AN EXAMINATION OF THE FACILITATORY ROLE FOR ENVIRONMENTAL EDUCATION OF CONSERVANCIES

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by
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ABSTRACT

This study examines the possibilities within the conservancy movement for the facilitation of environmental education. By means of a case study approach, a conservancy in the Northern Cape and the conservancy movement within the Free State provinces are compared with a view to elucidating factors militating against and promoting the success of environmental education programmes. The current lack of research in isolated rural areas is discussed. Re-orientation of perspectives regarding the value of conservancy-based environmental education within governmental, academic and local circles is recommended.

ACKNOWLEDGEMENT

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To S L-J

who for a short while made all things possible.

TABLE OF CONTENTS

CHAPTER III: METHODOLOGY AND RESEARCH CONTEXT

CHAPTER IV: CASE STUDY COMPARISONS

PREFACE

The study was supervised by Ms U van Harmelen of the Department of Education, Rhodes University. The researcher is most appreciative of the perceptive, supportive and non-prescriptive way in which supervision was conducted. The skilful assistance of Dr E D Cornwell of the Department of English, Rhodes University, is also noted with gratitude.

Acknowledgement is due to respondents who were willing to give of their time and thought to the research project.

As far as the researcher knows, dissertations by McDowell and Janse van Rensberg are the only studies in South Africa available for guidance concerning some pivotal issues raised in the current project. The researcher is greatly indebted to them.

CHAPTER I: INTRODUCTION

> We live lives based on selected fictions. Our view of reality is conditioned by our position in space and time - not by our personalities as we like to think. Thus every interpretation of reality is based on an unique position. Two paces east or west and the whole picture is changed. (Durrell, 1963)

> In the end we will conserve only what we love. We will love only what we understand. We will understand only what is taught. (Popper, 1975)

This research project is located within the context of

(i) current perceptions of an environmental crisis, developing and extant; and
(ii) the notion of the developing and extant conservancy movement.

An elucidation of the link between these two parameters as pertaining to successful environmental education in agricultural communities reveals a number of problems the researcher attempts to address. These include the impact of isolated rural areas on individuals and communities, and the concomitant necessity to adapt environmental education programmes accordingly.

1.1 BACKGROUND AND CONTEXT OF THE RESEARCH

The widespread perception of an imminent environmental crisis has increased incrementally over the last decade (Bartelmus, 1994, Fuggle and Rabie, 1993). A corollary has been an increasing awareness of the human role in ecosystem degradation, and a concomitant awareness of the need for redress in order to ensure quality of life for all species (Fitzgerald, McLennan and Munslow, 1997, Wynberg, 1993, Chambers, 1983).

Because of this consciousness of environmental crisis, the researcher has become increasingly aware of the need for the optimal and successful implementation of environmental education programmes, particularly in isolated rural areas. As a consequence, an investigation into the

possibility of a facilitatory role on the part of conservancies in environmental education appears both appropriate and necessary.

1.1.1 Conservancies

The notion of conservancies within the dimension of this particular research is a particularly and peculiarly South African one in its location, as both concept and practice, within privately owned lands. In referring to conservancies the researcher is thus referring specifically to a unique approach to land and its conservation. An increasingly sophisticated understanding of ecosystem linkages and their scale (species and area) has resulted in the formation of rural conservancies by private landowners, who have determined on "the voluntary co-operative management of the environment by its community and its user's" (Hugo, 1997).

The movement was started in Kwazulu/Natal by a group of relatively affluent neighbouring landowners, whose primary goal was the preservation of certain species, within expanded territories, of perceived value to the international hunter and tourist (Fuggle and Rabie, 1993). It subsequently spread to the Free State and Northern Cape provinces, then to the rest of Southern Africa, and in some instances has developed to incorporate as primary goals the protection of fragile or rare ecosystem types, a socio-political aspect incorporating the amelioration and transformation of severely abused urban environments such as townships, environmental activism in affluent urban areas, and the rehabilitation of degraded industrial areas (Hugo, 1997).

1.1.2 Conservancies and environmental education

A growing awareness of the increasing need for localised or situation-specific environmental education for any sustainable constructive change in environmental attitudes, beliefs and behaviour has been concomitant (Janse van Rensberg, 1995 and 1991, Redclift and Benton, 1994, Ekins, 1992, McDowell, 1989). This perception holds that environmental education should bring about a closer link between educational processes and real life, with environmental education "building

its activities around the environmental problems that are faced by particular communities" (Connect, 1978).

Recommendations for pertinent research include those areas concerning

> ...the knowledge and attitudes of individuals, in order to identify more precisely the most effective educational conditions...as well as obstacles to the modification of concepts, values and attitudes held by individuals, and the use of these concepts, values and attitudes in relation to environmental behaviour. (*ibid*, 1978).

It is also proposed that appropriate environmental education should explore both those issues which are actual problems, and those which are perceived problems (Milton and Dean, 1996, McDowell, 1989). This disjuncture between the perceived and the real and its implications are seen by the researcher as significant in the context of facilitating environmental education programmes. The current research project is concerned with investigating the possibilities offered for environmental education within a rural conservancy located in the Northern Cape. As such, aspects that will optimise, as well as militate against, environmental education projects and programmes need to be identified.

1.2 RATIONALE

With respect to conservancies, there are certain fundamental issues raised in the literature. The research project is concerned primarily with investigating these issues.

The study was bounded by the following parameters in seeking to understand the nature of possible environmental education action in the area under investigation.

1.2.1 The agricultural community

The importance of the agricultural community (both landowners and their labour force) as modifiers of the land is *a priori* a matter of scale: approximately 80% of the land surface of South

Africa is in private ownership (Fuggle and Rabie, 1993). This leads to the question of what aspects of environmental education are needed, and why is it required within such a community. Environmental education within this group is seen as particularly necessary where the modification of the land has had or will have negative environmental consequences (Auerbach, 1999, Fuggle and Rabie, 1993). Certain of these environmental consequences and the environmental education required to address them will form the focus of this study (Shearing, 1994).

The relative voicelessness and powerlessness found within the agricultural community in isolated regions has been documented (Chambers, 1983). The researcher considers that this is another important factor impacting on the possibilities available to environmental education.

Both employers and employees in isolated and extended areas such as found in the Great Karoo in the Northern Cape have to a degree been ignored in terms of research interaction (Milton and Dean, 1996, Shearing, 1994, Janse van Rensberg, 1991, Anderson, pers. comm.). It is maintained that both landowner and worker groupings in isolated regions tend to be conservative socially, intellectually, politically and economically (Milton and Dean, 1996, Janse van Rensberg, 1991, Vayda, 1989, McDowell, 1989). This has relevance to the notion of environmental education (Auerbach, 1999, Chambers, 1983) and the introduction of new concepts and attitudes (O'Donoghue, 1996, Eagly and Himmelfarb, 1978, Fishbein and Ajzen, 1975).

Research in such extensive areas is hampered by the high costs associated with the protracted logistics of time and distance (Auerbach, 1999, Chambers, 1983), and a general attitude of suspicion towards perceived outsiders or newcomers to a closed community (McDowell, 1989). Gaining the degree of trust required for independent, honest and open responses is extremely difficult and time-consuming, and often not possible within the given empirical constraints (Janse van Rensberg, 1991, *ibid*, 1983).

1.2.2 The Northern Cape: an extensive and isolated rural area

The researcher believes that in terms of environmental conscientising for altered behaviour, regions such as these should be seen as being of significant import. It is postulated that landowners in such thinly-populated areas have an inordinate degree of influence on their families

and their work force (Auerbach, 1999, Ekins 1992, McDowell, 1989). They are often the sole employer for a considerable area, and their potentially significant impact on changing specific attitudes and behaviour patterns has been noted in the literature (Robson, 1993, McDowell, 1989, Fishbein and Ajzen, 1975).

Although innate conservatism is held to be an impediment to altering values (Chambers, 1983, Eagly and Himmelfarb, 1978), the love of the land expressed by all respondents is a profound and deeply-felt emotion which can be used to facilitate attitudinal change (Auerbach, 1999, McDowell, 1989). It is postulated that increasing economic and political uncertainty is forcing a degree of openness to new ideas, and, in particular because of poor agricultural and climatic conditions over the last few years, positive conservation ideas (Shearing, 1994).

In promoting the concept of conservancies to potential members, the recommended rationale is to stress the benefits accruing to individuals and the community, such as increased security in general, as well as the protection of game, stock and crops (Hugo, 1997). For example, regular patrolling would include fences, windmills, watering points, and thus keep a check on the entrance or presence of undesirable elements (*ibid*, 1997). This approach appeals to landowners who are not necessarily committed to environmental principles, as they see the clear benefits for themselves in financial terms as well as in terms of social approval, given the current climate of what is acceptable conservation behaviour (Auerbach, 1999, Ekins, 1992). There is also a tenuous benefit in their perception that this facilitates their need to express in a more concrete way their "love for the land" (McDowell, 1989).

1.2.3 The impact of conservancies in isolated rural areas

Within the predominantly Afrikaner community there is often an acknowledged degree of submission to authority forms and figures and their pronouncements (McDowell, 1989). A registered conservancy, which has the acknowledgement and approval of a state organisation, thus has the advantage of a degree of sympathy in its promotion of new concepts and values. An important proviso s that contentious issues, particularly those with economic consequences, need to be handled with extreme care (Hugo, 1997, Janse van Rensberg, 1991).

The stated aims or goals of a conservancy should explicitly reflect the interests and needs of its members (Hugo, 1997). The commitment of individual members and the land they own is essential to achieving such goals, and stressing their interdependence can be a significant force for building a close-knit community with coherency and strong empathetic links (Ekins, 1992). It is claimed that this can be a significant factor in the promotion of environmental education (O'Donoghue, 1993, Chambers, 1983).

According to respondents, a rural conservancy is typically launched as starting with great enthusiasm, with meetings which are widely and willingly supported. There is a strong desire for knowledge pertinent to members' complete farming situation, including the natural as well as the altered environment, and there is no other platform available for airing such knowledge in a neutral manner (Hugo, 1997). The need to best utilise this initial positive situation for the promotion of responsible and holistic environmental behaviour is additionally referred to by several respondents. Problems with conservancy agendas becoming skewed, with a resultant loss of membership support, are discussed in the body of the thesis.

1.2.4 Impact of conservancies in promoting environmental education

The potential and actual role of conservancies in successfully percolating through to members a more subtle and holistic ecological awareness has been noted (Fuggle and Rabie, 1993). This progression is reflected in the development of the conservancy movement itself, altering from species-orientated nature conservation to the inclusion of the full gamut of disturbed systems and the human role within the holistic comprehension of the ecologically determined environment (Hugo, 1997, *ibid*, 1993).

The researcher contends that this project could reveal insights regarding triggers for successful environmental education, particularly in terms of increasing the environmental awareness of individuals as well as extending such awareness to the greater community of individuals within an initially closed system (Auerbach, 1999).

1.3 GOAL OF THE RESEARCH

In the light of the above discussion, the goal of the research is therefore:

> To investigate the possibilities for environmental education offered by the establishment of conservancies in the Northern Cape, and in so doing, to identify aspects that will optimise the functioning of environmental education programmes and projects in existing and proposed conservancies.

1.4 THE RESEARCHER'S BIOGRAPHY AND LOCATION

The researcher's own situation is seen within the hermeneutic research paradigm as being a relevant part of the development of meaning within a specific context (Cohen and Manion, 1994, Fetterman, 1993).

The researcher's cultural background is Afrikaans, her family has been present in the Britstown region for several generations, and she currently lives on a sheep and game farm which is historically significant in the districts of Britstown and Prieska. The academic background of the researcher is in Philosophy, Literature and Ecology. She has a commitment to living in harmony with and with respect for all species. She also has a strong personal interest in education, perceived as *e ducere*: to lead forth, in terms of growth of all aspects of the human spirit.

1.5 RESEARCH OUTLINE

Chapter I: Introduction, introduces the background and context of the research project, its rationale, goals and research methodology. A brief overview of pertinent contextual problems is given.

Chapter II: Theoretical perspectives informing the research, focuses on a critical examination of the pertinent literature, examining those ideas and concepts which form the basis of the project. These include the notion of conservancies, the notion of environmental education as well as its sustainability, the notion of agriculture and conservation within the two locations examined, the notion of ownership and power, the notion of discourse, the notions of belief, attitude, intention

and behaviour, and the notions of rural poverty, voicelessness and bias.

Chapter III: Methodology and research context, details the paradigmatic orientation of the project, the research instruments selected, the data collection procedures followed, methods of data analysis, and a brief critique of the problems arising in the data collection.

Chapter IV: Case Study comparisons, in presenting the data gives a detailed background for the two situations triangulated. Historical, socio-economic and conservation contexts are given for each case study, and a brief comparative analysis of these aspects is essayed.

Chapter V: .Analysis of data, attempts to examine the underlying reasons for the occurrence of themes and issues which emerged in chapter IV. This thick analysis and evaluation is done with a view to establishing factors which hinder or facilitate the promotion of environmental education within conservancies.

Chapter VI: Evaluation and Conclusions, looks at the whole research project reflectively. It indicates the dimensions that have emerged from the data, on the basis of which some tentative ideas and possibilities emerge, including the identification of areas where further research is needed. An examination of the limitations and strengths of the research is given, and recommendations are made in the light of the goal of the research project.

CHAPTER II: THEORETICAL PERSPECTIVES INFORMING THE RESEARCH

This chapter focuses on the theoretical perspectives that have informed the research. It does not purport to be a comprehensive literature review; but rather surveys the specific writings that inform the perspectives, issues and aspects of the research. Pertinent facets of the literature will be critically examined. The rationale for selection from the range of the literature available was dictated by the direction of the research topic. Aspects canvassed therefore include the following: conservancies, environmental education, sustainability of environmental education programmes, conflict between agriculture and conservation, perception and reality regarding problem species, ownership and power, discourse, belief, attitude, intention and behaviour, and poverty, voicelessness and bias.

2.1 THE NOTION OF CONSERVANCIES

2.1.1 Historical perspective

A conservancy was originally defined by the Natal Parks Board as:

> A group of farms whose owners have combined resources for the improved conservation and well-being of wildlife inhabiting the area.
>
> (Natal Parks Board, 1995)

The term "wildlife" used here encompasses mammals, avifauna, fish, natural vegetation, and all desirable natural life forms (National Parks Board, 1979). In most instances, a provincial conservation authority will assist such a conservancy with staff training, relocation or selling at reasonable cost animals for re-stocking, and technical advice on management (Hugo, 1997). The conservancy has no legal nature conservation status, and is run and financed solely by the landowners concerned (Fuggle and Rabie, 1992).

The conservancy movement has subsequently, in some instances, developed and expanded from

a narrow biophysical perspective, to one which includes as an intrinsic part of the environment the human community and its well-being. Consequently a more up-to-date and accurate definition of a conservancy is:

> The voluntary co-operative management of nature and the environment of an area by its community and its users. (Hugo, 1997)

The first conservancy was established in the rural Balgowan area, Kwazulu/Natal, in 1975. Primarily in an attempt to control the poaching of game, the concept of communal game guards within a defined and discrete region was posited by Nick Steele, a professional conservator working for the then Natal Parks Board; and training, which was highly militaristic, was given by this provincial conservation authority (*ibid*, 1997). The concept in Natal was broadened to include industrial and urban areas by Mike Milton; however the training given was still determined by a legalistic concern with the policing of environmental activity (Natal Parks Board, 1987).

The Free State provincial conservation body first expanded the concept to incorporate an holistic, ecosystems approach. The first training course for rangers was held in 1988, and was focused on education in environmental management and the communication of pertinent information to the owners and users of conservancies. This concept has now been developed in a creative and far-sighted manner with extensive ramifications, particularly as regards training, and conservancies have been established in urban, industrial, and township areas, and squatter camps, with growing success. Conservancies are currently found in all provinces, the majority in rural areas (Hugo, 1997, Earle, 1991).

The rationale of conservancies has thus moved from the protection of the purely bio-physical elements within an area to include the social, political, and cultural aspects; it currently also focuses on rehabilitative elements within the community as a whole. This development parallels the development of the "new environmentalism", which addresses urban issues, particularly those of occupational health and the pollution that threatens the health of people in their residential areas, rather than the predominantly biophysical concerns of the past (Ngobese and Cock, 1997).

Degraded urban environments are seen as interrelated with social problems, and rehabilitating the

environment is held to be the starting point for improving community health and social relationships (Brinn, 1999, Redclift and Benton, 1994). This enhanced conceptualization is currently devolving into the traditional rural conservancy thinking, where ownership by all the community of the process of management of the environment is increasingly seen as essential to the successful and sustainable functioning of the conservancy (Hugo, 1997, Natal Parks Board, 1994).

2.1.2 Current situation

The potential importance of conservancies in a South African context cannot be over-emphasised. Users of the environment need to have an holistic understanding of ecosystem functioning in order to prevent further environmental degradation; and environmental education is integral to developing such an awareness (Tanner, 1998, Strumm, 1994, Redclift and Benton, 1994).

The fundamental idea currently informing the conservancy movement is that the community should be involved in the management of its environment (whether that community is perceived as consisting of only the landowners, and/or their labourers, or simply of any utilisers), and that environmental education is integral to this (Ekins, 1992). Given that 80% of the land surface in South Africa is privately owned, and predominantly utilised for commercial agriculture, a conservancy strategy which is based on the voluntary co-operative management by private landowners in an environmentally positive manner, can easily be seen as the optimum conservation action of the future (Duart Hugo, pers. comm.).

The majority of crop and stock farmers world-wide practise agricultural procedures which are harmful to the environment and result in a decline in the quality of the resource base. A fundamental shift in attitude - from maximising short-term gains through the use of exploitative practices to methods that would result in long-term sustainable productivity - is required for global ecosystem functioning (Fuggle and Rabie, 1992). The value system in terms of which conservation is seen as minor needs to undergo a paradigm shift, and this will only be achieved

if education changes the norms and attitudes of the populace, and in particular those of the farming community as the statistically most prominent landowner (*ibid*, 1992, Janse van Rensberg, 1991). The researcher concurs, and further postulates that this in turn indicates the desirability of promoting of localised environmental education that currently within rural South Africa can be effectively facilitated by the conservancy system.

2.2 THE NOTION OF ENVIRONMENTAL EDUCATION

The analysis of the literature that is pertinent to this part of the research question has revealed a tension between standardised notions of what environmental education is, and the idea of a national consciousness and appropriateness. The illusion of a national consciousness in a completely heterogenous society, a society of diversity, is revealed throughout the thesis, and clearly demonstrated in chapter V in examining the responses to the interview schedules.

2.2.1 Contextual perspective

The researcher has adopted a broad concept of the environment as comprising four related dimensions: the bio-physical, economic, social and political (Fitzgerald, McLennan and Munslow, 1997, O'Donoghue, 1994, Merchant, 1990). The environmental crises is thus a reflection of problems occurring in all four of these dimensions; and the troubled relationship between human beings and their environment has become a topic of widespread concern (Ekins, 1993; Fuggle and Rabie, 1992). The World Conservation Strategy (IUCN, 1980) stressed that humanity, as an integral part of nature, could not continue to exist unless nature and natural resources were conserved. Three objectives in order to achieve this were emphasized: the maintenance of essential ecological processes, the preservation of genetic diversity, and the sustainable use of species or ecosystems.

2.2.2 Rationale

The researcher has elected to approach the subject of environmental education from the perspective that the history of environmental education can be interpreted as a set of responses to the environmental crisis. Each of these responses represents an ideological position (Fuggle and Rabie, 1992, Ekins, 1992, Kahn, 1990).

2.2.3 Ideologies and their historical context

Modern environmentalism can be held to have started in the 1960s, a decade in which existing social values and practises were widely examined and criticised by a broad spectrum of the population (Auerbach, 1999, Ekins, 1992). In the following decade, the voice of the scientific community was predominant, basing its response to environmental crises primarily on the biophysical aspect, notably the preservation of species and environments in protected discrete areas (Strumm, 1994, Western, 1994). This concept expanded in the 1980s to conserving and managing such areas, and included adjacent environments, thus incorporating shared natural resources as a necessary part of such a strategy (Strumm, 1994).

In 1987, the concept of sustainable development was proposed in the Bruntland Report. This was a more broadly-based response, which recognised the central issue of human needs within the environmental crisis, but was unduly linked to economic growth (Bruntland, 1987). As a consequence of this limitation, the concept of sustainable living (Caring for the Earth, 1990) re-examined the basic premises of both conservation and development, and is the current dominant international perspective (Fuggle and Rabie, 1993).

This development of environmental consciousness and its concomitant response to the developing environmental crisis can be interpreted as a reflection of the modernist perspective, focusing largely on the present, the short-term future and the universal, developing into the post-modernist perspective. This latter holds it necessary to incorporate history, local circumstances and a sense of uncertainty and risk as integral to a valid comprehension of environmental crises and constructive responses thereto (Western and Wright, 1994, Chambers, 1987, Hope and Timmel, 1984).

2.2.4 The South African context

These international trends are reflected in the development of environmental consciousness in South Africa. The policy of apartheid and both its contribution to holistic environmental degradation and its impact on specific environmental issues, has meant that South African environmentalism as it has developed has tended to focus on such issues and their outliers (Huntley, Siegfried and Suntner, 1989). Democratic government since 1994 has posited a policy of sustainable development, emphasising the conservation of biodiversity, integrated environmental management, equity and redress as solutions to the environmental crisis (Fuggle and Rabie, 1993).

The role of education is stressed in all these policy initiatives. The importance of policy making at a local level as an appropriate focus for constructive environmental action has been iterated, and local initiatives are increasingly reflecting, albeit theoretically in many instances, the international commitment to the concept of sustainable living (or at least sustainable development) and the concomitant importance of environmental education (Fuggle and Rabie, 1993, Ekins, 1992). The concept of conservancies and their conceptual development within the South African context fits comfortably within this paradigm. The development of their potential and actual role in the sphere of environmental education can be seen as being parallelled in the increasing national environmental consciousness (Irwin, pers. comm.).

2.2.5 Conceptual development of environmental education

There is an inherent dilemma in trying to find an adequate definition of environmental education within the plethora of ideas and concepts in the literature. This dilemma arises from the diversity of understandings of what is meant by "the environment": as will be seen later in this chapter, the notion is influenced and shaped by a great deal more than purely academic considerations. Contributory variables and parameters are examined in chapters III and IV, and analysis and reflection about their influence is made in Chapters V and VI.

Definitions of environmental education have parallelled the development of environmental

consciousness and the response to the environmental crises elucidated above. Selected examples will be cited, indicating this development, and forming a theoretical framework which underpins the research project and forms a continuum for evaluation, interpretation and the contextualisation of the inherent dilemmas found (O'Donoghue, 1990, Fitzgerald, McLennan and Munslow, 1997, Janse van Rensberg, 1991). The demands of a changing political and social order in South Africa have required that environmental educationalists formulate a broader, holistic view of the environment, one that recognises "the essential interrelatedness and interdependence of all phenomena - physical, biological, psychological, social and cultural." (Fitzgerald, McLennan and Munslow, 1997, Capra, 1983:285).

An early seminal definition, which unusually incorporated a unique motivational aspect more common to later thinking, is:

> Environmental education is aimed at producing a citizenry that is knowledgeable concerning the biophysical environment and its associated problems, aware of how to help solve those problems, and motivated to work toward their solution. (Stapp, 1969, In: Mrazek, 1993)

In 1971, the IUCN was concerned primarily with the biophysical aspects, and thus defined environmental education in a more limited and conservation-orientated sense as:

> The process of recognising values and clarifying concepts in order to develop skills and attitudes necessary to understand and appreciate the interrelatedness among man, his culture and his biophysical surroundings. Environmental Education also entails practice in decision making and self-formulation of a code of behaviour about issues concerning environmental quality. (IUCN, 1971)

A later perception incorporated the socio-political nature and the complexity of the environmental crisis; and the political dimension of environmental education was particularly emphasised:

> Environmental education does not ultimately have validity unless it also involves

> education to change the human environment for the better by understanding on the one hand the political processes by which this can be done as "participating citizens"; and on the other hand, as noted by conservationists and other environmentalists, by acquiring an environmental ethic and a knowledge of the ecological basis of life, on which value judgements about the environment can be based. (Martin, 1975, in Irwin, 1990)

This socially critical ideology is extended by Huckle (1991). His twin focus on redressing power imbalances in social and educational institutions, and on environmental education increasingly based on empirical reality, stresses the social context in which environmental education takes place. Although his context is a pupil : teacher scenario, his conceptualisation has been illuminating for the current research project, although limited in lacking a component of individual values, attitudes, beliefs or behaviour (Ekins, 1992, Irwin, 1991).

> Education for the environment should be a shared speculation with pupils on those forms of technology and social organisation which can enable people to live in harmony with one another and with the natural world. (Huckle, 1991)

A bland and possibly parochial summation of environmental education as a response to the environmental crisis in South Africa is given by Fuggle and Rabie (1992):

> Through educational programmes and the dissemination of information individuals must be encouraged to re-examine their values and to alter their behaviour to accord with the ethic of living sustainably. (Fuggle and Rabie, 1992)

There is no mention of the highly complex interrelationships among belief, attitude, intention and behaviour (McDowell, 1989, Fishbein and Ajzen, 1975), or the role of empirical example in fostering an openness to change in behaviour patterns (Janse van Rensberg, 1991). Fien (1993) also stresses the role of values; however he sees social justice and ecological sustainability as being inseparable, given the role of human rights and democracy in environmental matters (*ibid*, 1993).

Although the sampling quoted above is elucidatory, it is apparent that no single definition can be appropriate within all contexts; and that conceptualisations should continually be approached critically (Leedy, 1993, Nachmias and Nachmias, 1987). Environmental education is seldom practised according to an abstract definition, rather is empirically adapted to specific circumstances (Irwin, 1989, Fishbein and Ajzen, 1975). It seems evident that environmental education should be seen as specific to a particular context, and to the people involved within that context (Ekins, 1992, Kahn, 1990, Chambers, 1987).

The researcher concurs that environmentally responsible behaviour can only be defined and determined within an empirical situation: a point of origin for this research (McDowell, 1989, Chambers, 1987). The aim of context-related environmental education must therefore be determined within the specific situational environmental issues or risks with those persons affected by such issues or risks, an inclusive process of constructing responses to environmental problems, entailing diverse processes of problem solving and change (Bartelmus, 1994, Nelson-Jones, 1993, Ashwell, 1992).

2.3 THE NOTION OF SUSTAINABILITY OF ENVIRONMENTAL EDUCATION

The sustainability issue is one of the most serious problems facing environmental education nationally and internationally. On a practical basis the need to provide sustainable programmes and projects has been recognised and approached, most frequently within the context of a structured learning situation (Ashwell, 1992, Ekins, 1992, O'Donoghue, 1990, Chambers, 1983).

Regarding the conceptual viability of environmental education, preliminary reading indicated that "successful" environmental education which "achieved" the goal of changing personal values and behaviour was significantly dependant on individual charismatic personalities and their organisations, and supported the contention that when such agents are no longer present, programmes often disintegrated, and the alteration in behaviour patterns frequently regressed (O'Donoghue, 1993, Ashwell, 1992, Grieg, Pike and Selby, 1989, McDowell, 1989). This predicament has been referred to as a scenario of people tending to hear "the Singer and not the

Song" (O'Donoghue, 1990).

Research in the field of educating for the environment from a perspective of sustainability within a structured educational system has been conducted: those aspects identified by Huckle (1990) and Fien (1993) have been summarised and adapted by the researcher where pertinent to the non-formal and unstructured situation found in this research project. The practical applicability of such recommendations within this empirical situation is extremely limited, given the existing logistical and personality constraints (Hugo, 1997, McDowell, 1989). The knowledge base of specific sets of learners requires both deconstruction (examining the origins of specific understandings) and reconstruction (the inclusion of further dimensions developing a more complex understanding of issues and phenomena). It involves the gamut of social, political, cultural and economic spheres pertaining to these individuals (Janse van Rensberg, 1991, McDowell, 1989, Chambers, 1983).

It is claimed by, among others, Fien (1993), Bowers and Flinders (1990), and Huckle (1990), that, for effective environmental education to occur, it should be conducted in the following manner:

* Environmental learning should be active and experiential: learners must be given the opportunity to engage with real issues in their local environment;
* Dialogue should be based on the questions why and who and what benefits: the role of the community must not be ignored or marginalised by the environmental education process;
* Learning or teaching situations should be linked to learner empowerment, based within epistemological and political agendas;
* Dialogue should encourage debate and the search for alternative perspectives;
* Learning or teaching situations should not avoid the exploration and critical analysis of values.

The necessary content of environmental programmes should include the following:

* Knowledge of the natural environment and the ecological processes within that

environment; real issues impacting locally;

* Technology education which enables learners to have a theoretical and practical grasp of appropriate technology;
* Development of a sense of history and change, specifically regarding conflict and social movements;
* Political literacy: the awareness of alternative social and environmental futures and the political strategies required for their realisation;
* Understanding different ideologies and their implications, particularly consumerism (The Rhodes University Gold Fields Certificate: Course Notes, 1997, Fien, 1993).

This suggested theoretical structure appears robust and inclusive; however, as indicated above, the extent to which its practical application is possible within the given non-formal, individual-driven extant project situation, is limited (Hugo, 1997, Janse van Rensberg, 1991, Low and Hoon, 1990, McDowell, 1989). It does serve to contextualise and possibly prioritise aspects which current conservancy programmes in isolated rural areas, without support from a provincial body, and overly dependent on individual personalities for motivation, could attempt to focus on to improve their long term viability. This is particularly pertinent in the light of the following analysis of parameters.

2.4 THE NOTION OF AGRICULTURE AND CONSERVATION: PROBLEMS AND ISSUES IN THE KARROID ENVIRONMENT

2.4.1 Mixed motives: Agro-ecology

The challenge for agriculture in the latter part of this decade can be seen as the "necessity to produce an economically viable crop while preserving the short- and long-term integrity of the local regional and global environment" (Paul and Robertson, 1989). Within the dominant "agribusiness paradigm", the use of fossil fuels and pesticides, and a research emphasis on the biotechnological improvement of crop yields, amongst other factors, ignores or impedes the protection of natural processes such as soil formation, water infiltration, nutrient cycling and predation (Bartelmus, 1994, Fuggle and Rabie, 1992). The dominant value system remains one

where conservation takes a minor position, and is evident in the attitudes and practices of farmers, governments and society in general (Fitzgerald, McLennan and Munslow, 1997, Bartelmus, 1994, Ekins, 1992).

A preliminary survey of the literature indicates that the motivation of landowners for positive conservation action was not clear-cut: the complex interplay of factors was typical of behaviourial phenomena (Fuggle and Rabie, 1993, Huntley, Siegfried and Suntner, 1989, Fishbein and Ajzen, 1975). The verbally stated conservation motive of a particular farmer could have been decisively influenced by one or more of the following reasons: (i) to satisfy the author, (ii) the technology to further develop the land is not available, (iii) the clearance and planting, or other agricultural development, is not economically possible, (iv) the income tax bracket of an individual is sufficiently high that perceived returns are too low to warrant agricultural development, (v) family pressure to preserve the land, etc., (McDowell, 1988).

By contrast, "passive" conservation practices are currently almost the norm in the Karroid ecosystem (Shearing, 1994, pers. obs.). Flocks and herds of unproductive animals are very seldom encountered. It is economically preferable to keep fewer highly productive animals than large numbers whose production ability is questionable (Milton and Dean, 1996). Evidence of soil reclamation methods is widespread (Shearing, 1994, and pers. obs.), and interest in grazing methods, and the eradication of alien invasives, is common even in those instances where economic circumstances prevent active intervention (Ferreira, pers. comm., 1997).

McDowell (1988) summarised his findings about farmers' attitudes towards the conservation of an agriculturally valuable veld-type by noting that factors influencing behaviour were attitude-related as far as the acceptance of conservation principles and values was concerned, and finance-related as far as the practical application of these principles and values was concerned. This empirical dichotomy is echoed in much of the literature (Ekins, 1993, Janse van Rensberg, 1991, Chambers, 1983).

Current legislation for the advancement of natural ecosystem conservation on private land emphasises restrictive means for achieving goals (Fuggle and Rabie, 1992). Such means are perceived as having unrealistic expectations, primarily as they are incapable of being enforced -

law enforcement personnel are insufficient, and both perceived and actual financial benefit for contravention is frequently high (Fitzgerald, McLennan and Munslow, 1997, McDowell, 1989). Consequently, legal considerations appear to play a minimal role in the conservation decision-making process of private landowners (Ferreira, 1999, pers. comm., Ekins, 1992, *ibid*, 1992, McDowell, 1988).

Ongoing research into vegetation recruitment projects has resulted in management proposals designed to maximise the palatability of a specific vegetation type without sacrificing biotic diversity. Such projects have been completed in a number of biomes: for example, in the southern coastal regions a specific fire regime was suggested to shift the composition of the suite of species from less palatable, shrubby communities to more palatable, grassy communities (Cowling *et al.*, 1989). In this instance, Pierce (pers. comm.) admitted that such improved management would still not compensate for the difference in grazing value of planted pasture or exotically manipulated "natural" vegetation: no fully satisfactory compromise between conservation and economic activity could be found. Similar research aimed at improving the food productivity of natural ecosystems without excessive degradation of biotic diversity could be an important component of presenting alternative conservation-conscious strategies for the landowner to consider implementing (Fuggle and Rabie, 1992, Chambers, 1983).

However, the presentation (and imposition) of grazing strategies in the past on national and provincial levels has frequently been unsuccessful, and also overturned by subsequent research, resulting in antipathy toward innovative grazing regimes (Ngobese and Cock, 1997, Milton and Dean, 1994). McDowell (1988) notes the importance of presenting such alternatives and their financial costs objectively, with an awareness of the individual landowner's socio-economic situation: preservation or conservation is often an effective economic loss to the landowner, particularly in more productive agricultural areas. Similar compromises between conservation and economic activity are less capable of being tangibly assessed or illustrated in the faunal, avifaunal or insectivorous problem species encountered in the Karroid research environment.

The pervasive emphasis in ecosystem research has, until fairly recently, been on the non-human or physical components of the ecosystems themselves (Tanner, 1998, Bartelmus, 1994, O'Donoghue, 1990). Currently, the interaction of the human factor with the natural environment

is increasingly becoming the research focus, even in biotic research (Ekins, 1993, Fuggle and Rabie, 1993). The researcher concurs that systematic evaluation of the most crucial influence on the survival of the natural ecosystem "baseline", namely the socio-economic threats interlinked with current agricultural trends, deserves much greater prominence (Ekins, 1993, Chambers, 1983). Following this rationale, humankind becomes the logical target for investigation when one is attempting to provide a meaningful strategy for surviving natural ecosystems (Bartelmus, 1994, McDowell, 1989). An effective strategy to facilitate positive environmental conservation attitudes among landowners who are not conservation conscious appears to be a prerequisite for the long-term protection of the extensive natural or semi-natural ecosystem component, which is predominantly in private ownership.

Work by McDowell (1988) and Janse van Rensberg (1991) to establish an understanding of the attitudes and behavioural responses towards conservation of a representative cross-section of South African landowners is a reminder of how necessary it is to understand the status quo before attempting to change it (Chambers, 1993, Opie, 1990, Kahn, 1989). Attempting to understand the reasons and conditions under which landowners are most likely to be good, bad or indifferent conservers of natural diversity represents a major hurdle to be cleared in the process of gaining insight regarding development of holistic conservation behaviour (*ibid*, 1988, Chambers, 1983). The researcher recognises the role of conservancies in this context in promoting material and spiritual incentive- and reward-based legislational reform, as well as in promoting and motivating personal environmentally sound behaviour.

Many current agricultural practices throughout South Africa, of both crop and stock farmers, are detrimental to the environment and result in a decline in the quality of the resource base, specifically causing soil erosion, nutrient depletion, reduction of groundwater and river flow or their pollution, and the elimination or replacement of many valuable plant and animal species by exotics or weeds (Milton and Dean, 1994, Fuggle and Rabie, 1993). To reduce, halt, or reverse this aspect of environmental degradation, a shift of emphasis must occur, from maximising short-term gains through the use of exploitative practises to approaches that would lead to sustainable productivity over the long term. It is maintained by several authors that this can only be achieved if education changes the norms and attitudes of the farming community (Ngobese and Cock, 1997, Fuggle and Rabie, 1993, Ekins, 1992).

2.4.2 Problem animal species: perception and reality

The flora of the Karoo is the economy of the area - predominantly, farmers make a living by grazing their animals on the veld. The rainfall is too low for artificial pastures to exist, except where there is strong underground water or large storage dams. Thus the flora of this area is of prime economic importance to those who farm here and must be conserved as it cannot be replaced by anything else. The Karoo farmer in fact farms his bushes and uses small stock units as harvesters (Shearing, 1994, Milton and Dean, 1994, Cowling, 1992).

The need for conservation-related farming practices, particularly regarding grazing strategies, is almost universally recognised by farmers within the biome. Although meeting the high costs of capital input frequently cannot coincide with the long-term view that conservation is economically viable, farmers who ignore the conservation status of their veld will inevitably see it regress, to the detriment of the individual farmer concerned (Shearing, 1994).

The concentration of more economically productive animals within smaller flocks or herds decreases those margins available for the perceived acceptable level of predation. This applies equally to the increasing value placed on elements within the vegetation cover and the desirable species suites, which are managed within individual grazing plans when threatened by locust swarms. Both aspects of increased value devolve into the perceptions held by individual farmers regarding perceived and actual problem species (Shearing, 1994, Janse van Rensberg, 1991).

Attitudes held by individual farmers toward perceived and actual problem species vary in

(i) the extent to which certain species are perceived as a threat or not, and
(ii) their responses and the extent to which action would be taken within specific given circumstances (Auerbach, 1999, Janse van Rensberg, 1991).

Many farmers connect wildlife with stock losses and persecute what they perceive as problem species: indiscriminate persecution can disturb predator-prey relationships, such as the increased population recruitment of Caracal *Felis caracal,* and the territorial expansion of the Rock Hyrax

Procavia capensis, concomitantly with the reduction of avian predator species such as Black Eagles *Aquila verreauxii* and Tawny Eagles *Aquila rapax* (Shearing, 1996, Milton and Dean, 1994, MacDonald, 1989). Control methods in the research area against caracal and Black-backed Jackal *Canis mesomelas* have impacted against those mammalian species beneficial to agriculture such as the Bat-eared Fox *Otocyon megalotis* and the Aardwolf *Proteles cristatus* (Taljaard, 1999, pers. comm., Ferreira 1999, Shearing, 1994).

Problem species are generally categorised as such for their direct competition in grazing, such as Rock Hyrax and Locust swarms, and for their (frequently alleged) predation on domestic stock, such as vultures (Milton and Dean, 1994, McDonald, 1989). The apparent increase in the size and incidence of locust swarms has been attributed to the practice of spraying with toxic chemicals, which impacts on the food chain and ultimately causes large scale mortalities among natural prey species such as the Bustards (Boshoff, 1989). The increase in range of the rock hyrax throughout the Great Karoo in the 1970s and 1980s is linked to the reduction of the species' dominant avian predator, the Black Eagle (MacDonald, 1989).

The visible extent of these negative trends affecting veld availability, combined with the publicity given to research findings regarding the extent of grazing competition from Rock Hyrax by farmers' organisations, and the campaign to halt spraying for locusts using toxic chemicals, appears to have brought about an increasing awareness of the interrelatedness of ecological systems and ecosystem functioning (Fuggle and Rabie, 1994, Ekins, 1992, Lawson, 1989, Ferreira, pers. comm.).

The issue of problem species predating directly on domestic stock units - which can represent a very immediate and severe economic loss (McDowell, 1989) - is more complex, and responses vary greatly. It is maintained that raptor persecution by farmers will always occur while perceived or actual economic linkages exist. Successful conservation strategies for such species must necessarily be based on educational programmes informing individuals and groups of the role of raptors within each specific system, and that it is financially more beneficial to have raptors than to kill them (Janse van Rensberg, 1991). Such strategies must take into account the perspective of the landowner (Boshoff, 1980, Anderson, pers. comm.): it would be counterproductive to disregard or deny stock predation (Janse van Rensberg, 1991). It is also necessary to address

commonly held misconceptions regarding certain species which are perceived as problem animals but which are physiologically incapable of killing stock (Bat-eared foxes, vultures). Such misconceptions are usually based on either inadequate knowledge regarding the physiology of particular species, or flawed investigation of veld events, or both (Shearing, 1994, Janse van Rensberg, 1991).

"Rogue" individuals within species are also frequently perceived as necessary targets for elimination, and concern about the resultant selective breeding of a "super jackal" or "super caracal" is widespread (Shearing, 1994).

Janse van Rensberg (1991) in her study of farmers' attitudes towards problem animals notes that no one single factor determines an individual farmer's attitudes and actions, and that the context plays a pivotal role, albeit at times unconscious. She has summarised the significant interacting factors as:

Demographic (particularly language orientation)
Situational (topography and infra-structure, and quality of veld cover)
Value orientation (narrowly economic or "conquering")
Attitudes towards conservation and conservation agencies
Peer group influence; and
personality factors.

This breakdown of interacting factors influencing an individual's understanding was found to be particularly valuable in the context of issues and parameters emerging from the interview analyses in chapter V.

Similar findings which correlate well are found in McDowell (1989), in his survey of attitudes towards the conservation of a specific biome type, and in Chambers' (1983) summarising of development work in rural impoverished villages in India. These studies are used as a basis for interpreting and evaluating respondent replies in the current survey.

2.5 THE NOTION OF OWNERSHIP AND POWER

Private landowners, all commercial farmers, were selected for initial investigation, firstly because they own the largest proportion of rural land in South Africa (about 80%: Benson, 1988). This includes vast tracts of natural and near-natural ecosystems (Huntley, Siegfried and Suntner, 1989). Secondly, the accountability for actions on a particular property is usually accepted by one decision-making individual or family (Janse van Rensberg, 1991, McDowell, 1989). If an outsider wishes to suggest change, for example concerning the conservation management of a private property, the bureaucracy involved is minimal because one works directly through a single individual (Fuggle and Rabie, 1992). Publicly owned lands encompass a wide variety of very often complex systems of ownership, controls, "authorities" and usage: accountability for actions as well as for land uses are thus diffuse and variable (McDowell, 1988). Thirdly, the mismanagement by farmers in general, in particular of semi-arid regions and by overstocking, has resulted in widespread degradation and contributed to the desertification of this biome (Shearing, 1994). The use of toxic substances in a variety of applications, with extensive and extended impacts on the food chain, in particular destroying species which are beneficial to the farmer, is another agricultural malpractice of long standing (Milton and Dean, 1994, Fuggle and Rabie, 1992, Steyn, 1989).

Improved land-use practices are seen as essential to the maintenance of essential ecological processes, and the concomitant maintenance of human health and well-being (Auerbach, 1999, MacDonald, 1989). This again emphasises the importance of prioritising environmental education for the agricultural landowner group. The large number of people residing in rural areas and linked to agriculture and the wealth-creating process in agriculture also emphasises this sector's political "value". This in turn provides an opportunity for lobbyists to manipulate policies for their own benefit, which is reflected not only in the history of South African agriculture, but also in the political standing of such lobbying groups. The agricultural production structure has been affected by the change in the political economy, and this has a significant impact on the country's total economic activity (Van Zyl and Van Rooyen, 1991). Within the current altering political situation it has become an ecological necessity to shift the emphasis from maximising short-term gains through the use of exploitative practices to approaches that will lead to sustainable productivity in the long term. However, it is believed that this will only be achieved if education changes the

attitudes and norms of farmers (Fuggle and Rabie, 1992).

The degree of perception of "absolute" ownership of land amongst predominantly European commercial farmers in South Africa is amongst the highest in the world (De Klerk, 1991), and is rooted in the historical and political development of agriculture within an authoritarian, predominantly patriarchal society: "Die boer is baas op sy plaas" (the farmer is the master on his farm), (Claassens, 1991). The absolute ownership of land confers upon the owner all possible rights in the land. The most important rights of ownership are:

the right to possess exclusively (hence the right to privacy)
the right to use
the right to take the fruits, and
the right to alienate.

These are limited only to the extent that (i) in private law the exercise of such rights should not infringe upon the rights of neighbouring landowners and the general public, and (ii) in the provisions of public law, for example relating to environmental conservation (Fisher, 1981). Whoever owns the land, controls access to it, determines the use to which it is put, decides the economic, social and political beneficiaries of production on it, and how the wealth below it is to be exploited (Budlender and Latsky, 1991). This has far-reaching implications for the relationship between employer and employee in the rural arena and the relative power basis of each grouping (Marcus, 1991).

Within the development of national environmental concern Fisher urges the adoption of a concept of land stewardship: the notion of making full use of the land and taking all its fruits without degrading it, of active possession without denying possession to others, of nurturing a proper respect for a fragile and limited resource so that future generations will benefit equally (Bartelmus, 1994, Fisher, 1983). Promoting the adoption of this attitudinal perspective, which includes social, cultural and political realignment, is also the realm of environmental education. The tendency towards this is increasingly visible; as is its importance (Janse van Rensberg, 1995, Fuggle and Rabie, 1993, De Klerk, 1990, Opie, 1990).

2.6 THE NOTION OF DISCOURSE

In observing the various ways individuals perceive the world, multiple realities must be recognised: those of the observer, the observed, and also those to whom research findings are to be delivered. Any speaker must adopt his or her discourse and manner to suit the expectations and biases of the audience; and the instrumental tools of collaboration, negotiation and advocacy engage the audience and facilitate change (Fetterman, 1993, Hopper, 1993, Chambers, 1984).

Fetterman particularly stresses the need to maintain an holistic and contextual perspective, to elicit the emic or insider's perspective about their reality, and to adopt a non-judgemental attitude throughout the interview procedure. He also raises the notion that within an educational setting, all participants can be seen as power brokers: lack of support, boredom, inattention and indifference can be seen as real forms of power (Hopper, 1993). Within such a context the role of language and its power to shape thoughts and influence minds is stressed: what is to be communicated must be spoken in language that the listener understands and appreciates. Two basic parameters for effective communication are (i) to know one's work and oneself, and (ii) to know one's audience (Fetterman, 1993b).

In her treatise on recording oral histories, Yow (1994), in considering the subject of communication, stresses the existence of the dominant-subordinate relationship between interviewer and narrator, and the necessary care required in handling the dichotomy between relative levels of disclosure expected between interviewee and interviewer. In the interviewing situation, power is most often on the side of the interviewer: "We control to some extent the interpersonal relationship, and we use rapport to get information..." (*ibid,*:110). She notes that the encouraging, non-critical listening based on mutual respect between narrator and interviewer is crucial not only to a productive interview, but also to the narrator's self-esteem. The interviewer enters the narrator's world and learns not only about another way of life, but also about his or her own assumptions. Other significant aspects which claim careful consideration are the recognition of some characteristics of gendered communication: competitiveness and condescension can be dominating factors, and the effects of social class and ethnicity in habitual ways of relating must be examined critically by the researcher (*ibid,* 1994).

2.7 THE NOTION OF BELIEF, ATTITUDE, INTENTION AND BEHAVIOUR

For the purposes of this study the following definitions of pertinent terms have been adopted:

> Aesthetic Response: A culturally mediated, personal preference response, implying cognitive evaluations (cognitions) and personal affective preferences (based on perceptions). An appraisive response. Used synonymously with positive attitude towards the environment. (Popcock and Hudson, 1978)
>
> Attitude: A moderately intense emotion that prepares or predisposes an individual to respond or act consistently in a favourable or unfavourable manner when confronted with a particular object. (Anderson, in Keeves, 1988)
>
> Culture: The core beliefs, perceptions, values, norms, customs and behaviours of a social group which they seek to transmit across generations. (Altman *et al.* 1980)
>
> Subjective Pressure: Perceived social approval or disapproval of significant others in response to behaviours or behavioural intentions. (Fishbein and Ajzen, 1980)

There is little evidence that South African society is being successfully educated for environmental concern leading to responsible action at an individual level: the "man in the street" may appreciate wildlife programmes on television and reports in popular journals, and yet neglect or even abuse nature (Fuggle and Rabie, 1993, Huntley, Siegfried, and Suntner, 1989, Gear, 1988). The natural environment is still frequently treated as an exploitable resource where each individual consults his own self-interest at the expense of the common good (Opie, 1990, Hardin, 1968).

To optimise the effectiveness of Environmental Education initiatives, it appears essential to establish which factors and criteria are significant determinants of attitudes towards the natural environment (Huntley, Siegfried and Suntner, 1989). Response to the natural environment is seen in part as a function of the cultural ambience which moulds individual perceptions (Opie, 1990). Data in Chapters V and VI support this contention. It is maintained that a non-labelling, non-judgemental focus on the object of perception is essential to enhancing aesthetic awareness, and

the emphasis consistently appears to fall on visual experience, rather than on auditory, tactile or olfactory experience (Osborne, 1976, Franck, 1973). In addition, the sophistication of people's response is generally held to be more learned than innate, thereby implying that they are subject to socio-cultural instructional pressures, and so can be influenced or positively enriched by educational intervention (Knopf, 1987, cf.: Chapters V and VI).

Attitudes are thereby viewed as positions which the individual adopts in response to his or her perception of the total environment, and which he or she continues to negotiate with other social actors as selected consequences of his or her position are evaluated (Opie, 1990). The totality of an individual's beliefs serves as the informational base that ultimately determines his or her attitudes, intentions and behaviours. Fishbein and Ajzen (1975) maintain that attitude is related to the totality of beliefs, not necessarily to any particular belief held; and changes in these variables (beliefs, attitudes, intentions, and behaviours) are initiated by exposing an individual to information which produces changes in some of his or her beliefs. They caution that persons holding the same belief may have very different attitudes, and that persons holding different beliefs may have the same attitudes: when the same beliefs are held with different strength or when evaluations of associated attributes differ, attitudes will also be different. Conversely, when different beliefs are held with equal strength and when they have identical evaluative implications, the same attitudes will result. Thus knowledge of a person's attitude appears to provide little information about the particular beliefs an individual holds, or about his or her evaluations of attributes associated with the attitude object.

This constant negotiation of attitudinal position in response to subjective pressure reflects the manner in which past and present experiences modify the individual's understanding of the perceived environment (Opie, 1990). This was clearly revealed in the analysis in ChapterV.

2.8 THE NOTION OF RURAL POVERTY, VOICELESSNESS AND BIAS

Much has been written regarding poverty in rural southern Africa, but it is primarily focused on densely populated areas (Auerbach, 1999, Fitzgerald, McLennan, and Munslow, 1997, Wynberg, 1993). Chambers, in writing of the degree of rural poverty unnoticed by first world research in

third world countries, notes that poverty is not limited to material and social deprivation, but also relates to the spiritual aspect of life and the quality of experience and being. Extremes of material and social deprivation can narrow awareness, and warp, embitter and kill; and Chambers focuses on those in the rural areas who are poor, weak, isolated, vulnerable and powerless.

In discussing research bias, he contends that in receiving visitors, the private feelings of rural persons (indifferent, suspicious, amused, anxious, irritated or enthusiastic) would almost axiomatically be put aside and a best face put forward in order to receive a visitor well; and that they "... would respond nervously in ways which they hope will bring benefits and avoid penalties" (Chambers, 1983:12).

Devitt also stresses the problems of accessing the opinions of the rural poor: that they are reluctant to speak up; that with those of perceived higher status, they may even decline to sit down. Because they are weak, powerless and isolated, and frequently inconspicuous, inarticulate and unorganised, outsiders "... invariably find it more profitable and congenial to converse with local influentials than with the uncommunicative poor" (Devitt, 1977:23). For a number of reasons such as fear, prudence, ignorance, exhaustion, hostility or hope of benefit, poor people can give information which is slanted or false (Chambers, 1983).

Chambers postulates that the very act of being in a rural area and trying to learn about it creates biases of insight and interpretation towards what can be seen: the observer's specialisation increases the likelihood of one-sided diagnoses, explanations and proscriptions. By contrast, he notes that among the strengths of rural people's knowledge are the faculties which maintain, extend and correct it. These may include acute observation, good memory for detail, and transmission through teaching, apprenticeship and story-telling: "Those who have to survive in extreme conditions cannot afford inaccurate observations or misleading inferences ... five senses, keen observation and a good memory go a long way" (*ibid*,:91). Although his findings are primarily applicable to the extreme degree of poverty and high population density found in Asia, the researcher has found them pertinent to the current project, usefully extrapolated to the social deprivation and poverty found in the extremely sparse population of the study area. Isolation, both spatial and informational, is an important contributory factor in powerlessness and voicelessness (*ibid*, 1983). In addition, the priorities of the rural poor are not general, but particular, immediate

and personal, and the question of the long- or medium-term protection of the environment, seen by most conservationists as having a value higher than the livelihoods of the poor, is often simply not pertinent to the existence of isolated rural communities or family units (*ibid*, 1983).

In order to access rural knowledge, Chambers strongly advocates the use of games as a means of suspending status and social differences. Teaching by respondents can thus be uninhibited, and learning by outsiders can be deep and direct. Simulation games in particular are held to be one of the most successful methods of enabling outsiders to understand the life and problems of the rural poor. They can contribute significantly to changes in understanding and in feeling, and to a new empathy with poor rural people (*ibid*, 1983). The researcher concurs fully with the promotion of this tool as a means of gaining access to the free thoughts and opinions of the voiceless rural population.

2.9 SUMMARY

This chapter has raised a number of questions which will be both a focus for the data analysis and will be revealed throughout the data analysis. Key questions that have emerged from this analysis of the literature are the following:

- the diversity of opinion concerning the nature and purpose of environmental education;
- the dilemma and challenges attendant on applying ideologies in which environmental education is typically embedded within completely contrary and even hostile ideological contexts;
- the nature of the rural Karoo area under investigation and of its population, seen as a target for environmental education intervention.

CHAPTER III: METHODOLOGY AND RESEARCH CONTEXT

In this chapter the identification with a specific research paradigm in the project is elucidated with a view to establishing its validity. Also discussed are the appropriateness of the consequent research plan, its specific methodology and analyses, in relation to the goal of the research. The goal of the research is:

> To investigate the possibilities for environmental education offered by the establishment of conservancies in the Northern Cape, and in so doing, to identify aspects that will optimise the functioning of environmental education programmes and projects in existing and proposed conservancies.

The research context is described through a brief outline and evaluation of the research methods utilised, a review of the sample population selection and approach, and some generalised overview of its findings. These form an interpretive background to the conclusions formulated in chapters IV, V and VI.

3.1 PARADIGMATIC ORIENTATION

The research paradigm provides the philosophical framework which in turn guides research activity; it determines the criteria a researcher uses to select and define problems for research (Fien, 1992, Husen, 1988). Popkewitz (1978) maintains that research technique must necessarily be congruent with the research paradigm and method in a research project, for the project to produce meaningful results.

Environmental Education is predominantly concerned with an holistic, integrated approach to phenomena usually not available to objective investigation or direct experience (Irwin, 1991). Relationships and the contexts within which they occur are of primary importance, (UNESCO-UNEP, 1978, 1993), and these - together with the socio-cultural, psychological and political constructs of individuals and groups - are complex and diffuse: empirical measurement and assessment of such indeterminate factors are not possible (McDowell, 1989).

3.1.1 Selection of an appropriate paradigm

Within the parameters of this project, the researcher, coming from a hard science background, is particularly aware of the import of questions of validity and reliability. Positivism or logical empiricism is not, however, an appropriate strategy for establishing the attitudes or perceptions of individuals within their social or environmental context (Burgess, 1989). Travers (1969:16) claims that positivistic research is

> an activity directed towards the development of an organised body of scientific knowledge ... which reveals laws of behaviour that can be used to make predictions and control events within educational situations.

The notion that knowledge is a given and therefore value-free is contrary to the search in this study for that which constitutes an intersubjective reality for participants within their circumstances (Malone, 1993, Burgess, 1989). The hermeneutic paradigm was seen as an appropriate theoretical orientation for this project (Cohen and Manion, 1984).

Contemporary environmental education research has overwhelmingly shifted its focus away from measurement, prediction and control towards the greater use of description, narratives and explorations rooted in understanding (Mrazek, 1993, Leedy 1993). Goodman maintains that

> social reality becomes known through prolonged and intimate participation in (it) ... rather than adhering to scientific protocol. (Goodman, 1992:120)

3.1.2 The hermeneutic paradigm

Hermeneutics is usefully defined in this research context as the theory and practice of interpretation and understanding in different kinds of human contexts (Odman, in Keeves, 1988).

The hermeneutic or interpretive research paradigm focuses on the development of meaning within a specific social context rather than prediction and control (Carr and Kemmis 1986), attempting

to elicit the meaning participants give to their actions, in particular their social interactions (Robottom, 1988). Scientific objectivity and the verification of empirical objectivity is perceived as the flawed product of human intelligence, not an absolute given: knowledge is socially constructed and can have multiple meanings (Fien 1992, Codd, 1983). This paradigm takes the position that there is no objective reality apart from the knower, and therefore truth consists of a complex of value-laden observations and interpretations: no *a priori* fact-value dichotomy exists (Mrazek, 1993). A degree of subjectivity can be seen as inherent in this paradigm (Burgess, 1989), though this can be counteracted by rigour and self-consciousness on the part of the researcher. It ought to be added that complete neutrality is not possible within any research approach.

Characteristic ends to be served by science in the hermeneutic tradition and envisaged in this study include: improved understanding among people, the release of human potential, the formation of a truly sustainable relationship with one's surroundings (social and biophysical) and the generation of new possibilities for experience (Mrazek, 1993). Wals maintains that this approach suggests that environmental education research should have a pedagogical end, i.e. that participants should benefit in some way from the research. The process of understanding must necessarily be mutual and implies an increase in self-understanding on the part of the subject (Odman, in Keeves, 1988). The research is seen as

> ... not just an attempt to learn about people, but to come to know with them the reality which challenges them ... (it) can help in producing knowledge with emancipatory relevance that can promote the autonomy of the individual and the solidarity of the entire community, rather than the production of technically exploitable information. (Wals, in Mrazek, 1993:161)

A significant consideration in the project planning was the cognizance that no research methods can be neutral technical instruments for recording and describing reality, that do not themselves change reality (Sanders, and Pinhey, 1983, Reason and Rowan, 1981). All methods will inevitably have consequences, and the form and content of interviews will affect interviewees (Chambers, 1983). It was thus felt to be important to investigate ways in which interviewing procedures could be changed to minimise the alienation consequent upon, in particular, traditional research practices.

> The standard research interview through both its form and the hierarchic structure of the interviewee-interviewer relationship tends to obscure relations between events and experiences and to disrupt individuals' attempts to make coherent sense of what is happening to them and around them. (Mishler, 1986:120)

The researcher believes that the cardinal acknowledgement within the hermeneutic paradigm of the socially constructed and ever-changing nature of meaning and reality is congruent with the non-prescriptive and interpretive approach envisioned by this study (Cohen and Manion, 1994). Given that the study assumes environmental education to be a participatory process, it has sought to identify the potential for catalysing a shift in activity, mutual education, new knowledge and solutions to specific problems (Western, 1994, Boeren, 1992, Brown, 1985). Appropriate research instruments were sought, and triangulation with data from sources familiar with the initial situation investigated was structured, used and interpreted to promote the validity of the research findings.

A directed, rigorous and systematic approach is seen as inherently necessary in the hermeneutic deployment of elements of "naive enquiry" such as involvement, commitment, relevance, and intuitive validation (Reason and Rowan, 1985:xiii). The end product of knowledge claims is seen as being validated by necessarily "marshalling good arguments, relevant observations, solid experimental results" (Phillips, 1987:18). Marcinkowsky (1985) observes that the methods and techniques of quantitative and qualitative research are not mutually exclusive and may enjoy a relationship of complementarity and co-operation. Patton (1990:39) concludes that

> The issue then becomes ... whether one has made sensible methods decisions given the purpose of the enquiry, the questions being investigated, and the resources available. The paradigm of choices recognises that different methods are appropriate for different situations.

3.1.2.1 Theoretical limitations

Two theoretical limitations of the hermeneutic paradigm should be noted. The first, the absence

of an inherent action component (Robottom, 1988: 20) was not felt to be pertinent to this project, which insists that an increase in self-understanding is an integral part of its approach (Odman, in Keeves, 1988). This dynamic aspect is embodied in the structure of the interviews, immediate post-interview discussions, and follow-up (which has been structured to facilitate consequent personal action). The second limitation, the claim that the chosen paradigm necessitates the researcher standing outside the research process, and thus doing research for and not with people (Cohen and Manion, 1994, Burgess, 1989, *ibid*, 1988), is simply not valid in respect of the methodology selected for the project, nor accurate within the chosen interpretation of the hermeneutic paradigm.

For the researcher, the questions of validity and reliability were of particular import. Rigour is seen to be derived not from the utilisation of a specific technique of observation or analysis, but from the logical, empirical, and political coherence of interpretation during observation and reflection, and the logical, empirical and political coherence of proposals for action during the stage of reflection, analysis, planning and recommendation (Kemmis, in Keeves 1988). Validity and reliability must be sought by means other than enquiries supported by quantification (Cohen and Manion, 1994).

Kemmis (*op. cit*.) has proposed a three-tiered system to evaluate educational research, and this has been used in this study as the basis for establishing structure in the data collection process as well as a reference point for evaluating the data obtained:

i The level of scientific discussion researchers are involved in, in drafting and explaining their own practical theories.

ii The level of enlightenment in terms of the degree to which researchers are involved in self-reflection, applying and testing their own practical theories in their own situations.

iii The level of organisation of action that arises in an attempt to resolve practical problems and challenge the social order.

Further clarification regarding bias and subjectivity, and the degree of primacy given to the feelings, narratives and values of subjects in their settings has been provided by Western (1994), Cohen and Manion (1993), Goodman (1992), and Odman (in Keeves, 1988). Blumer (cited in

Goodman, 1992) claims that social science enquiry fulfils the basic requirements of science in directly confronting the social world being studied and raising questions regarding this world. This is done to establish relations between categories of data; propositions are then formulated regarding these relations, and the propositions are in turn organised into analytical schemes. The testing of questions, data, relations, propositions and analysis occurs through the examination of the social world (Auerbach, 1999). This perspective has been particularly significant in the design of this project and its data collection methods.

3.1.3 Issues arising

An issue that was felt to be seminal to the study, and which informed the design of the data collection methods (Enviropicture Game Adaptation and Interview Schedules), was the question of powerlessness, and the consequent voicelessness of some of the social groupings in the study (Chambers, 1983). The researcher felt it important to explore ways of empowering the respondents in order for them to have more control over the processes through which their words were to be given meaning (Redclift and Benton, 1994). Interviewing practices that empower respondents, by encouraging them to find and speak in their own voices, produce narrative accounts. This in turn may result in moving beyond the text to the possibility of action:

> ... to be empowered is not only to speak in one's own voice and to tell one's own story, but to apply the understanding arrived at to action in accord with one's own interests.
>
> (Mishler, 1986:119)

Chambers (1983) claims that simulation games are one of the most promising methods to enable outsiders to understand the life and problems of the poor, and a potentially remarkable way into the experience of others as well as a powerful source of learning. An adaptation of a simulation game, based on pertinent localised empirical data was played with the researchers' staff. This was done in order to establish to what degree powerless individuals within a stratified grouping had opinions and insights. The results indicated that there were valid opinions and ideas: this powerless group had a voice which needed to be taken seriously.

3.2 APPROACH

The aim and direction of the project has been outlined in chapter I. Within the hermeneutic paradigm, and the confines of the sample population and their individual social, cultural, political and economic milieus, appropriate research instruments were dictated. In order to achieve the goals of the research, in particular the identification of the possible facilitatory role of a conservancy in environmental education, the researcher sought

- to elucidate attitudes towards and awareness of environmental conservation in an holistic sense (McDowell, 1989);
- to explore perceived causal linkages between biographical factors and the attitudes displayed (Janse van Rensberg, 1991);
- to examine these findings with the aim of establishing appropriate potential avenues for increasing environmental education and awareness.

3.3 RESEARCH INSTRUMENTS

3.3.1 Enviropicture game adaptation

Because of logistical and political constraints, this simulation game could only be played with a very small sample population in an isolated context, which was not within the confines of the Platberg Karoo Conservancy. However, valuable insights were obtained, emphasising that the voiceless do have opinions and valuable ideas, but that these are almost completely untapped. Although the data could not be used directly as they were not of immediate relevance to the project, their real value was in sensitising the researcher to this issue. The use of this research instrument in dealing with a complex situation with extensive ramifications was positively verified. It provided access to data which would otherwise have remained impenetrable.

3.3.2 Semi-structured interviews

The first target population consisted of seven farmers who are members of the Platberg Conservancy, De Aar region, Northern Cape. Their selection was based on an attempt to cover

the spectrum of geographical locations, agricultural practices, economic levels and extremes of both positive and negative attitudes towards the environment. Names were obtained by means of personal and referred networking systems. The use of a semi-structured interview was felt to be the most appropriate research tool for generating the desired data (Cohen and Manion, 1994, Leedy, 1993, Reason and Rowan, 1981).

An interview schedule was designed in order to meet the requirements of the goals of the research. It was therefore based on establishing biographical data as well as facilitating and directing narrative pertinent to these goals. The schedule was drawn up and translated into Afrikaans. All the farmers were bilingual to varying degrees (Janse van Rensberg, 1991, McDowell, 1989).

3.3.3 Observational notes

A schedule for observational notes was drawn up based on empirical factors felt to be relevant to further interpretation and assessment of the farmers. This was completed immediately after seeing each individual and constitutes supplementary qualitative data (Leedy, 1993).

3.3.4 Pilot survey

The draft interview schedule was tested with 2 individuals, primarily to ascertain the duration of the interview, also to confirm the optimum order in which open-ended questions were posited, and to check the clarity of wording used especially in respect to the Afrikaans translation. No methodological or logistical problems were experienced. The pilot survey was done on June 20th, 1997, and as this did not indicate any need for alterations to the schedule or methodology, the interview was included in the data in full.

3.3.5 Reiteration interview

In order to identify those aspects of an existing conservancy which optimise the functioning of environmental education, it was felt to be essential to attempt to include the dimension of time in

the investigation into the functioning of the Platberg Karoo Conservancy, to ascertain whether any positive change had ensued in the development of environmental consciousness or holistic environmental education, within the conservancy and its members. One of the original farmers was therefore interviewed again after a period of 15 months. He was chosen because he is a significant leader in the Platberg Karoo Conservancy. The interview schedule was drawn up in order to determine what changes or developments had occurred within the conservancy, its members, or the broader community within which it functions.

3.3.6 Interviews with agricultural workers

Two of the labourers working on the farm whose owner was selected for the re-iteration interview were identified by the farmer as being those individuals best able to contribute independent thinking in response to the questions asked. The interview schedule was designed to elucidate attitudes to conservation in general, and to the way this farm was managed, not only as a member of the Platberg Karoo Conservancy, but as a farm managed on the principles of holistic environmental management.

3.3.7 Interviews with officials from a provincial conservation organisation

It was also deemed to be essential to triangulate data in order to clarify aspects promoting the successful facilitation of environmental education within conservancies, for example by establishing the role of an outside body in the successful functioning of a conservancy *per se.* Robson (1993) notes that triangulation can be done in social research by using multiple and different sources or informants, methods, investigators or theories. The Northern Cape provincial conservation department has no individual or section dealing with conservancies (Anderson, pers. comm.). The provincial body most committed to the notion of conservancies is that of the Free State (Duart Hugo, pers. comm.).

The individuals selected for interviewing included (i) the prime mover in the conservancy movement and the development of conservancies, not only in the Free State province, but

nationally. The interview schedule drawn up for the Director: Conservancy Section, was aimed at the elucidation of the system of conservancies, their history and development, and identifying those aspects felt to be of importance in their success. This would serve as a basis for the comparative case study analysis and triangulation with the Platberg Karoo Conservancy.

The other subjects interviewed were (ii) an individual trained as a conservancy game guard by the department, and (iii) one of the senior persons involved in the training of the game guards for conservancies. Their interview schedules were drawn up to identify their attitudes regarding their work and the work of the individual conservancy concerned, conservancies in general and their perceived importance, and the contributory role of the department in the success or failure of the conservancies.

3.4 RESEARCH PROCEDURES FOR DATA COLLECTION

3.4.1 Semi-structured interviews

The data being sought in this project, viz. regarding individual insights, attitudes and feelings, requires the establishment of a personal rapport and trust between interviewee and interviewer as a prerequisite (Cohen and Manion, 1994, Chambers, 1983, Reason and Rowan, 1981). A formal structured interview would militate against this, not only tending to increase the distance between interviewer and interviewee, but also reducing the possibility of exploring attitudes and perceptions within the setting of the interview. The use of a questionnaire was clearly unsuited to the project, owing to the universal low rate of return, as well as the widespread reluctance of farmers to commit tenuous ideas to paper (Janse van Rensberg, 1991). The semi-structured interview provided the flexibility to pursue possible emotional and irrational attitudes by both parties, as well as the structure required to depersonalise and contextualise them when necessary (Robson, 1993, Elliot, 1984, Burroughs, 1975).

3.4.2 Interview schedules

The procedure used in drawing up the specific questions in the schedule was firstly to translate the research aim into a series of detailed objectives (Robson, 1993). The schedule focused on exploring the possibilities for environmental education within the Platberg Karoo Conservancy, and aspects which would contribute to the success of environmental education programmes and projects in the Conservancy. These in turn were translated into a series of specific questions (Cohen and Manion, 1994, Leedy, 1993, Mishler, 1986, Reason and Rowan, 1981). The interview schedule was then designed in consultation with the project supervisor, tested in a trial situation and revised and refined (Seidman, 1991).

The interview schedule was divided into two sections, covering firstly the biographical details pertinent to each individual narrative, and then a series of linked questions focused on establishing environmental attitudes and levels of awareness. The schedule was then translated in full. Attention was focused on specific aspects of ecologically sustainable farming practices which were perceived to be locally applicable, such as predator control and the sustainable utilisation of water. This schedule is attached as Appendix A.

A formal pilot survey was done on June 20th 1997 with a selected farmer in the study area. No alterations in methodology proved necessary, and the interview was included in the survey proper. In comparison with the other respondents, this individual was most lucid and even garrulous, and served as a useful benchmark regarding the degree of structure which the interview required.

3.4.3 The interviews

The first interviews were conducted during 24 to 29 July 1997. Each selected farmer had been contacted telephonically, and all expressed willingness to devote a period of two hours to the interview procedure. The purpose of the project was made clear: establishing the possible role of conservancies in facilitating environmental education; confidentiality and feedback were assured, and appointments were then made.

Respondents were seen on their farms, with one exception. In only one case was a spouse present

during the interview. The researcher made every effort to be absolutely punctual, and this was noted with great appreciation, because of the distances involved. The interview was consistently initiated by a re-iteration of the purpose of the project, an assurance as to confidentiality, and a summary of the researcher's background designed to reduce hostility based on preconceived ideas and facilitate the establishment of trust and rapport.

Personal biographical details given included the researcher's family being from the district, her subsequent career in academia and conservation, and current marriage to a farmer in the Prieska region. The researcher stressed her awareness of the practical implications of farming in a conservation-conscious manner and conceded to the general perception of researchers being both arrogant and often irrelevant. In attempting to redistribute the power relationship between researcher and respondent, the roles of informant and reporter, research collaborators, and learner/actor and advocates were explicitly elucidated prior to and during the course of the interview (Burgess, 1989, Chambers, 1983). In this regard it was necessary frequently to re-iterate that there were no right answers, as well as no irrelevant stories or topics.

All respondents agreed to the use of recording equipment: the mechanics of recording the interview were managed as discreetly as possible. However, the problem of intrusiveness remained, occasionally causing a break in the flow of dialogue. This was particularly so in the initial stages of the interview or discussion (Seidman, 1991).

Consequent to the experience of the pilot study, Mishler's (1986) conceptualisation regarding the importance of the role of the intervention of the interviewer on the development of the narrative was perceived as crucial. Interviews lasted between 2 and 3 hours, and on completion the respondent was allowed to initiate whatever discussion he chose. This was consistently an intimate aspect of the individual's belief system, and reflected an unanticipated level of trust.

On completion of data collection, a letter of thanks was sent to each participant, expressing gratitude for their assistance and re-iterating that research results would be made available to them.

The second round of interviews was conducted between 8 and 12 March 1999. All procedures

regarding the initial contact, explanations regarding the aims of the project, setting up appointments and ensuring confidentiality and feedback were followed as before. The interview schedules drawn up were specific to the information sought from the particular individuals identified. These are attached as Appendix B.

3.4.4 Observational notes

An observation schedule was used to note empirical data which could be valuable in establishing the type of individual as well as his standing as a farmer. A summary was made subsequent to each interview covering non-verbal aspects such as emotional content and degree of personal rapport and response experienced; this was felt to be of value in interpreting the subsequent transcriptions (Huckle and Sterling, 1996, Mishler, 1986), and in ascertaining possible bias. This is attached as Appendix C.

3.5 DATA ANALYSIS

3.5.1 Semi-structured interviews

Immediately after each interview the observational notes schedule was completed, and extensive notes made consisting of impressions and non-verbal findings which the researcher felt would assist in interpretation and analysis of the transcriptions. Each interview was fully transcribed after re-reading the data from both schedules, and the individuals coded for anonymity.

Themes emerging from the transcriptions common to all respondents were identified after multiple re-readings of the transcriptions (Huckle and Sterling, 1996), and in discussion with the researcher's supervisor. The transcriptions were then subjected to rigorous analysis using discourse analysis methodology, selected after a survey of literature on this topic (Stables, 1996, Freeman, 1996, O'Dea, 1994, Tannen, 1993, Fetterman, 1993, Boden and Zimmerman, 1991). This was focused on those sections pertaining to the themes identified. Descriptive summaries of the attitudes of the full group to these themes were compiled; and categories based on factors

illustrating attitudes were constructed. The factors selected included

affect (reported feelings about and evaluations of a subject)
actions taken regarding a subject
knowledge concerning a subject, and
beliefs about a subject (Janse .van Rensberg, 1991).

3.6 CRITIQUE: PROBLEMS ARISING

3.6.1 Contextual problems impacting on the data collection process and interpretation of data

3.6.1.1 Sycophancy: singing the song you want to hear

Within the research context and the socio-cultural and economic background of the region several difficulties were foreseen. The most problematic is that there is a problem of perceived sycophancy in the interview process with all levels of respondents. For farm labourers this is to a large degree an inherent defence mechanism to protect their livelihood (Chambers, 1983): individuals believe they have no choice but to agree with the dictates of the employer, and this extends to voicing agreement with his beliefs regarding the environment and how to respond to it. For many of the farmers there is a marked degree of seeking what is perceived to be the approval to be granted them when they appear to be on the individually deduced "right" or "green" side, or alternatively to be seen to be strongly against such a perception as a strong and independent-thinking individual (Janse van Rensberg, 1991, McDowell, 1989). This appears to be a surprisingly strong motivation, perhaps related to the degree of isolation experienced by these individuals (Eagly and Himmelfarb, 1978).

To attempt to minimise this problematic aspect of the data collection process and its evaluation, the researcher often overtly situated herself within the respondents' contexts (Chambers, 1983). This appeared to facilitate relating more freely and reducing potential conflict, as well as being of assistance in respect of knowing the reality that challenges them as individuals and communities

(Popkewitz, 1984). An attendant liability was in that in some instances a possibly inappropriate degree of confidence and intimacy with the respondents appeared to develop (Burgess, 1989).

3.6.1.2 Generalisations and common knowledge

A secondary problem was that of applying generalisations, or the accepted knowledge/wisdom pertaining to the specific situations extant in the research project, as reflected in local newspapers (*De Aar Echo*, 1999, 1998, 1997, *Griqua Gnus*, 1999) and in-house documentation (provincial departments of nature conservation, 1999, 1998). Many of these generalisations are widely held by the regional population (Anderson, Xaba, pers. comm.), and were accepted by or referred to by respondents (*ibid*). Such generalisations, often in conjunction with political or religious belief systems (Palsson, 1996, Martell, 1994, Popkewitz, 1984), can be interpreted as being parochial, old-fashioned or even just not "politically correct" (McDowell, 1989). There appears to be a tendency in current literature (Ritchken, 1997, Cook, 1997) to overcompensate when accrediting beliefs which are widely perceived as patronising or racist from perspectives based outside or in ignorance of the empirical realities of the context.

Pertaining to this predicament is the growing cognizance of the extreme degree to which the voiceless of this region (employees as well as employers) are indeed voiceless. There is, for example, particularly on the part of the farm labourers in a stock farming operation within the remoter areas, a virtually complete powerlessness regarding the sale of their labour and possible bargaining power (Yearley, 1994, Chambers, 1983). The knowledge of political systems or structures with which to increase personal or community empowerment was claimed by three respondents to be "minimal" among the population as a whole. This situation is exacerbated by the current climate of extreme political reaction in some areas: suspicion and fear of "political" developments are widespread in all segments of the community (Steering Committee meeting, 1999).

3.6.1.3 "Treklus": migration by socio-cultural choice

A difficulty in selecting respondents is the localised socio-cultural phenomenon of "treklus" which is still found in many of the areas covered in the research project and is widely accepted as the norm in the region. On average within a period of 2 years, farm labourers who enjoy comparatively good, secure employment with benevolent employers, and who have the possibility of promotion and increased benefits for individuals and family groups, wish to move to a different physical location (*De Aar Echo*, 1987). This occurs in spite of evident cascading negative implications for family, careers and personal growth and development. The phenomenon is possibly to be linked to the short-term perspective which of necessity generally informs decisions made by poor rural households or individuals (Vayda, 1979). This in turn is rooted in education and cultural habituation, as well as the attitudes of certain employers, which have an inordinate degree of influence on the comprehension of long-term goals which could develop within individuals or families (Marshall and Ritchie, 1984). It is the exception rather than the rule that this localised migration of labour does not occur on a regular basis.

3.6.1.4 Language and translation

Although many of the interviews were conducted in Afrikaans, it was considered that the data would flow and communicate more effectively if English were used throughout. The researcher attempted to be as true as possible to the original message conveyed in her translations; as she is fully bilingual it is felt that the translations are successful in reflecting the thoughts expressed by the respondents. There are some singular phrases where the Afrikaans original has been retained, as the original captures the speaker's intention more effectively than a bland translation.

3.6.2 Semi-structured interviews

3.6.2.1 First round of interviews

The personal circumstances of the researcher were a significant factor in establishing rapport and trust. As an individual from an Afrikaans background, currently living on a farm in an adjacent magisterial district, the hostility or suspicion usually shown towards an academic background was

significantly reduced. As a consequence there was a degree of personal difficulty in establishing an appropriate level of neutrality and formality, in particular when going into a hostile situation, in order to facilitate an authentic response rather than one appropriate to a generic perception of an arrogant and ignorant researcher coming to criticise a farmer. It was felt that more contact with each individual subsequent to the interview would have yielded valuable interaction (Chambers, 1983); however physical constraints disallowed this.

3.6.2.2 Second round of interviews

Agricultural workers

Several difficulties were encountered in these interviews. The first was that some landowners were reluctant to allow access to labourers owing to financial and other implications. The second was a biographical constraint in selecting individuals: farm workers in the region frequently move around the district, so that their tenure on a specific farm is limited, seldom being in excess of a two-year period (cf. 3.6.1.3). Their exposure to environmental practices on a particular farm, or to the impact of the conservancy on the agricultural practices of a landowner or region, is therefore concomitantly limited. Thirdly, there appeared to be justification for postulating that individual respondents were "singing the song that you want to hear". It is extremely difficult to attempt to establish what are the personal beliefs or attitudes of individuals from the "rural poor" given the logistical constraints of the project. This is seen as associated with the powerlessness and consequent voicelessness of this social grouping (Ekins, 1992, Chambers, 1983).

Game guard, Free State Province

This respondent was an excessively shy individual, growing markedly more at ease during the course of the interview. This development was reflected in immoderate body language, as well as in the fact that his initial answers were very brief, tended to be literal, and depended extensively on translation by the trainer. As the interview proceeded he spoke much more freely, at greater length, and without assistance in translation. The dialogue became much more of a free exchange

of ideas.

Certain aspects of this project relating to the attitudes of the farming community towards environmental matters appeared to be unique in terms of published and unpublished findings, (Janse van Rensberg, 1991, McDowell, 1989). Some of the standard techniques were consequently adapted in keeping with the perceived empirical constraints.

3.7 SUMMARY

The isolation, political, cultural and social, of communities in this region is extreme, and is exacerbated by the sparsity of the population: it was considered important to factor this into interpreting the narrative obtained.

Farmers interviewed represented the widest possible range of social, political, cultural and economic extremes within the conservancy. The initial responses of respondents to the researcher's perceived orientation varied from extreme shyness to outright hostility. The re-iteration of the researcher's background and neutral orientation (regarding the agricultural: conservation dichotomy) was essential in some cases and of significance in others in the promotion of trust and rapport and facilitation of free dialogue. At the conclusion of all interviews, the high levels of trust and openness displayed by respondents were unforeseen. This was factored into the analysis of these individual narratives.

Similarly, in the second round of interviews, frequent reference to the researcher's agricultural background and empirically-based attitudes was of value in establishing common ground and a concomitant level of acceptance and trust, and was seen as crucial in eliciting personal attitudes and beliefs.

3.7.1 Problems specific to the empirical reality of the research project

Two empirical situations with ramifications for the data collection and evaluation processes were

a cause of concern for the researcher. The context of the research project is a geographically extensive and extremely isolated, sparsely populated agricultural community, almost exclusively engaged in stock farming. Social structures are generally paternalistic and stratified, with power deriving largely from the ownership of land on which the work is done by a labour force which is in the main without any power: political, labour-related or economic (Huntley, Siegfried, and Suntner, 1989). Eliciting original opinions from either group was considered to be extremely problematical. Landowners in some instances appeared to want to be perceived as being "on the right side" (Janse van Rensberg, 1991), and the powerlessness of farm labourers through their dependence on patrons (Chambers, 1983) seemingly encourages them to see possible gain in expressing the same views as their employer: "The appearance of acquiescence ... may be a condition of survival, for a chance of casual work" (*ibid*, p. 106). There seemed to be a number of responses based on what individuals perceived the researcher was wanting to hear, rather than what was personally believed, particularly in the earlier stages of each interview (Janse van Rensberg, 1991). The dilemma of relating to a subject in the manner in which the respondent could best relate to the researcher was often experienced: the degree to which the researcher consciously situated herself within the context of the interviewee in order to facilitate a greater degree of free relating and discussion at times became problematic (McDowell, 1989).

The presentation of the data obtained, and an initial analysis of the data, will be made in Chapter IV.

CHAPTER IV: CASE STUDY COMPARISONS

In this chapter more detailed background and baseline information is given for the two case studies. Data for triangulation arises from interviews with individuals, attendance at two Steering Committee meetings, observation, historical background, and some relevant literature. Data obtained in recorded interviews with selected respondents was transcribed in full, and pertinent themes were extrapolated. These were compared and contrasted with a view to elucidating their differences and similarities and in order to establish which issues might contribute to achieving the aim of the research: to identify the facilitatory role for environmental education within conservancies.

4.1 RESPONDENTS

The selection of the initial group of respondents was based on an attempt to cover the spectra of geographical location, agricultural practices, economic level, age, education level attained, and diverse attitudes towards the environment. Selection of the second group was based on the need for triangulation in attempting to elucidate factors promoting the successful development and functioning of conservancies. Aspects focused on included the role of a provincial body in supporting the continued growth and development of conservancies, and the development of one specific conservancy and its impact on the community over a period of 18 months. A brief biographical description of the respondents is given in order to facilitate reference to the coding given to protect anonymity.

Respondent E1: English-speaking, early fifties, retired early from a career in commercial world. Tertiary education. Farms 8,500 hectares, Merinos.

Respondent A2: Afrikaans-speaking, mid-fifties, farms on family farm. Two farms totalling 14,000 hectares, Merinos.

Respondent A3: Afrikaans-speaking, mid-forties. One farm is family farm; Tertiary education to honours level. Two farms, totalling 9,000 hectares, Merinos

and cattle.

Respondent E2: English-speaking, mid-sixties, retired from senior management position in research organisation, on family farm, 7,000 hectares, Dorpers and cattle. Doctoral degree.

Respondent A5: Afrikaans-speaking, mid-forties, on family farm of 3,000 hectares. Dairy farm. Tertiary education.

Respondent A6: Afrikaans speaking, mid-sixties, on family farm of 6,500 hectares.

Respondent A7: Afrikaans-speaking, mid-forties, tertiary education to honours level. Two farms totalling 10,000 hectares.

Respondent 2A1: Afrikaans-speaking, professional conservator at senior management level with a provincial conservation department. Mid-fifties, tertiary education.

Respondent 2E1: Xhosa- and Afrikaans-speaking, mid-forties. A trained game guard working within one conservancy for 10 years. Primary education.

Respondent 2E2: Xhosa- and Afrikaans-speaking, late forties. A professional conservator training game guards for a provincial department. Secondary education.

Respondent 2A1: Afrikaans-speaking farm labourer, mid-twenties. Rudimentary primary education.

Respondent 2A2: Afrikaans-speaking farm labourer, late twenties. Primary education.

4.2 THE PLATBERG KAROO CONSERVANCY

4.2.1 Historical context

The Platberg Karoo Conservancy is located in the Northern Cape Province, and stretches over a semi-arid zone of 1,288,003 hectares, covering the districts of Hanover (85 farms) De Aar (81 farms) and Petrusville/Phillipstown (182 farms). It was established on the 31st July, 1990, largely due to the initiative of two individuals; the first a committed conservationist who farms in this region, who gave a talk at a local farmers' meeting about raptors, their role in the food chain, and the importance of "making a specific area safe for raptors". The second, an elderly farmer, was influenced by this talk to a realization for the first time that the Karoo was also an area worthy of conserving, and he telephoned the next day to propose the formation of a conservancy, beginning with their two farms.

The conservancy was initially established on the basis of conserving a geographical area; and thereafter, acknowledging the primacy of the role of raptors within the environment, it committed itself to ensuring their safety as a primary goal.

Procedurally, the formation of the conservancy followed the existing models of the Free State province, where emphasis is laid on the clear elucidation of goals and structure within a constitution (Hugo, 1997). The initial point of departure for the proposed Platberg Karoo Conservancy was "These are the things we would like to have happen", with the provincial conservation body to "simply be part of the troops". As the Northern Cape provincial conservation department is extremely limited in both funding and manpower, this non-confrontational attitude by a private organisation gained the conservancy great credibility and a small degree of support initially from the provincial authority (Anderson, pers. comm.).

The boundaries of the conservancy were drawn up to demarcate a geographical area, and no farmers were excluded on the basis of "We don't exclude any members". As the first (and to date only) conservancy in the Northern Cape Province, and at that time the largest in the country, a large amount of positive publicity was generated. However, it was not possible to claim that all the farmers in the area were members of the conservancy, or even to establish how many actual members there were.

The original stated objectives of the Platberg Karoo Conservancy were:

* Nature:

  To promote the conservation of the natural environment with the conservancy as set out in the constitution, with acknowledgement of the fact that conservation comprises the preservation and development of the earth's natural resources, viz. air, water, soil, plants and animals, by man;

* Man:

  To obtain the voluntary co-operation of all institutions and persons who have control of the natural environment, as well as nature lovers and environmentally conscious people who want to become involved in these conservancy projects;

* Educational Task:

  (a) To establish the extent of wildlife to be found in the area, and to make all the inhabitants duly aware of their existence

  (b) the elimination of all existing practises harmful to nature within the power of the individual landowner, viz.

  labourers' dogs,

  wire snares and traps,

  the poisoning of carcases;

* Malpractices:

  The conservancy will strive to identify malpractices which harm wild life and to address and persuade responsible institutions to apply alternative measures;

* Research:

  The identification and elimination of vermin threatening the natural environment through research and well-trained hunters;

  Research on endangered species;

  Research into the natural behavioural patterns of animals found within the area;

* Utilisation and enjoyment of nature. By whom and in what manner?
  It is the expressed aim that members of the conservancy and nature lovers be encouraged to enjoy nature and that landowners be encouraged to make suitable areas available for this purpose;

* To seek affiliation with other wild life societies and to co-operate closely with them;

* To ensure a healthy and practical balance between hunting opportunities and nature conservation (Platberg Karoo Conservancy: Constitution, 1990).

The role of dominant and charismatic personalities in the formation of group priorities for conservation action is generally accepted (Fitzgerald, McLennan and Munslow, 1997, Opie, 1990, O'Donoghue, 1990, McDowell, 1987). "If I think what is happening in the Free State: I promise we could get that happening here for no other reason than that [individual y] is involved." Of the group of respondents initially interviewed, there were frequent references made to the strong personalities of some of the founding members, and their focus on their own individual conservation priorities ("It is the reality of the situation that it has become the [individual x] show"). Two aspects of conservation action in the region were considered to be of cardinal importance and prioritised in this manner:

(i) the role of raptors in a functioning ecosystem; and
(ii) the issue of spraying locust swarms with toxic chemicals (Ferreira, pers. comm., Anderson, pers. comm.).

The emphasis on these two aspects of conservation action, which are both highly contentious within farming communities (Shearing, 1994, Janse van Rensberg, 1991), led to a skewing of programmes in the conservancy, and the situation between supporters and opponents polarised, developing to the point where a number of members began to resent and subsequently reject both the views of conservancies *per se* and this conservancy in particular: "The conservancy these days is only about locusts ... the moment (the committee) hooked into locusts a lot of farmers got fed up with the conservancy." The committee members currently perceive as naive their original

expectation that by disseminating information and doing those things which they knew to be ecologically correct, they would automatically gain the support from the farmers (Steering Committee meeting, 1999).

After 6 years of existence, the Committee decided that it was necessary to examine the conservancy's progress and achievements: it was felt that there was an increasing lack of support among the membership. A strategic planning study was initiated, and the resultant mission statement was:

> The Platberg Karoo Conservancy seeks to create harmony between the environment and man by means of disseminating objective and pertinent information.

The most important recommendation to come from this exercise resulted from recognition of keeping the crucial importance of keeping membership informed. As a result a newsletter was started, which for the first year was sent free to all members. The purpose of the newsletter was to attempt to correct the perceived imbalance of imposing "green views", and striving to create dialogue. The committee state that they recognised the dangers of prescription, and the importance of simply presenting available information in a neutral way. The challenge of changing perceptions was seen as promoting the " ... understanding of the puzzle of nature: the challenge is not to change and manipulate nature; if you can understand the puzzle the decisions you make are so much easier." Attitudes towards the efficacy of the newsletter vary: some farmers claim that they will remain unread (Janse van Rensberg, 1991), others that they enjoy and look forward to them.

Recently the committee has sought to clarify their actual support base by following through on their policy of no longer sending the newsletter out gratis. The result has been "we've actually discovered there was a lot of support out there" and that individuals were very willing to pay their annual subscription "for the newsletter" when requested to do so. Several individuals who have relocated to other areas have also requested that the newsletter be sent to them. The committee agree that this has re-affirmed their recognition of the primacy of dialogue and keeping the members informed in order for growth to take place, and confirmed the vital role of the newsletter in the continued functioning of the conservancy.

More recent and less controversial and divisive foci of interest promoted by the committee have taken the form of interest groups concerned with Cape vultures *Gyps coprotheres* and Blue cranes *Anthropoides paradisea*. Members claim that as a result of these interest groups and their activities (monitoring road kills, ringing chicks and representations at international conferences, the Platberg Karoo Conservancy has recently been proclaimed as an IBA (Important Birding Area), one of 126 in the country (*Griqua Gnus*, June 1999). This in turn means access to international funding, support and political clout in, for example, the matter of locust spraying, but more importantly it has generated increased interest and involvement on the part of farmers in the conservancy. They perceive these projects as less problematical within the farming community, that is, less contentious (Anderson, pers. comm.); however, a high percentage of respondents volunteered that their initial interest in conservation came because of their love of birds ("It is the birds that sparked off my interest").

4.2.2 Socio-economic, political and cultural context

The demographic profile of persons living in the area circumscribed by the conservancy is characterised by divisions of race, language and economic situation similar to those found in other rural parts of southern Africa (Hugo, 1997). Several respondents claimed that the landowners are predominantly Afrikaans speaking, who have inherited from parents the land they now farm. The farming units are relatively small compared to the neighbouring districts, averaging 6,000 hectares, and the carrying capacity is low (6ha per small stock unit). With one exception, respondents did not see themselves as wealthy, and claimed this to be a general perception among landowners. An increasing number are experiencing severe economic hardship and an uncertain future in agriculture. Farmers are generally educated to the secondary level, and all respondents claimed that environmental consciousness levels are in the main directly influenced by the media: television or radio programmes, newspapers and magazines (Janse van Rensberg, 1991).

Because of the topicality of environmental issues, as well as the fact that agriculture has become of necessity more scientific, there is an acknowledged desire and need for scientific information on which to base informed decisions (Fuggle and Rabie, 1994, McDowell, 1989). Several respondents stressed that this had increased in the light of the current financial downturn (higher

interest rates, lower prices for agricultural products) and the drought situation, which is threatening to be severe. The Steering Committee of the conservancy has also acknowledged this, and is now responding as a matter of priority to requests for information on farming matters such as grazing strategies, of which the conservation aspect forms a vital part (Milton and Dean, 1996). They have also accepted that their somewhat confrontational *modus operandi* in the past was not constructive. An instance of their new approach is their careful dissemination of the concept of Holistic Resource Management by means of example, which is gradually gaining some support in the region: "A lot of people have made this mistake - when you discover this sort of information ... the only way to go about it is to put it into practise, i.e. show by example, you can't just go and teach them."

The importance of conserving within the context of successful farming is recognised by individuals on a continuum of commitment to conservation (McDowell, 1989). Three perspectives are noted.

(i) An individual who is antipathetic towards the conservancy and a meticulous and financially successful farmer: "In order to make it possible to farm for the next 50 years, I must conserve on a practical level, as long as it remains within limits and is not at the cost of my farming."

(ii) A founder Steering Committee member maintains that "Conservation for me boils down to one thing - it's not a message, it's an attitude ... if you have a problem with predators catching your lambs, and it's affecting your whole economic situation [then] if you've got the right attitude you come up with a viable solution. If you don't, you'll create a problem maybe in 5 or 10 years time, which is going to be even worse."

(iii) Another Steering Committee member states: "For me after all these years of locust plagues, there is no evidence of lasting damage ... it costs me more to try to control the problem animal than what the damage is."

Politically there is significantly less tension among the members of the farming community as a whole than in the past (*De Aar Echo*, 1999). Several respondents perceived that political pressure is now experienced between individuals and farming groups, and governing bodies, which are

perceived as anti-white. The ANC government is regarded by all respondents as an inescapable if unpleasant fact, a government which is generally viewed as considering any opposition to current policies as "they have no role to play; they are just there to disrupt the government not to help build up the country." (*ibid,* 1999)

The Steering Committee noted that a degree of reverse racial discrimination is experienced from the structures of local government such as the District Development Committee, with whom they interact in their individual capacities as well as representing the conservancy. Projects which would benefit both farmers and their staff are blocked on the perceived basis that the farmers would be the primary beneficiaries, not their staff (District Divisional Council meeting, February 1999), for example electrification of a section of railway line from De Aar to Kimberley, "... so that any money going ... will not be channelled that way because it'll be for a few white farmers and what advantage will go to the labourers, and how many labourers are there?".

Labourers in this area are also predominantly Afrikaans speaking, and mixed-race persons, with very rudimentary education. Individual respondents considered that wages are low, and several considered that paternalism on the part of farmers and their spouses (which is seen by both parties to some degree as compensatory financially and socially) is the norm for the relationship between employer and employee. This impacts negatively on the growth of individuals into self-sufficiency, and adds to the powerlessness or voicelessness of the work force (Chambers, 1983). The new Labour Relations Act has not yet had any significant impact (*De Aar Echo*, 1999). Of the farmers interviewed, only two had put into practice its provisions, and those out of concern about possible investigation for compliance. Politically the population is generally conservative, and somewhat sceptical of ANC government structures because expectations, however unrealistic, have not been met. The populations of township and squatter areas around the bigger towns are typically more politically active and aware of political and labour rights, with high unemployment percentages and poverty present as a spur to activism (*ibid*, 1999). Only one respondent who is meticulous in applying the provisions of the new Labour Relations Act voiced his concern about possible labour unrest, specifically as he was now running a dairy herd: "... and if I pick up a strike or get problems: we are only 20kms from the town, and these elements can very easily influence my people and then I have a huge problem."

A somewhat unusual feature of the labour population in this region is that of "Treklus" (Wanderlust). Several respondents volunteered the opinion that this population is, with very few exceptions, intermittently migrant through choice (Steering Committee meeting, 1999). Even on some of the farms where the staff are particularly well treated, a high turnover is experienced: "I found that the problem was their own [social] politics, that's the reason they don't want to stay at the end of the day."

This clearly has implications for education and training, particularly for the raising of environmental awareness, as some employers feel it not worth the effort (Anderson, pers. comm.). Others, however, do see long term results: "He still remembers everything I said to him about anything you can't make you mustn't kill." Labourers who work on farms run in accordance with conservation principles have no choice other than to accept the extant regime, though some individuals appear to internalise such practices: "I learned here what not to kill, and not to use snares. Now I agree with it. It makes complete sense to me."

Other labourers on adjoining farms consider practices such as not allowing the hunting of small mammals as untenable: "They also say they won't be able to manage if they cannot go to the veld with the[ir] dogs." Although it is claimed by some landowners that the activity of hunting or killing is sometimes done out of boredom or machismo, a more important reason is that of harvesting the veld for free protein (*Griqua Gnus*, 1998). Respondents agreed that the majority of farmers will provide families with a "slagding" (carcase) as part of the remuneration package or its financial equivalent (this last subsequent to the new labour legislation, with farmers beginning to put all remuneration in kind on a monetary basis). They speculated that given the large and extended family units, which tend to foregather at such times, relating to current plenty with a short-term perspective; and given the lack of storage facilities, which motivates this behaviour (Marshall and Ritchie, 1984, Vayda, 1969), the provision of a "slagding" or its equivalent is often perceived as insufficient. When asked how labourers on other farms respond to talk of a particular farmer's stricture against killing small mammals the reply from a labourer was: "I see that they laugh ... but they refuse [to accept this]: they say they will not go hungry like that."

As with the increasing problem of poaching domestic stock, there are no clear answers to this

problem (*De Aar Echo*, 1999). Deterrent measures such as placing ostriches or Blue Wildebeest *Conriochates taurinus* in camps (P E Herald, 1999), or forbidding the use of hunting dogs, do not address the problem: "So it's almost like an insurance policy for your own peace of mind; but you haven't addressed the problem." The reduction in numbers of those small mammals which are the natural prey of predators, leads to an increase in the number of livestock mortalities due to problem animals (Janse van Rensberg, 1991). One farmer believes that his minimal predator-induced stock losses are related to the fact that he has a policy that nothing is unnecessarily taken from the veld, no dogs are allowed on the farm, and jackals *Canis mesomelas* are tolerated: "For the rest I leave them alone. If they want to walk around here I won't bother them as long as they don't bother me."

A labourer working on a conservation-orientated farm, who said that he agreed with this ban on hunting small mammals, gave as a reason for his concurrence the fact that he and many of the people on the farm enjoyed seeing habituated wild animals close to their homes: "Here are Hares and Steenbok which lie just on the other side and that is lovely to us, but for many men they just see them [and say] no, just kill them."

The committee members of the Platberg Karoo Conservancy state that they are not wholly demographically representational of the geographical area of the conservancy. The first Chairman was a retired senior military officer, who put in place rigid structures regarding positions and procedures. The current chairman is a retired hydrologist from the CSIR with a PhD degree who has been farming for 7 years on his family farm. Committee members were recruited on the basis of their attitudes to conservation, and their willingness to serve in a voluntary capacity. The majority of the committee were younger individuals, educated to tertiary level, and liberal in their social and political outlook (Steering Committee meetings, 1999 and 1997).

The current chairman noted that in the initial formation stages of the conservancy it was stressed that members should above all enjoy what they were doing: a portfolio was given to a specific volunteer, who was then expected to identify and prioritise the concerns in that area, and suggest pertinent projects. The initial enthusiasm extended the activities of portfolio holders beyond the boundaries of landowners in the conservancy to schoolchildren of all races, and programmes chiefly concerning the Black Eagle (of primary interest to most of the committee members) were

taken to many of the rural schools (Platberg Conservancy Newsletter, 1997). Conflict soon arose among the farmers regarding the generally held attitude that the black eagle is responsible for killing lambs. This is a misconception which is widely held, and few farmers will acknowledge the reality of relatively few losses to this raptor (and those few consisting predominantly of ill or injured animals), thus amounting to an acceptable level of economic loss. The financial threat posed by large birds of prey is commonly seen as direct and unavoidable other than by killing them (Shearing, 1994, Janse van Rensberg, 1991).

Several respondents noted that portfolio holders on the committee differed markedly in their ability to initiate and develop projects, while some individuals were simply too committed to their farming interests to make a marked impact on their portfolio functioning. The committee agreed that the replacement of committee members who relocated tended to exacerbate the situation. When a dynamic, active individual who had set a precedent of activity within a specific portfolio resigned, it was felt that the chairman saw his role as simply filling the vacancy; not checking the level of enthusiasm and or competence of the new incumbent. "He would say 'Welcome we've got a lovely job waiting for you. Can you see your way clear? Thank you' and so the chairman had done his job and filled the gap and 6 months down the line nothing had happened because you'd have to report on what you'd done so the obvious thing is to miss the meetings..."

Subsequent to the initial focus on the Black Eagle, the even more emotive issue of spraying for brown locusts *Locustana pardalina* became the perceived agenda of the conservancy: "The conservancy has totally lost [sight of] its aims, these days it turns only around locusts." Information available from government agencies at this period (the late 1980s) was often contradictory to current research (Shearing, 1994), and legal implications were unclear: "If they want to take me to court they can try". Several respondents commented that significant sums of money were and are involved. At the local level the locust control officer is paid according to the number of farms sprayed: "you have guys who are earning huge [sums of] money ... after a locust plague they have gone out and bought a new bakkie...". At the national level the ministerial committee called together to debate the issue had a majority of persons present by invitation and co-option who were involved in the manufacturing side of the "locust control industry" (Minutes: Committee to evaluate the Locust Problem, 1998).

Two respondents stated that the uncompromising and vociferous stand of certain individuals against spraying resulted in polarised attitudes towards the conservancy being formed: "It caused a division which is a very serious thing ... the one thing that is always necessary [in promoting positive attitudes towards the environment] is to keep the sympathy of the farmer."

Several respondents noted it was a commonly held perception that "farms which don't spray are breeding grounds" and that failure to spray resulted in animosity between neighbours and a loss of any co-operation in other matters such as problem animal control (Janse van Rensberg, 1991); more specifically it led to further loss of membership and support for the conservancy. The situation has now become potentially more fluid as a result of the new legislation incorporating the recommended use of the commercially available fungus produced by Loboloza, (trade mark: Green Power) which is claimed to be environmentally friendly. The department has insisted that this must first be tested in the field (*Griqua Gnus*, 1999), which is problematic as its application is technically sophisticated and precise: "... and the man in the field is actually just old Piet and Klaas on the back of the bakkie [thinking] we are now going to kill the damn locusts." (En die man in the field is maar ou Piet en Klaas agter op die bakkie en ons gaan nou die donnerse goed doodmaak). As other farmers' organisations have repeatedly asked the conservancy for an ecologically suitable alternative in the past (Britstown Farmers Society, 1997), the potential acceptance of this control method has already markedly reduced the potential for interpersonal conflict, and gained a lot of credibility for the conservancy whose Executive Director has been largely responsible for this national development (*Griqua Gnus*, 1999).

4.2.3 Biophysical and conservation context

There are several conservation issues that are central to the conservancy. Several respondents claimed that these generally originated with the personal agendas of one individual, an initiator in the formation of the conservancy, and have broadened as his thinking has become less situation-specific and more holistic. Others felt this development from localised emotive issues was inevitable given their experience with the functioning and occasional lack of progress in the development of the conservancy.

4.2.3.1 Raptors

The Black Eagle, *Aquila verreauxii*, was chosen not only as the logo of the Platberg Karoo Conservancy, but also as its initial focal point. The boundaries of the conservancy were drawn with the general aim of protecting an important breeding area for this species, and its presence was used as a barometer of a healthy and functioning ecosystem (Minutes, Formation Meeting, 1990). What is unfortunate is that not all members of the conservancy have the same dedication towards the protection of the Black Eagle. This was commented on by a number of the respondents, who pointed out that an important breeding site (some 20 established nests) lies on a single mountainous property. This is owned by an individual who is perceived within the neighbourhood to be an extremely goal-orientated and totally dedicated farmer who has attained a considerable measure of financial and agricultural success. One respondent claimed to be able to identify and selectively kill specific problem individuals; and he openly resents any perceived interference by members of the conservancy: "I personally think because of my experience with them that they are a group of arrogant, exclusive people."

Four of the respondents commented that many farmers, whom they felt were generally older individuals with more entrenched and rigid beliefs, and farm labourers, would assume that any dead sheep which was found being scavenged on had been killed by the animal (e.g. Bat-eared fox *Ococyon megalotis*) or raptor doing the scavenging. This assumption was attributable either to flawed observation or to a lack of knowledge that certain species were physiologically incapable of doing the killing. As these beliefs are based on ignorance and an unwillingness to thoroughly examine the situation in the field it is extremely difficult to change them on the basis of empirical data (Janse van Rensberg, 1991). "It sounds bad but those ideas ... you won't change them ... they will have to die before the ideas go out of the community."

4.2.3.2 Brown Locusts *Locustana pardalina*

Periodic outbreaks of Brown locusts in this region occur almost annually, having increased incrementally since spraying began, owing to the resultant mortalities of natural predators. These include Ludwig's Bustards *Otis ludwigii,* Kori bustards *Otis kori,* white storks *Ciconia,* Little

egrets *Egretta garzetta* and yellow-billed egrets *Egretta intermedia*, Cattle egrets *Bubulous ibis,* Black egrets *Egretta ardesiaca*, Secretary Birds *Saggitarius serpentarius*, and raptors, particularly kestrels and falcons. Swarms differ greatly in size and severity of impact (Milton and Dean, 1994, Platberg Karoo Conservancy Newsletter, 1998). Three respondents claimed that official policy from the Department of Agriculture has been to spray as soon as possible after outbreaks occur, with poisons ranging from extremely toxic in earlier years to what is currently promoted as more environmentally friendly pyrethrum extracts, with a claimed half-life of 3 days and no toxicity towards insects. One of the respondents, a retired research scientist, maintains that even the newer, most environmentally friendly poisons have toxic levels that will destroy all invertebrates and result in areas of sterile ground.

Stances toward the outbreaks of locust swarms vary greatly. Some of the respondents commented that the majority of farmers, as well as they themselves, see them as a direct threat to their farming operation and an immediate economic loss. "He mustn't tell me that locusts don't cause damage to him ... because each farmer knows at the end of the day that they do." All respondents commented that knowledge about spraying techniques (required by law) is very often minimal, and staff training in application methods as well as safety is frequently ignored. Two respondents prefer not to spray unless absolutely necessary, and then only in locations such as tarmacadam roads where possible damage to predators will be minimised. One respondent has refused to spray for a number of years, but admits that if an extensive swarm landed now covering his farm, he would not know what to do. He also maintains that he has never seen proof of any lasting damage caused by locusts, and that on the contrary all permanent damage has been caused by management activity. Another has refused access to his farm to officials, and challenged them to take him to court. The context for his stance is his understanding that the locust " ... is one of the most balanced poultry feeds there is; (one of the) most high protein feeds there is. (When swarms arrive) everything gets revved up, procreates and breeds; it's one of the ways an arid system replaces numbers; it supplies this very high protein food and gets all their hormones going ... just about every animal eats it."

All the respondents who admitted a reluctance to spray but did so stressed the importance of carefully controlling the spraying, if not actually doing it themselves, in order to ensure strict compliance with application instructions and dilutions, so as to minimise damage to predators,

veld and safeguard staff.

Several respondents commented on an additional factor regarding the often axiomatic or unquestioning spraying of all swarms, regardless of size or incidence. They postulated a widely held attitude by farmers of not questioning the dictates of an authority; and this was confirmed by the majority of the Afrikaans-speaking respondents, one respondent stating "We [Afrikaners] didn't learn to think for ourselves (or at least a lot of us) and that is nice and easy and no responsibility..."

4.2.3.3 Problem mammals

The most troublesome species in the region are Lynx *Felis caracal* and Black-backed Jackal *Canis mesomelas*. As with the locust swarms, the control of problem mammals is a highly contentious issue (Milton and Dean, 1994, Janse van Rensberg, 1991). The killing of species often wrongly perceived to be killers is based either on ignorance of the specific animal's physiology and *modus operandi*, or incorrect knowledge of the circumstances of specific instances.

All respondents commented that trapping by other farmers is generally done in a non-selective manner; four claimed that traps can be set to exclude any but the target species, and all those who used traps spoke of the extreme care with which traps were issued only to trained staff or set personally by the respondents, who had invariably attended at least one intensive trapping course. Several commented on the increasing and successful use of Compact Disc recordings of the species communicating and species-specific whistles when shooting at night.

The use of poisoned collars was perceived by the majority of respondents as prohibitively expensive within this community. Due to the relatively small average size of the farms in the conservancy, there is less leeway for so-called acceptable stock predation levels: "The guy that has the bigger property that doesn't have the pressure of turning over the cents - he can take a bit of a knock."

4.2.3.4 Blue cranes *Anthropoides paradisea*

The conservancy has over the last few years become very involved in the national Blue Crane Project, the current vice-chairman sitting on the committee of the South African Blue Crane Working Group. The De Aar magisterial region has the highest concentration of power lines in the country, and mortalities are extremely high - nearly 200 in one monitored 3 month period (ESCOM data sheet, 1998). The committee decided to commit to the current project "Partly because we know nothing ... we decided to embark on a project whereby we would go out at a specific time of the year .... and catch and ring as many chicks as possible."

This activity has received a lot of publicity over the radio and local newspapers (*De Aar Echo*, 1999, *Griqua Gnus*, 1999), and the committee reports it has elicited a wide-spread positive response from individuals previously unconnected with the work or aims of the conservancy, who are now calling in to report nests and ask for assistance in ringing (Steering Committee meeting, 1999). The committee believe that in conjunction with the publicity regarding the classification of the conservancy as an IBA, it has added to a current resurgence of interest among members, who see this as a non-politicised and non-contentious conservation action and are eager to support it.

4.2.3.5 Grazing strategies

The Karroid vegetation is surprisingly robust; however, even a small degree of over-utilisation will cause damage that will take many years to repair. Badly damaged veld will seldom recover in the space of one human generation (Milton and Dean, 1994). This is reflected in the carrying capacity figures given out by the Department of Agriculture, which have been greatly reduced over the last century: between 1911 and 1981 the stock reduction rates of some magisterial districts are in excess of 60% (*ibid*, 1994). One respondent described this by saying that the early settlers mined the veld, and the majority of respondents felt that there was widespread recognition of the fragility of the ecosystem: "They realise that we are in the Karoo and if we don't look after it then it is finished within a few years."

Several respondents commented that grazing strategies vary widely according to the level of education and/or understanding of individual farmers. The departmental policies are generally viewed with a degree of scorn: "If you take these conservation methods and the schemes they've got and apply them, fewer than 10% have any merit." Such strategies are recognised by conservationists as unfortunately coupled to drought aid in the past, whereby a farmer who has overgrazed is helped in times of drought, whereas the individual who has successfully conserved his veld does not qualify for aid (Milton and Dean, 1994). "So you have the danger of maybe exploiting the farm - once you've done it ... it's such a delicate system." This has contributed greatly to the steady desertification of the Karoo (*ibid*, 1994).

Some individual farmers have defined strategies based on extensive and intimate knowledge of their veld: "I know exactly what is in which camp. I do regular plant counts and adapt my grazing to that." Others have evolved their own systems according their specific area: "My strategy which I developed myself is different to anyone else's ... it suits me and my environment, and is management intensive ... many of the farmers are a bit lazy and so don't like to manage the thing [intensively]". A respondent who supports the Holistic Environmental Management concept remarked: "You don't start with a grazing strategy, you start with an holistic goal and you test everything against it."

Two of the respondents speculated about collecting seeds in order to assist in regeneration, and all respondents recognised the fundamental importance of allowing the grasses to seed after a rainfall event, as well as the inherent dichotomy of stock needing fresh grazing at that vulnerable stage of veld regeneration. On all the farms visited, no badly degraded veld was seen, and the Steering Committee claims some degree of positive influence in moderating the stocking rates of certain individual farmers by means of articles in the newsletter (Steering Committee meeting, 1998).

4.2.3.6 Environmental education

The Platberg Karoo Conservancy was initiated originally to conserve a specific species, the Black Eagle *Aquila verreauxii.* The Steering Committee believes this point of departure has developed

to a more holistic understanding of the interrelations of all ecosystem components and of the need to protect the breeding areas of species. However, most respondents commented that the main concerns of the conservancy are still species-orientated, largely according to the enthusiasms of some individual members. This view is changing - "Conservation for me boils down to one thing - it's not a message it's an attitude ..." - and is filtering down to the members via the newsletter.

An important factor that is absent in the policy thinking of the committee is that of officially recognising the necessity or even desirability of incorporating the entire population (Steering Committee meeting, 1999, 1998). This can be explained to a degree by the established racial attitudes on both sides, the parochialism resulting from extreme isolation (intellectual as well as physical), the transient nature of the labour force and the extreme degree of its voicelessness (Hugo, 1997, Fitzgerald, McLennan and Munslow, 1997, Huntley, Siegfried and Suntner, 1994, Chambers, 1983).

Respondents frequently made it clear that they believed promoting environmental consciousness was a straightforward matter of communicating information, and not the encounter, dialogue and reflection dialectic recognised as a prerequisite for altering attitudinal perspectives (O'Donoghue, 1993). "You must communicate it to the people who don't know it and then they will also become conservation conscious." There is an expectation that a farmer should communicate such knowledge to his staff: "So you must say to every farmer this thing that you are protecting, this is the reason you must protect it. And this is [the type of information] he can communicate to his staff."

Two opposing views on the value of the conservancy's newsletter were held. One individual, who had served on the committee for 6 years, felt it was largely a waste of effort: "A farmer does not read things. This I know from years of experience." However several other committee members noted that the one thing that had kept the conservancy going and also improving was the newsletter. The latter group stated that they now recognised that to keep constituents informed was absolutely essential, and saw the newsletter as a medium for presenting information in a non-confrontational manner.

Several of the respondents in their criticism of the conservancy noted the need for more specific

interest groups to be formed, and requested that farmers day meetings be held on topics of general interest where information could be freely exchanged: "... should get everyone involved because the more people the more information."

Three respondents mentioned the incorrect beliefs of the older farmers, and that changing those beliefs would be virtually impossible: the statement (which they claimed was frequently made by many farmers in the district) - "I have a problem with those bloody vultures that catch my lambs" - is seen by them as the result of a lack of information, as well as a generally held belief among older more conservative farmers that the younger men and their ideas are not correct. To diminish the influence of such mistaken thinking on the part of individuals is, they feel, not possible by means of education: "You cannot teach them ... but they have to die before you can get those ideas out of the community." Two other interviewees in contrast stated the value of the opinions of the elderly, specifically in their understanding of nature, and that these should be tapped into: "They ask intelligent questions and they do have their insights, they can learn if you show them."

4.3 THE FREE STATE PROVINCIAL DEPARTMENT OF NATURE CONSERVATION, SUB-DIRECTORATE: CONSERVANCIES

4.3.1 Historical context

Frequent reference has been made, by nature conservation officials in two provinces and several respondents, to the belief that the burgeoning development of the conservancy movement in southern Africa is largely the result of a singular individuals' enthusiasm and commitment to this concept. Duart Hugo is currently an Assistant Director in the Free State provincial Nature Conservation Department, in charge of conservancies and honorary Nature Conservation Officers. In 1985 he read an article about conservancies, and on the basis of discerning conservancies as the co-operative management of natural resources, started the first provincial conservancy in the Orange Free State in the same year. By 1992 there were 19 registered conservancies in the province, and he was offered a promotion to Head Office in Bloemfontein to be in charge of a new section devoted to conservancies by the Director, who believed in and personally supported this concept (Hugo, 1997). He claims to have recruited an equally committed and enthusiastic

staff to service and develop the conservancies in the province.

The current breakdown of conservancies is: Agricultural (93) Urban (13) Township (30) Industrial (3) Educational (1). The total area is 592,078ha (which excludes some of the urban conservancies), and in the case of rural conservancies the total number of farms registered within conservancies is 838.

For each conservancy, the primary proviso is that it must be a positive situation: all the farmers must subscribe to the rationale of co-operative management (Hugo, 1997): "If you have some people that don't want to fit in then [you must] leave them completely. But the bottom line is you must get everybody and everybody must be enthusiastic." The conservancy is registered as such once a constitution is drawn up which sets out unambiguous goals and procedures (Fuggle and Rabie, 1994). The training of game guards is seen as vital to the viability of the conservancy, as they are able to speak to the labourers in their own language on a grass roots level to promote the conservation aspect of the conservancy rationale (*ibid*, 1997).

The Free State provincial conservancy section adapted the Kwazulu-Natal conservancy prototype progressively to suit their specific circumstances, initially also focusing on rural and agricultural areas. One such important adaptation was that, *ab initio,* the section incorporated in their training of game guards a socio-economical aspect of holistic environmental awareness: "The reason for this is to upgrade the people's living standards; to actually inform the people about more things than just anti-poaching." Training sessions are given free of charge, and held in a region or an area where there are sufficient trainee rangers. Another adaptation was to train part-time rangers, thereby having one labourer occasionally removed out of a working force: this adaptation has recognised and responded to the financial stress being experienced by many farmers, and has frequently resulted in the farmers' subsequently using that person to perform as a permanent ranger (Hugo, 1997, and pers. comm.).

The importance of the game ranger and his function within the community is repeatedly stressed: "What we've done is we took the guy from the ground and we gave him the ownership of the environment. What he's got to do is to educate the whole population in the conservancy; it doesn't matter who it is, that's the whole idea."

In some areas training the part-time ranger occurs locally with one or two full-time rangers: whenever a full-time ranger comes to a particular farm the part-time ranger will work hand in hand with him for the short period that he is in the vicinity. This adaption has also worked well (Hugo, pers. comm.).

Success of the conservancies is ascribed to the personalities involved, provincial and local: "It came to be a big success but it all depends on management; on the people involved, like anything. You can do whatever but one year you've got an excellent conservancy; next year you've got a stagnant conservancy because of the people [involved]."

4.3.2 Socio-economic, political and cultural context

The broad generalisations that follow are taken from discussions with respondents, officials who were consulted from two provincial conservation departments, and two Steering Committee meetings of the Platberg Karoo Conservancy. There was general consensus that farms in the Free State Province generally have a higher carrying capacity (10ha per ssu), and that a greater variety of different types of crop and stock farming is possible than in the Northern Cape. Farming in the Free State is also significantly more labour intensive. Farmers more frequently own several properties, and generally consider themselves, and are considered by farmers from the Northern Cape, as wealthy. Many have diversified into game farms, investing heavily in sophisticated infrastructure as well as importing a variety of indigenous game species in order to attract an overseas clientele, which is an extremely profitable aspect of tourism.

Three respondents volunteered that an increasing number of Free State farmers attain tertiary education levels, are relatively cosmopolitan, environmentally conscious and have a sophisticated degree of long-term economic foresight by comparison with the Northern Cape farmers. The conservancy concept is easily appropriated into this socio-intellectual environment, being seen as "not only good for the environment ... but good for the hunting industry" (Hugo, pers. comm.).

Politically and socially, there are areas which range from extremely liberal to extremely conservative, and in one region where farmers refuse to co-operate across the political spectrum,

a few single-owner conservancies have been formed with the primary goal of protecting a very vulnerable wetlands area - "... which I hate because it's not co-operative but I've established them, I've trained a ranger from each conservancy and they're working together without knowing it. That's adapting to the political situation."

Initial and follow-up leadership of a conservancy Steering Committee is seen as an essential component in the successful development and continuation of a conservancy: "Initially you get a very very capable man in the chair and it's working: they've got a fantastic constitution, they're carrying on and doing everything. Next year elections ... in some cases [the] same chairman is elected and that usually works well but if the new guy comes in with fire and after a month it dies down and nothing happens, that is because the vision [he has] is the wrong way. That is where the vision must be set out very early in the constitution and the mission of the whole conservancy must be spelt out."

An innovative and pro-active development is the formation of Urban, Industrial and Township Conservancies. Adapted and expanded from the Kwazulu-Natal MOSS system, urban and industrial rangers are trained in the same way as game rangers, to police environmental activity as well as maintaining security in the case of industrial complexes. Within the township and squatter communities the approach has been to respond to the request from the community of "What can we do?" with a broadly-based programme of training and education. It includes aspects of basic hygiene, management of open spaces, water and litter, environmental health hazards, dealing with tourists, creating money out of litter, domestic animal care, and gardening: harvesting water for food gardens is an important concept to convey (Hugo, 1997, Fuggle and Rabie, 1994).

The most recent development in the Free State is co-operative environmental management at educational institutions. In this type of conservancy the school's governing body, teachers and students together plan to manage the school environment, as well as focusing on recycling, and the re-using and reduction of waste.

Personal and party politics, as well as inter-personal problems, conflicts and misunderstandings, exacerbated by the (then) upcoming elections (June, 1999), have resulted in an insistence that the

committees be formed out of each single party which is represented in the community. Examples of the abuse of the conservancy by individuals for political gain were enumerated as the rationale for this pre-requisite.

The first requirement in forming a conservancy is to formulate a constitution with clearly defined aims and goals arising from the site-specific problem areas which have been identified by a fully representational group (Hugo, 1997). Workshops are held on these various environmental problems, they are prioritised, and solutions sought in the context of "... how are we going to solve these problems without any resources, equipment or whatever: how are we going to use the community to address these problems ... and they come up with fantastic solutions and then we've [the community] got to implement them."

4.3.3 Biophysical and conservation context

Within the Free State Province the different types of conservancy have diverse environmental rationales. In the rural areas, they are registered either to conserve a sensitive area such as a wetland, or to re-establish indigenous game and rehabilitate an ecosystem within a specific location, frequently in order to attract tourism or hunting. All farms are mixed farming, and the declared problem animals causing the biggest stock losses are the Black-backed jackal *Canis mesomelas* and the caracal *Felis caracal*. However, it is possible that the biggest negative impact in both rural and urban areas is being made by stray dogs (Hugo, pers. comm.).

In the industrial areas, particularly where mining has occurred, rehabilitation of slurry and other dumps is the perceived priority, using indigenous vegetation. In one instance an indigenous nursery has been established and is utilised in a coherent and holistic programme of extensive replanting, linked to imaginative environmental education programmes directed at staff and visitors. In the relatively more affluent urban areas, the predominantly watchdog role of the urban conservancies is primarily to deal with local developments perceived as environmentally unsound, and to monitor the actions of local government in, for example, dumping waste in a proclaimed green belt (Hugo, 1997).

In the township conservancies, the emphasis is on "[the need to] establish a clean and acceptable environment to have a good shelter to have good food ... as soon as you've got a clean decent environment we've got a happier community which will eventually [develop] into a healthier community and a healthy relationship [with]in the community ... and the day will come when people look at the environment and say right let's form everything around the environment" (Hugo, 1997 and pers. comm.).

4.4 COMPARISONS

4.4.1 Historical context

The differences between the conservancy movements in these two provinces appear to be both clear and instructive. In the Northern Cape, the provincial Department of Nature Conservation places no priority on the development of conservancies. In 1996, after a training session run by Duart Hugo for a week with officials from this department, an attempt was made to start two other conservancies in the Northern Cape, also based on the preservation of raptors. In both instances an initial meeting was held, the conservancy concept was contextualised and explained, certificates were awarded to individual farmers who had established raptor nesting sites, proposals for committee members were tabled, draft constitutions were presented, and no further progress has been made to date. The reasons for this are seen as being that " No-one got up and ran with the idea, and province showed no further interest" (Ferreira, pers. comm., Anderson, pers. comm., Jessnitz, pers. comm.).

In the case of the Platberg Karoo Conservancy, the motivation of at least three central figures was sufficiently strong to get the conservancy registered and functioning, initially with some limited support from individuals within the provincial department who had a personal interest in or were engaged in research on the raptor population, which was the primary rationale for this conservancy (Anderson, pers. comm.). Two respondents commented that the lack of any outside input or support has as a corollary meant that this conservancy is isolated from both theoretical developments and the actual progress and expansion of the concept in other parts of the country. Consequently, a degree of stagnation and parochialism has ensued. Despite an awareness of the

danger of the conservancy becoming a one-man show, and notwithstanding specific attempts to avoid this, the role of individual personalities is still perceived as unavoidably prominent in the functioning of this conservancy at this stage: "It basically means that I've got to see things happen."

In the Free State province, an entire section devoted to the promotion and servicing of conservancies exists, with committed support from the Director General. The Director: Conservancy Section has moreover been given the authority to appoint the personnel he wants within his section, and as much financial backing as possible within the severe constraints being experienced by the department (Hugo, pers. comm.).

There is no direct financial gain for the registered conservancies from the provincial authorities. Training and active support from the provincial staff is gratis and the training programmes are conducted whenever these are requested. The rural conservancies enjoy benefits such as biological control programmes or the release of rehabilitated animals within registered areas (Hugo, 1997). Within township conservancies sponsorship obtained from private enterprise is used for subsidising training courses, uniforms, and items such as notice boards and drip irrigation systems, thereby stressing the empirical benefits accruing to the specific conservancy, as well as promoting the concept and its environmental education aspect (Hugo, pers. comm.).

In the urban and township conservancies, the departmental appointment of a Xhosa-speaking woman, and the pending appointment of a social worker to work with her in the townships, reflects the priority placed on "... working with the people at their level ... of need." One respondent noted that the appointment of women does lead to a degree of conflict within the tribal patriarchal milieu, but this is diminishing with the perceived effectiveness of this individual's contribution in working with the township women.

4.4.2 Socio-economic, political and cultural context

The Platberg Karoo Conservancy is situated in a region with generally poorer agricultural land than the Free State province. The farms are thus smaller, the landowners more financially

challenged, and as it is predominantly stock farming, the labour force necessary for individual farming operations is much reduced (Ferreira, pers. comm.). As has been noted above, several respondents commented that the labourers have a tendency to self-motivated migration, almost invariably to their long-term economic detriment. As a result, some members of the conservancy thought it pointless to provide environmental education for what seemed to them an essentially migrant population.

The Steering Committee agreed that farms in the Northern Cape were on average smaller (4,500ha) than the Free State, and - as stock farms only - more intensively utilised. Owing to the smaller size of the farms and the lower carrying capacity (71ha per ssu), significant economic sacrifice is entailed in putting aside land for conservation, let alone in incorporating conservation principles into their grazing strategies: "I am still not able to give enough veld adequate rest for recovery. I would have to go to smaller camps and I would like to be able to go to bigger flocks and have a longer period between grazing times." The concept of acceptable economic loss thus has much narrower parameters.

The Free State farms are generally bigger, with wealthier owners engaged in mixed farming, with larger, settled labour populations (Hugo, pers. comm.). Many of the farmers within registered conservancies perceive the need for training a game guard to be of both long- and short-term benefit, and it is generally seen as desirable and affordable (Resale, pers. comm.). The impact of such a trained individual on his peers is believed to be considerable: "As soon as they get back from the training session they usually call together the whole personnel, then they are actually preachers." Landowners also see the promotion of environmental consciousness and consequent positive environmental action among a settled labour population as beneficial and profitable (Resale, pers. comm.).

Due to the larger size of many of the farms in registered conservancies, setting aside a portion of land or even a whole farm primarily for conservation becomes economically feasible. Many of these areas have not been intensively grazed, or were originally set aside as hunting camps, with the result that veld rehabilitation and the subsequent introduction of indigenous game species is relatively easier to achieve. A number of what have been seen as wilderness areas have been the original focal points of conservancies (Hugo, 1997).

4.4.3 Biophysical and conservation context

The geographical location of the Platberg Karoo Conservancy is geologically ancient and very varied. It consists mainly of the Ecca Series with Mudstones and Shale, and is intruded by Dolerite dykes and sills (Van Zijl, pers. comm.). In conjunction with an unstable and harsh climate, varied site-specific suites of plants and a high degree of endemism and biodiversity is found (Milton and Dean, 1994). The balance between ecosystem components is delicate, and can easily be disturbed. Predator numbers are high, as suitable niches are found on most farms, where predator species control is difficult. As little crop farming is possible, habitats have frequently been degraded but not altered or destroyed beyond rehabilitation (Shearing, 1994).

The Free State province varies widely between eastern and western regions. In contrast with certain areas which are similar to the Northern Cape, the generalisation can be made about the rest of the province that it is more homogenous geographically and geologically, most of it falling on the Stormberg (sediment) and Beaufort geological areas. It has a more stable climate with a higher rainfall, with less varied plant communities, mainly consisting of *Cymboden-themeda* veldtype. The degree of biodiversity is thus lower, and those areas which have remained in a relatively natural state are less vulnerable to degradation (Acocks, 1957). As areas suitable for predator species are more remote and isolated from each other by extensive areas of monocultural plantings, control and even extermination of such species is possible (Hugo, pers. comm.).

Several respondents noted that the development of environmental consciousness resulting in the initiation of the Platberg Karoo Conservancy was the realisation among several individuals that conservation could be practised on their farms, and that it was not necessarily confined to the National Parks and other reserve areas. "Out of this I realised that the whole Karoo had passed me [by] my whole life long and I never knew it ... all the time we were busy creating habitats, but we never thought about the nature component which fitted in there." Conservation was now seen as a new component of their farming practise: "It is part of your farming, part of your daily life: it makes your farming more complete."

This expansion of consciousness in respect of conservation and environmental education has

occurred in a much broader and encompassing context in the Free State province. As noted above, conservancies have been established in urban, industrial, township, squatter and educational areas, and their successful development is monitored and actively promoted by the department. An interestingly negative and perhaps parochial response from the national environmental community occurred in response to the conservancy centred on the Wonderwater Strip Mine near Sasolberg. The department awarded it the "Conservancy of the Year" title for innovative and far-reaching efforts in the area of rehabilitation and in particular environmental education. The granting of this award was heavily criticised as rewarding an organisation perceived as being in the business of degrading the earth: "... the wildlife people banged on me because who am I to give awards while they are damaging the earth. So I explained to them: I don't care because I know what's coming out of it and that's so excellent ..."

4.5 THEMES ARISING AND ISSUES IDENTIFIED

The researcher has identified several themes and issues arising from examination of the case studies presented. These indicate what has emerged from the data, in particular that there is a lack of understanding of the influence of cultural and historical "baggage" on the formation of the attitudes, values, beliefs and behaviour of individuals and communities (Ekins, 1992, Fishbein and Ajzen, 1975). Delving into the "baggage" is pertinent to examining the role of conservancies in promoting environmental education, as it will elucidate possible reasons for the emergence of such belief systems, and the degree to which they have been impacted on by various factors (Bartelmus, 1994, Chambers, 1983).

The research process was seen as "... not just an attempt to learn about people, but to come to know with them the reality which challenges them ... [it] can help in producing knowledge with emancipatory relevance that can promote the autonomy of the individual and the solidarity of the entire community, rather than the production of technically exploitable information" (Wals, in Mrazek, 1993:161). The data presented in this chapter indicates that such a relationship between researcher and researched was achieved through the interviews which, it is hoped, have had useful repercussions for both parties.

Several variables impacting on the formation of attitudes and beliefs were identified as key factors in reaching an understanding of the individuals and communities under consideration. Historical, socio-economic and bio-physical contexts have been briefly enumerated in this chapter; within those contexts several themes emerged and issues arose that require examination in order to attempt to establish the reasons for the similarities and differences identified in the case study comparisons (McDowell, 1989).

In ChapterV insight into the causes and rationale of such emergent parameters will be provided in order to identify some of the key factors that affect the development and sustainability of conservancies.

4.5.1 Historical theme and issues arising

An individual history of personalities and/or communities as a factor in the development of attitudes towards the environment is of primary importance (Ngobese and Cock, 1997). The role of parents or mentors in the formulation of attitudes or the degree of willingness to alter existing perceptions was clear in all interviews. A significant issue here was the role of individuals in altering the level of environmental awareness, as well as the question of at what point in the life of an individual or community such an input was made for it to have a positive or negative impact (Fishbein and Ajzen, 1975). Allied to this theme was the role of provincial or external support in the viability of a conservancy as well as its potential facilitatory role in environmental education. The role of individual personalities and their prevailing and dominant influence in the facilitation of positive or negative attitudinal perspectives was found to be of fundamental importance in terms of the goal of the research project (Janse van Rensberg, 1991, Chambers, 1983, *ibid*, 1975).

4.5.2 Socio-economic, political and cultural theme and issues arising

Most respondents perceived socio-economic factors as the primary determinants of their behaviour patterns regarding conservation, with individual exceptions holding a longer-term understanding of ecosystem functioning, frequently owing to the intervention of some financially

critical event (McDowell, 1989). In terms of those respondents who were landowners, their attitudes tended to hinge on whether their losses were at what was to them an acceptable level. Two respondents claimed that, particularly in the case of township conservancies, what was crucial to attitude formation was the perceived viable existence of family units and communities. Other issues relating to this theme noted by respondents were the role of the landowner in influencing the environmental awareness levels of labourers, and the influence of trained individuals such as urban or rural rangers on communities within conservancies. A significant aspect of this latter issue is the role of the voiceless or the powerless within such a situation (Chambers, 1985).

4.5.3 Metaphysical and biophysical themes and issues arising

In chapter V the researcher examines the possible rationale for the differences between the two case studies presented, and the potential optimum facilitatory role for environmental education within conservancies. This is done within the context of a number of themes identified from the data, and the issues associated with these themes (Wals, in Mzrasek, 1993).

4.5.3.1 The dimension of self-perception by respondents

This was seen as pivotal to gaining an understanding of the causes of environmental attitudes and beliefs held by respondents, and in turn as a key to understanding the facilitation of environmental education within the context of conservancies (O'Donoghue, 1993, Ashwell, 1992).

4.5.3.2 Respondents' views on conservancies

Attitudes towards the single functioning conservancy in the Northern Cape, and towards the many in the Free State, varied widely. It is postulated that this can be seen as an environmental perspective, analogous to other environmental concepts, which is largely determined by the degree of sophistication of an individual's understanding of holistic ecological functioning, and by

personal commitment to promoting environmental awareness (Hugo, 1997).

4.5.3.3 Bio-physical themes and issues arising

The bio-physical status quo within each situation was found to be an extremely significant theme. Within the areas examined and contrasted, it was found that this aspect impacted on the formulation of specific goals for each individual conservancy, and thereby on the degree and type of environmental consciousness-raising that could take place within each situation (Milton and Dean, 1994, O'Donoghue, 1994, Opie, 1990).

Respondents' perception of their environment and some of its associated environmental problems

The ecosystem functioning components differ in several bio-physical respects between the two provinces. Issues in common include problem animals, veld or area management, peer attitudes, and perceptions of the ecosystem within which the respondents live.

Respondents views on environmental education

There is a significant dichotomy between the Northern Cape respondents and those from the Free State. The former, all landowners, do not consider the environmental education aspect of the conservancy as being of particular importance to the population as a whole. The latter regard it as fundamental that the conservancies' role of environmental education should incorporate and be primarily focused on the "man on the ground."

The searcher's initial observations prior to commencing the project were that environmental

education is perceived by the majority of owners, managers and labourers in the Platberg Karoo Conservancy as comprising only

> (i) specific training for discrete groups such as game guards, with an empirical end view, such as proficiency in the identification of species or the acquisition of tracking skills, which will be of direct, perceivable benefit to those landowners and managers who have contracted to this concept, or
>
> (ii) promoting a change of attitude amongst landowners and managers towards ecological indicators such as raptors, or the use of insecticides (Jessnitz, pers. comm., *Griqua Gnus,* 1997).

Replies from all respondents interviewed initially indicated little awareness of the potential significance of the participation of the larger "passive" community: it appears that the integration of the total population in the ecological functioning of the system has been overlooked in the Northern Cape conservancy. The long-term benefits of extending the policy of increasing environmental awareness to the broader community has not been part of the perceived agenda of several persons promoting the concept of conservancies (Earle, 1991, Long, 1988, Bucinger, 1969).

Comments from three respondents in the reiteration interviews and at the second Steering Committee meeting attended by the researcher indicated an increasing awareness of this as being of at least theoretical importance. In the absence of an education portfolio holder on the Steering Committee, this matter was held in abeyance; it was still seen primarily as the province of schoolchildren and teachers (rural and urban; of all races). On the basis of her findings in the Enviropicture game adaptation, the researcher tabled a proposal for a formalised focus on the farm labourers as a necessary part of the successful operation of the conservancy. This was met with a degree of both surprise and acceptance, but no concrete decisions were made: "Yes that sounds as though it could work ... but the time [required] ... we must think about this."

4.6 SUMMARY

In this chapter questions have been raised which can be linked to issues which emerged from the literature review. At the same time some clarity has emerged from the data regarding possible solutions to these emergent questions, as well as indications of lacunae. These include the role of individuals, and of a provincial conservation organisation, in the success of conservancies. The role of socio-economic, political and cultural contexts, biophysical and conservation contexts, and historical contexts in formulating individual self-perception and attitudes towards conservation and environmental education, is underscored.

Themes that will be examined in ChapterV include the following:

* The dimension of self-perception;
* Respondents' perception of their environment and its associated environmental problems;
* Respondents' views on conservancies; and
* Respondents' views on environmental education.

CHAPTER V: ANALYSIS OF DATA

The processes of analysis and interpretation are conceptually separate. Analysis is the process of ordering data into patterns, themes, categories and basic descriptive units (Cohen and Manion, 1994). Interpretation is seen as the process of

> ... attaching meaning and significance to the analysis, explaining descriptive patterns, and looking for relationships and linkages among descriptive dimensions.
>
> (Patton, 1987:145)

Empirically, however, these processes are not always separable. Interpretative insights which occur during the course of data collection can improve the quality of both data collected and the subsequent analysis, but must not be allowed to bias further data collection (Wilson, 1991, in Boden and Zimmerman, 1991).

In this chapter the researcher has sought to elucidate at a deeper level the reasons for the occurrence of the issues and themes identified in chapter IV. Seeking to understand and contextualise the individual voices of the respondents, one hopes that a better understanding will emerge of why the differences, similarities and issues that have been identified have manifested themselves. This is necessary in order to establish which factors are pertinent to the facilitation or hindrance of the functioning of a conservancy, and in particular, which dynamics need to be considered in establishing the possible role of a conservancy in facilitating environmental education. Uncertainty as to the nature of environmental education, and the absence of a national consciousness or shared view of the environment, noted in chapters II and III, were clearly indicated in the responses given by respondents.

The chapter in its entirety revolves around the fact that there is little shared understanding of key concepts in the central issues being examined. This emphasises the complexity that was revealed through the literature survey given in chapter II.

5.1. THEORETICAL CONSTRUCT

The research project has been informed *ab initio* by the proposition that an interview is a form of discourse; the joint product of what interviewee and interviewer talk about and how they talk about it (Mishler, 1986). The researcher maintains that the interpretation of meaning must rely ultimately on the use of cultural understandings (Chambers, 1983). The analysis of naturally occurring discourse, such as interview narratives, must therefore necessarily include supplementing the text in order to expand the meaning (Cohen and Manion, 1994, Martell, 1994, Fetterman, 1993). For this to be accomplished, the analyst

> uses her or his best understanding, makes explicit pronominal or elliptical references to other material as well as to presumably shared knowledge between the participants, and introduces factual material from other parts of the interview or from general knowledge of the world (Mishler 1986:93).

5.2. DATA COLLECTION

Methods, duration and time of data collection have been noted in chapter III. Respondents have been identified by coding in order to preserve anonymity. No logistical problems were experienced. The question of the researcher's neutrality, in the context of the continuum of perceived hostility to an authority figure (Chambers, 1983), has also been noted. Examples of the Interview Schedules (Appendices A and B) and the Observational Notes Schedule (Appendix C) are attached.

5.2.1 Platberg Karoo Conservancy: semi-structured interviews and observational notes

Detailed descriptions of data capture and explanation for the methodology used are given in 3.3.2. to 3.3.7.

5.2.2 Sub-directorate: Conservancies, Free State province

It was postulated subsequent to the initial data collection that the data base of the research project required the incorporation of a dimension of time as well as the triangulation of different perspectives on the conservancy movement. Interviews with the Assistant Director: Conservancies, Free State province, a trained Game Guard working in a conservancy in this province, and one of the trainers for the Conservancy Section, Free State, were thus conducted.

5.2.3 Reiteration interview

A repeat interview with the Executive Director: Platberg Karoo Conservancy was also held in order to ascertain the development of this conservancy over the intervening period. A second meeting of the Steering Committee of the Platberg Karoo Conservancy was attended, and a second informal meeting with individuals from the Northern Cape conservation section was held. These added data about the impact of the research project and developing consciousness of the role and functioning of conservancies over a period of time.

A significant development indicated by the data in respect of the intervening period has been the positive and marked increase in commitment of the official attitude toward the perceived value of the Free State conservancies in holistic environmental education, brought about largely by the development and growth of Urban, Township and Industrial Conservancies. This has been attested to by the Chief Director: Nature Conservation, Free State province (Xaba, pers. comm.). Within these different types of conservancy, the primacy of involvement of the community as a whole has been repeatedly stressed. This perception has also spilled over to the understanding of the importance of the involvement of the whole community as a prerequisite for success in the rural conservancies (Hugo, 1997). Respondent 2A1 repeatedly stressed this notion: "The so-called little people are the most important ... the bottom line is you must get everybody involved." Respondent 2E2: "You must have meetings to enlighten the labourers, who are more important, because it must come from the bottom up."

A second rationale for obtaining data using the Enviropicture game adaptation procedure became

apparent in the course of the research interviews. The researcher found it appropriate to communicate not only the concept of this manner of eliciting opinions, but to extrapolate on the value of it in her own situation and thus by extension, its possible value to the individual respondents. This facilitated freer discussion on the role of environmental education in reaching the whole community.

5.2.4 Interviews with agricultural workers

Two interviews were held with agricultural workers both currently employed on a farm managed on conservation principles. The data obtained added another perspective to the process of triangulation.

5.3 DATA ANALYSIS

5.3.1 Themes emerging from the narrative

The respondents as quoted below provide a clear picture of the variety of ways in which the same concept or phenomenon can in actuality be seen. In discussing, for example, the presence of raptors, attitudes varied widely from extremely positive to extremely hostile. The existence of such conflicting perspectives accentuates the dilemma noted in chapter II concerning the appropriateness or irrelevance of environmental education in specific locations.

Coherent themes and their implications were identified by noting underlying ideas, issues and concepts in the data (Robson, 1993). Several of these were selected as having particular relevance to the central aims of the research: to investigate the role of conservancies in facilitating environmental education. It was not possible or desirable to treat the themes as discrete units: the themes themselves, as well as the attitudes informing the themes, were closely linked (Janse van Rensberg, 1991).

The extrapolation of themes follows the pattern of a continuum of movement from the particular

to the general: the respondents' self-perception, how that relates to or is reflected in site-specific environmental awareness, attitudes to the conservancy or its concepts, and finally a tentative examination of attitudes towards environmental education itself (McDowell, 1989, Fishbein and Ajzen, 1975). Clustering of the respondents was used to highlight the different dimensions revealed in the data.

As noted in 4.5, themes were primarily identified within categories of historical, socio-economic and biophysical categories. Issues arising from these broadly-based categories were seldom discrete, and the researcher has not attempted to confine them into artificial and rigid compartments. For example, the predominant importance of the role of a single personality, either as a private individual or as representative of an organisation, is spread across the respondents' self-perception, as well as their views on the environmental problems associated with their geographical locations, on conservancies themselves and on the concept and practice of environmental education (McDowell, 1989). Socio-economic imperatives were referred to in contexts as diverse as specific farming practices, the concept of a conservancy and its practical application, and the acknowledged (or rejected) perceived value of environmental education.

The site-specific biophysical continuum of respondents impacted directly in an economic sense on farming and conservation imperatives and practices (often mutually exclusive and contradictory). In an indirect way the responses of several respondents indicated a further linkage to the degree of environmental consciousness and the related recognition of the need for conservancies and environmental education. (McDowell, 1989). The headings used were therefore selected primarily for the focus given to an understanding of the perspectives and contexts of individual respondents (Vayda, 1989, Chambers, 1985), thus producing an interpretive mechanism for the parameters and issues raised in the preceding chapter (Robson, 1993).

5.3.1.1 Dimension of self-perception by respondents

This aspect is felt to be of great significance; in particular because of its inherently dynamic nature (Burgess, 1989). Within the context of the interview, as noted in 3.1.2, the process of understanding must necessarily be mutual and implies an increase of self-understanding on the

part of the subject (Odman, in Keeves, 1988). Consequently, all the other themes elicited from the data were contextualised in part by referring to the respondents' individual self-perceptions (*ibid*, 1989).

Extracts from each respondent's perceptions of himself have been selected, in order to establish the background for subsequent extrapolations regarding conservation, environmental education, and the related issues noted (Burgess, 1989). The several extracts disclose the many views that emerge in place of what might be assumed to be a common understanding. This indicates some of the problems that will have to be taken into consideration when examining the whole question of environmental education.

Custodian, conservationist and educator

All respondents who were landowners referred to themselves as custodians, and allied to this expressed the notion of necessarily being a teacher. Both concepts were variously located on a continuum of scale stretching from a single generation or physical location (e.g. "My family and my farm"), to taking responsibility for making the broader community aware of holistic farming in the Northern Cape or - in three instances - southern Africa. The notion of personal or individual responsibility for the education and upliftment of the "community" (either the several labour forces or communities in urban and township areas), in the sense of raising environmental consciousness, also varied widely. Respondents who were not landowners similarly expressed a strong feeling of personal commitment towards custodianship and teaching in the areas within which they worked, limited only by what they understood to be the logistical parameters of their work.

Respondents from the Platberg Karoo Conservancy

Respondent E1

This respondent is referred to by all respondents who know him as the primary mover in the Platberg Karoo Conservancy: "It is his enthusiasm that drives the conservancy." He had worked

in commerce in another province, until being offered the opportunity to farm on the land a relative had inherited in his late 40's. He had known this area from childhood visits in the region, and said: "It was quite ironic, I knew what a great deal it meant to me. This was where I wanted to be." He had made a success of his business endeavour, but expressed disillusion with what he perceived as the necessary dishonesty of salesmanship: "If you're a person who can tell lies and get away with it that's fine; but I began to battle, that's what made me decide to get out."

His involvement in conservation had begun while he was in commerce, and he moved to the Northern Cape with experience and knowledge of conservation action within an NGO, and a determination to be a force within the local farming community for ecologically sound farming practices. He was given a platform for his primary interest, raptors, in the local farmers' association, and the subsequent progress to the formation of the conservancy has been described above. He indicated he was liberal in his political outlook, and he states that his personal development over the past 7 years has benefited immensely from involvement in the conservancy and the conservation projects that have developed from that initial focal point. He is identified by several respondents as a charismatic and knowledgeable environmental "evangelist", and sees his farm and the way he runs it as a working example of constructive ecological management: "The only way to go about it is to put it into practice, i.e. show by example - you can't just go and teach them."

His states that his agricultural attitudes and practices have been driven by the need to understand holistic ecosystem functioning: "So the challenge is not to change and manipulate nature, but to try to understand its puzzle ... then the decisions will be so much easier." He acknowledges that his personal campaign to halt the use of toxic chemicals in spraying for locusts has resulted in legislation allowing alternative options, and expresses dismay about the resultant high profile he has within the larger community. He sees this as compounding the concern he feels about his role: "We said right at the beginning that the conservancy mustn't be a one man show."

He assesses his life by saying:

> I know in myself that I have made a contribution not only towards the Karoo. [It] is a special place for me because this is where I spent my holidays as a kid, [it formed]

my ideas of open spaces. This was our farm and our space. I just said to myself: I am a custodian. I just didn't want my kids to say one day but couldn't you just have said something, couldn't you allow that, couldn't you have said, but why didn't you just say something because you know it's wrong.

Respondent A2

Respondent A2 was identified by several respondents as a person of significant influence within and beyond the community, as member and chairman of a number of local and regional organisations. Throughout the interview he revealed a degree of marginalisation from the conservancy, and even a certain animosity voiced towards the organisation and some of its members. This antipathy was vocalised in statements such as: "There was a small group, and it kept on getting smaller ... the conservancy sends a mixed message to the farmer: it is not really in touch with the farmer." He was a member of the Steering Committee for several years, resigning because of what he claimed was an over-emphasis on certain contentious issues by the committee. He claimed that farms where locust swarms are not sprayed are breeding grounds for swarms, and saw this as creating tension among the farming community which is extremely undesirable: "One thing I do know is that for conservation to be accepted you must have the co-operation of the farmers."

He volunteered several statements which indicated his endorsement of the value of precise knowledge: he collects data of stomach contents of all species killed on his farm, and has drawn up a detailed form for the local jackal-hunting club for similar relevant data. He was resentful that this data was not utilised, and also that data obtained by members of the committee was not made available to all members: "They report back to a closed circle, no-one else knows some experts are there." He suggested that data collection projects on the small mammals of the region would be of interest and value: "We need to know about these other mammals, how many are left: these other things are important for me. You must be able to tell the farm labourer why this animal is there because he is the one who kills these animals. It is important to reach that person and to reach him you must stimulate his interest."

He questioned the initial *modus operandi* of the conservancy, which registered all farms within loosely defined boundaries as members: "They decided to include everyone. I could never see the purpose because you could never really say who was a member, and how many members there were." He also differed with the committee regarding their perception of the vital role of the newsletter: "I know from years of experience that farmers don't read things."

Towards the latter part of the interview there was a marked increase in the respondent's sharing of personal feelings and beliefs. In one instance he asked in a very serious manner for the researcher's opinion regarding "Why is it that farmers who come from outside have conservation in them like [named 2 English-speaking members of the conservancy and the researcher] and develop with that a love of the land? A person born and bred here is not conservation-minded; it seems to me he just wants to make money out of the land." He referred to his eldest son with regret, as not having "that feeling for the veld: for me the veld is what it's all about."

Respondent A3

Several respondents indicated that this individual is recognised by the community as an extremely dedicated, successful and hard-working farmer, in spite of their disagreement with his attitudes and actions regarding groundwater abstraction and problem animals. He stated that his rationale for farming was that "You farm because you love the land... it was always a dream for me ... no farmer farms out of a financial viewpoint because there's no money in it."

By contrast, throughout the interview he continually stressed his practical side: "Look I am a practical person and I have been farming for 16 years; and if my health allows I want to still farm for the next 50 years: if the political situation will allow this. In order to achieve that I must conserve in a practical way: as long as it is within limits and not at the cost of my farming. I must conserve in order to keep farming for ever." He displayed a tendency to be dismissive of theoretical input, in spite of his academic background, saying "These chaps eat books up and then they think they know everything, while the reality is the hardest taskmaster on the farm." In his agricultural management he also emphasised the need to be practical: "The farmer that says to you he has a programme whereby he works is in my eyes a bad farmer because I have never been able

to follow a programme: you must stay with the situation as it is found in reality."

The respondent completed an honours degree project on the grazing potential of his main farm, and does regular plant survey data collection, adapting his grazing strategy according to his findings. However, he does not accept research-based data regarding possible improvement of veld cover, such as the planting of non-endemic species: "I told this man that if I plant Old man Saltbush then I am busy in one year interfering in a process that has taken millions of years to establish, so I [would be] disturbing nature."

Regarding problem species, he stated that he sprays locust swarms whenever they occur: "He mustn't come and tell me that locusts don't cause damage. At the end of the day every farmer knows that it does." He justified this possibly contradictory interference in nature and its processes by saying: "But I am a Christian and if you read the Bible then you see Locusts are one of the plagues. It's a plague still so we have to deal with it."

With regard to those of his agricultural practices which have been interpreted as being harmful to the ecosystem by several other respondents and local officials, he said: "At the end of the day it's my business ... nobody's going to hunt me down, nobody's going to change my mind: over and done with ... I'm not going to conserve eagles they can conserve themselves." Reacting to criticism of his shooting Black Eagles he stated: "I told him what I do on my farm has bugger-all to do with him." He frequently expressed antipathy towards the conservancy and members of the Steering Committee - "they are a bunch of arrogant people" - and felt that the conservancy should "come down to earth - it must be farmer-friendly and not anti-farmer."

In contrast to other respondents, he has mechanised and computerised to the extent that he currently has one assistant and no labour force *per se*. The only aspect of environmental education he claimed to be practising was that of using his *in situ* observations to contradict those who criticised his farming methods. Of the environmental education role of the conservancy, he said: "It should be an information provider ... if it gives valuable conserving information to people that they can practically enrich themselves as well as their farming set-up then they don't need to sell the product [of positive environmental practices]; it will sell itself."

Respondent E2

The respondent volunteered that he had spent holidays on this farm as a child, and although he was always strongly conservation-orientated, he largely ignored and was indifferent to the farm until his father was forced to retire because of ill-health. "Then I thought you know you've got this whole beautiful ecosystem and I looked forward to [coming here] and truly I've enjoyed it."

As a retired research scientist, he set about deciding how to manage his farm by developing his own system based on his research and findings: "My father told me the way he farmed but it's not necessarily right, so I asked questions ... and I've developed [a unique] grazing system which suits me and my veld." He believes that he can contribute to environmental education in the region by talking about his system to farmers, and volunteered that he had learned from the conservancy's focus on locust spraying: "That sort of sensibility I didn't have before." He sees the conservancy as a forum for environmental education: "Its most important role is to disseminate information, and it should influence others in the way of ongoing teaching about the environment." He stated his willingness to spend time furthering the goals of the conservancy "... because I believe in it: we must teach people, and the conservancy can do it."

Respondent A5

Of the landowners interviewed, this respondent has much the smallest farm allied with the lowest carrying capacity, and volunteered that in order to survive financially he had no choice other than to change from sheep to dairy farming. He was referred to by two respondents as highly intelligent, and proactive, being the first farmer in the area to implement the provisions of the new labour legislation. His strong religious beliefs, which he says colour his attitude to the land, his farming and his staff, were frequently reiterated during the course of the interview. He is the only respondent who openly acknowledges that he is committed to conservation methods to the point of real financial sacrifice.

> I am going to remain here: it is my land and I am prepared to work on all levels and areas. And eventually I want to strive for a goal. I ask myself: why am I a white in the

> land? My ancestors fled here because of religion. And why has the Lord allowed me here; why have we and many whites been driven for many years with many problems in the interior? I say we are missing a great purpose in this land: we must bring our Christian and other [conservation] beliefs to people.

He is also one of three respondents who conceded the overriding importance of family in his life: "If I didn't have my three sons, I would have a completely different attitude to my farming, to my whole life." This was his point of departure for all his dealings with staff in terms of social upliftment and conservation practices: "I approach it always like this to them: that it is for the benefit of the children, otherwise they will only see these animals in pictures in books."

His given reason for joining the conservancy was that he had, through interaction with friends on a specific evening, become much more environmentally aware: "It was like waking up ... I was eager to identify with those people as a custodian and protector of our land, with everything that goes along with that [conservation conscious agricultural practices], and also doing what my friends had done for me."

Interestingly, respondents A5 and A7, who were both conservation-orientated, relatively young, from conservative backgrounds and with tertiary education levels, speculated that the fact they were Afrikaners, products of an extremely structured and authoritarian society, helped to account for their personal conservation behaviour. Respondent A5: "We didn't learn to think for ourselves (or at least a lot of us). It's nice and easy and no responsibility." Respondent A7: "We grew up to believe everything was true, we don't easily question anything, especially if it comes from the state or the church. So if the state says [the poison is safe] then who are we to argue?"

Respondent A6

Respondent A6 was the most senior farmer, with the longest unbroken family history among the respondents of settlement on one farm: he was perceived as the wise elder statesman by many of the other farmers interviewed. He referred in passing to having first motivated the foundation of the conservancy. After a talk given on the protection of raptors, he was so enthused that he

suggested the next day that this process could be started in his area. In speaking of his awakened realisation that this region was also worthy of conserving, he said: "Then I realised we also have this [an ecosystem worthy of protection]; this grey Karoo also has this, and can't a person do something about it?"

His thoughtful honesty was also apparent in the way he spoke about problem animals. He stated that although he is against spraying locust swarms, and has refused to do so for the last 10 years, if in the future some of the very extensive swarms such as he has experienced in the past do land on his farm, he is not sure what his actions would be.

He was the only respondent interviewed who, after being asked a question, would say that he would think about that before replying later: "we must chat a little more and then come back [to this], I haven't thought about that." He volunteered contemplative and sympathetic comments on farmers' attitudes, and how constructively to change them by recognising where individuals were placed and how they were motivated. He repeatedly revealed a depth of understanding and patience within his strong commitment and desire for conservation progress. Talking about his early days on the farm when he was not conservation-conscious, he referred to hunting Steenbok *Raphicerus campestris*: "And I was proud about it ... to prove yourself: you are a hunter, and these days I cannot believe that I was so unintelligent: it was stupid." He sees his "conversion" to environmental consciousness as an awakening from a situation in which, although his family had farmed in the area for over a hundred years, they were simply not aware of nature *per se* as pertaining to their land; and he felt he had been a part of that blindness: "Nature was the Kruger National Park and here? Well, you just lived here. And then the information, the environmental education came with [individual x], and you were ready: there was absolute sense in it for you."

Respondent A7

This respondent is currently working on a dissertation topic pertinent to the agricultural problems of the area, where he considers that current research is inadequate. During the interview he evinced a cool, considered attitude towards his conservation farming practises and their amplitude, and stressed his rational and detached point of view: "Look, a person does sometimes

become emotionally involved with a thing and as you gain perspective [your emotional involvement] can cool off or deepen, but no, there are still things that a person will look at more realistically later."

As did two other respondents, he expressed the view that in the past conserving nature was seen as something done by organisations, not individuals: "In the past everyone was more or less conservation-minded, but conservation was done by Nature Conservation and the Parks board, not us people on the farm. And then we became aware that you can also do it on the farm, we have here an environment which is relatively pristine." He referred to his involvement with the conservancy as a matter of enjoyment, adding: "And then I believe that a person must carry out the message of environmental awareness: there are now few farmers here which are hostile to us, most people agree with what we are doing and work with us."

He mentioned two instances where he had personally confronted individuals who were killing eagles: in the one instance, the individual concerned as a result now frequently refers with great pride to the fact that he has a breeding pair on his land. He summarised this intervention by saying: "So he has turned a little because he has seen that the eagle isn't really such a threat; however he still believes the Bat-eared fox *Otocyon megalotis* is a threat and he kills them all and hangs them on the fence." He speculated that the reason for this was that the labourers reporting scavengers at a carcass did not have the correct education to assess what species was responsible for the actual killing, and that this farmer was infirm and therefore had to depend on reports from his staff. "There is no evidence that the Bat-eared fox has done the killing - it has been attracted by the afterbirth or the smell of blood. So it is important to teach [the labourers] as well as the owner, and the conservancy can do this if it does not prescribe to the farmer, because it can present neutral facts."

He referred to the change in his conservation practices and how he communicates this to his staff: "You learn here and there in the conservancy about snakes and their role in the environment, and so if you come across one in the veld then you say to [the labourers] don't kill it and all that sort of stuff. And now they are also like that. There is a Puff Adder *Bitis arietans* living near a gate we frequently drive through. In earlier days I would have killed it immediately."

Respondents from the Free State province

Respondent 2A1

This individual is perceived by all respondents who know him as an innovative, courageous and charismatic promoter of the conservancy movement in Southern Africa. He has been a professional conservator all his working life. He is currently considering the promotion and development of conservancies as a private individual, because of the geographical curtailment of his activities by his financially strapped department. He is immensely dedicated, to the point of personal financial sacrifice, as was revealed in his comments: "I'm giving training to you can't believe who all ... I am putting in leave on my own cost ... that's why I thought of privatising the whole thing so that it can work nationally, but again who is going to pay for a service like this?"

He has an attitude of custodianship similar to that displayed by the landowners in the Platberg Karoo Conservancy, only more wide-reaching: "But I think this is a national thing and to me it's no use getting everybody involved in one province and just next door nothing is going on - that's my concern."

Attitudinal perspective: Directional modification of the conservancy concept

Within the Free State conservancy movement there has been a significant change from concentrating almost exclusively on the protection of the natural environment, to recognising and incorporating the primary role of persons within that environment. This has occurred because of the extensive development of conservancies within urban and township regions. In such instances, the provincial department currently views the role of the environment as crucial, a perspective sometimes not initially shared by the people on the ground (Xaba, pers. comm.).

> What we usually do is go to the people and ask according to you what is your biggest need ... first thing they go to is food then we need shelter, love, compassion. The environment comes right down, so this is an attitude that we must try and challenge. If you establish a clean and acceptable environment to have a good shelter to have

> good food and to have all these others the day will come when people look at the environment and say right let's form everything round the environment.

He states unequivocally that the people on the ground, the "little people," are the most important factor in the success of any conservancy, rural or urban: "They are of vital importance. And we must reach them. And the conservancies work like a bomb to teach them as a community and as individuals about the environment and how it works and what it needs."

Respondent 2E1

This respondent has worked as a game guard for the past 10 years in a successful conservancy within the Free State. At the start of the interview he appeared to be extremely shy and nervous, but relaxed towards the end, when he began to rely much less on the interpreter and ventured more of his own personal opinions. He has had a life-long interest in nature, which was what motivated him to volunteer for training: "Because of the interest I'd always had in the nature and the wild animals. I was always interested at home when I was little." He expressed pleasure that he had this work, that he had a role in protecting the environment: "I am very pleased for the work ... that I work for them [the animals] and see that they don't have any problems."

He saw his, as well as the conservancy's, environmental education role as pertaining to the farmers as well as to the farm labourers: "Before there was a conservancy the people didn't know. And now I've been with them they know and they look out for everything. [Other people on farms which don't conserve] see that at the conservancy there are many more animals, the most in the area, and so they think about what the conservancy results in."

Respondent 2E2

This respondent trains the majority of game guards in the province, and is also largely responsible for training urban guards, especially those within the township conservancies. He replied to questions in an outspoken and frank manner, and declared his complete commitment to the

conservancy concept several times. He indicated that he was ready and eager to commit the resources of the department to assist not only the Platberg Karoo Conservancy, but also the researcher's own area in initiating a conservancy. He saw the role of environmental education as being largely about sharing understanding of environmental matters: "You must talk to people all the time about these things. Talk to children, talk to adults, what is right to do in the environment and also at meetings we explain these things." When he suggested having meetings in the Northern Cape to enlighten both the farmers and the labourers, he repeatedly stressed that it was the labourers who were the more important to reach: "It must come from the bottom up."

Reiteration interview: modification of attitudinal perspective

A matter of some significance was noted during the course of the reiteration interview with respondent E1. He referred to hostility shown towards him by respondent A3 over a number of years. He said that this attitude had altered in the period subsequent to the initial interviews held by the researcher, from frequently verbalised and aggressive personal criticism to a new open-minded acceptance of E1 and his conservation ideas:

> Well you know him and his attitude, well I'll walk into his shop any time of the day and he's sweetness itself. A lot of people if they want to have a go at the conservancy they'll have a go at me. But he's not: I don't have a problem I'll sit down and talk to him about why he shot those vultures. We'll talk about it quietly and nicely. I don't know what the reason would be [for this change] he might not agree with certain things, he might be fixed in his views, but he's not anti me which is a good sign because he's used as the barometer ... he's a difficult this and that but he's not difficult to me any more.

This shift in attitudinal perspective was noted to a less marked degree among all respondents with whom the researcher had further contact. It was seen as forming a part of the moral justification for the research project (Burgess, 1989), realising the hope that the process of understanding be mutual and imply an increase of self-understanding on the part of the subject (Odman, in Keeves, 1988), not just superficial rural academic tourism for the researcher (Chambers, 1983). As noted in chapter II, the research project was not merely an attempt to learn about people, but to learn

with them about the reality which challenges them. Wals in Mrazek (1993) noted that this approach can assist in producing knowledge with emancipatory relevance, which can in turn promote the autonomy of the individual and the solidarity of a community. There was evidence of this tendency in all subsequent interaction among the respondents.

Data obtained through the research instruments indicated that the notion of custodian in particular appeared to develop over time into a more all-encompassing one. Two respondents indicated that their sense of the scope of their role as educator expanded from their immediate family and friends to their work force and peers. Three respondents volunteered that the conservancy and the ideas it promulgated over a two-year period had made them re-evaluate some of their farming practices in the light of relatively newly-acquired holistic environmental knowledge.

Interviews with agricultural workers

Little original data was obtained from respondents 2A1 and 2A2. Reasons for this are also noted in chapters II, IV and VI. Respondent 2A1 in particular appeared reluctant to voice any personal opinions, and the responses given during the interview were markedly diffident.

5.3.1.2 Respondents perception of

(i) the Karroid environment and some of its associated environmental problems and

(ii) the Free State and some of the environmental problems associated with the township conservancies in particular

In looking at this key dimension, which provided an obvious focus for the conservancy, a shared vision was again expected. But in the data the lack of a common perception or understanding was re-iterated. Respondents in the Platberg Karoo Conservancy revealed levels of perception and understanding of their physical environment and associated conservation issues which varied

greatly from site-specific and issue-based to an holistic perception of ecosystem functioning. This was in most cases predictably linked to higher educational levels, English-language orientation and incomes (Janse van Rensberg, 1991, McDowell, 1989). While most respondents were aware of the fragility of the Karroid vegetation suites, there was a clear dichotomy in their responses to problem animal control.

Clustering of the respondents has been effected where appropriate, in order to enhance the contrasts or agreement among individual responses.

The Karroid environment and ecosystem

Of the seven farmers interviewed, two of those currently most involved in the Platberg Karoo Conservancy are English-speaking, retired from successful professional lives in commerce and science, and possess sophisticated and holistic understandings of ecological processes. They are seen as innovative by neighbouring farmers, and regarded both with approval and with scepticism. One respondent farms according to the principles of Holistic Resource Management, and the other has developed an innovative veld management system which he affirms is currently receiving recognition and acclaim.

Respondent E1

He summarised his understanding of this ecosystem by saying: "This is an arid zone system so it consists of fluctuations of abundance and scarcity. Within that we've got to find the balance between abundance levels." He saw the periodic outbreaks of locust swarms as "one of the ways the arid system replaces numbers. It supplies this very high protein food which gets all their hormones going; it is a form of food for a lot of animals - just about every animal eats it, it is the system's way of getting everything back into balance."

He affirmed that his personal (and initially one-man) campaign to halt the automatic spraying of locusts with toxic chemicals had not only brought him national prominence, but had recently

resulted in a positive alteration in the existing statutes (Department of Agriculture, 1999). This undertaking has been criticised by some members of the conservancy as the primary and dominant agenda for the conservancy as a whole; and as it is generally recognised as a contentious and potentially divisive issue (Shearing, 1994), many farmers have rejected its perceived prominence.

He has also campaigned for an end to the indiscriminate killing of raptors and jackal. This is likewise a highly emotive issue among conservative farming communities (*ibid*, 1991), and several respondents indicated that his stand has brought the conservancy into a degree of disfavour among the majority of farmers, who see any potential predator as an immediate threat to their livelihood, necessitating destruction. The respondents revealed a broad knowledge of problem species, in large measure the result of this respondent's diligence in following his own precept: "The challenge ... is to try to understand [nature's] puzzle ... [then] the decisions will be so much easier."

Regarding the mammalian problem species jackal *Canis mesomelas*, he expresses serious concern about the development countrywide of superior individuals: "They've gone out and shot and trapped and thus selected the superjackal: we have helped this selective process because of shooting out the weaker and less intelligent individuals selectively over the years, and he [the more clever jackal] actually goes out and teaches his young; it is proven that there is learned behaviour, teaching the cubs avoidance behaviour." As a result of this perception, he only kills the youngsters in their dens, "and thus I take off the pressure from that part of the veld that need for predation for a litter of young."

He no longer uses traps, explaining that the first time he did so he caught two bat eared foxes *Otocyon megalotis*: "I am not squeamish but that did something to me. I had a problem because what I had done was not what I had wanted to happen. The only other time [I used traps] I found a jackal killing in a kraal so I set a trap knowing nothing else could get caught and they had a choice to come back so I caught them."

Respondent E2

When speaking about his understanding of the karroid environment, this respondent stated: "My veld management system is unique; and very flexible. It depends on when it rains and this takes some management. I have many camps, so your management can be so much better: you can rest camps and make flocks bigger or smaller so you have a lot of parameters ... it is such a delicate system." He summed up his approach by saying: "all the stuff I can control I do control: the grazing intensity or the groundwater or whatever. The air surface layer - well, if you can manage that then the insects come and the rain penetrates and everything's fine, but you can't manage it if you don't have rain. If you haven't had rain for 3 years you can't have a viable ecosystem because your surface soil has been buggered up."

Regarding the locust spraying, he said: "This locust thing - it's wonderful what has happened: now there are a whole lot of guys who lock their gates and won't let the sprayers in. That's great, that sort of sensibility I didn't have before." Considering the problem jackal issue, he maintained "I don't have a problem. I can assure you it is not because I don't want to have a problem ... yes there are tracks which we see sometimes, but they don't cause problems." As with five of the other respondents he has focused on protecting the natural prey of problem species, and all respondents indicated they had done so primarily by preventing their staff hunting for food: "We don't allow the labourers to go out [in the veld] with dogs; we've never allowed dogs."

Two of the younger respondents from an Afrikaans background, both with tertiary education, indicated their commitment to conservation practices on their farms, while acknowledging the limitations, in the one instance severe, imposed by financial restraints. They both acknowledged that this impacted directly on the level of "acceptable losses" they felt they could accommodate.

Respondent A7

In referring to the limits of acceptable losses, particularly in terms of the impact of locusts on grazing, this farmer noted that on his second farm, which has a much lower carrying capacity: "There I held out for a long time when there were locusts, but then I saw later that if I wanted to keep any grazing at all then I would have to spray." This apparently pragmatic approach did not extend to losses from mammalian predators. He does not allow any trapping, although he mentioned that he had attended a trapping course, and had in the past successfully trapped specific

problem individuals. Regarding his current situation, he states that: "All my traps are hanging here, the jackal walk freely. This whole week: we've heard the jackal each night but they haven't caught anything ... I've counted and am not missing anything."

As his neighbours are complaining about losses at the same time he claims not to have any, he speculates that the difference is due to his preventing any unnecessary predation of natural prey species in the veld (he did however mention that he shoots Scrub hares *Lepus europaeus* once a year and Hyrax *Procavia capensis* in the winter). He summed up his attitude thus: "As long as they don't bother me I won't bother them ...", indicating that as was the case with his response to locust swarms, he would take action should he experience what he considers to be unacceptable losses.

This respondent also referred to selective trapping, saying that traps, if used, should be set in a such manner as to not catch the wrong animals. However he accepts that that is not always possible, when for example setting traps in game paths. In this instance he advocates following techniques which will attract problem animals away from paths to minimise killing innocent species. The claim that complete success could be achieved with such techniques received a mixed response from other respondents.

Respondent A5

This respondent acknowledged that he was committed to conservation principles to the point of very real financial sacrifice, and noted: "If you begin to farm here ... [you will] realise immediately that we are in the Karoo and if you don't look after it then it is finished within a few years." Regarding locust spraying, which he used to do regularly, he claimed to have scientifically proven that no lasting damage was caused to the veld vegetation after a swarm event. Subsequent to a severe infestation when he did not spray, after the first follow-up rains he maintained he could clearly see the track where the veld was recovering better after being grazed by a locust swarm than those areas which had not been infested. "And there I realised that if we continually kill the locusts ... we cannot go on like that for ever."

He has a small farm with extreme erosion problems because of placement on a slope; among the many anti-erosion measures he has adopted, his primary one is this: "I rather see that my grazing strategy is such that I give my primary grasses a chance to cover the veld so that secondary growth can take place in the veld ... but each plant must be able to set seed and flower and plant ... then it establishes itself."

Regarding action against the problem species of jackal *Canis mesomelas*, he has undergone training and taught a member of his staff the selective trapping of problem individuals. He showed he was extremely careful and meticulous about the traps themselves as well, ensuring that they are not used carelessly: "It is not just a catching and killing thing". He keeps complete records of their placement and return. Although he will abide financial losses in the medium term regarding resting grazing camps to benefit veld cover, he contends he is too financially restricted to have any margin of "acceptable stock losses" caused by problem mammals.

Respondent A3

This respondent appeared to contradict many of the widely accepted assumptions regarding the relationship between higher education levels, success, wealth, and more holistic environmental understanding and action (McDowell, 1989, Janse van Rensberg, 1991). He has an honours degree focusing on the plant suites of his main farm, and is referred to as having achieved great success financially within a short period. He made frequent references to his great pride in, and dedication to, his family, and is acknowledged by his peers as an excellent farmer. "Make no mistake I think he's a bloody good farmer and his profits are pretty big but you have the danger that maybe you are exploiting the farm..."

He asserts that conservation is vital to the long-term viability of his farming operation: "I must conserve in practice; as long as it is within limits and not at the cost of my farming; I must conserve in order to continue farming always."

However, in contrast to this perception and the expected level of scientific knowledge he has attained, he uses flawed data to validate some questionable (in fact and degree) farming practices.

For example, he extracts underground water heavily for his extensive irrigation lands, and justifies this by claiming there is an underground river starting under the Gariep Dam (formerly Verwoerd) and ending under the Orange River at Prieska. "There are three places in its entire length where you can drill: two in Ventersdorp and one coincidentally by my gate and that's where I'm catching it. And it's a river; it's not that I'm pumping the water from this vicinity." His neighbour, formerly an hydrologist specialising in underground waters, says that "His information is absolute piffle - maybe it comes from guys who do boreholes and stuff (i.e. have a vested interest) but it doesn't come from me. It's because they have this peculiar idea of underground rivers coming up ... [he is] the only guy in this area who over-pumps and his water level has gone down from the normal 50m to 75m or 80m."

Respondent A3 rejects the "conservation" attitude to spraying locusts: "[Respondent x] mustn't come and tell me that locusts don't cause him losses. Of course it causes him losses which every farmer at the end of the day knows." He explained in detail that he was meticulous in doing the spraying himself to the correct dosages and in the correct manner. He also surprisingly justified his spraying from a religious viewpoint: "But I am a Christian and if you read the bible one of the plagues was locusts. It's a plague still so you have got to address it."

This farm is a very mountainous farm, and he has large populations of avian raptors: Black Eagles *Aquila verreauxi*, Martial Eagles *Polemaetus bellicosus* and Tawny Eagles *Aquila rapax*. Regarding their protection he states: "If he doesn't catch lambs why should I bother him?" He visits the nesting sites on a regular basis and claims he can identify any problem individuals, which he will then shoot. In discussing this matter, he expressed anger that he had been threatened in the past by legal action for shooting endangered species, claiming to have responded by saying he would stop shooting raptors if he was paid out in full for all the lambs taken. "Then I said I take it that you understand my problem because it is an astronomical amount." Two of the other respondents interviewed speculated that the reason for his actions lay in his background of straightened financial means, that he had worked extremely hard to reach his current level of financial ease, and that he could not see stock losses within a wider context; only as a direct and immediate financial loss.

His response to other problem animals is similar. He said he was meticulous in his procedures,

having attended a trapping course, setting traps himself, and using some of the new technology (whistles, recordings on Compact Discs) to attract the animals. He claims extremely high success levels. He concluded, regarding all problem species, that: "If he is a problem I take him, I take him out. If we can leave them we do. He must conserve himself. If the caracal *Felis caracal* is catching his natural prey, why should I catch him?"

He balanced out the beneficial value of some species against the infrastructural damage caused by them. "Why should I shoot the aardvark (*Orycteropus afer)*? Naturally he is a pest with his digging of holes (under fences) but if he doesn't dig holes the Bat-eared fox *Octocyon megalotis* which is worth a lot can't get through."

On several occasions he indicated respect for and knowledge of aspects of the natural life on his farm. In one confrontation regarding the Black Eagles, a local conservation official asked to go and see the nesting sites on a particular hill-side and the request was denied. The visitor then asked the respondent what he was hiding, and the reply was: "The answer is Klipspringers *Oreotragus.* Do you know how rare they are in the Karoo? I've got a bunch and I'm not going to let them be feared, chased away and bewildered by some arsehole who is arrogant. Nobody, not even us, go in there frequently; and we handle it with respect. We do it in nature's manner, we try to limit interference from whatever side it comes." In addition he has a number of tamed species in his yard, and he spoke with noticeable warmth about the pleasure they give him, e.g. albino and black Springbuck *Antidorcas marsupialus,* Eland *Taurotragus oryx,* Black Wildebeest *Connochaetus gnou* (the latter which he breeds and utilises as a deterrent against poachers) and Meerkats *Suricata Suricatta*. "I won't say go and tame left right and centre, but this is my pleasure. But for the environment to give me two Meerkats I don't think hurts the environment and I care for them, they actually do much better here than in the veld, here they get fed."

His final comment, which seemed to contradict what was learned elsewhere of his activities (e.g. by several of the other respondents) was: "If we eat what we kill - not jackal etc which we shoot because they are out of line - there will be no need for conservation. There are certainly single farmers who will kill left right and centre but he will not remain a farmer for long." Respondent E2 however commented that respondent A3 always had a rifle with him and shot a Steenbok *Raphicerus campestris* "every day because he loves them" (presumably referring to the taste).

A tentative conclusion offered by two respondents is that he feels unable to take the long-term step, with far-reaching implications, of attempting to heal his ecosystem functioning; that is to protect natural prey species and thus also reduce his perceived need to kill problem animals. Another comment from respondent A6 was to speculate: "I wonder if it is not an image, a sort of mechanism, a defence mechanism and that he is actually very insecure ..." Respondent A7 considered that his attitudes were primarily financially based, and so long as there was no direct threat to his farming, he would not be concerned.

Respondent A2

This respondent volunteered that he had been on the committee of the Platberg Karoo Conservancy for about 5 years, but had resigned over two matters:

> (i) the matter of locust spraying: "The conservancy at De Aar currently revolves around locusts ..."; and
> (ii) the policy of trapping selectively for jackal: "On behalf of this same conservancy ... I held courses on poison and trapping so they're not against jackal hunting *per se* but unfortunately the conservancy says only catch those which are catching the sheep and this is a mixed message to the farmer."

He felt it was important for the conservancy to deal with those conservation issues which would not conflict with the agenda of a successful farming operation. He indicated several times his feeling of marginalisation since leaving the committee, and expressed disappointment that he no longer had access to any of the "experts" on a personal and social level: "They report back to a closed circle ... they telephone [individual x] but no-one else knows they are there."

In his position as head of a local jackal hunting club, he had collected a great deal of valuable data concerning stomach contents, habits and patterns of movement and behaviour; and he expressed disappointment that this had not been utilised: "I have all this information, but the conservancy has never asked for it. I make a summary and it's all on record ... and I think it's important." He mentioned a number of times his interest in general conservation issues, relating them to the

Karoo; e.g. a radio broadcast he had listened to about overpopulation in China, and the centrality of this problem regionally and locally.

Regarding locust spraying his attitude was unequivocal: "Farms which don't spray are a breeding ground. You should spray when locusts are small and breeding. The breeding is increasing because certain farms don't spray or report [the presence of swarms]."

He maintained that his biggest environmental problem was Black-backed jackal *Canis mesomelas*, and claimed extremely high numbers caught in one year (500 in the region). The potential financial losses are substantial, as is the cost of control: "It means how much money? If you really want to control jackals your perimeter fences must be closed, but aardvarks will dig them up. Some people don't look any further and kill the aardvark." The respondent insisted that he was not one of the latter.

This respondent revealed interesting and ambivalent views on research. He pleads for more research to be done on the mammals, so that the information is to hand: "I have farmed for 30 years and what I know my father taught, told me. I have sat and said: what, where, who knows something about a hedgehog *Erinaceus frontalis*, an aardvark *Orycteropus afer*, or whatever about him; about his movements, of a porcupine *Hystrix africaeaustralis.* We need to know about these other mammals. These other things are important to me."

By contrast, when relating an example of research about the aardwolf *Proteles cristatus*, he indicated that it had failed; the implication was that the methodology followed in the project was not appropriate to the area. "They placed reflectors on each anthill and then you're seeing lots of eyes at night. A neighbour who was hunting said: `I rode through a ditch and drove so far and then I saw it was a bloody reflector so I shot that dead anyway.' So you see what came out of that research."

The respondent mentioned on a number of occasions his interest in specific species, especially avifauna, and how they capture his imagination. However, in spite of revealing some understanding of their physiology, he did not refer to their place in ecosystem functioning, or to the fragility of the karroid ecosystem.

Respondent A6

Throughout the interview this respondent indicated an understanding of his own personal development towards environmental awareness, and an awareness of the encounter-reflection-dialogue cycle in his behaviour modification (O'Donoghue, 1993). "If a person thinks back there are many things you realise ... The birds are what actually interests me. And so a person learned to know the whole Karoo from the birds and realise that these places do have a rich life."

Regarding locust spraying, he was very firm but non-confrontational in his tone and manner as he spoke about his refusal to allow it on his farm: "If a person has the information, you realise what you are going to let yourself in for if you use poison or the imprudent use of fertiliser on your veld. I shall fight about it." However he admitted, with regret, that if really large swarms came, as he had experienced in the past, he was not sure how he would deal with it: "Locusts can be big big swarms; I have experienced them here as enormous enormous swarms. How I will then handle them if they come like that again I don't know."

He was the third respondent who denied that locusts caused any lasting damage: "No-one can go and show me where locusts have caused lasting damage on the Karoo, but I can show where I have caused lasting damage because of my grazing methods."

Regarding the control of problem animals, especially jackal, the respondent gave a reply which hinged on the rationality of the "acceptable losses" perspective.

> If a person really goes and looks at what happens over a period in practise, then you discover that in the individual incidents where lambs have been caught a person tends to say there is a dead lamb; the first thing you say is that a jackal or problem animal caught it. But now a person must first go and see did the problem animal really catch it? And then a person must go and see how many he is catching, what is the damage and then you come back to the control methods. And when you come to the control methods then at a point you realise: it costs me more to attempt to control this thing than the cost of the damage.

As a consequence of this thinking, although he had attended trapping courses and possessed traps, because of the time constraints of current-day farming on an owner, he would be forced to get someone else to do the trapping, and the results in numbers caught would not warrant the expenditure: "Then you see that you hang up the traps in the garage and hold your thumbs." He has also noted that the jackal have cycles where they are present or move away, increase or decrease. He suggested therefore that "a person must perhaps farm with this cycle."

The Free State environment and ecosystem

In the Free State province, as indicated in chapters III and IV, rural environmental problems are generally not as acute as those in the Northern Cape because of more stable climatic conditions and a less fragile and more simple vegetation suite. Within the urban context, however, there is an increasing understanding of the intimate connection between the health or otherwise of the immediate environment and robust or ailing social conditions. "We adapted the whole idea of rural or agricultural conservancies in the Free State: we thought we must start getting more socio-economical type of training. The reason for this is to upgrade the people's living standards to actually inform the people about more things than just anti-poaching, so we adapted out whole training session to incorporating this aspect of the environment."

Respondent 2A1

Respondent 2A1 referred to a squatter area in Bloemfontein "which was a complete dirtbag and they came to us with huge huge problems of child abuse and said listen what can we do to? So we went there and said right let's get this environment clean. As soon as you've got a clean decent environment we've got a happier community which will eventually go to a healthier community and a healthy relationship in the community."

He was of the opinion that a major problem for environmental conscientising is the apathy found in poor communities: "You know where my biggest problems are in the townships? From the coloured communities; they are so full of apathy and do not care; so what. Everything that you

want to do to help them they think there are some sort of political motives or anything like that behind it. It's not apathy always it's: don't care, why do I need to do anything, I have nothing so why must I look after the environment. So what's in it for me."

The respondent admitted that he dealt with this attitude by flagrantly using emotional manipulation to motivate people:

> I play on the feelings I play on their loved ones. Maybe it's not good from my side but I tell them if you're not paying for your services and you leave your areas dirty as it is, you're actually committing murder and suicide. Let your children play in the garbage let them dehydrate let them get diarrhoea let them die because you don't care because you say it's the TLC's [Transitional Local Council] problem and they don't care. But in the meantime nobody can work without money and if you don't pay for your services forget about it. And if you don't look at you own environment around you, forget about it again. Because you are committing suicide because you are going to die, not of natural causes. You're actually committing suicide. And who is the most vulnerable? It's the youngsters and the elderly you love most. So carry on. Don't pay just murder them that's all. But I'm telling you if somebody dies of this type of diseases go into your room and close the door and think about what you could've done to prevent that. You could at least get your family aware of it, at least work in your direct surroundings: your neighbours - that is where the conservancy thing comes in.

He has formulated a process involving a slide presentation to initiate the formation of new conservancies, which is adapted for each community (slides are taken of the environmental problems specific to each individual community). The environmental problems revealed are typical of any urban or township region in any province (Fitzgerald, McLennan and Munslow, 1997), although perhaps the extreme degree of some aspects of environmental abuse is unusual (Xaba, pers. comm.).

In the training programme of urban rangers, manuals on all aspects of environmental problems are used, covering a broad range of topics from animal handling to water harvesting. The researcher felt that an extremely balanced approach to the realities of township environmental

problems was maintained (Ngobese and Cock, 1995). For example the reason for the use of alien invasive trees by inhabitants was recognised as being because of their unpalatability to goats, so species appropriate to this situation are planted and allowed to grow before the more aggressively invasive alien species are eradicated (Hugo, 1997).

In training the rangers, both urban and rural, the functioning of the ecosystem as a whole is stressed: the problem of deforestation and annual burning is used extensively as an example to indicate linkages. According to respondent 2A1:

> We say and show them how this creates a sterile environment. The whole cycle is out of balance; there is no shelter so the rodents go into the house, urinate and make faeces on mieliemeal and can cause bubonic plague. But the thing [the people] are seriously afraid of is snakes so [we] say to the people that the cycle, the food chain must be completed so the snakes will go after the rodents because they haven't got anything else to eat. The snakes are afraid of the birds of prey. Same as the rodents they can't go out into the open because there is no shelter so eventually [they] will go into the houses. So [there is] not only a disease problem [rodents] but also a snake problem because of deforestation and burning.

Respondent 2E2

Respondent 2E2 explained how he went about informing individuals and communities about environmental matters as follows: "We give them a lot of information about that animal and why he is there. It is bad [how much they don't know]." He then repeated the identical story cited above. In spite of his acknowledging the fear of snakes felt by most people, he said that in addressing the communities he advocated leaving the snakes alive "... until they have eaten the mice because then they will leave of their own accord because the food source is gone."

In the rural conservancies the respondent indicated that trained rangers use a very similar approach: the interdependence of the ecosystem is demonstrated by giving information about a specific animal or species, and its function: why it is there, and what it does. "Let them see how

beautiful the things are; everything is beautiful. That animal, everything is part of a plan: the porcupine, the hedgehog. Those small birds are beautiful. Then they will not kill them." Information given regarding the comparative situation of poverty in the Northern Cape, where there was a perceived need among some communities to hunt small mammals for food, was dismissed as irrelevant by the respondent. This was possibly due to the generally higher wages in rural conservancies in this province: "They will not go hungry they just say it because they don't understand."

5.3.1.3 Respondents' views on conservancies *per se* and the concept of conservancies

The data obtained again showed little shared perception of key issues pertaining to this concept. Respondents from the Northern Cape revealed a lack of consensus regarding even those key issues specified in the mission statement. The general attitudes of respondents towards the Platberg Karoo Conservancy, and the conservancies in the Free State province, respectively, varied widely. It appeared that the degree of commitment to and support of conservancies was generally in direct proportion to the degree of the individual's understanding of ecological processes and personal commitment to promoting environmental awareness (Hugo, 1997, McDowell, 1989).

Respondent E1

In the first interview the respondent tended to avoided replying directly to questions regarding the conservancy, using the interview to reveal his knowledge, attitudes and goals regarding environmental action. Regarding the conservancy he explained that "they decided to make a specific area safe" (for raptors, specifically Black Eagles), and that their point of departure was "these are the things we would like to have happen." He noted that "One of the major mistakes we made was to assume that everybody would applaud us and say look what a wonderful job; and we were naive enough to think that we were doing all these wonderful good deeds and automatically people would support us. And our strategic study thing actually pointed out that we've actually moved away from our support base. So the bottom line is that you can do good

things and can ask people for money but in return you must keep them informed."

In the second interview conducted he responded more directly, perhaps as the researcher had had considerable contact with him in the intervening period (Chambers, 1983), and he no longer needed to identify his personal position. He spoke expansively about the problems of the conservancy, in particular those associated with its being a voluntary organisation. He saw the primary problem concerning the conservancy as arising from its being especially reliant on (and vulnerable to) the fluctuating and changeable whims and degrees of commitment of its committee members. A second problem which he was very conscious of, was the undesirability of his own high profile role, though he sees no practical alternative, as his absence from the committee would have a severe negative impact on its successful functioning. "It basically means that I've got to see that things happen. What has changed is that the responsibility was accepted in the past by the various portfolio heads. [Now] they have just sat back quietly, where the whole reason for doing it was [that they should run with their portfolios]. And now it's voluntary so the guy who is doing it knows he's not going to be paid so he's got to have it in him. Because people are so difficult if you start managing things from the top down." This last sentence is of considerable interest as it is perceived by several respondents that many of the problems in the running of the Platberg Karoo Conservancy are precisely because of this top-down approach.

"Coming back to my personal involvement I still get the feeling - and it's a gut feeling - that my input is needed. Maybe I've created the situation myself and maybe I should call their bluff and say I'm resigning and see what happens. I get the feeling that they say oh don't worry [individual x] will see that it gets done." He has on a number of occasions offered to resign his portfolio, but this has not been accepted by the committee: "So I said OK, for the very reason I got involved in the first place I'll continue. What worries me is when we started the conservancy a statement was made and echoed by most people there: that what was important was that the conservancy and its concepts should be remembered, not the individual personalities. Because we said it must not become the [individual x] show or the [individual y] show; but [this] is the reality of the situation. It happens in practice because someone's got to do [the job]." Commenting on this aspect, respondent E2 said: "But he is wonderful to have; it is his enthusiasm that drives the conservancy."

Respondent A2

This respondent indicated a degree of animus towards the conservancy in its *modus operandi*, as well as towards some of the personalities involved. He stated that at the inception of the conservancy the initial enthusiasm was high, and a lot of farmers were involved, but felt that the conservancy had stopped being pertinent to the farmers as a whole. He ascribed this to the inner circle getting smaller, to the English orientation of two of the leading figures, and to the mixed messages regarding for example the trapping of jackal. He said that the conservancy's stance of not being against trapping *per se* but advocating the selective trapping of problem individuals was confusing to the farmers. The radical stance of one member against locust spraying, challenging the then law, was another factor which undermined support: "Thereby he angered a lot of people and made them anti the conservancy; and [the conservancy] is actually a good thing."

His suggestions for the future direction of the conservancy were theoretically constructive: for example, that more people should become involved because more knowledge would then become available, that the target population should be the non-converted, and that topics which were not controversial and therefore potentially divisive should be studied. As an example of how the conservancies should continue, he cited the manner in which it had started: by focusing on the Black Eagle, studying them, researching where they bred, and going out to schools and other groups to talk on the subject. He made the point that his neighbour killed any aardvark found on his farm, "And this he must not do and that is where the conservancy should be; not threatening going to court but coming to talk with him."

Respondent A3

The respondent frequently verbalised general criticism of the personalities involved in the conservancy and their personal agendas: "they are a lot of arrogant exclusive people, they want things their way." He felt that "It must be an information provider not a prescriber. If it's informative; if it gives valuable information to people on the ground so that they can practically enrich themselves as well as their farming setup, then they don't need to sell the product; it will sell itself. If they keep on the road they are on [now] they won't even by force be able to sell it."

He suggested that "the conservancy must come down to earth and become practical; farmer-friendly not farmer-hostile." He proposed that informative field days, or visits to farms epitomising matters of interest, as long as they were not prescriptive, should be arranged, and that these would be welcomed.

Respondent E2

This respondent spoke about the value of the conservancy for himself as an individual. He said that initially, as an outsider and a newcomer to the community, the conservancy offered him good friends, a forum for ideas, access to knowledge and help with farming matters. It has now given him a position of influence, and is a forum and occasionally a platform for those conservation ideas he has always supported: "Its most important role is to disseminate information, and it influences others in the way of ongoing teaching, as I see environmental education." He also suggested the holding of more workshops and farmers' days focused on neutral topics; and expressed his willingness to further the environmental education work of the conservancy because of his belief in it. He sees the polarisation caused by the locust spraying issue as a failure by the conservancy, and would like to see the conservancy reach more farmers' actual needs, as they would then be more responsive to suggestions regarding positive environmental practices in their farming.

Respondent A5

Together with four other respondents, respondent A5 echoed this last-mentioned sentiment. He also felt that owing to the combination of geographical isolation, of his extremely heavy workload concomitant on his specific farming operation, and of his financial constraints, he had a particular insight into the ongoing success of the conservancy. He personally felt it was important for the conservancy to go smaller in order to more effectively meet the needs of farmers: "conservancies must be smaller so that specific interests can [be focused] on; or which can flow out of that."

His reasons for joining initially were to obtain information, but also to identify with this group as a conservationist and all that that implies, i.e. "nailing his colours to the mast". He stated that he

now has a better understanding of the problems associated with volunteers because of the time it is taking to establish a smaller conservancy in his region: "no-one is willing to chair such a group; the older people no longer wish to lead and the younger people are so busy with their farming concerns and other matters that they cannot spare the time."

Regarding the environmental education role of the conservancy his suggestion for future farmers' days re-iterates the importance for him of sharing knowledge: "Although we eventually will also come to [the subject of] locusts and jackal. But then we should exchange scientific knowledge [about these contentious subjects], and then say to a farmer this is how we think we can apply this in practice."

Respondent A6

Respondent A6 contended that the conservancy had put people in touch with important information which one could incorporate in a farming operation, and which had previously been passed over. He was enthusiastic about the recreational aspect of the conservancy: "It was a great source of information, and on the other hand it is relaxation, it is nice, it is new interests." He stated that he saw an aspect of environmental education in the way in which his view of farming had been transformed by an understanding of ecological functioning within his daily farming activities: "It is now not only about planting, sheep and farming, a fourth element has now come in, which belongs and has always belonged."

He accepts responsibility as a then committee member for the loss of interest in the conservancy after its proclamation and initial success: he feels the way in which it was managed caused this problem. "Initially everything went well, people got involved, research projects continued with enthusiasm, but there was not really report-back." In addition, the controversial aspects of locust control and selective trapping for jackal became matters where the conservancy began to exercise a little pressure: "And that is what you have to be careful about. For we must say to those people and try to convince someone that way: that we ask together how much damage is [the locust] causing here? Come let us look at it and then you again must arrive at the point of evidence."

He suggested that an appropriate route for the conservancy to follow now was to cultivate separate interest groups with autonomy to run with their specific enthusiasms, not to have to report back to a central structure which would not be able to give sufficient individual attention to each interest group.

Respondent A7

This respondent had joined the conservancy at its foundation meeting, as he felt it was necessary for effective environmental education to take place. "We had to in our area give conservation a bit of direction and co-ordinate it because each person does his own thing and has his own opinion: in the end you don't achieve anything."

He sees his own involvement as a matter of personal enjoyment, but also as in accordance with his belief in promoting the message of conservation. He contends that most farmers in the region are no longer antipathetic, but is concerned that the role of the conservancy in environmental education, particularly that of schoolchildren, is currently deficient. The very dynamic individual who first held this portfolio relocated, and this loss of an effective personality is recognised as a serious problem by the Steering Committee. However the lack of a suitable candidate is seen as the reason why this portfolio is inactive and of necessity remains so. This respondent did accept his own lack of involvement as a contributory factor to the reduction of the environmental education activities of the conservancy. "There is clearly also me that does not do enough but... ."

Respondent 2A1

Respondent 2A1 has worked within the conservancy movement for many years with great success (Xaba, pers. comm.). He said that for him it was a matter of personal commitment to the concept: "I believed in conservancies quite a lot. ..." He indicated that although he came from a strong paternalistic background, he had changed and now believed and continually stressed the overriding importance of the role of the man on the ground, the grass-roots person, and the need for a bottom-up approach: "What we've done is we took the guy from the ground and we gave him the ownership of the environment; what he's got to do is to educate the whole population in

the conservancy, doesn't matter who it is. That's the whole idea."

Regarding rural conservancies, he stresses that all the farmers involved must have a positive attitude to the concept. In commenting on the problems of the Platberg Karoo Conservancy he says: "I think the whole thing why [individual x] is picking up problems is that he really wants this thing to make it a big success and you can't make it a success if you haven't got the support of everybody ... everybody must be enthusiastic."

He sees the lack of any trained rural rangers as another significant problem in the Platberg Karoo Conservancy: "That's one serious negative point because there's nobody that can talk to the people on grassroots level." The third problem he notes is the lack of any support from the provincial conservation authorities: "There is not the capacity, knowledge, funding or staff, nor indeed the interest in this concept in the Northern Cape: and if you haven't got the [provincial] backing for a conservancy then I think there will be problems."

Regarding the success or failure of conservancies in general he sees the role of the committee as crucial:

> If you get the right people in leadership positions in a conservancy which are on the committee; yes it's going to be a big success. But as soon as you get someone [who is elected] because it's got a good name or because he's a politician or he's a rich man or he's playing in the first team; you know this typical thing especially in the rural areas - take Prieska: who's the elder in the church? The same guy that's on the chamber of commerce, chairman of the farmer's association, on the Sunday School. And he's not always a capable guy - in fact he's usually the most incapable guy.

He acknowledges the problem that can arise in the continuation of a conservancy after a successful start under a dynamic chairman who was the driving force behind its establishment.

> And this is the reason why the vision, goals or rationale of the conservancy must be clearly set out in the constitution of each conservancy. Then you get a very very capable man in the chair position: it's working, they've got a fantastic constitution,

> they're carrying on they're doing everything. Then next year comes the elections, then they will say in some of the conservancies he must be chairman again. In others [the new chairman] gets in with fire and after a month it goes down and nothing happens because [the new chairman's] vision is the wrong way. That is where the vision [and] mission of the whole conservancy must be set out very clearly in the constitution.

Respondents 2E2 and 2E3

Both respondents spoke about the conservancies primarily from the perspective of how they perceived their role in protecting nature; and the role of environmental education within that framework. "Before there was a conservancy there were lots of snares and everything - the people didn't know; and now if I've been with them then they know everything and then they look [after] everything. They think that [it's OK for] people who eat rabbits and guinea fowl *Numida meleagris*; then they see at the conservancy there are many of these animals - the most in the area - so they think about what the conservancy results in."

According to respondent 2E3, "Also at the meetings we explain about snares: if you kill the animals and the birds it's not right." Regarding neighbours not belonging to or hostile to a conservancy, respondent 2E2 said: "but [if] it is one we haven't spoken to yet they shoot the Guinea fowls, partridges *Francolinus levaillantoides*, and eagles so [they] run off to our land where they live happily. Then they can see how we treat our animals and perhaps they can learn."

Respondent 2E2 referred specifically to the awareness of and focus on the broader social implications of the work of the conservancies, even in rural areas where emphasis is placed on the natural environment: "That's how they work to protect the animals and protect the nature and that's how it works; when the people attend the course ... then they also teach and help the people to live better. They learn about all things together."

Respondents 2A1 and 2A2

Both respondents are currently employed on a conservation-orientated farm in the Platberg Karoo Conservancy. Respondent 2A1 had been on the farm for a relatively short period of time, and appeared to indicate in his responses a desire to please, or echo the perceived opinions of, the farm owner, in a manner analogous to that referred to by Chambers (1993). He did not appear to wish to express independent opinions, saying, for example, regarding the ban on hunting small mammals with their dogs: "This is the way things are done on this farm; it had been explained and this was what they [the labourers and their families] accepted." After being given several examples of environmentally hostile situations among neighbours in the researcher's own district he was asked how his peers who were not on a farm with such rules saw his own restricted situation where animals were protected by the employer's mandate. "Sometimes they come here and then they ask us why don't we kill hares and those sorts of things. Then we say what the problem is - how the boss has taught us to protect the animals ... I see they laugh but they refuse [to follow this example]: they won't see chance for that story. They give a reason: they won't suffer hunger in that way."

Respondent 2E2 appeared more open to the interview process, expressing his excitement and pleasure about being asked for his opinions. He had been on the farm for a longer period (about 2 years, as well as previously for a similar period), and gave what appeared to be more independent and individually reasoned answers. His responses indicated a lesser degree of automatic agreement with the perceived stance of the researcher and the employer, and this diminished markedly as the interview progressed. The researcher consciously referred to undesirable aspects of conservation behaviour by farmers in her own neighbourhood in a neutral fashion. He then referred to the results of his employer's conservation practices, and described the attitudes of other persons (staff on the farm as well as their extended families) towards them as largely positive: "There are actually many that feel good about it and they feel glad to see pets; look especially in this area of ours here they are very tame they walk round the house. And that is beautiful to me. Many people only see no they only kill them. They see it as nonsense but some see it as: it is beautiful to them; but there are many in this area where I have now returned to again which see it as beautiful."

5.3.1.4 Respondents' views on the broader concept of environmental education itself

The data again indicated few shared perceptions on this concept. Fundamental parameters, such as the appropriate target for environmental education and its scope, were perceived in greatly differing ways by the respondents. Possible reasons for this wide variance are noted in chapters III and IV.

During the initial interviews no respondents considered that the broader aspects of environmental education which the conservancy promoted to landowners and schoolchildren (of all races) were pertinent to their labourers. Reasons for this are noted in chapter IV; as is the contrast with the very different perception of necessarily including all sections of the population in the environmental education paradigm dominant in the Free State conservancies. Respondents from the Platberg Karoo Conservancy volunteered severally that their concern towards their staff was largely limited to matters of social health, population control, moral upliftment and instructions to control littering and prevent poaching. "And these things we have to say again and again. We spend a lot of time talking about it but sometimes it does not seem to matter and they go back to what they were before."

This concern for the upliftment of staff was referred to frequently without prompting in the course of all the interviews but one. However, responses regarding an ongoing programme of active and growing involvement of farm labourers in environmental education indicated that this was not seen as necessary to the success of the conservancy by any respondents. Respondents maintained that the target audience for environmental consciousness-raising was the landowner, sometimes specified as the non-converted landowner. Although the potential impact of the labourer on the ecosystem (in killing small mammals) was recognised by several respondents, this was seen as a matter of informing the individual labourer concerned and imposing restrictions. Four respondents maintained that a change in attitude by staff was considered desirable, not essential, and unlikely to occur.

All farmers with staff stated that they frequently instructed their workers on specific aspects of environmentally sound behaviour pertinent to their specific farming operation and conservation beliefs. For example, labourers involved in spraying locust swarms would be carefully instructed regarding the toxicity of the chemicals used, the correct dosages and methods of application, and the necessity to take care for the safety of animals and humans. Similarly, trapping problem

mammals was also contextualised for staff, with explanations as to why it had to be to avoid impacting on harmless species. In both instances several respondents indicated they felt so strongly about minimising the impact of these practices on the environment that they personally did any spraying or trapping they felt was necessary.

Many respondents declare that they shared information and precepts concerning their own specific areas of conservation-orientated interest: "[He] used to work for me and he still remembered all the raptors, remembered about the Pale Chanting Goshawk *Melierax canorus*, still remembers I said to him anything you can't make you mustn't kill."

Respondent A1

This respondent was described by two other respondents as exemplifying the conservative, older farmer of the region. In the course of the interview he revealed a complex perception of environmental education, partially reflected in what was identified by one respondent as a paternalistic and possibly racialistic attitude toward his staff: "You must convey this information to the people that don't know it and then he will also become conservation conscious. I think I have good people: there was luckily [miscegenation] some generations back and so I think the breeding is not so bad. They are faithful to the farm and they don't move off which is unusual for this area; so I can teach them."

In terms of teaching the landowners he suggested: "So [you] must say to every farmer this thing that you are protecting, this is why you must protect it. This he can convey to his workers." He suggested that in some instances the workers were a more important target for environmental education as they were mainly responsible for killing the small mammals which were his particular interest. "Who is the person who kills these animals? The farm labourer. The farmer must tell him you must not kill a tortoise *Testudo pardalis babcocki*; you must tell him why: because this is why [that animal] is here."

He contends, and this is attested to in some of the literature, that "if you begin to tell the labourers and begin to interest them then they won't just kill for the fun of it. It is important to

reach that person and to reach him you must stimulate his interest" (Hugo, 1997, O'Donoghue, 1996, Ekins, 1992, Opie, 1990).

Respondent A3

This respondent was anomalous in many respects with regard to the other farmers interviewed, displaying an attitude of dismissiveness towards staff: "Don't want, don't need." He manages two farms with a combined area of 13,000 hectare, without staff except for one young assistant. To reach this situation which he asserted was most satisfactory and far more efficient than before, he had mechanised extensively and computerised all his irrigation systems; he also uses an aeroplane in order to facilitate accurate and fast stock counts and grazing surveys. He maintains that environmental education is something which should be done by the conservancy, and that it should consist in the provision of data-based, neutral information which can be of value and financial benefit to the farmer. However, he described how in interactions with various individuals, he liked to convey his understanding and perceptions of natural elements, and consequent conservation actions, in order to convince them of his opinions. In speaking of his son, whom he praised as an exceptional hunter, he repeated thoughts that his son shared with him some years back after a hunting incident regarding the beauty of the animal, and how it would have been better to leave it be. This memory is an example of the encounter: dialogue: reflection cycle necessary for environmental education (O'Donoghue, 1993), and has had a lasting impact on the respondent.

Other respondents spoke about environmental education more in terms of the techniques they used to attempt to awaken interest in environmental matters. One farmer mentioned that he always explained to his staff in detail what the stomach contents of all animals caught were, and from this starting point, interpreted the role of that species in the ecosystem. Another used the importance of children as a point of departure, saying that if the fathers killed all the rabbits then the children would only be able to see rabbits in library books or pictures. This particular respondent is seen by several respondents as the most involved in the upliftment of his staff, and he recognises the need for attitudinal change to occur for sustainable behavioural change to result: "Although the coloured people stand far back in the queue of development, they are people just

like you and me. And if you honestly begin to talk to them in their own idiom, and begin to explain that they understand and grasp it and make it their own, then attitudes can change."

A second respondent expressed the need for attitude change, referring to other farmers in the conservancy: "If [conservation] is just in the heart and the mind then you have already achieved a lot. You just mustn't be a person who is anti or against conservation or shortsighted, because then it is a problem. If it is in your being then nobody needs to teach you or sell it to you, it is part of your life. Then a person has already won a lot." He nevertheless insisted that, for a positive change in environmental behaviour to be sustained, it was necessary to continually stimulate individuals' interest: "If there is no continuity [of input] then you will lapse." This was where he maintained the role of the conservancy in environmental education should be situated.

Finally, he suggested a confrontational but information-based way to approach farmers with wrong attitudes: "Say: look here, you are understanding the thing incorrectly, it actually works like this and this." As he is widely respected for his wisdom and non-confrontational personality (and the researcher concurred with several suggestions he made) it seemed likely that even in the emotive areas of controversial conservation measures, he would be successful in promoting positive conservation behaviour among the farmers in the region.

Respondent A7

This respondent referred several times to the fact that he consciously balanced his actions between his commitments to conservation and to successful farming practices, and interpreted negative conservation attitudes generally as the result of financial pressures. Short-term solutions to environmentally-based problems (trapping, poisoning) were easier to apply: "It's a lot more trouble to apply the alternative strategies, and takes longer. They will have to be taught and understood." He also feels that the negative ideas of some individuals will only be removed from the community when they die: "That person's mind you won't be able to change by teaching. He will have to die first to get those negative ideas out of the community."

He referred to a remarkable instance of facilitating successful attitude change in a neighbour, who

had in the past indiscriminately destroyed any perceived problem species, even harmless species. He ascribes this to his intervention and talking about the rarity and value of raptors, shortly followed by the visit of a family member to the neighbour at a time when a Martial eagle started breeding there. The farmer's pride of perceived ownership developed as a result of displaying the nest to a peer, having recently been informed of its rarity and value in the eyes of many people. "Then I said to him look please just leave the eagle alone. He said yes but it's catching my lambs. I said just leave him. Then [relative x] came to visit the farm, and he showed him the Martial eagle with great pride. Now every so often when he sees me he tells me it looks as if the eagle is going to breed. So he has turned around a little, because he has seen the eagle is not really so much of a threat. I told him I had walked underneath the nest and then I picked up bones of Dorper lambs. Then he probably felt better that the eagle was rather catching my Dorper lambs than his [Merinos]."

Respondent A7 also believes that negative environmental behaviour, e.g. spraying indiscriminately for locust swarms, is largely due to a lack of complete information, and sees this as an important role for the conservancy to fulfil. He personally questions the validity of the scientific research done by government departments on locust spraying, seeing it as incomplete, incorrect, and inaccurate, and is completing a dissertation on this topic.

Respondent 2A1

The views of this respondent, who is a professional conservator, provided an informative contrast. He repeatedly indicated his awareness of and increasing involvement in the broader interpretation of environmental education, including the socio-political aspect as well as a more long-term and realistic appraisal of where environmental education is most needed. "We must start getting more socio-economical type of training: the reason is to upgrade the people's living standards; to actually inform the people about more than just anti-poaching."

He continually stressed the importance of the grassroots, bottom-up approach, and what he believes is the vital role of the little people in environmental transformation: "The biggest need for transforming the way of thinking is in the disadvantaged communities: we can't argue that

away."

This is in complete contrast to the individual landowner's attitudes, as well as the stated policy of the Platberg Karoo Conservancy. An illuminating statement made by respondent 2E2 in this regard is: "So we took the guy from the ground and gave him ownership of the environment." He acknowledged that in a literal sense, this formulation could be undesirable to a somewhat threatened (in the current political climate) landowner. On the other hand it was extremely positive and motivating for individuals or communities who have always seen themselves as dispossessed or powerless. Interpreted metaphorically it sums up a constructive and successful approach to motivating the modification of environmental behaviour (Chambers, 1983).

This respondent also explained what he saw as an important difference between the two approaches (bottom-up and top-down): "I mean if I'm a farmer I go to a labourer and tell him listen you're not allowed to hunt with dogs and that's what you tell him and you don't tell him why. But when you get your rangers and [they] go out and say listen don't hunt with dogs, don't use poison, don't put up snares, because this is actually what will happen they will disappear and you've got children who then won't ever see them."

Success in promoting environmental awareness among farm labourers he sees occurring principally "When (the ranger) speaks their language, then environmental ideas are promoted out of their own mouths; being brought over to them by a leading figure within their farm, then yes it will work."

On this aspect, the rural ranger and departmental trainer interviewed, 2E1 and 2E2, described their logistical strategy as being: "We talk to the children so that they can go and talk to the parents. We talk to the women so that in the evening ... if they don't understand they can talk to the men." They characterised the dissemination of environmental knowledge in a similar way: "But they come back from the school with knowledge which they tell their mothers, which they then tell the fathers. At meetings they ask many questions because they don't understand well. But after questions, they understand and then [there are] no more problems about poison, snares etc."

An appraisal was made of a situation, the area where the researcher herself lived, where no

conservancy existed. The respondent suggested having meetings to enlighten both farmers and labourers; the latter group he repeatedly emphasised as the more important factor in successful conservancies. In the absence of an established conservancy as a forum, he suggested: "Bring the black people together and talk about these things. Let them understand the animals, their role, their value. Then it will be successful; all the problems will go."

Respondent 2A2

The responses from this respondent were unusual and thought-provoking. He appeared to develop a good personal rapport with the researcher very quickly, possibly responding to being shown photographs of a pet suricate. This was done in response to his saying how much he enjoyed seeing the tamer wild animals around him when he worked near the farmhouse. He explained his method and motivation for propagating an environmental message, specifically to stop the setting of snares, in this way: "My reason will be to explain to them and very approximately (little by little) to bring them to change their attitudes. I explain to them how Noah behaved himself with the animals [i.e. saved them from destruction]."

Somewhat unusually for a member of an agricultural labour force (Chambers' rural poor), he speculated on whether the neighbouring environmentally hostile farmers would ever change their attitude: "It takes an [E1] to tell them do that and why; they will be a little angry but then over time [the farmer] begins to understand and then he opens his heart a little. It is difficult to open the heart unless there is someone to say you must listen."

5.4 INTERPRETATION OF ANALYSIS

Every effort was made to observe the seminal principle of the methodology of qualitative analysis, namely that any theoretical and causal statements be clearly grounded in and emergent from data collected, not imposed on the data (Patton, 1986). The research project was seen throughout as not simply an attempt to learn about people, but to come to know with them the reality which challenged them (Wals, in Mrazek, 1993). The given historical, socio-cultural, economic and

biophysical parameters attendant on individual respondents or communities were seen as fundamental to establishing how individuals could respond positively or negatively to the challenges of increased environmental consciousness (Ekins, 1992, Vayda, 1989, Marshall and Ritchie, 1984).

The imposition of a theoretical paradigm onto a perceived, rather than an empirical reality has occurred frequently in the area of rural development research (Chambers, 1983), and the researcher became increasingly conscious of the need to avoid this error. Issues of bias were also noted, and every effort was made to redress those aspects which were plastic (*ibid*, 1983).

5.4.1 Historical context: dimension of self-perception by respondents

An examination and comparison of the personal biographical backgrounds of individual respondents revealed certain issues which assisted the researcher in understanding the individual stances assumed. The role and impact of parents and their attitudes towards farming and conservation-orientated action was noted by all respondents (McDowell, 1989). This was in some instances perceived as a hindrance to attitude change, particularly by those respondents who had grown up and continued to live on their farms and tended to farm "as their fathers before them" (Janse van Rensberg, 1991). Other respondents, particularly those who had moved away for their tertiary education, returned with new insights to which their parents were either receptive or hostile. In the latter instance this opposition served to strengthen the conservation beliefs of the respondents (*ibid*, 1989).

In the extreme social isolation found in this region, the role of a strong individual personality was seen by all respondents as crucial to the alteration of communal or individual consciousness (Chambers, 1983, Fishbein and Ajzen, 1975). Two respondents related this to their understanding of the passive acceptance of strictures or attitudes emanating from an authority figure which is common in the Afrikaner community. The introduction of new ideas or attitudes in a quasi-evangelical manner has had a direct impact on the attitudes of respondents towards their farms and farming methods (Auerbach, 1999). Several respondents indicated that, faced with new and/or alternative strategies for their farming practices, as well as the broader ramifications of

ecosystem functioning, farmers could either accept them or reject them fully or in part. This applies equally to the communities approached for forming conservancies in the Free State townships (Hugo, 1997).

5.4.2 Socio-economic, political and cultural context: dimension of perceived standing and attendant restrictions

The perceived social standing of individuals within the community of respondents varied widely, as did its impact on their several behaviours. Individuals who were recognised as leading figures saw themselves as having a significant role to play in formulating public opinion and attitudes towards a positive conservationist stance. Alternatively, they felt they had an important role to play in safeguarding some anti-conservation behaviour patterns justified by the belief that "Boer is Baas op sy Plaas" (The farmer is the master on his own land). Several respondents indicated that such acknowledged leaders within the community tended to have clear attitudes to and express them in public without reserve or caution, other than that allied to their specific personalities (Breckler, 1984). Other respondents claimed that such vigorous leadership has been responsible for a growing degree of antipathy in the region towards the conservancy over the last few years. However they also expressed the view that this conflict is currently moderating, as a more long-term view of the mechanics of attitudinal change is being taken by the leading figures in the conservancy. Increasingly pro-conservation interaction is taking place on a more neutral basis, with objective information being presented largely in the form of empirical examples of farming practices with unarguably successful results (Steering Committee meeting, 1999, 1997).

The social standing of individual respondents was referred to by the majority of respondents in conjunction with their perception of financial standing: the data is very much in the public domain. With one exception, those respondents practising conservation-conscious farming methods enjoyed more favourable economic circumstances than the average for the community (McDowell, 1989). Where they were positioned on the continuum of absolute or relative conservation practises was primarily dictated by the relative affluence of the respondents, only thereafter by the strength of the individual belief or value systems (Janse van Rensberg, 1991). This was also directly applicable to the behaviour of members of township or squatter

conservancies (Hugo, 1997, Chambers, 1983).

The sustained acceptance of conservation practices or restrictions within a rural conservancy is almost entirely contingent on the perceived financial viability of such actions for the individual farmer (Auerbach, 1999). Five respondents speculated that the notion of what qualifies as acceptable losses is determined in the first instance by the economic leeway available to individual farmers, and thereafter by their individual response to longer-term conceptualisation relating to an understanding of ecosystem functioning.

Three respondents maintained that the level of perceived economic leeway is largely determined by the individual biography of a respondent. An example was given of a respondent who has moved from straitened circumstances to affluence by means of unremitting hard work: it was felt that he would not easily overlook a single stock loss caused by a problem species. Respondents also averred that economic leeway is empirically determined by the nature and extent of individual farming units: the smaller the economic unit of the farm, and the poorer the quality of the farm, the less likely a farmer is to adopt conservation-orientated farming practices with a perceived detrimental economic impact (Ekins, 1992, Chambers, 1983).

These are regarded by all respondents as extremely emotive and problematic areas, and there is a great need for viable and affordable alternatives to, for example, the highly toxic chemicals used to destroy locust swarms. It needs to be accepted that some farmers, irrespective of their value systems, simply cannot tolerate the presence of swarms on their farms when their livelihood and financial survival is under threat (Auerbach, 1999). A more sympathetic understanding of the existence and rationale of such a dilemma on the part of those promoting conservation-orientated behaviour is also required (*ibid*, 1983).

5.4.3 Bio-physical perspective: continuum of levels of understanding of ecosystem functioning

A fundamental issue for the conservancy movement, and one which is frequently not openly acknowledged, is the recognition that participants often hold very different views of what

conservation is (Hugo, 1997, O'Donoghue, 1996). Levels of understanding are largely determined by, among other factors, parental influence, education levels attained, the influence of friends and family, the receptiveness of individual personalities, the isolation from or contact with current thinking about this subject, and individual enthusiasms or discrete empirical events: such as one respondent setting traps and accidentally catching the harmless species he was seeking to protect (Janse van Rensberg, 1991).

The differing individual perspectives on conservation and what it encompasses and entails, underline the need for an understanding of what has caused the formulation of such ideas (recognition of the individual's or community's biographical influences) and of ways in which they can feed into or be reconciled with the notion of broadly based environmental education. The issue of the relative priority of education for and from the grassroots level upwards is also raised (Auerbach, 1999, Robson, 1993, Eckersley, 1992, Burgess, 1989).

The researcher contends that this question of prioritisation needs to be examined within existing contexts: she notes an unfortunate tendency in the literature whereby a politically correct stance leads to expectations of understanding which are unrealistic within specific and individual empirical circumstances (Chambers, 1983).

There appears to be a lack of recognition of the existence and extent of a stance of dismissiveness within isolated and thinly populated rural communities, deriving at least in part based from a patriarchal and power-driven dichotomy between land-owner and worker (*ibid*, 1983). Two respondents noted that intellectual isolation resulted in a lack of input regarding the need to alter such perspectives, and they felt there was no option but to work within the existing system in order to change it. In the Platberg Karoo Conservancy, as well as some of the rural Free State conservancies, the notion of bottom-up could be seen to be no more important than the notion of top-down at this stage of environmental sensitising (Hugo, 1997). A perhaps ephemerally fashionable approach excluding the latter perspective would currently be inappropriate (Auerbach, 1999).

The comprehension of environmental education in the broadest sense is markedly different in the urban Free State conservancies. All respondents saw the long-term goals of sustainability and

viability as necessarily allied to the priority of reaching towards grassroots levels first. The extreme environmental degradation and associated health and societal ills found in some of the township and squatter conservancies has resulted in an imaginative and creative approach towards environmental education for the totality of the environment, which includes the human ecosystem as a fully-fledged part (Xaba, pers. comm.). Respondent 2A1 maintained: "My whole outlook is we can't do anything lasting in environmental education without the participation of communities; that's why conservancies must be got to expand, and people must understand this part of conservancies [extending] to the whole community."

It is suggested that strategies which have proved successful in the motivation of these communities to behave in environmentally responsible ways could equally be applied to labourers' communities on farms in the Platberg Karoo Conservancy. A prerequisite for such an initiative would be a sensitive, responsive and responsible approach to the individual farmers within their personal and environmental context in order to gain trust, comprehension and support (Hugo, 1997).

The role of totem species such as the raptors or Blue Cranes *Anthropoides paradisea* in forming a focus for developing a more holistic understanding of ecosystem functioning and its parameters is acknowledged by most respondents as being of prodigious consequence. Within the Northern Cape, focusing on the protection of the Black Eagle and the Blue Crane has resulted in cascades of practical implications for the farming environment, such as protecting the species environment, habitat, and natural prey (*Griqua Gnus,* 1999, *De Aar Echo,* 1999).

The perception is also growing that it is necessary for the community as well as individuals to develop an understanding of the population dynamics of the species being studied: breeding cycles, mating patterns and seasonal fluctuations, leading to research into mortalities and recruitment patterns (Anderson, pers. comm.). Several respondents believed that a focus on such relatively neutral topics, emotionally speaking, has resulted in a significant increase in environmental awareness among all sectors of the community: nonpartisan knowledge of this kind continues to be not only disseminated but also acted upon under the non-threatening rubric of gaining knowledge.

Within some of the Free State conservancies which have been registered with the primary goal of protecting particularly sensitive vegetation suites, an analogous incremental increase of holistic ecosystem functioning has been encountered (Hugo, Jessnitz, pers. comm.). The importance of feedback and personal acknowledgement within such projects is recognised by all respondents as vital for ongoing motivation, viability, and expansion (McDowell, 1989). The awarding of certificates in a small ceremony to those farmers who had noted breeding pairs of raptors on their farms over a twelve-month period had a significant impact in the reduction of human-induced mortalities within one region in the Northern Cape (Anderson, pers. comm.).

5.5 SUMMARY

The concept of a necessary circularity involving the presence of all the factors of Dialogue (talking), Reflection (thinking) and Encounter (touching) for environmental consciousness to alter or environmental behaviour to change, was consistently underlined in all interviews with respondents (O'Donoghue, 1993). Three respondents also insisted on the necessity for this process to be germane to their own experiences or those of others they referred to. It appears axiomatic that something must happen internally for any change of attitude and accompanying external manifestations to occur (Breckler, 1984, Fishbein and Ajzen, 1975).

Several problematic issues require highlighting regarding the viability of conservancies and their possible facilitatory role in promoting environmental education. The existing constitutions of conservancies in the Free State and Northern Cape, both draft and actual, do not contain any reference to the goal of increased environmental awareness within the broader community, or to the concept of the totality of the environment. This researcher believes these should be the underlying bases of the conservancy movement, a view supported by Western (1994), Nelson-Jones (1993), and Hope and Timmel (1984), amongst others.

What also appears to be an inescapable reality that has potentially immense negative implications is the importance of individual personalities within the promotion of holistic environmental education. Among many similar statements, respondent E1 referred to the burgeoning

conservancy movement in the Free State thus "If I think what's happening in the Free State; if we could just get that here and I promise you [their success is] for no other reason than the fact that [individual x] is involved." However, this comment does not take cognisance of the very different structures and emphases in the Free State conservancies as contributing to their success. As such his view can be contextualised as unavoidably parochial, limited by his lack of exposure to the development of the conservancy concept. This is a consequence of the isolation attending the development of a conservancy without ongoing input from a provincial department (Hugo, 1997).

A third factor that has already revealed its negative consequences is mentioned by five respondents: the fact that voluntary work cannot be expected or demanded within a specific time frame. This is currently recognised as a problem by the Platberg Karoo Conservancy. For example, the strategic planning study commissioned by the committee as an urgent matter, was done without charge, but took 3 years to complete "because he was doing it as a favour and you couldn't say get this done by Wednesday or else. So we eventually got the document but by that time a lot of the impetus had been lost and that was unfortunate."

The relation of these problems arising from the data obtained in comparing the two case studies to the goals of the research project will be further pursued in chapter VI.

CHAPTER VI: EVALUATION AND CONCLUSIONS

The stated objective of this research project has been to evaluate the facilitatory role of conservancies in the environmental consciousness-raising of groups and individuals who are part of such a organisation, so as to identify those aspects that will optimise (or militate against) the functioning of environmental education programmes and projects within conservancies. In the process of data collection and analysis, certain perspectives have been highlighted, further areas for research have been identified, and a critical evaluation of the research process has been made.

The project has been seen throughout as not just an attempt to learn about people, but to come to know with them the reality which challenges them (Wals, in Mrazek, 1993). A secondary moral justification for the academic intrusion of the research process (Chambers, 1983) has been the belief that the project could help in producing knowledge with emancipatory relevance: knowledge that could promote the autonomy of the individual and the solidarity of the entire community, as opposed to mere technically exploitable information (*ibid*, 1993, Burgess, 1989).

As indicated the chapters concerned, Kemmis' (1988) three-tiered system for evaluating educational research has been used as a basis for establishing structure in the data collection as well as a guide in the evaluation of the data obtained. In chapters II and III (theoretical perspectives and methodology) the researcher sought to apply the first dimension, in chapters IV and (particularly) chapter V (data collection and analysis), the second dimension. This final chapter will move into the third dimension, of considered reflection on issues that have been highlighted by the research.

Useful perspectives on issues of bias and subjectivity (Chambers, 1983), and the degree of primacy given to the feelings, narratives and values of subjects in their settings, were provided by Western (1994), Cohen and Manion (1993), Goodman (1992), and Odman (in Keeves, 1988). Blumer (in Goodman, 1992) claims that social science enquiry fulfils the basic requirements of science in directly confronting the social world and raising questions regarding this world. This is done to establish relations between categories of data; propositions are then formulated regarding these relations, and propositions are in turn organised into analytical schemes. The testing of questions, data, relations, propositions and analysis occurs through the examination of the social world (Robson, 1993, Burgess, 1989). This model for interpretation has been

particularly significant in the design of this project and its data collection methods.

6.1 ISSUES RAISED BY THE RESEARCH

Examination of the data accentuated specific questions raised during the research procedure. The fundamental research question relating to the facilitation of environmental education is elucidated by the thesis as a whole. Most salient is the overwhelming complexity of interactions within a heterogenous society, even within the narrow limits canvassed by this study. This alone would seem to spell the doom of imposing any homogenised notion of environmental education. Data in chapters IV and V clearly support this contention. Concerns within the research that are highlighted (Section 5.4) relate in the main to the role of differentiation in specific spheres pertinent to the formation of attitudes and behaviour of respondents, and how all the dimensions established impact on and weave into each other (Descola and Palsson, 1996, Martell, 1994).

Newspapers and the other media are given to making generalisations about the relationship between landowners in isolated regions of South Africa and their staff, and the relationship of both to their immediate environment (e.g. *Mail and Guardian*, 13 May 1999, *PE Herald*, 8 June, 1999, *Grocott's Mail*, 28 May 1999). Such generalisations are often ignorant or dismissive of the local ethos of place. Implicit support is thereby given to the imposition of an ideologically fashionable or convenient paradigm which may well be at odds with the empirical circumstances which obtain (Auerbach, 1999, Ritchken, 1997). Through its close focus on a specific geographical area and by an open sensitivity to that area's social and cultural idiosyncrasies, this study hopes to have avoided this error.

6.1.1 Socio-economic levels

Data obtained indicates that socio-economic standing (perceived and actual) impacted directly on people's notion of themselves as custodian, conservationist and educator. The degree to which such roles could be assumed was determined directly by the interplay between an historical biography and financial constraints. The role of family and education in determining levels of

conservation-orientated behaviour is also seen as a primary determinant (Janse van Rensberg, 1991, McDowell, 1989).

6.1.2 Geographic isolation

A factor which is perhaps most frequently underestimated is the extreme isolation experienced in areas such as the region studied, and the many consequences attendant on minimal population density (McDowell, 1989, Chambers, 1983). One example resulting from this perspective is the notion of empowerment, often seen as a *sine qua non* for individual and community development (Martell, 1994, Yearley, 1994, O'Donoghue, 1993, Eckersley, 1992), which appears to contradict the site-specific situation revealed in the data.

Given this degree of isolation, the role of a dominant and charismatic individual in promoting a change of consciousness and attendant action has been crucial. The predominant and apparently indispensable role of individual personalities in the motivation of changes in attitudes, beliefs, values and behaviour was noted with concern by all respondents, particularly as pertaining to a voluntary organisation (O'Donoghue, 1993, Opie, 1990, Fishbein and Ajzen, 1975). Within this perspective, the potential role of an outside organisation becomes of paramount importance.

Respondents who had a labour force reported that programmes for empowerment had been attempted, most often more than once over a period of some years. They claimed such strategies were unsuccessful in the long term, in spite of projects for such empowerment being well researched by other organisations (Rural Development, Agricultural Union, Woman's Federation) and in some instances perceptively and conscientiously put into practice (Robson, 1993, Chambers 1983). A common factor seemed to emerge: that the projects had been implemented sporadically, by a succession of individuals with differing degrees of commitment.

6.1.3 Economic standing

In all cases financial leeway was directly linked to the ability to practice positive conservation.

Perceived economic leeway, reflected in the notion of "acceptable losses", was influenced by personal biography and economic status. Environmental educationalists need to accept and understand this dilemma.

6.1.4 Power and voicelessness

Data indicated a dichotomy between approaches emphasising bottom-up and top-down prioritisation. Holistic environmental understanding assumes the former, but the latter seemed more apposite in some of the empirical situations examined. This was partly due to the area's intellectual isolation from current developments, consequent on the lack of formalised support from an outside conservation organisation.

Voicelessness paralleled to marginalisation was indicated within both landowner and labourer groupings. The lack of a neutral platform for expression within such parameters was seen as an empirical reality rooted in the political and cultural expectations of both individuals and communities concerned. This in turn is in part a product of intellectual and social isolation.

6.1.5 Perceptions of the environment

It was continually emphasised in the data that the view of conservation is of not a shared view. Individual perspectives were assessed in terms of their degree of holistic understanding of the environment, which is the product of personal biographies, circumstances, individual personalities, intellectual contact or isolation from current thinking, and personal experiences, among other factors. The challenges of the site-specific biophysical environment are also extremely influential.

6.1.6 Conceptualisation and functioning of conservancies; and perceptions of environmental education

These perceptions were also found to be linked to site-specific and individual environmental

consciousness levels, and significantly determined by individual and community levels of environmental understanding. They were related to intellectual isolation from current developments (or the opposite), involvement within such programmes or organisations, political, social and financial standing, levels of power and influence or voicelessness and marginalisation.

6.2 ATTENDANT OPTIONS CONSEQUENT TO THE RESEARCH FINDINGS

Pertinent factors emerging from the research process have been enumerated. Of necessity they will impinge on any action taken as a consequence. Appropriate action would include research into suitable environmental education programmes, their development and implementation. The complexity of the issues that have been identified throughout the research allows at this stage for a very tentative set of suggestions to be made. In looking at action the researcher has been guided and directed by the data obtained in the research project. In the long term, an ideal situation within conservancies regarding holistic environmental education, would include concepts such as the following:

- internalisation rather than awareness of environmental understanding
- conscientising of holistic environmental awareness
- recognition of the need for empowerment
- acknowledgement of the extent of the problem of voicelessness, and its necessary resolution, and
- and the need, and readiness, to change attitudes, beliefs, intention and behaviour towards the environment.

6.2.1 Short-term recommendations

These have been indicated by measures and trends which were shown to be successful in the case study comparison made. It would appear from the research results that those aspects which have been successful and are working, whatever their nature, should be continued with and built on. Thus setting up a framework facilitating environmental education within conservancies should

therefore include consideration of the following:

- an understanding of the existing empirical situation: accepting the realities and working within the parameters facing individuals in their specific contexts;
- the clear formulation of several discrete, neutral, goals, with (initially at the least) clearly perceived benefits (financial, social or aesthetic) for individuals or communities;
- recognising the need for outside involvement by a provincial department or NGO for ongoing support and guidance. This is particularly necessary because of extreme geographical, intellectual and social isolation;
- acknowledging the inescapable need for, and attendant problems of, a charismatic influential individual as leader;
- promoting the significant role of rural rangers, i.e. trained individuals from the traditionally voiceless and powerless community.

6.2.2 Medium- and long-term goals

The desiderata of long term goals have been indicated above. The achievement of such goals, however, is going to be a long and complex process, and difficult to imagine from the current situation without further research and analysis. Clearer indications have not emerged from within, nor been possible within the limited scope of a small scale half-thesis, which has been in reality a pilot study.

6.3 LIMITATIONS OF THE RESEARCH

In looking for possible shortcoming and lacunae in the research, one contemplates whether one has made intelligent methodological decisions given the purpose of the enquiry, the questions being investigated, and the given resources available to the researcher (Patton, 1990).

As noted in chapter I, few appropriate references in the published literature were available. The

researcher was limited to two seminal references, namely McDowell and Janse van Rensberg, for guidance concerning some of the pivotal issues in the project.

6.3.1 Access to and selection of respondents

The problematic access to the farm labourers was applicable to all respondents in varying degrees. With few exceptions employers are reluctant to withdraw labourers from a work schedule which would almost invariably have extensive hidden costs of transport, delaying other workers while they wait for interviews to be concluded, and a probable decrease in productivity for some while. With some respondents an initial fear of disruption consequent on radical liberal attitudes entering their closed system appeared to be indicated in their reluctance to provide access. This is in part due to either perceived or actual prior negative experiences of "Rural Development Tourism" and insensitivity by academics or researchers. As a hidden agenda this attitude was invariably mitigated during the course of interviews as personal credibility (largely owing to the researcher's domestic situation and geographical location) was progressively established. At that stage logistical and time constraints did not permit interviews with staff.

On an individual level, the problem of conscious concurrence is ostensibly unavoidable: "Rural people ... nervously respond in ways which they hope will bring benefits and avoid penalties" (Chambers, 1983). Although Chambers is talking about the powerless rural poor *en mass*, this tendency was noticeable even in the interviews with some of the landowner respondents, where the "perceived benefits" took the form of a tenuous sense of approval sought from the researcher. The agricultural workers interviewed were both from one farm, and selected for their ability to communicate and a positive conservation attitude on the part of the farmer concerned. This was similar to the selection bias of indigenous individuals in the Free State, where an additional factor of facility in English or Afrikaans was seen as a prerequisite by their employers (Chambers, 1983).

In selecting landowners for the initial interviews, the male-dominated farming community led to an unavoidable male bias: there are no female farmers within the Platberg Karoo Conservancy. The researcher consciously attempted to seek a range of opinions, economic status and geographical locations.

6.4 IDENTIFICATION OF FURTHER AREAS FOR RESEARCH

Several areas have been indicated as requiring research because of reflection on both the considered achievements and limitations of the research.

The facilitation of a change in values, beliefs, attitudes and behaviour is immensely complex and frequently unpredictable (Reddy, 1994, Strumm, 1994, Opie, 1990, Fishbein and Ajzen, 1975). Indications are that it can be an extended process: "It takes two generations to change values" (Murray, 1999), or occasionally immediate: "It suddenly all made sense". There is little consensus in the literature concerning primary motivation for such change or facilitatory mechanisms.

The literature indicates that accessing the knowledge and in particular, the original opinions of the voiceless is extensively time-consuming. The attendant logistical and financial implications can be predominant. Facilitatory mechanisms, in particular simulation games (Chambers, 1993) are recommended. The development of site- and role- or community-specific adaptations would appear to be of value in this regard.

Enhancing the viability of voluntary organisations appears to require the formation of successful structures. A primary concern is the minimising of the role of individual personalities or leaders. Reducing the dominance of the "Singer not the song" paradox is seen as a key factor in successful environmental education programmes.

6.5 ACHIEVEMENTS OF THE RESEARCH

The particular biography of the researcher was of significant benefit in the data collection process; both logistically and on a personal basis. Through her external circumstances and perceived participation in the reality (and thus the assumption of understanding and shared experiences of such a reality) of the respondents, data not commonly attainable was accessed. The choice of the semi-structured interview was also pivotal in facilitating access to data.

A key finding from the data was the differentiation of views regarding the environment. Little shared holistic perception emerged, the data indicating that convictions and opinions are principally determined by individual biographies and endemic current circumstances.

A further critical finding was the extreme complexity of individual biographical and empirical situations. This emphasised the consequent intricate interrelationship of all parameters pertaining to individual respondents' comprehension of the issues investigated. Significant aspects included respondents' perceptions of themselves, the environment (both general and specific), environmental education and conservancies. A singular factor was the differential apprehension of perceived and actual problem animals, and the direct linkage with socio-cultural, biographical and economic circumstances.

A further central achievement is the perception that significant personal growth in the researcher's understanding of this research field has occurred. This has been largely due to the nature of the interview process and the response to the interviews held. As a result a growth in sensitivity and understanding of existing individual situations has occurred, and there has been a reduction in the tendency to take matters as givens or at face value. A realisation of the complexity of given situations has developed as a result.

A further dimension that has been particularly pertinent to the researcher is the recognition of the voiceless and their powerlessness, which occurs not only at the grassroots level, but also from all who perceive themselves as marginalised.

The principal consequence of the research has been for the researcher to be sensitised to the complexity of individual lives and situations, and their sensibilities. As a result there has been a renewed realisation that academics or environmental education practitioners do not have the moral right to come from the outside and impose ideas or concepts in a top-down fashion, without attempting to understand the lives of those who are to be impacted upon. In particular, in a time of transition, such as the present, individuals are generally vulnerable, and as a consequence defensive. Environmental educators therefore have an even greater responsibility to establish and take into consideration the factors predominant in individual lives and circumstances, for the facilitation of positive environmental sensitising to be achieved.

A significant dimension of the research was the attitudinal perspective change which occurred subsequent to initial interviews. The possible positive or negative influence of the researcher on research subjects within the research process itself was acknowledged (McDowell, 1989, Chambers, 1983). It is suggested that this aspect merits fastidious consideration and analysis within the analysis and interpretation of research results. A scrupulous objectivity should be sought. Happily, however, the 'intervention' of the researcher appears to have had a positive educative result.

The researcher would suggest that further medium- and long-term research in this field should be attempted. It would appear to be of considerable value to marginalised individuals and communities who are both voiceless and often powerless, as well as to the individual researcher in an under-researched field.

6.6 CONCLUSION

The research has focused on the unique situation of conservancies within a South African situation. It has explored the possibilities afforded by those conservancies for the development of environmental education programmes that will be of benefit to agriculture and agriculturalists as the key modifiers of the land. What this research has shown in particular are the extraordinary complexities of the individual situations examined, and it has raised awareness of the issues and problems that are going to be faced in developing appropriate environmental education programmes, as well as the great sensitivity with which this will need to be approached.

REFERENCE LIST

Acocks, J.P.H. (1975). *Veld types of southern Africa*. In I.A.W. MacDonald, and R.J.M. Crawford (Eds.), *Long-term data series relating to southern Africa's renewable natural resources*. SANSP Report No. 1575. Pretoria: CSIR.

Altman, I., and Chemers, M.M. (1980). Cultural aspects of environment-behaviour relationships. In H.C. Triandis, and W.W. Lambert, (Eds.), *Handbook of cross-cultural psychology*, Vol. 5: Social Psychology (pp. 19-27). New York: Wiley and Sons.

Anderson, L.W. (1988). Attitude measurement. In J.P. Keeves (Ed.), *Educational research, methodology and measurement: An international handbook* (pp. 421-428). Oxford: Pergamon Press.

Ashwell, A. (1992). *Project water: A case study of the development of an environmental education project*. Unpublished M.Ed. Thesis, Rhodes University, Grahamstown.

Auerbach, R. (1999). *Design for participation in ecologically sound management of South Africa's Mlazi River catchment*. Published PhD thesis. Wageningen: Landbouw Universiteit.

Bartelmus, P. (1994). *Environment, growth and development: The concepts and strategies of sustainability*. London: Routledge.

Boden, D., and Zimmerman D.H. (Eds.). (1991). *Talk and social structure: Studies in ethnomethodology and conversation analysis.* Cambridge: Polity Press.

Boeren, A. (1992). Getting involved: Communication for participatory development. *Community Development Journal*, 27(3), 259-271.

Bowers, C.A., and Flinders, D.J. (1990). *Responsive teaching: An ecological approach to classroom patterns of language, culture and thought*. New York: Teachers College Press.

Brinn, D. (1999). *Environmental education in a National Park: Experience at the Brecon Beacons National Park, Wales*. Powys: Brecon Beacons National Park Authority.

Brown, D.L. (1985). People-centred development and participatory research. *Harvard Educational Review, 55*(1), 69-75.

Buchinger, M. (1969). *Saving natural areas*. Washington: FORESTA Institute for Ocean and Mountain Studies.

Budlender, G., and Latsky, J. (1991). Unravelling rights to land in rural race zones. In M. De Klerk (Ed.), *A harvest of discontent: The land question in South Africa* (pp. 115-139). Cape Town: Institute for a Democratic Alternative for South Africa.

Bullock, A., Stallybrass, O., and Trombley, S. (1988). *Dictionary of modern thought* (2nd ed.). London: Fontana.

Bundy, C. (1997). Comparatively speaking: Kas Maine and South African agrarian history. In *Beyond White supremacy: Towards a new agenda for the comparative histories of South Africa and the United States*. Collected Seminar Papers no 47. London: Institute of Commonwealth Studies, University of London, School of Advanced Study.

Burgess, R.G. (Ed.). (1989). *The ethics of educational research*. New York: Falmer Press.

Burroughs, G.E.R. (1975). *Design and analysis in educational research*. Birmingham: Birmingham School of Education.

Capra, F. (1983). *The turning point: Science, society and the rising culture*. London: Flamingo.

Carr, W., and Kemmis, S. (1986) *Becoming critical*. London: Falmer Press.

Chambers, R. (1983). *Rural development: Putting the last first*. Harlow: Longman.

Claassens, A. (1991). For Whites only: Land ownership in South Africa. In M. de Klerk (Ed.), *A harvest of discontent: The land question in South Africa* (pp. 25-43). Cape Town: Institute for a Democratic Alternative for South Africa.

Codd, J. (1983). *Educational research as political practice.* Paper presented to the National Conference of the Australian Association for Research in Education, Canberra.

Cohen, L., and Manion, L. (1994). *Research methods in education* (4th ed.). London: Routledge.

Connect. (1978). *UNESCO-UNEP Environmental Education Newsletter, 3*(1),1-7.

Cook, J. (1997) Empowering people for sustainable development. In P. Fitzgerald, A. McLennan, and B. Munslow (Eds.), *Managing sustainable development in South Africa* (pp. 275-272). Cape Town: Oxford University Press.

Cooper, A., Coppard, A., Evans, A.D., and Barsby, J. (1994). Not just another environmental education tool: The urban jungle: Development and evaluation. *Southern African Journal of Environmental Education,* (14)*,* 56-60.

Cowling, R. (1991). Options for rural land use in Southern Africa: An ecological perspective. In M. De Klerk (Ed.), *A harvest of discontent: The land question in South Africa* (pp. 11-25). Cape Town: Institute for a Democratic Alternative for South Africa.

Cowling, R.M., Pierce, S.M., and Moll, E.J. (1986). Conservation and utilisation of South Coast Renosterveld: An endangered South African vegetation type. *Biological Conservation,* 37, 363-377.

Cross, C. (1991). Informal tenures against the State: Landholding systems in African rural areas. In M. De Klerk (Ed.), *A harvest of discontent: The land question in South Africa* (pp.63-99). Cape Town: Institute for a Democratic Alternative for South Africa.

Deacon, J. (1992). Farming with nature. *South African Panorama,* 37(4), 54-59.

De Klerk, M. (Ed.). (1991). *A harvest of discontent: The land question in South Africa.* Cape Town: Institute for a Democratic Alternative for South Africa.

Descola, P., and Palsson, G. (Eds.). (1996). *Nature and society: Anthropological perspectives*. London: Routledge.

Durrell, L. (1963). *The Alexandrian quartet*. London: Faber and Faber.

Eagly, A.H., and Himmelfarb, S. (1978). Attitudes and opinions. *Annual Review of Psychology*, 29, 517-54.

Earle, R. (1991). The story of the Orange Free State conservancy concept. *African Wildlife*, 45(3), 141-147.

Eckersley, R. (1992). *Environmentalism and political theory: Towards an ecocentric approach*. London: University College.

Ekins, P. (1992). *A new world order: Grassroots movements for global change*. London: Routledge.

Elliot, J. (1984). Action research: A framework for self-evaluation in schools. In W. Flanagan, C. Breen, and M. Walker (1984). *Action research: Justified optimism or wishful thinking* (pp. 88-107). Cape Town: University of Cape Town Press.

Fetterman, D.M. (Ed.). (1993). *Speaking the language of power: Communication, collaboration and advocacy: Translating ethnography into action*. Washington: Falmer Press.

Fetterman, D.M. (1993). Words as the commodity of discourse: Influencing power. In D.M. Fetterman (Ed.), *Speaking the language of power: Communication, collaboration and advocacy: Translating ethnography into action* (pp. 2-18). Washington: Falmer Press.

Fien, J. (1988). *Education for the environment*. Bicentennial Australian Studies Schools Project, Bulletin 6. Canberra: Curriculum Development Centre.

Fien, J. (1993). *Educating for the environment: Critical curriculum theorising*. Geelong: Deakin

University Press.

Fishbein, M., and Ajzen. I. (1975). *Belief, attitude, intention and behaviour: An introduction to theory and research*. London: Addison-Wesley.

Fisher, R.C. (1983). Land and land tenure. In R.F. Fuggle, and M.A. Rabie (Eds.), *Environmental concerns in South Africa: Technical and legal perspectives* (pp. 435-445). Cape Town: Juta and Company.

Fitzgerald, P., McLennan, A., and Munslow, B. (Eds.). (1997). *Managing sustainable development in South Africa*. Cape Town: Oxford University Press.

Franck, F. (1973). *The zen of seeing*. New York: Vantage Books.

Freeman, D. (1996). To take them at their word: Language data in the study of teachers' knowledge. *Harvard Educational Review*, 66(4), 732-761.

Fuggle, R.F., and Rabie, M.A. (Eds.). (1983). *Environmental concerns in South Africa: Technical and legal perspectives*. Cape Town: Juta and Company.

Fuggle, R.F., and Rabie, M.A. (Eds.). (1992). *Environmental management in South Africa*. Cape Town: Juta and Company.

Gear, D. (1988). The natural environment: Some adult preferences versus education. *Southern African Journal of Environmental Education*, (7), 11-14.

Goodman, J. (1992). Theoretical and practical considerations for school-based research in a post-positivist era. *Qualitative Studies in Education*, 5(2), 117-133.

Grieg, S., Pike, G., and Selby, D. (1989). *Earthrights: Education as if the planet really mattered.* London: Worldwide Fund for Nature (WWF) and Kogan Page.

Hardin, G. (1968). The tragedy of the commons. *Science,* (62), 1243-1248.

Hope, A., and Timmel, S. (1984). *Training for transformation: A handbook for community workers*. Book I. Gweru: Mambo Press.

Hopper, K. (1993). Translating ethnographic findings and putting them to use. In D.M. Fetterman (Ed.), *Speaking the language of power: Communication, collaboration and advocacy: Translating ethnography into action* (pp. 19-37). Washington: Falmer Press.

Huckle, J., and Sterling, S. (Eds.). 1996. *Education for sustainability*. London: Earthscan Publications.

Huckle, J. (1991). Education for sustainability: Assessing pathways to the future. *Australian Journal of Environmental Education,* 21(3), 8-21.

Hugo, D. (1997). *Manual: The establishment of conservancies in the Free State*. Bloemfontein: Internal Publication, Directorate Conservation, Department of Environment Affairs and Tourism, Free State.

Huntley, B., Siegfried, R., and Suntner, C. (1989). *South African environments into the twenty-first century*. Cape Town: Human & Rousseau.

Husen, T. (1988). Research paradigms in education. In Keeves, J.P. (Ed.), *Educational research, methodology and measurement: An international handbook* (pp. 17-20). Oxford: Pergamon Press.

Irwin, P. (1989). *Modern trends in the concept of environmental education*. Unpublished mimeograph. Grahamstown: Rhodes University, Department of Education.

Irwin, P. (1991). *Environmental education: A quest for the future*. Inaugural Lecture. Grahamstown: Rhodes University.

Janse van Rensberg, E. (1991). *A study of the relationship between personality factors and attitudes towards perceived problem animals in white small-stock farmers of the Eastern Cape*. Unpublished Masters Thesis. Grahamstown: Rhodes University.

Janse van Rensberg, E. (1995). *Environmental education and research in Southern Africa: A landscape of shifting priorities*. Unpublished Doctoral Thesis. Grahamstown: Rhodes University.

Kahn, F. (1989). The role of history in understanding current South African attitudes to conservation. *Southern African Journal of Environmental Education*, 10, 3-5.

Kahn, F. (1990). Environmental education: Past, present and future perspectives. *Environmental Education Bulletin*, 3, 6-8.

Keeves, J.P. (Ed.). (1988). *Educational research, methodology and measurement: An international handbook.* Oxford: Pergamon Press.

Kemmis, S. (1988). Action research. In J.P. Keeves (Ed.), *Educational research, methodology and measurement: An international handbook* (pp. 42-49). Oxford: Pergamon Press.

Knopf, R.C. (1987). Human behaviour, cognition and affect in the natural environment. In D. Stokols, and I. Altman (Eds.), *Handbook of environmental psychology* (pp. 201-227). New York: Wiley.

Kurth-Schai, R. (1992). Ecology and equity: Towards the rational re-enchantment of schools and society. *Educational Theory*, 42(2), 147-163.

Leedy, P.D. (1993). *Practical research: Planning and design*
(5th ed.). New York: Macmillan.

Long, D. (1988). The wildlife conservancy movement in the Cape Province. *Pelea*, 7, 41-43.

Low, B., and Hoon, E. (1990). Community involvement in environment (CEE). *Environmental*

Education Bulletin, 3, 10-13.

MacDonald, I.A.W., and Crawford, R.J.M. (Eds.). (1988). *Long-term data series relating to southern Africa's renewable natural resources*. SANSP Report No. 1575. Pretoria: CSIR.

Malone, K. (1993). *The constraints on research in environmental education*. Unpublished paper. Brisbane: Griffith University.

Marcus, T. (1991). National, class and gender issues in land reform. In M. De Klerk (Ed.), *A harvest of discontent: The land question in South Africa* (pp. 25-43). Cape Town: Institute for a Democratic Alternative for South Africa.

Marshall, J., and Ritchie, C. (1984). *Where are the Ju/Wasi of Nyae Nyae? Changes in a Bushman society 1958-1981*. Cape Town: University of Cape Town, Centre for African Studies.

Martell, L. (1994). *Ecology and society: An introduction*. Amherst: University of Massachusetts Press.

Martin, G.C., and Wheeler, K. (Eds.). (1975). *Insights into environmental education*. Edinburgh: Oliver and Boyd.

Merchant, C. (1989). *The death of nature: Women, ecology, and the scientific revolution*. San Francisco: Harper and Row.

Mishler, E.G. (1986). *Research interviewing: Context and narrative*. Cambridge: Harvard University Press.

Mrazek, R. (Ed.). (1993). *Alternative paradigms in environmental educational research*. Monographs in Environmental Education and Environmental Studies vol. 8. Troy: North American Association for Environmental Education.

Murray, E. (1999). Violence against women. Article quoted in *Umbuliso,* Aug - Sept 22(4), p2.

Nachmias, D., and Nachmias, C. (1987). *Research methods in the social sciences*. New York: St. Martin's Press.

Natal Parks Board, (1995). *Annual Report*. Pietermaritzburg: Natal Parks Board.

Natal Parks Board. (1987). *Conservation: The Natal system*. Pietermaritzburg: Natal Parks Board.

Nelson-Jones, R. (1993). *Lifeskills helping: Helping others through a systematic people-centred approach*. Pacific Grove: Brookes/Cole.

Ngobese, P., and Cock, J. (1997). Development and the environment. In P. Fitzgerald, A. McLennan, and B. Munslow (Eds.), *Managing sustainable development in South Africa* (pp. 256-272). Cape Town: Oxford University Press.

O'Dea, J.W. (1994). Pursuing truth in narrative research. *Journal of Philosophy of Education*, 28(2), 161-171.

O'Donoghue, R.B. (1990). *Environmental education, evaluation and curriculum change: The case of the action ecology project*. Unpublished M.Ed thesis. Pietermaritzburg: University of Natal.

O'Donogue, R.B. (1993). Clarifying environmental education: A search for clear action in southern Africa. *Southern African Journal of Environmental Education*, 13, 28-38.

O'Donoghue, R.B. (1994). *Stories, myths, competing perspectives and ways of thinking about indigenous knowledge in environmental education*. Unpublished working document, Indigenous Knowledge Project. Pietermaritzburg: Natal Parks Board.

O'Donoghue, R.B. (1996). Detached Harmonies: A study in/on developing social processes of environmental education in eastern southern Africa. Unpublished Ph.D thesis. Grahamstown, Rhodes University.

Odman, P.J. (1988). Hermeneutics. In J.P. Keeves (Ed.), *Educational research, methodology and measurement: An international handbook*. Oxford: Pergamon Press.

Opie, F.W.J. (1990). *Factors associated with the development of positive student attitudes and aesthetic response towards a South African natural environment*. Unpublished PhD thesis. Cape Town: University of Cape Town.

Orr, D.W. (1992). *Ecological literacy: Education and the transition to a post-modern world*. Albany: State University of New York Press.

Osborne, H. (1976). *The art of appreciation*. New York: Oxford University Press.

Parker, L., and Langley, B. (1993). Protocol and policy-making systems in American Indian tribes. In D.M. Fetterman (Ed.), *Speaking the language of power: Communication, collaboration and advocacy: Translating ethnography into action* (pp. 70-75). Washington: Falmer Press.

Patton, M.Q. (1990). *Qualitative evaluation and research methods*. Newbury Park: Sage Publications.

Paul, D.S., and Robertson, M. (1989). Ecology and the Agricultural Sciences: A False Dichotomy? *Ecology*, (70), 1594, 1595.

Phillips, D.C. (1987). *Philosophy, science and social enquiry*. Oxford: Pergamon Press.

Pocock, D., and Hudson, R. (1978). *Images of the urban environment*. London: Macmillan.

Popkewitz, T.S. (1978). Values and vision of social order. *Theory and Research in Social Education*, 6, December, 20-39.

Popper, K.R. (1966). *The open society and its enemies*. (5th ed.). London: Routledge and Keegan Paul.

Reason, P., and Rowan, J. (1981). Issues of validity in new paradigm research. In P. Reason, and J. Rowan (Eds.), *Human inquiry: A sourcebook of new paradigm research* (pp. 39-46). New York: John Wiley and Sons.

Redclift, M., and Benton, T. (Eds.). (1994). *Social theory and the global environment*. London: Routledge.

Reddy, C. (1994). *A study of the problems and possibilities of using the marine intertidal zone for teaching principles of ecology in senior secondary schools*. Unpublished Masters Thesis. Belville: University of the Western Cape.

Ritchken, E. (1997). The RDP, governance, and rural development. In P. Fitzgerald, A. McLennan, and B. Munslow (Eds.), *Managing sustainable development in South Africa* (pp. 78-90). Cape Town: Oxford University Press.

Robottom, I., and Hart, P. (1993). *Research in environmental education: Engaging the debate.* Geelong: Deakin University Press.

Robottom, I. (1988). *Science education: Exploring the tension*. Geelong: Deakin University Press.

Robson, C. (1993). *Real world research: A resource for social scientists and practitioner-researchers*. Oxford: Blackwell.

Sanders, W.B., and Pinhey, T.K. (1983). *The conduct of social research*. New York: Holt, Rinehart and Winston.

Schubert, W.H. (1986). *Curriculum: Perspective, paradigm and possibility*. New York: Macmillan.

Seidman, I.E. (1991). *Interviewing as qualitative research: A guide for researchers in education and the social sciences*. New York: Teachers College Press.

Stables, A. (1996). Reading the environment as text: Literary theory and environmental education. *Environmental Education Research*, 2(2), 189-195.

Sterling, S. (1990). Towards an ecological world view. In J.R. Engel, and J.G. Engel (Eds.), *Ethics of environment and development* (pp. 43-56). London: Belhaven.

Strumm, S.C. (1994). *Lessons learned*. In D. Western, and R.M. Wright (Eds.), *Natural connections: Perspectives in community-based conservation* (pp. 228-241). Washington: Island Press.

Tannen, D. (Ed.). (1993). *Framing in discourse*. Oxford: Oxford University Press.

Tanner, T. (1998). Introduction. *Environmental Education Research*, 4(4), November.

Travers, R.M.W. (1969). *An introduction to educational research*. London: Macmillan.

UNESCO-UNEP. (1978). Tbilisi principles of environmental education. *Connect*, 3, 1.

UNESCO-UNEP. (1993). Teaching global change through environmental education. *Connect*, 13, i.

Vayda, A.P. (1989). *Environment and cultural behaviour*. Austin: University of Texas Press.

Van Zyl, J., and Van Rooyen, J. (1991). Agricultural production in South Africa. In M. De Klerk (Ed.), *A harvest of discontent: The land question in South Africa* (pp. 179-214). Cape Town: Institute for a Democratic Alternative for South Africa.

Western, D. (1994). *Linking conservation and community aspirations*. In D. Western, and R.M. Wright (Eds.), *Natural connections: Perspectives in community-based conservation* (pp. 228-241). Washington: Island Press.

Western, D., and Wright, R.M. (Eds.). (1994). *Natural connections: Perspectives in community-*

based conservation. Washington: Island Press.

Wilson, F., and Ramphele, M. (1989). *Uprooting poverty: The South African challenge.* Cape Town: David Phillip.

Wilson, T.P. (1991). Social structure and interaction. In D. Boden, and D.H. Zimmerman (Eds.), *Talk and social structure: Studies in ethnomethodology and conversation analysis* (pp. 22-43).Cambridge: Polity Press.

World Commission on Environment and Development. (1987). (WCED) *Our Common Future*. (Bruntland Report). Oxford: Oxford University Press.

Yearley, S. (1994). Social movements and environmental change. In M. Redclift, and T. Benton (Eds.), *Social theory and the global environment* (pp. 42-57). London: Routledge.

Yow, C. R. (1994). *Recording oral history: A practical guide for social scientists.* London: Sage Publications.

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APPENDIX A:

INTERVIEW SCHEDULE: SEMI-STRUCTURED INTERVIEW:
BIOGRAPHY: PERSONAL CONTEXT

What sort of farmer is part of a Conservancy ie a "conservationist" farmer.
Details: age, family, cultural links to land. General: Who are you what is your connection with this part of the world, how did you come to be here

.....(Name), ...age
Have you always been a farmer Was jy nog altyd 'n boer
married children old/young parents still alive getroud, kinders, lewe die ouer geslag nog
(Role of wife active / not. Ed level if unusual should prob come out)
(perception that child pivotal to introducing conservation awareness ex school)
(Language orientation) Family "normal" or unusual

Type and size of farm Hoe groot is die plaas en waarmee boer jy (what sort of env problems farmer is likely to experience)
How long have you been farming in the area Hoe lank boer jy nou in die omgewing
family farm *(child to inherit)*new to area *retirement dream
(degree of realism ie experience of actual problems of specific area)
interpretation re degree OR type of commitment :: custodianship belief

BIOGRAPHY: CONNECTION WITH CONSERVATION AND CONSERVANCY
ENVIRONMENTAL AWARENESS OF INTERVIEWEE - BACKGROUND
.
Tell me about your farm and the Conservancy and what you hope to achieve.
Influence on Conservancy on self; staff; others
How would you describe yr feelings about nature and conservation when started farming
Hoe sou jy jou gevoelens oor die omgewing en sy bewaring beskryf toe jy eers begin boer het
(possibly slip in educational level here)
(If were environmentally conscious) When did this environmental awareness start
Waneer het hierdie omgewingsbewustheid begin*(How longstanding is his env. consciousness)

What started this awareness or who was main influence

Wat het hierdie bewustheid laat begin of wie het grootste invloed gehad

(Positive or negative event; Friends, teachers, parents) Explore the importance of the role of an individual or event in EE (start exploring his understanding of what is EE)

Did being env conscious influence your relations with other people or your farming practises Het die feit dat u omgewingsbewus was jou onderhandelinge met jou medemens of jou manier van boer beinvloed

If not why didn't feel strongly enough Opposition from father

If yes why strong conviction OR strong personality Based on facts OR feelings OR both

Continuum of belief translating into action (Role of facts)

What are the biggest environmental problems you have on the farm Wat is die grootste omgewingsprobleme wat u het op die plaas

Water (Mention excessive borehole pumping), Fuelwood, Litter, Poisons, Grazing, Alien invasives, Ignorance

Do the same or different problems occur in the rest of the Conservancy Kom dieselfde of verskillende probleme voor in the res van die Bewarea

Others aware? eg Officials (sometimes seen as part of the prob)

His perceptns of other's EE awareness(Staff part of solution not part of problem)

His understanding of EE in broader terms: sustainable

INTERVIEWEE'S INVOLVEMENT WITH CONSERVANCY

When did you become involved in Conservancies; Why /Who Waneer het jy betrokke geraak met die Bevarea; hoekom/ wie

(Problem eg -ve mortality post spray) (Benefit +ve economic re dassies ie new facts)

Role of personality in EE What did Conservancy offer to individual

What form did yr involvement take Watter form het u betrokkenheid geneem

(Attending meetings)(Accepting portfolio)

Has yr membership of the Conservancy influenced you; how

Increased env awareness and knowledgeFarming practisesDiff relationships with staff neighbours

Het u lidmaatskap van die Bevarea u beinvloed; en hoe? *groter omgewingsbewussyn en kennis manier van boer *verhoudinge met personeel, buurmense

Did it assist with problems you may have had arising from farming in an env aware manner such as Legal (spraying) Financial ("acceptable" level of predation)Social (Peer press to hunt ongediertes or spray or wallop raptors)

Het dit dalk gehelp met probleme van omgewingsbewus te boer soos byvoorbeeld *Wet (spuit) Finansieel (verliese binne maate) Sosiaal (bure drukom ongediertes en roofvoels te jag, te spuit)

(Does farmer perceive need to involve more owners / managers)

(Does farmer perceive need to involve staff) EE holistic?

Has Conservancy given you new ideas or facts Het die Bewarea nuwe idees of kennis aan u verskaf

(Conservancy as forum, also gives peer support, also disseminates knowledge)

(Query input from officials) Role of Conservancy in EE

IMPACT OF CONSERVANCY ON ACTIONS AND ATTITUDES OF INTERVIEWEE

To what extent do you think the Conservancy is part of

(i) Conservation (ii) Its progress

Is it part of your environmental understanding

Does it reflect your idea of conservation

How has your involvement changed from when you first became involved Hoe het u betrokkenheid verander van toe jy eers betrokke geword het

Why do you think this is Hoekom dink u sou dit wees

Influence of other people Role of peers ::momentum Sustainable and sustaining nature of EE

What role does your staff have in the Conservancy Watter rol speel u personeel in die bewarea

What influence has Conservancy had on yr personal feelings re environment and its conservation Watter invloed het die Bewarea op u persoonlike gevoelens oor die omgewing en sy bewaring gehad

(Is Conservancy meeting this individuals needs as farmer, as person)

Has being involved with the Conservancy affected your relations with family, friends, neighbours, staff, officials Het u betrokkenheid met die bewarea u meededelinge met familie, vriende, buure, werkers, amptenare beinvloed

Explore role of authority figures eg officials can now be challenged because peer support; Perception of role as icon in EE

What has been most significant impact of being involved with the Conservancy wat is die mees belangrikste effect van betrokkenheid met die bewarea

Personal Professional What aspect of EE perceived to be most nb

Why do you see this as being the most nb impact hoekom sou u se dit is die mees belangrik Check relative nbance in EE

How has Conservancy influenced yr farming practises; why / how Het die bewarea u boerdery praktyk beinvloed; hoekom / hoe

Is there something you do differently now assess impact of Conservancy

veld management stocking rates Raptor encouragement - branches in dams, snack bars Practicable Acceptable level of "sacrifice"

Role of +ve and -ve intervention in ecosystem functioning

Has this influenced others (staff); and why het dit ander beinvloed (werkers); en hoekom importance of individuals role in this change Importance of Conservancy's forum function in this role (nbance of role of indiv in EE; nbance of role of peer press in EE)

Perception of role of Conservancy in EE as forum: peer pressure, platform for data dissemination, platform for individual enthusiasm being shared

Why do you think some farmers, officials, and staff disagree re spraying, alien clearance, raptors Hoekom dink u dat party boere, amptenare en werkers nie saam stem met betrekking to spuit, indringers, prooivoels Misconceptions, wrong data, ignorance

How does that impact on your actions

Does he feel strongly enough to resist peer pressure, reject legal requirements

Would you like to see the Conservancy having a greater impact on the env attitudes of family, peers, staff; /greater involvement sou u wil sien dat die bewarea n groter indruk / meer betrokkenheid op die omgewingsgesindheid van familie, medeboere, werkers het

Who would that benefit (Environment Staff training Role of staff as part of the solution What benefit to the farm What benefit to the area)

How could this be achievedhoe kon dit gebeur

Should the Conservancy have more authority More regular meetings

What would you be willing to do to facilitate this; and why wat sou u bereid wees omte doen om dit te bewerkstelling; hoekom

(Time; Money: Does he perceive longterm benefits; Level of commitment to EE

As a member of the Conservancy, what has been of most benefit; why

to you personally; to your farm; to your labourers; to the neighbourhood; to the environment as lid van die bewarea, wat was van mees belang; hoekom(Understanding of holistic nature of EE)

What has been unsuccessful; why wat was nie n suksess nie; hoekom

Does it need to change How - in what way Why - to achieve what

What would you like to see the Conservancy become; why Wat sou u grrag sien dat die bewarea word; hoekom

Relevance to him personally or farm; Personal interests dominate? Recognition of importance of role of Conservancy in EE

What role could you play to achieve this Watter rol kon u speel om dit te bewerkstellig

perception of individual role and responsibility in EE

APPENDIX B:

TRIANGULATION: TIME INTERVIEW SCHEDULE 2ND ITERATION

<u>BASE QUERY:</u> HOW HAS THE PLATBERG CONSERVANCY CHANGED IN PRECEDING YEAR?

SUBJECT: E1 (reasons for his selection given in data analysis section)

What is your past and current official role in PKC

What is your personal role and sphere of influence in the PKC: past and current

How do you se as your current role in a personal capacity within the Conservancy?

How has this changed? (Degree of influence?) Is the result +ve or -ve?

VARIABLES

I: GOVERNMENT INPUT: National, provincial and Local. Poss impact of an individual with specific enthusiasm?

How has official input altered over the past year? greater involvement & recognition, greater indifference?

(i) National level: **Has involvement on a national level changed?**budget; national priorities

(ii) Provincial Level Department Nature Conservation. **Has provincial level status quo changed?** qualified staff or lack thereof, budget restraints, priorities (socio-political, conservation)

(iii) Local Level **Is there any change in involvement at local level?** any TLC acknowledgement any other dept eg Education?

2: GENERAL AGRICULTURAL CONDITIONS

How have general or National agricultural parameters changed over the past year?

Better / worse? climatic, financial, socio-political

How have these impacted on the activity levels of the PC?

Have neighbouring farmers attitudes become hardened/more sympathetic due to increased financial stress? increasing environmental awareness?

Has the new Labour Legislation had any impact?

Turnover in labour force: retraining worthwhile?

3: PLATBERG CONSERVANCY ITSELF

How has the PC itself changed over the past year? More active; more stagnant?

Has there been any progress and / or influence fr the other proposed Conservancies?

Interaction fr other successful conservancies? cf. attempts to start two other n cape conservancies: any progress?

Has the implementation of the recommendations of the survey done 2 years ago had any impact? positive / negative?

How has the role of the newsletter developed? Has programme orientation changed?

Indifference after initial excitement cf. survey in 1997 results?

Have there been any changes in the Leadership of the PC?

Leadership changes positive / negative? Movement of Landowners

Have the localised agricultural conditions had any impact on PC?

Local agricultural changes: climatic, financial, socio-political (Labour Legislation, movement of individuals: (cf. seasonal trek karretjies movement of staff)

Are there changes in neighbouring farmer's attitudes?

neighbouring farmers attitudes hardening/more sympathetic; increasing numbers of problem animals a factor?

Are there new members of the farming community with new inputs & enthusiasm or suspicion? Environmental awareness level higher / lower?

What do you see as positive / negative developments in the PC?

Mistakes? Successes? i.e. of individuals, or committee

4: PERSONAL INVOLVEMENT:

What was yr involvement over the past year?

What factors do you consider of significance in past year

Positive Negative

What lesson have you learned from this personally / as member of PC hierarchy?

5: FUTURE PROSPECTS AND PLANS

AIMS AND GOALS: WHAT IS NECESSARY FOR FUTURE POSITIVE GROWTH OF PC

What do you consider the most nb short, medium and Long term goals for the PC?

Greater involvement of National Government ; Provincial Government; Local Government; Members of conservancy: Office Bearers,

Outreach to neighbours, other farmers, staff (training programmes?);

education and training and/or promotion of concept to members, non-members.

STRATEGIES TO ACHIEVE THESE GOALS:

What strategies do you suggest be followed to achieve these goals?

Short term Medium term Long term

Role of Newsletter re education; publicity role of meetings re education; publicity

Membership drive for increased numbers, new members; increased involvement of existing members

What projects do you feel wld be of most value?

Projects? With specific goals? Ifso, what goals? Staff? Link-up with any national impetus/project?

Closer contact with National, provincial, local authorities, committee representation,

reciprocity with other Conservancies?

What role do you feel office bearers should play? And Why?

If you were to prioritise most nb areas needing attention in PC growth, what wld they be?

TRIANGULATION:

(I) CONSERVANCY MOVEMENT IN FREE STATE PROVINCE

SUBJECTS: ** GAME GUARD, AN OFS CONSERVANCY

*** OFFICIAL FROM FREE STATE PROVINCIAL DEPARTMENT**

(II) AGRICULTURAL WORKER ON FARM IN PLATBERG KAROO CONSERVANCY

POSITION

What is your position in the Conservancy?

What is your area of responsibility (What does title really mean?)

Why did you come to work here; (main reasons)

How long have you worked here?

Why have you stayed here for ..... period of time money, work conditions, interest,

opportunity, family

EXPERIENCE and minor CV

What is your experience of the Conservancy?

Does it work? Good idea? Are there visible results? WHAT?

How involved are you in its aims in a personal way WHY?

Have you always been interested in nature? one aspect of it?

When did you become interested? Influence fr parents / friends / children / school / boss

CURRENT ROLE AND ITS PARAMETERS

How do you see your role; has it changed? WHY?

If not would you like to change yr role What wld you like yr role to be WHY

What is yr sphere of influence in the Conservancy? Has this changed?

If so, why and how: (because of your experience and pers. interest; because of the conservancy; because of ee influence on you / influence of boss / peers)

KNOWLEDGE BASE OF CONSERVANCY

What is a Conservancy

What is it for: aim / goals long term, short term

conserve spp; increase ee; make landowners more responsible re land**;** quality of life in broadest sennse ; in personal sense

Is it important? WHY?

what do you know re the PC (or OFS C)

EVALUATION

Does it succeed in its aims / goals (as per mentioned above) **WHY?**

What are its failures WHY?

What/who are the role players

Government (national, provincial, local); Groups of landowners; Individuals with controlling influence; individuals who are voiceless / powerless; educators; legislators

how do they influence success or failure in the Conservancy

VARIABLES

How do you think Conservancies can work in different circumstances?

Location & Soc/Pol: rural; industrial; urban; squatter camps; Financial access

What goals would such diff Conservancies have?

In rural area Industrial Urban Squatter

Why would persons fr these diff areas become involved?

How wld they benefit themselves / their Conservancy

How cld they become involved Types and degrees of involvement; Types of persons

PERSONAL ASSESSMENT OF NBANCE OF ROLES OF PLAYERS

How important are the "little people"? non-Gov players: "black" eg workers, families schools or education system, passive participants,

Who else would be the important figures in these Conservancies regarding

Success Failure Perceived value of Government Initiative

How nb do you think the role of government is in Success /Failure in the Conservancy movement

CONCLUSIONS

What do you think is needed to increase success

What must change to avoid minimise failure? i.e. achieve what goal NB: Role of EE

Benefit short med and long term for individuals, community, place, ecosystems, health soc/cultural env etc

How can these objectives be reached? By individuals, groups, gov intervention, EE

what do you think is the most nb thing that needs to happen for Conservancies to succeed? WHY?

Do you think conservancies should be encouraged? WHY?

APPENDIX C:

SEMI-STRUCTURED INTERVIEW: OBSERVATIONAL NOTES

CHECKLIST: PROFESSIONAL

1 Gates and Fencing
2 Roads
3 Infrastructure eg dams, windmills, kraals
4 Alien vegetation present
5 Wildlife present
6 Staff
7 Vehicles
8 House outside
9 Garden
10 Farmer's activity at time of visit
11 Hospitality offered
12 House inside
13 Other notes on my impression of him as a farmer

CHECKLIST: PERSONAL

1 Initial telephonic response
2 Greeting
3 Facial expression
4 Posture
5 Movements
6 Clothing
7 Vocabulary and speech
8 General appearance
9 Interaction with me
10 Interaction with others
11 Other notes on my impression of him as a person

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1 Gates and Fencing .....

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1 Initial telephonic response .....

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8 General appearance .....

9 Interaction with me .....

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10 Interaction with others .....

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11 Other notes on my impression of him as a person .....

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SEMI-STRUCTURED INTERVIEW

INTRODUCTION : ESTABLISH RAPPORT

* Introduce myself - personal background, academic background.
  Bit on our farm, what we farm (veld, not sheep/buck), rains, hunting season
  Cover letter from Rhodes to validate
* Aim of research - to assess the potential of the Conservancy (actual or proposed) on increased environmental awareness in individual and community (macro and micro)
* Reason for selecting this individual: his ideas and opinions important, not knowledge. No right answers
* All contributions equally important and of equal value: add to total knowledge
* Confidentiality assured. Check quotations: if feelings remain unchanged; if happy to let quote be used. Individual will not identified by name
* Use of tape recorder request. Rationale: distraction of note taking, and loss of information

RATIONALE TO FARMERS

1 Looking to start up new Conservancy in Doringberg (our region)

2 From work of colleagues, know about Enviropictures games as way of eliciting opinions from workers

3 Wanted to know workers perceptions of problems and aspirations

4 Could they be part of the solution not part of the problem

5 Played game at Omdraaisvlei: amazing results... wld love to share

6 Conservancies appear to have great potential as tool for EE

Unifying factor of concern for environment Common goal and aims within that

7 Farmers faced with many environmental problems

8 Wish to establish how Owners/managers who have been part of a Conservancy perceive problems and aspiration

9 How do they feel potential for EE can best be facilitated in a Conservancy to meet those problems and aspirations

10 Do they see role of EE as pertaining to: family staff peer group

11 Examples of data from ODV staff

CONCLUSION: CLOSURE AND DETENSION

* personal env. goals at Omdraaisvlei
* Specific problems environmental problems at ODV - own perception
* Specific environmental problems perceived by staff at ODV established by means of enviropictures
* How enviropictures findings will help ODV Env probs as staff will be part of solution not part of problem
* Future of this research and research report

  To inform Doringberg re establishment of Conservancy

  To inform other Conservancies re poss new developments

  To inform Province re value of Conservancy in EE; i.e. value of empowering disempowerd
* Offer use of Enviropicture game to all farmers interviewed
* Offer to give demonstration of Enviropicture game at Conservancy meeting