A South African Perspective on Conservation Behaviour – A Programme Description

A research opportunities document compiled on behalf of the Working Group for Conservation Behaviour

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ABSTRACT

In South Africa there is a serious lack of understanding of the relationship between human behaviour and environmental conservation. A multidisciplinary field of study is described dealing with the causes and effects of people's attitudes and behaviour, relative to their use of the natural environment.

A conceptual framework is proposed for determining research priorities in this new field of study. The framework describes four components, namely the setting of goals, the accumulation of baseline data (inventory and survey), analytical research (establishing cause and effect relationships) and a re-evaluation or monitoring component. Responses are invited from researchers in a wide variety of scientific and social disciplines in order to develop the programme and define research priorities.

SAMEVATTING

In Suid-Afrika is daar 'n ernstige gebrek aan begrip oor die verhouding tussen menslike gedrag en omgewingsbewaring. 'n Multidissiplinêre studieveld word beskryf wat handel oor die oorsake en effek van die mens se houdings en gedrag relatief tot hul gebruik van die natuurlike omgewing.

'N Konseptuele raamwerk word voorgestel om navorsingsprioriteite in dié nuwe studieveld te bepal. Die raamwerk beskryf vier dele, naamlik die daarstelling van doelwitte, versameling van basiese data (oorsig en opname), analitisie navorsing (vasstelling van verhoudings tussen oorsaak en effek) asook 'n komponent vir re-evaluasie of monitoring. 'N Groot verskyndeheid van wetenskaplike en sosiale dissiplines word genader vir kommentaar sodat 'n program saamgestel, en navorsingsprioriteite bepaal kan word.
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BACKGROUND

The National Committee for Nature Conservation (NAKOR) is a central coordinating body of government agencies set up to liaise on all matters relating to the conservation of nature. On several occasions between 1976 and 1980 NAKOR approached the CSIR's National Committee for Environmental Sciences for assistance in the coordination of nature conservation research in South Africa. In 1979 funds for the establishment of the Committee for Nature Conservation Research were obtained and in 1981 a full-time coordinator was appointed.

The activities of this Committee are divided into five separate but overlapping components, each with an appointed Working Group to advise on research priorities and funding:

1. Habitat Conservation
2. Species Conservation
3. Invasive Biota
4. Management and Utilization
5. Conservation Behaviour

Each Working Group has drafted its own terms of reference which describe and delimit its field of activity. In general their emphasis includes a specifically national or sub-continental perspective of research needs in conservation, and a mandate to fill gaps left by the established programmes of existing environmental research agencies. The areas of interest for Working Groups one to four are reasonably well defined and understood, but those for conservation behaviour are not.
The term conservation behaviour is, by necessity, all-encompassing. It is unfortunately also somewhat ambiguous. In the context of this document it specifically includes the terms environmental education and conservation awareness. It also incorporates related conservation agency activities, variously referred to as information or interpretive services and public relations. It goes further than all of this. The subject includes the study of human motivation and conservation ethics and the formation and understanding of human attitudes and values. It specifically includes investigation of the cause and effect relationships between the attitudes and behaviour of people and the related condition and sustainability of the natural environment.
THE PROBLEM

Nature conservation is a human activity for human purposes with the natural environment as it's stage. Why are conservation researchers so reluctant to focus on people?

South Africa is the most physically and commercially developed country in Africa and as a result has the largest and most densely populated urban complexes. There are also large densely populated rural areas where subsistence land-use practices persist. As a result, man-induced environmental degradation in South Africa is evident at both ends of the development spectrum (National Veld Trust 1972; Clarke 1974; Hall et al 1980; DWAFEC 1980). There are types of degradation typical of industrial consumer nations (eg overcrowding, pollution, extinction of species) together with those typical of the rural poor in underdeveloped countries (eg impoverished soils, energy shortages, high incidence of disease). It is accepted that environmental change is inevitable, much of it directly benefiting mankind. However, in natural ecosystems these changes are often detrimental, both to the ecosystem and to its dependant human population.

Most South Africans are unaware of or misinformed about their dependence on the natural environment (Hurry 1978; Adler and Ackerman 1981). If they are aware of this relationship, it is probable that they are not able or willing to do anything about it in practice. This may be due to a variety of reasons; some straightforward, like poverty, inadequate resources or poor education, and others more complex, such as current aspirations for the future and differing standards for quality of life and basic human needs.

Regardless of the reason, it is a fact, disputed only by economists and developers, that the sustainability of South Africa's natural environment is steadily declining (Acoccks 1953; Noble and Hensens 1974; Begg 1978; Huntley 1978). Much of this is due to the inevitable consumption of resources and competition for space associated with economic development and human population growth. However, much serious environmental degradation could be avoided (WLSSA 1981). There are gross ecological
changes, such as the severe loss of topsoil and reduction of the stock raising productivity of natural veld. There are threats to the future, such as the over-use and pollution of freshwater resources, extinction of species and loss of natural plant communities. Many of these detrimental effects are produced or at least enhanced by socio-economic forces in the human environment and are strongly influenced by human attitudes and behaviour.

In spite of there being adequate technological progress and scientific knowledge to remedy many of these negative effects, no remedy is in sight. The problem appears to be one of human behaviour and the remedy probably lies in the fields of sociology, economics and education.

What is being done about this apparent lack of awareness, and the sometimes lemming-like behaviour that seems to result from it? The short answer is, quite a lot unintentionally, most of it in a haphazard way with little feedback as to its effectiveness. Not nearly enough is being done deliberately and systematically. The international news media give us insights into the problems of developed countries in the western world together with the plight of third world peasants, providing ample opportunity to learn from others' experience. Nature study, and an increasing content of environmental issues such as pollution, are taught in schools. "Schools in the Wild" operate widely if inadequately around the country but are probably least effective where they are most needed - among decision making white adults and the rapidly expanding black populations (Hurry 1978; Irwin 1982).

Although there appears to be widespread appreciation of some issues (eg coal from the Kruger National Park), there is little understanding of some of the subtle but much more important ones (eg the significance of the degraded condition of South Africa's estuaries). What is most clearly evident is the lack of active research in the field of public awareness and understanding of environmental issues. There are probably less than a dozen people in South Africa currently involved in research in this field, both in the sphere of formal education and in the informal learning context.
We do not have an information base from which to develop a national environmental awareness programme. We do not know what the attitudes of people or communities are towards their environment. We do not know what the best or most practical way to influence these attitudes is. We do know that certain legislation has been poorly effective (eg the Soil Conservation Act and the Stock Reduction Scheme) but the analyses of these failures have so far failed to enhance their effectiveness on the ground (Rabie 1976).

Society has developed three basic ways of motivating people to counteract the negative environmental changes that result from human attitudes and behaviour:

1. **Enforcement** - by Government imposed controls (laws and regulations) on the type of development or land-use and the style of land management.

2. **Inducement** - primarily financial through tax concessions, also social through promotion of conservation ethics - prestige value.

3. **Education** - by voluntary, scientific or moral controls, achieved through man's understanding of his dependence on the sustained productivity and health of his environment.

In reality, these means are used simultaneously. It is reasonable to assume that any national administration would have the long-term aim of using a minimum of the first and a maximum of the second and third.

Of all the facets of environmental conservation these human behavioural components are the least understood and least researched. Academically they often fall uncomfortably between the stools of environmental science and the social arts. Potential research topics range from; psychological studies such as the sub-conscious motivations affecting the "throw away mentality" in society, to testing the acceptability of alternative energy sources for the treeless environments of the rural poor. For instance a full programme could be launched solely on the adequacy of environmental education in schools, or on the effects of legislative and financial incentives for conservation.
In short, how does a nation like South Africa prepare and organize itself for the excessive demands that are going to be made on its natural resources in the future? With a population crisis ahead, complicated by the diversity of our cultures, how are we to develop a national ethic for land? What is the morality behind, "Die boer is baas op sy plaas", when farmers have not inherited the land from their forefathers, but have it in trust for generations of the future?
THE PURPOSE

The purpose of this document is to stimulate interest in research into problems associated with the interaction between human behaviour and the natural environment.

This document serves to define the scope and emphasis of research priorities in conservation behaviour, namely the study of the human behaviour/natural environment relationship. It is also a research promotional document intended to stimulate an awareness of research needs in this area among a wide variety of research leaders, educators and administrators. In order to do this, the subject matter is set out in a framework that is intended to show potential and possibly unaware researchers how their particular field of expertise can contribute. The description does not set out to be definitive or comprehensive, merely to create interest in and awareness of the subject. Within its financial capabilities the National Programme is prepared to fund suitable research projects in this field.

At this point it is useful to set out the purposes for which the Working Group for Conservation Behaviour was convened. To quote from its terms of reference, it is the aim of the Working Group,

"to initiate, coordinate and interpret research into human behaviour relative to environmental conservation, in order to:

- improve our understanding of the causes and effects of conservation behaviour;

- understand the development of values and attitudes that might lead to positive conservation behaviour by individuals;

- facilitate ecologically sound management and use of the natural environment."
In this context "conservation behaviour" is defined as those aspects of human behaviour which affect or arise from man's interaction with the "natural environment". ("Natural" is used to distinguish from man's developed, built or socio-cultural environment). Of particular relevance are those aspects which most positively or negatively influence the life-support systems and processes upon which the long-term welfare of man himself depends.

In order to achieve relevance to local needs there are some additional guidelines or areas of emphasis, appropriate to a specifically South African research programme:

- Since the field of research is vast and undeveloped, research priorities need to be carefully selected. In this respect the need to promote positive conservation behaviour among key decision makers is recognised as of prime importance, eg politicians, senior administrators and policy makers in fields such as education, journalism and physical planning.

- Within selected population or interest groups, research should be related specifically to the values, attitudes and motives of individuals and communities within the group.

- To guide research towards achieving positive changes in people's attitudes and behaviour, relative to conservation and human interdependence with living natural resources.

Recipients of this document who are able to contribute suggestions or general comment, are encouraged to do so. Government and administrative agencies who are in a position to indicate research needs, and university researchers who wish to suggest academic involvement or to submit research proposals, are requested to respond to the address on the title page. Once adequate responses have been received a national workshop will be convened in order to improve and complete the framework and to identify specific research priorities. An ultimate objective is to develop self-sustaining centres of research expertise in this field at education and academic institutions and conservation agencies around the country.
A CONCEPTUAL FRAMEWORK

There are many ways of looking at the human behaviour/natural environment interaction. This framework is presented as a convenient means of arranging the topic conceptually for the purpose of highlighting potential components of a research programme. Such a programme will of necessity be multidisciplinary, catering as it does to normally unrelated research disciplines such as, ecology, biology, sociology, psychology, education, law, agricultural extension, public administration and mass media communication.

The framework contains four basic components which are described below, three of which provide real opportunities for research. Within reason, research work could be carried out in any component, either simultaneously or in any logical sequence. Examples of potential topics or approaches are listed under each heading.

- The first component is that of describing, in normative terms, what the state of the human behaviour/natural environment system should be; some collective goals for society.

- The second component is that of gathering the information to provide a description and inventory of the constituent parts of the human/environment interaction. In this description it will be necessary to establish, by analytical research if necessary, the cause and effect relationships between human behaviour and environmental response.

- The third component is that of in-depth analysis of the influencing factors and change mechanisms involved in these aspects of behaviour. Here, research will aim to measure the potential for creating public attitudes with a positive influence on environmental conservation.

- The fourth component is that of re-evaluation or monitoring. This is carried out to provide a measure of the dynamics and trends in the elements and processes that comprise the man/environment
interaction. This may include repeated assessment of the effectiveness of the factors and social mechanisms which influence behaviour. It will also measure general, non-specific shifts in attitudes over time. It will include regular assessment of the environmental problems associated with human behaviour. It is only through this research component that the success or failure of environmental awareness programmes may be judged.

1. **Goals for society**

This may be seen as a description of "what should be", or as a formalization of society's environmental responsibility to future generations. It involves the setting up of a behavioural target for society to aim at. It involves the concept of a set of norms and codes of conduct, as determined by ecological and sociological limiting factors, which by various change mechanisms will seek to establish a caring environmental ethic for society (Leopold 1949; Tilden 1977).

These goals or guidelines will be written initially for policy makers and opinion formers and will not have much requirement for research. However researchers will be needed to help compile them and test their practicality and acceptability. They could well form part of a National Conservation Strategy, drawn up for public administrators. They should set goals for environmental awareness not only at the national level but at the community and individual levels as well. Research, if there is any in this component, might be limited to looking for alternatives to this "goals for society" approach, as a means of achieving overall objectives.

2. **Descriptive component of the framework**

This is basically a description of "what is". It comprises a qualitative and quantitative description of the identifiable components of the problem and the evaluation of their causative factors. It will consist largely of descriptive analysis by means of surveys and inventory-type information.
gathering. There may be a need for a more analytical research component only in respect of establishing some of the cause and effect relationships. There are several possible subdivisions of this component:

a. Survey and description of the attitudes and behaviour of people towards conservation and the environment

Some examples:

- Identification of key population groups, organizations or individuals and description of their conservation behaviour characteristics.

- Attitudinal and behavioural surveys of specific (key) segments of society - characterize - classify - compare. (eg leaders, teachers, farmers, journalists, students, parks staff, the poor etc).

b. Description and inventory of conservation and environmental problems manifestly related to human behaviour

An approach:

- List environmental problems and describe their probable causes.

- Establish in each case a link with human behaviour, attitudes, beliefs and traditions etc.

- Investigate suitable indicator components in the environment, use them in monitoring trends and possible future responses to changing behaviour (eg soil erosion, pollution, species extinctions etc).
c. **Description and assessment of influencing factors and change mechanisms that operate in society and have an impact on conservation**

- Inventory, survey, description and evaluation of these influencing factors and change mechanisms, characterize - classify - compare (e.g. assessments of the role of education, legislation or poverty in rural behaviour and land-use).

- Establish a priority order for research into these factors and mechanisms. (They may be subdivided into institutional and other change mechanisms for practical convenience.)

3. **Analytical component of the framework**

This section seeks to understand causes and effects in the patterns of human behaviour. The intention here is to provide future societies with the option of changing their behaviour from "the way the world is" (2) towards "the way the world should be" (1). This component should focus on research and analysis of the change mechanisms, educational methods and other influencing factors involved. The psychological basis for attitudes and behavioural responses to these factors will provide one important emphasis. Another will be evaluation of the effectiveness of institutionalized change mechanisms, such as education, legislation and economic incentives. Results of this research will hopefully indicate new change mechanisms or teaching methods for testing in the field.

a. **Analysis of the effects of institutional change mechanisms and factors affecting behaviour relative to conservation**

i. **Formal education and training.** This includes research to assess the effectiveness of both current and proposed conservation education. It should include investigations into teaching methods and perspectives as well as the syllabus content at all levels. It includes primary to tertiary schooling, teacher and university graduate training and adult
education courses. Public education facilities might also be included, eg interpretive displays, information literature and public relations activities of nature conservation agencies, museums, zoological and botanical gardens. Some examples of potential projects:

- What is the effectiveness of teaching conservation ethics in different ways relative to specific objectives?

- What is the best means of integrating conservation education into existing curricula within existing time schedules?

- Development of an intensive conservation awareness course for headmasters, geography and biology teachers.

- Analysis of the syllabus review processes for teacher and graduate training programmes with a view to introducing an ecological component.

- What is the variety of student receptiveness to conservation awareness ideas?

- Publication of a handbook on "school-yard" teaching methods and teaching resources.

ii. Legislation. This may include a broad look at legislation in general to investigate ways in which it indirectly affects conservation, as well as more penetrating studies on the costs and benefits of existing environmental law. Here proposals for new legislation could be tested for feasibility. Some examples:

- A broad theoretical review of different styles of legislation in South Africa and other countries, eg positively motivating legislation vs negatively motivating legislation.

- Analysis of tax laws and other relevant economic legislation.
- Analysis of the laws of land ownership and freehold title.

- Analysis of laws controlling agricultural land-use and management practices, eg Soil Conservation Act.

- Analysis of laws controlling pollution and how they are circumvented - including cost-benefit analysis.

- Assessment of the differences in the nature conservation legislation of each of the four provinces with a view to future compatibility.

iii. Public administration. The way in which public administrations are organized and routinely function is vital knowledge to those involved with the definition and attainment of goals for society. An investigation is needed to illustrate the bottlenecks and opportunities likely to exist within the administrative machinery that may have an impact on conservation. Some examples:

- To what extent does the administrative system encourage or discourage the coordination of ideas between developers, engineers, administrators and conservationists?

- How can legislation with a potential for positive environmental impact be more positively administered? (eg administrative factors in the enforcement of the Soil Conservation Act.)

- Is the planning of future administrative activities short of an ecological perspective and, if so, how best is such a perspective implanted? (eg would it be more effective to provide the ecological perspective to the planners or to the top administrators to whom the plans are submitted?)
b. **Analysis of factors and mechanisms of behavioural change that are imposed on society and have unintended environmental consequences**

Studies in this section are intended to include all the sociological structures and conventions that societies impose upon themselves, and have imposed on them, which result unintentionally in behaviour that has environmental consequences. A list of subjects that could be investigated for their impact on environmental conservation might include:

- Religion or belief systems
- Traditions and customs
- Politics
- Poverty
- Lack of resources
- Affluence
- Competing interests and ethics (e.g., the economic growth ethic, the rise in living standards)

c. **Analysis of the effects of factors that subconsciously influence behaviour by psychological means**

There are many factors associated with peoples' everyday surroundings and life style that have the potential to affect attitudes and behaviour. Some may be more or less obvious, while others may be unanticipated and subtle in their effects. These psychological factors need to be recognized and understood in order to describe accurately some of man's more obscure responses to his environment. A list of topics that would provide interesting research themes could include:

- The personal environment - especially that of young people, parents, home-culture; the adult environment, impact of socio-economic status, the physical and social work environment - are there common factors?

- Experiential events - the value of that single enlightening experience that germinates a seed of future interest and understanding - how does it work?
Urban crowding syndrome and the value of open space — it drives some people away from nature and others to become more concerned — why the dichotomy?

The effects of media and advertising influence — as education will never be adequate to the task of informing the public as a whole, how can the power and the pitfalls of the public media be used to best effect?

4. Re-evaluation component of the framework

This component is intended to include all measurement of trends and changes over time. It may include the initial evaluation as well as the ongoing re-evaluations that follow. In ecological parlance it is referred to as monitoring. Whatever the words used to describe it, it provides the “feedback control” for the entire research system. Whereas some projects may be concerned entirely with a monitoring or re-evaluation exercise, in general this measurement of change, its rate and extent, is integral to all phases of research in this field.

Monitoring or re-evaluation should set out to measure changes, not only in response to deliberately imposed programmes, but also changes in human behaviour and in their associated environmental conditions that result from the non-specific effects of the passing of time. This provides the background or control sample in any experiment or field trial. One aspect of evaluation that is of particular importance is cost-benefit analysis. With monetary and social values changing rapidly, repeated assessments of the real costs and benefits of all programmes and proposals should be a regular feature. Some of the more obvious and generalized research topics are:

- Regular and repeated evaluation of the effectiveness of environmental education.

- Evaluation of the effectiveness of legislation and the incentives it provides (eg tax write-offs).
- Monitoring for ecological changes in the environment (having first established the behavioural link).

- Identifying cause and effect relationships that are not readily perceived or anticipated.

- Monitoring changes in attitudes as a result of non-specific socio-economic changes.

- Monitoring the effectiveness of interpretive and public relations efforts of nature conservation agencies.
ACTION PLAN

This document is intended to initiate widespread interest in these multidimensional topics which contribute to the study of conservation behaviour. It is intended that this interest should develop into active coordinated involvement. This applies not only to researchers but also to public administrators, teachers, trainers, economists, extension officers, planners and many others. For this purpose the preceding background, rationale and framework will need to be refined and improved to describe the programme more comprehensively.

The first activity should therefore comprise responses by interested or involved people and institutions, with comment, criticism and suggestions for the development of this programme. After evaluation of the dialogue generated in this way, the Working Group will review the programme by means of a system of workshops or meetings.

This would comprise a second level of activity where participants with potential for involvement in the programme could be identified and critical nuclei of research activity created. This phase would also serve to align research priorities with available manpower and academic resources.

A third level of activity, simultaneous with the review process, would be the acquisition of funds and their allocation to priority components in the research programme. In addition to funding research the Working Group would consider holding further meetings to generate new perspectives and ideas and to expose key, but hitherto uninvolved people to these viewpoints. From there onwards it is anticipated that the programme should determine its own course, as dictated by its participants and their achievements.

Although Cooperative Scientific Programmes (CSP) of the CSIR is specifically set up to coordinate and, to a limited extent, fund multidisciplinary research projects, it is hoped that independent support for the substance of these proposals will be forthcoming from administrative and research agencies throughout South Africa. A list of agencies that would have an interest in these activities should include:
1. **University Institutes and Departments for:**

   - Education
   - Biology and Ecology
   - Environmental and Resource Studies
   - Agricultural Extension
   - Nature Conservation
   - Forestry
   - Law
   - Economics
   - Social Studies
   - Town and Regional Planning

2. **Nature Conservation, National Parks and Forestry Agencies**

3. **Government Departments for:**

   - Education
   - Agriculture
   - Environment Affairs
   - Constitutional Development and Planning

4. **South African Technikons and Teaching Colleges**

   The Working Group for Conservation Behaviour specifically requests that you respond with proposals, criticisms or general comment to,

   The Coordinator
   Nature Conservation Research
   Cooperative Scientific Programmes
   CSIR
   P O Box 395
   PRETORIA
   0001
   telephone (012) 869211 (ext 3364 or 2705)
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