

**ENVIRONMENTAL STUDY/MANAGEMENT/
SCIENCE ORIENTATED PAPERS, PUBLISHED
BY SOUTH AFRICAN GEOGRAPHERS DURING
THE PERIOD 1996-2001.**

**by
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DISSERTATION

**Submitted in fulfilment
of the requirements for the degree
MASTER OF ARTS**

In
UNIVERSITY
JOHANNESBURG
GEOGRAPHY

**In the
FACULTY OF ARTS**

**At the
RAND AFRIKAANS UNIVERSITY**

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OCTOBER 2003

ABSTRACT

Geography as a discipline has undergone many different metamorphoses, and has experienced a turbulent and interesting past in its search for identity. Claims are made that geographers put great emphasis on humans and their interaction with their environment. It is therefore widely accepted that Geography is greatly dominated in its teachings by an emphasis on Environmental Management. It is therefore also accepted that South African geographers will participate actively in this practice, and that it will be reflected, distinctively, in their scientific publications.

This thesis seeks to examine the validity of the above assumptions. Thus the problem of whether or not the publications by South African geographers are environmentally orientated was surveyed and reviewed for the period between 1996 and 2001.

In order to do this it was necessary to undertake an extensive review of all databases, which contained publications, as well as to obtain web-site information on the lecturers at the individual selected universities. Questionnaires were also sent out to the different departments and some personal interviews were conducted. The researcher had to refine the search to an in-depth analyses of only eight of the twenty one Geography departments at South African universities, based on the availability of information.

The review reveals the current diverse nature of Environmental Geography in South Africa. In some instances papers have been written that remain within the boundaries of its sub-discipline, such as the Geomorphological papers. They did however prove to incorporate an application to the field of Environmental Management which could not be ignored, and hence they had to be of environmental relevance.

On further inspection it was found that there is an increasing awareness amongst all South African geographers for greater integration to solve problems holistically. More environmentally orientated papers were published towards the end of the study period under review. The survey conducted of the various environmentally orientated

papers also revealed the broad and diverse sub-discipline that Geography can cover from an environmental perspective.

It can be said that there is a growing trend amongst South African geographers to publish papers that are environmentally orientated.

Whether the number (and emphasis that is placed on environmental issues) of publications is large enough, still remains to be seen. It was established that geographers are still focussing more on their specialised areas of interest, in their research. They are still not doing enough to promote an understanding of the environment. The researcher had to conclude that it is disheartening and disappointing to realise what amount of growth is still needed in the emphasis of the area of Environmental Management. Some serious work still lays ahead for geographers and the content of their publications in this respect.



OPSOMMING

As 'n disipline het Geografie vele veranderinge ondergaan. In die soeke na identiteit het dit 'n onstuimige en interessante verlede. Daar word beweer dat geografe groot klem plaas op die mens en sy interaksie met sy omgewing. Dit word dus alom aanvaar dat 'n groot gedeelte van Geografie oorheers word deur die klem wat dit op Omgewingsbestuur plaas. Daar word ook aanvaar dat Suid-Afrikaanse geografe ywerig meedoen aan die praktyk van Omgewingsbestuur. Daarom word daar aanvaar dat dié aspekte duidelik na vore sal tree in die inhoud van hul vakwetenskaplike publikasies.

In hierdie verhandeling is daar gepoog om die geldigheid van die bogenoemde stellings te ondersoek. Daar is dus gepoog om die probleem op te los aangaande die vraag of Suid-Afrikaanse geografe wel heelwat omgewings-georiënteerde publikasies vrystel aldan nie. Hierdie ondersoek is geloot vir die tydperk 1996 tot 2001.

Om hierdie navorsing moontlik te maak was dit nodig om 'n intense oorsig te verkry van alle data-basisse, wat ook o.a. die webgebaseerde publikasie-inligting aangaande dosente by die geselekteerde universiteite ingesluit het. Vraelyste is ook per e-pos aan die onderskeie Geografie departemente gestuur. Persoonlike onderhouds met enkelinge is ook gevoer. Die navorser is genoop om die soektog te fokus op 'n in-diepte analise van slegs agt van die een en twintig Geografie-departemente aan die onderskeie Suid-Afrikaanse universiteite. Hierdie besluit was gebaseer op die hoeveelheid inligting wat beskikbaar was.

Die ondersoek het die huidige diversiteit van Omgewingsgeografie in Suid-Afrika benadruk. In sommige gevalle was die aard van die publikasies binne die grense van hul onderskeie sub-dissiplines, soos o.a. weerspieël in Geomorfologiese publikasies. Talle hiervan het wel die toepassing van die Omgewingsbestuurs-veld ingesluit. Hierdie tendens kan nie geïgnoreer word nie, en dus is daar bevind dat dié publikasies wel van omgewingsbelang was.

Verdere ondersoek het gelei tot 'n bevinding dat daar tog 'n toenemende bewuswording is onder geograwe, wat betref 'n groter integrasie en 'n holistiese benadering tot probleemoplossing. Omgewings-georiënteerde publikasies het meer teen die einde van die ondersoek na vore getree. Die ondersoek wat geloots is aangaande die omgewings-georiënteerde publikasies het ook aan die lig gebring dat daar breë en diverse velde/subdissiplines is wat gedek word deur Geografie. Al hierdie kan vanuit 'n omgewings-georiënteerde perspektief benader word.

Dit kan dus gestel word dat daar 'n groeiende tendens onder Suid-Afrikaanse geograwe bestaan om meer omgewings-gerigte publikasies te lewer.

Die vraag bly egter staan, of die hoeveelheid (sowel as die klem wat op omgewingsgerigtheid geplaas word) publikasies werklik teen 'n beduidende tempo toeneem. Daar is vasgestel dat Suid-Afrikaanse geograwe steeds geneig is om te fokus op hul subdissipline-spesialisasie-velde in hul publikasies. Daar word dus steeds nie genoeg gedoen om 'n ware begrip aangaande die omgewing te benadruk nie.

Die finale gevolgtrekking was een van ontugtering. Alhoewel daar wel 'n toename was in omgewings-gerigte publikasies, is daar egter nog baie werk nodig in hierdie verband. Die toekoms sal dus gekenmerk moet word deur meer omgewingsgerigtepublikasies indien geograwe hul merk in die veld van omgewingsbestuur wil maak.

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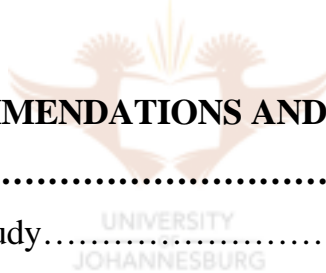
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CHAPTER 1: REVIEW OF THE STUDY

1.1 Introduction to the study

You pride yourself on your
creativity by which you set
yourself above the rest
of creation, yet, you alone
of all creatures
destroy
more than you create (Anon, 2002)

Geography as a discipline has followed many different metamorphoses in its search for identity as a source. Geography has experienced a turbulent and interesting past. Through much trial, tribulation and searching, the geographers of today have managed to establish a science that both looks at the physical, human and regional aspects of the earth. It is well accepted, today, that geography claims to place a large emphasis on humans and their interaction with their environment. In the latter half of the 20th century, a large movement has been made towards focussing on how humans are affecting their environment and how, in turn, this will cause the environment to affect them. This environmental focus is becoming a central theme to geography as a discipline. The main question that will be analysed, in this research, is whether or not this focus holds true also for South African geographers.

The geographical discipline is an exceptionally distinct and divergent one, which encompasses several fields, including economics, the arts and natural sciences. A popular definition that attests to this diversity is that given by Livingstone (1994, p.13) stating that geography is "...an evolving tradition of inquiry-conversation woven between nature and culture." Geography has gone through three phases:

Classical geography (600 BC – 1870 AD), became a separate field of study and created an awareness of the problems of knowing only a restricted part of the earth's surface. Modern geography (1870-1950), university departments were first established. It was now not only an organised and structured discipline but also a professional field.

Contemporary geography (since 1950) reflects the renewal of the discipline through the advent of the computer and remote sensing.

An environmental movement unfolded worldwide between 1960-1990. The late 1960s saw a rapid increase in the concern about the environmental problems in the world (Mikelsell, 1967). This was firstly initiated by the shock of the 1960s over the pollution and loss of species, which accompanied the economic growth of the 1940s and 1950s. Secondly, during the 1970s, came blueprints for utopias where Spaceship Earth was supposed to land safely. Finally, after 1980, a much clearer global picture of environmental change emerged through the work of scientists, environmentalism became institutionalised in international lobbies, and green political parties and the governments of the day adopted environmental agendas (Barnard, 2001).

Geography was swept along by the new environmental awareness. The term environmental geography is also becoming institutionalised in societies, periodicals, textbooks, curricula and consulting practices.

The Geography departments in South Africa were also influenced by this environmental revolution. Name changes of departments took place. From being only a Geography department, environmental studies were incorporated, for example the Geography department at RAU (Rand Afrikaans University), changed from the Department of Geography, to the Department of Geography and Environmental Management (1994-1995).

In this research, an overall survey will be done of all geographical publications for a certain period of time, in order to determine whether there has been an effective

increase in environmental management/science orientated publications, aiming at specifically highlighting the environment, and associated problems. One would also hope to determine whether there are any further fields that need to be explored. The president of The South African Geographical Society in 1991, the late Dr. Frances Gamble, addressed the South African Geographical Society at a conference; - her speech was published in the South African Geographical Journal in 1992. She spoke about the ability of geographers, through sound holistic education, to include people in the perspectives of the environment and, equipped with a unique worldview of environmental perspectives, they thus are able to share with other scientists who perhaps have a more particular expertise. Gamble continued to say that people have a view that the environment is a luxury, and that geographers will have to try and break down that view with absolute urgency (Gamble, 1992).

Abrams (1998, p.39) articulates that:

“... If we make people more involved, they will in turn become more aware of the environment and its problems and thus be motivated to act towards the environment in a more responsible ways.”



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Education thus forms the corner stone of the whole environmental movement, and one effective way of educating is by publications. Environmental geography proved of important relevance to society and to science, in providing a framework for integrated studies of human-nature interactions, and an educational basis for improved sustainable development on a global scale. Thus it is important to identify if there is an increasing trend among the publications of South African geographers in environmental orientated papers. It is furthermore also necessary to identify if these papers are truly environmentally orientated.

1.1.1. Terminology

This researcher deems it necessary to include a few definitions, to provide the reader with a 'sounding board' as to the meaning of these terms, as these terms will often be utilized in this research paper. (Other definitions are also contained in Appendix B – Questionnaires).

1) Geography

“Geography is the study of processes and patterns of humans and natural systems on the earth’s surface and their interaction. It brings together traditions from natural and social sciences to understand the causes and consequences of many of the world’s major environmental problems. Issues are studied both in theory and in practical field situations. The study of geography is therefore dynamic, exciting and relevant; with a holistic view of the interacting global systems” (Anon, 2001).

This definition highlights a number of factors that make geography a unique subject. The first of which is the spatial nature of geography. Everything that is studied is linked to a part of the earth. The third factor involves the interdisciplinary nature of geography; where geography can be seen as an integration of a number of disciplines into one subject. These disciplines include a diverse range from geology and biology to sociology and economics. This diversification into various sub-disciplines occurred in the 1960’s due to members within the field feeling constrained by the prescribed approaches of the discipline (Barnard, 2001). With this large number of influences the reason for geography remaining as an individual scientific discipline is due to the first factor (integration), which Fenneman (1919) refers to as “regional geography.”

On the other hand geography is supposed to represent a small and specific segment of the entire wide spectrum of knowledge. It should be logically demarcated at its boundaries and should have a core that is respected by other disciplines (Barnard, 2001).

This interdisciplinary nature allows geography to become an 'outward-looking discipline', as it is able to apply this wide range of influences to further divisions for research. It thereby creates other disciplines e.g. geodesy, plant ecology and soil science to name but a few. It could be argued that the number of sub-disciplines of geography is countless. There must be a demarcation between geography as an interdisciplinary subject, and where these different disciplines become completely dissociated with geography (Barnard, 2001).

Whether it has many branches or a few, it can not be denied that geography is a very broad subject and therefore is a "...dynamic, exciting and relevant..." discipline that enable people to view the earth and its many processes, and help them explain the processes (Barnard, 2001).

2) Environmental Management

Management is a dynamic process, by which plans are made, and processes are organised to produce effective control through leadership. In order for informed decision making to take place with respect to ecological issues, the term environment must be understood (Fuggle & Rabie, 1992). Hugo *et al.* (1997) state that the environment has both a natural and human component that are both affected by the other to the extent that they are not easily identified separately. These authors contend that the amount of interaction that occurs between the two occurs along a continuum. Odum (1997) identifies several types of environments, according to their alteration by humans. They are in the order of most altered too least altered as follows:

1. Fabricated environments - cities, industrial parks, roads, railways and airports.
2. Domesticated environments - agricultural lands, forests and artificial water masses.
3. Natural environments - unharmed habitats.

Figure 1 shows how difficult it is to define Environmental Management. Each dimension of environmental management should be looked at.

It is possible to identify the ecological processes that support life, but the environment must be considered as a whole. Once this has been done the functional units can be separated to make them understandable (Odum, 1997).

Simply put, the environment is the space in which humans live and interact with one another, as well as with other organisms and abiotic entities. Environmental Management is the management of human's activities on the earth, since humans have impacts on the earth. Once the impacts have been studied, initiatives are set in motion to manage the (negative) impacts to an area by rehabilitation and mitigation of the negative effects of developments and the promotion of positive impacts. Human's activities have to be managed within the constraints placed on them by the natural environment.

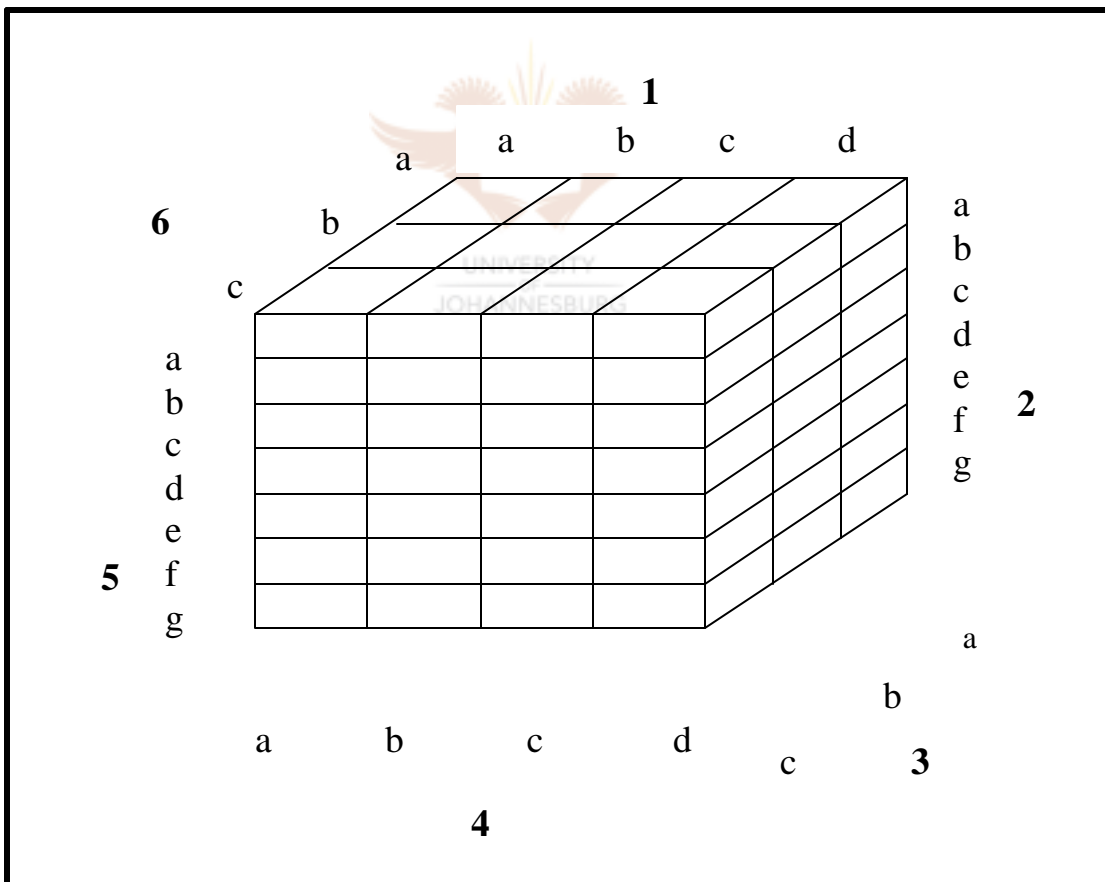


Figure 1: Dimensions of the Environmental Management Process (Hugo *et al*, 1997)

Key to interpret Figure 1:**1. Management Process**

- a. Mission
- b. Objectives
- c. Policies
- d. Management Style

2. Management Tools

- a. Environmental Impact Assessment
- b. Terrain Evaluation
- c. Landscape Assessment
- d. Risk Assessment
- e. Ecological Evaluation
- f. Environmental Audit
- g. Control Reports

3. Stages

- a. Operation
- b. Design and Construction
- c. Decommissioning

4. Scale

- a. Local
- b. Regional
- c. National
- d. International

5. Perspective

- a. Biophysical
- b. Economical
- c. Social
- d. Political
- e. Legal
- f. Institutional
- g. Technological

6. Time

- a. Past
- b. Present
- c. Future



There are three major elements to Environmental Management. It is evident from the figure that: Firstly, there is a need for environmental awareness. Secondly, environmental perspectives such as ethics and laws must be considered. Thirdly, use is made of Environmental Management tools and skills, which consist of models and frameworks to work within (Hugo *et al.*, 1997).

Environmental Management is the study of observing and describing the interactions between biophysical features and socio-economic features. This can lead to the cause of environmental problems. These problems can be observed and managed on different scales namely local, regional, national and globally. The management of these activities also varies through time and management strategies can vary over different time scales. For the environment to be studied effectively it must be evaluated. Evaluation consists of the process of obtaining, organising and weighting information on the consequences and impacts of developments and their alternatives.

3) Sustainability and Sustainable Development

Sustainability and Sustainable Development have become very popular terms. They are the subjects of conferences, books, and articles, and an underlying principle of many organisations that are active in development projects throughout the world. Sustainability has become the rallying call of environmentalists and a goal of corporations.

The most popular definition of Sustainable Development is from the WCED, or the Brundtland Commission, in 1987:

“...development that meets the needs of the present without compromising the ability of future generations to meet their own needs.”

This definition has been expanded and debated, but its essential purpose of caring for future generations remains the same (Bartelmus, 1994, p.69; Geneva International, 2000; Hunt & Johnson, 1995, p.21 & Turner, 1995, p.4).

In the final chapter of its report, the Brundtland Commission called for an international conference to be convened, within an appropriate period, after the presentation of the report to the General Assembly of the UN, in order to review progress and create a follow-up structure. This conference, the UNCED or Earth Summit, was held in June 1992 in Rio de Janeiro, Brazil. On this occasion, more than one hundred heads of state met to address urgent problems of environmental protection and socio-economic development. The assembled leaders signed the Framework Convention on Climate Change and the Convention on Biological Diversity, endorsed the Rio Declaration and the Forest Principles, and adopted Agenda 21, a three hundred-page plan for achieving sustainable development in the 21st century. The Commission on Sustainable Development (CSD) was created after UNCED to monitor and report on implementation of these agreements (Geneva International, 2000).

“The UNCED, held in Rio de Janeiro in 1992, formulated a global plan to achieve Sustainable Development through Agenda 21. Its principles were modified to fit into Local Agenda 21, according to the local needs and priorities of a specific country. By guiding development and monitoring environmental sensitivity at all stages of development, local authorities “play a crucial role in ensuring the protection of South Africa’s natural heritage” (DEAT, 1998, p.53).

In Chapter 28 of Agenda 21, it is clearly stated that:

“Because so many of the problems and solutions addressed by Agenda 21 have their roots in local activities, the participation and cooperation of local authorities will be a determining factor in fulfilling its objectives. Local authorities construct, operate and maintain economic, social and environmental infrastructure, oversee planning processes, establish local environmental policies and regulations and assist in implementing national and Sustainable Development policies. As the level of governance closest to the people, they play a vital role in educating, mobilising and responding to the public to promote Sustainable Development” (DEAT, 1998, p.53).

The Ministry of Environmental Affairs and Tourism stated the following on 1 February 2002:

“Agenda 21 and the Rio Principles are as valid today as when we negotiated them ten years ago - they remain the blueprint for Sustainable Development in the 21st century. The Rio Summit succeeded in developing the concept of Sustainable Development, and placing it firmly on the international agenda. Heads of State and Government at the Millennium Summit have reaffirmed their support for Agenda 21, and adopted an important set of targets for poverty eradication.

The Report of the Secretary-General correctly highlights the fact that Agenda 21 has neither been sufficiently nor evenly implemented, due to a number of constraints.

These include, the lack of implementation of commitments made in Rio, especially commitments around financial resources, capacity building and technology for Sustainable Development. For over 1 billion people the agreements in Rio on Agenda

21 have meant little, and Sustainable Development remains a distant dream. If we are to make a serious international effort to tackle poverty and inequality, we will require an unprecedented international effort to implement the social, environmental and economic aspects of Agenda 21. The political commitment for a sustainable future must include a package of agreements to address poverty and global inequality, and ensure balanced attention to all three pillars of Sustainable Development. It is our sincere hope that we will be able to realise such a level of renewed political commitment to implementing Agenda 21 at Johannesburg” (DEAT, 2002).

The Johannesburg World Summit 2002 had a renewed political commitment to Agenda 21. A start to implement Agenda 21 is contained in Chapter 36 of the document (from the World Summit) namely, Education, Public Awareness & Training. This is where publications and research in the mentioned fields fit in. The fields can be also seen in Agenda 21’s forty chapters. This is also where this research paper finds its motivation.

In Atkinson *et al.* (1997, p.1) the following is said to try and show the relationship between Sustainable Development and Agenda 21. Sustainable Development now features as a goal in dozens of national environmental policy statements, and in the opening paragraphs of Agenda 21, the massive shopping list of world actions, adopted at the Earth Summit in Rio de Janeiro in June 1992.

Agenda 21 states:

“In order to meet the challenges of environment and development, states decided to establish a new global partnership. This partnership commits all states to engage in continuous and constructive dialogue, inspired by the need to achieve a more efficient and equitable world economy, keeping in view the interesting interdependence of the community of nations, and that Sustainable Development should become a priority item on the agenda of the international community” (UNCED, 1992).

4) The Constitution

In order for one to see this research paper in context, the researcher also needs to highlight the content of what the Constitution of South Africa expects from everyone regarding the environment.

In Faber (2000, p.34 &5) the following is stated for everyone to try and achieve:

“The Constitution of the R.S.A., Act 108 of 1996 (Constitutional Assembly, 1996; Department of Constitutional Development, 1996; Rademeyer, 2000, p.29 & DEAT, 1997, p.40) is the supreme or highest law of R.S.A. It provides a general framework within which any law or conduct is consistent with its provisions would be invalid while its obligations imposed must be fulfilled. The Bill of Rights forms part of this legislative framework and its aim is to ‘enshrine the rights of all people in our country and affirms the democratic values of human dignity, equality and freedom’.

Section 24 of the Bill of Rights contains the main, overarching environmental right and provides that everyone has the right -

1. to an environment that is not harmful to their health of well being; and
2. to have the environment protected, for the benefit of present and future generations through reasonable legislative and other measures that-
 - prevent pollution and ecological degradation;
 - promote conservation; and
 - secure ecologically sustainable and the use of natural resources while promoting justifiable economic and social development.

Section 24 (a) is worded in the negative, most probably to avoid putting a positive, but very stringent obligation upon the state to provide an environment which benefits and ensures the ‘health’ and ‘well being’ of people (Barnard, 1999; Loots, 1997). Although not specifically stated in this section, the intention is that certain actions or remedies, such as an interdict or a clause for damages, will provide the appropriate

relief where an adjacent landowner or resident's 'health' or 'well being' is affected by the negative impacts caused by an industry's slag disposal practices on the surrounding environment (Loots, 1997).

Section 24 (b) guarantees a person's right to have the environment protected 'through reasonable legislative and other measures' in order to prevent pollution and ecological degradation (Barnard, 1999; Loots, 1997). The importance of this section lies in the fact that a person who is convinced of the fact that the presence of a slag dumped is causing environmental pollution or ecological degradation may now approach a court for an order compelling state authorities to take positive and pro-active steps to protect the environment as they are now expressly authorised to do so by this section. The local community, which may include adjacent landowners, downstream water users and residents within the impact area of slag dumps, are therefore empowered to initiate steps to have their environment protected and do not have to rely solely on government for this purpose (Barnard, 1999).

This should be in the forefront of everyone's mind in anything done before it is done. The environment isn't only the government's responsibility, but this Section 24 gives us, the people, a way to make our environment better for generations to come.

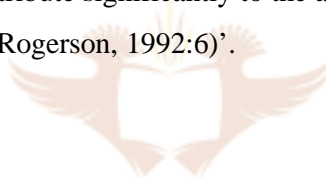
It is important to keep the following in mind. Two 'connective threads' that hold together the diverse array of sub-disciplines within geography are the 'Human-Nature' relationships and the 'Society and Space' themes (Cloke *et al.*, 1999). The discipline of geography is therefore inherently linked to the field of environmental management as it has traditionally focussed on explaining the relationship between people and the environment.

Concepts of nature and environment have always been central to South African geography. In South Africa, especially in the 1990's, geography has been far more diversified and challenging, including a greater reflection upon the geographies of

post apartheid reconstruction (McCarthy and Rogerson, 1992; Oldfield and Robinson, 2000).

Environmental problems and challenges hence form a key focus of the work of geographers today. There are new and different demands on the discipline in the country as a result of the current political and social transformation as well as the influence of globalization. South Africa now confronts serious problems regarding the environment, development, poverty, health and education:

‘The pressing problems of drought, pollution, and the appalling environmental conditions endured by the country’s shack-land dwellers, and the looming threat of and AIDS epidemic, are illustrations of these challenges. Geographers of South Africa are well placed to contribute significantly to the analysis and resolution of these issues (McCarthy and Rogerson, 1992:6)’.



In response to these problems South African geographers have moved into the forefront of the country’s political, social and economic transformation as academics, researchers, political commentators, practitioners, and policy makers (Fairhurst *et al.*, 2001).

1.1.2 Statement of the Research Problem

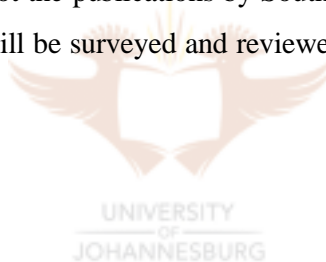
Geographical publications are as diverse and far reaching as the very discipline itself. Many geographers are publishing papers in different journals. Most of these geographers are involved with specific departments at universities. These geographers lecture the students in the different sub-disciplines of geography and integrate the environmental issues accompanied by this field of study.

These geographers are also doing their own research and this is what will be published. The problem that is looked at is whether they are publishing environ-

mentally orientated papers or whether the publications are mostly only based on a specific sub-discipline. For example are the physical geographers only publishing papers on physical geography, without integrating any environmental emphasis/trends?

The problem still remains that it can only be assumed that the publications will be environmentally orientated due to two main reasons. In the first place, the fact that the Geography departments, at universities, are only environmentally orientated in name and not in practice. Secondly, they are lecturing the students by incorporating environmental issues in the sub-disciplines, but don't give enough practical experience in the environmental field.

The problem of whether or not the publications by South African geographers are environmentally orientated will be surveyed and reviewed for the period between 1996 and 2001.



1.1.3 Research Methodology Framework

The RAU library database system was used to extract journal articles written by South African geographers between 1996-2001. The databases searched were BSCOHOST, Science Direct, Emerald, Infotrac and JSTOR. The databases also provide a list of journals commonly used by South African geographers, such as South African Journal of Geography. A list of well-known geographers was taken off the staff websites of South African university geography departments, as well as websites for professional geographers. This was correlated with the list of commonly used journals for South African geographers. Some journals can be found online, and some in hard copy format in the RAU library. A search was also conducted from the research books of South African universities, in which the annual publications of each university geography department were provided, but unfortunately not all the years could be traced. Thus a true representation of the geographers' research cannot be displayed.

The researcher also e-mailed the various university geography departments. Questionnaires were also sent to the different departments and personal interviews were also conducted. In order to provide a logical and reasonable answer to the question, stated in the title, a study was done as to the number of publications written by the various geographers in the various departments of the universities. Use was made of two forms of publication identification, namely, specifying published works for the period 1996-2001, for chosen university departments. This was followed by an indepth analysis of publications done by all South African geographers in journals.

The publications were divided into three disciplines namely,

- 1) Physical Geography: the study of physical features on the earth's surface, like geomorphology, climatology, etc.

- 2) Human Geography: refers to human populations, their settlements and their transportation routes, such as economic geography, settlement geography, etc., and
- 3) Environmental Oriented Geography.

The following has to be looked at in relation to the above mentioned. There seems to be a distinction between the philosophies/approaches to physical geography and human geography. The “purer” forms of physical geography are still dominated by positivism (Bird, 1993). The debate thus seems to be on which philosophies/approaches are most appropriate to human geography. There appear to be the three main philosophies/approaches, namely positivism, humanism and structuralism. The differences are highlighted in the Jackson-Smith triad. There are a vast number of other approaches, some of which are post-modern (which gives scope for marginalized groups) realism, and reductionism (which brings unity of method across disciplines).

In their exploration of social geography, Jackson & Smith (1984, in Bird, 1993, p.47) found it useful to describe a triad: “...various perspectives exploited by social geographers can all be illustrated with recourse to the philosophical triad (of positivism, humanism and structuralism) which we take as our major theme”. Figure 2 actualises this ‘imperfectly connected triangle’; Table 1 summarizes a somewhat similar classification used by Johnston (1983b, in Bird, 1993, p.47). In proposing such a triad, Jackson and Smith warn against attempts to synthesize one scheme by some form of eclectic ism or conflation of fundamentally different philosophies.

It is also worth recalling an earlier diagram from Chorley (1976, in Bird, 1993, p.49) where there is a dichotomous classification of positivism and 'behaviouralism' and which has the added advantage of a simple time dimension.

In the 1960s, movement over time would have been from right to left across the dichotomous divide, such as the transmutation of human geography into 'locational analysis'. Chorley still suggests that the purer forms of physical geography still remain happily positivistic with a vertical line on the left of the diagram, but that since the 1970s there is a drift in human geography from positivism into what Chorley calls 'behaviouralism'. The most spectacular 'move to the right' is that part of physical geography dealing with hazards. The drift away from positivism has continued; but we must not exaggerate. There is still a mainstream geography, which is overtly or implicitly positivistic in approach, and this positivist share of the discipline increases as we move from the researcher frontier down into undergraduate and school teaching, and away from Anglo-American geography (Bale & McPartland, 1986 in Bird, 1993, p.50-1).

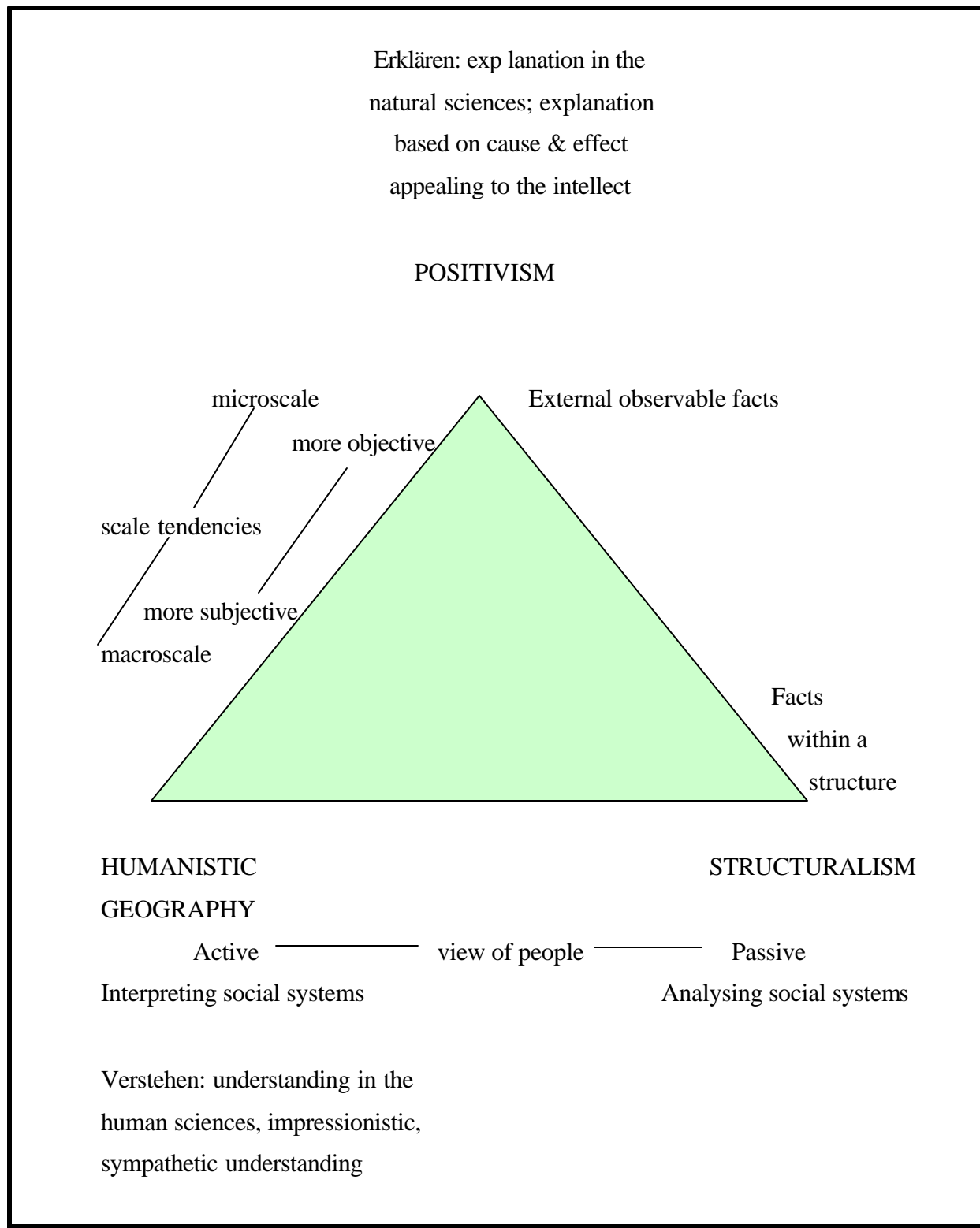


Figure 2: The Jackson-Smith triad (Bird, 1993, p.48)

Table 1: Some polarities in the methodological spectrum (Bird, 1993, p.50-1)

'Harder'	'Softer'
Esprit de géométrie-in science (the geometric realm) elements are clear, abstract, unchangeable, in a realm removed from everyday speech: there is a method.	Esprit de finesse-elements derive from a common heritage and, though known by common names, elude definition: they are mixed and confusing: there is no method.
Naturwissenschaften-natural sciences-more hypothetical than the human studies. They have the means of testing hypotheses about external nature by experimentation and mathematical calculations, which are not feasible when dealing with historical life.	Geisteswissenschaften-human studies-the concrete human being who embodies values is considered central to them.
Phenomenal environment	Behavioural environment
Erklären-explanation in the natural sciences	Verstehen-understanding in the human sciences
Environmentalism -world of objects	Existentialism – world of beings. Life world
Categorical paradigm	Dialectical paradigm
Empirical-analytic form of knowledge	Historical - hermeneutic form of Knowledge
Taken-for-granted world	Emerging world
Convergent thinking	Divergent thinking
Deductive	Inductive
<div style="display: flex; justify-content: space-between; align-items: center;"> Theoretical language Observation language </div> <div style="text-align: center; margin-top: 10px;"> Reflexive relation </div>	
<div style="display: flex; justify-content: space-between; align-items: center;"> Expected Experienced </div> <div style="text-align: center; margin-top: 10px;"> Diagonalism </div>	

Only in some fields of human geography is the natural science model held as a minority view. If the case is overstated the case, let us just say that positivism still has a strong hold within the discipline, so it is not too far-fetched to write of ‘positivism and the alternatives’ and to remember the long-standing polarity of *erklären* (explanatory-positivistic) methods of investigation and *verstehen* (sympathetic understanding) approaches (see Table 1) (Bird, 1993, p51-2).

In looking at a system theory there seems to be a few characteristics that needs to be taken into account (see Table 2).

Table 2: The characteristics of hard and soft systems. (Bird, 1993, p.161)

Hard systems	Soft systems
Well-defined goals	Objectives frequently poorly defined
Well-defined boundaries	Boundaries poorly defined
Clearly established procedures	Decision-taking procedures vague
Quantifiable performance	Difficult to quantify
Clearly structured	Poorly structured
Physical systems	Human activity systems

It must however be admitted that triads, dichotomies, and polarities, however useful as dramatic summary headlines, miss a great deal of the rich variety of various epistemologies. Johnston (1983b) treats the three philosophies of positivism, humanism and structuralism, which he terms ‘approaches’ because each embraces a variety of related ‘viewpoints’ (see Table 3).

Table 3: Johnston's four philosophical categories relevant to Human Geography (Bird, 1993, p. 161)

Political stance	Approach	Ontology	Epistemology	Methodology
Status quo	Empiricist	Experienced things exist as fact	Know via experience	Presentation of experienced facts
Status quo	Positivist	Agreed verifiable evidence	Know via experience based on verifiable evidence	Scientific methodology
Liberal reformers	Humanist	What exists is that which people perceive to exist	Knowledge obtained subjectively in a world of meanings created by individuals	Investigation of individual worlds = emphasizes individuality and subjectivity rather than replicability.
Radicals	Structuralist	What really exists (i.e. forces or structures creating the world) cannot be observed directly but only through thought	World of appearances does not necessarily reveal world of mechanisms (which causes world of appearances)	Construction of theories, which can account for what is observed but which cannot be tested because direct evidence of their existence is not available.

In identifying which research pertained to environmental geography, two simple questions were asked of the research topics inline with the empirical nature of environmental geography. Firstly, does the research reflect the human-environmental geographic interrelationship? Secondly, does it follow the critical rationalistic or neorealistic approach to geography, or does it use remote sensing or Geographical Information Systems to elucidate results? (Barnard, 2001). If an affirmative answer can be given for either of the two questions the research was considered to be in the environmental geographic sphere of research.

By analysing all the data gathered, and sorting it into the three above mentioned categories, graphs and tables are provided as a visual means of understanding and explaining the relevance of the research outcomes.

Based on the responses received by e-mail and the mentioned questionnaires, and thus the amount of information, from the various universities, under investigation, the following institutions were selected for a more in-depth analysis (Names given by the general public appear in brackets):



1. University of the Free State (KOVSIES)
2. Potchefstroom University for Christian Higher Education (PUKKE)
3. University of Stellenbosch (MATIES)
4. University of Cape Town (IKEYS)
5. University of Pretoria (TUKKIES)
6. University of Natal (NATAL)
7. University of South Africa (UNISA)
8. University of the Witwatersrand (WITS)

After a thorough analysis of publications generated by geographers at the above-mentioned institutions, the researcher will endeavour to determine whether their geography departments are becoming more environmentally orientated - as is claimed by many of them.

The problem statement, of this research paper, clearly stipulates what the mission is: To determine whether the institutions have become more environmentally orientated. It would also be interesting to try and establish what the influence, if any, departmental heads, being physical or human geographers, would have on this orientation.

1.1.4 Aims of the study

The main aim of this study will be to determine the environmental contents of geographical publications, by South African geographers for the period 1996 – 2001. The research will be conducted on different levels, including reviews of journal publications, and articles published on the World Wide Web. Thus the researcher is determined to establish whether or not South African geographers are researching and publishing what they claim, - to be doing, as well as whether they are following the international geographical trends of having a very environmentally focused geographical discipline.

The study will also enable the researcher to determine which geographical areas (more specifically within which universities) have been more pro-active in this respect. The applicability of the research that was done, will also be evaluated. Thus the researcher hopes to eventually, advise and direct further research (in the correct environmental fields) in order to create a more pro-active environmental publishing agenda.

1.2 Study Area

Figure 3 shows all the Universities in Southern Africa as for 1996. The selected universities for this study, as specified in section 1.1.3, are highlighted.

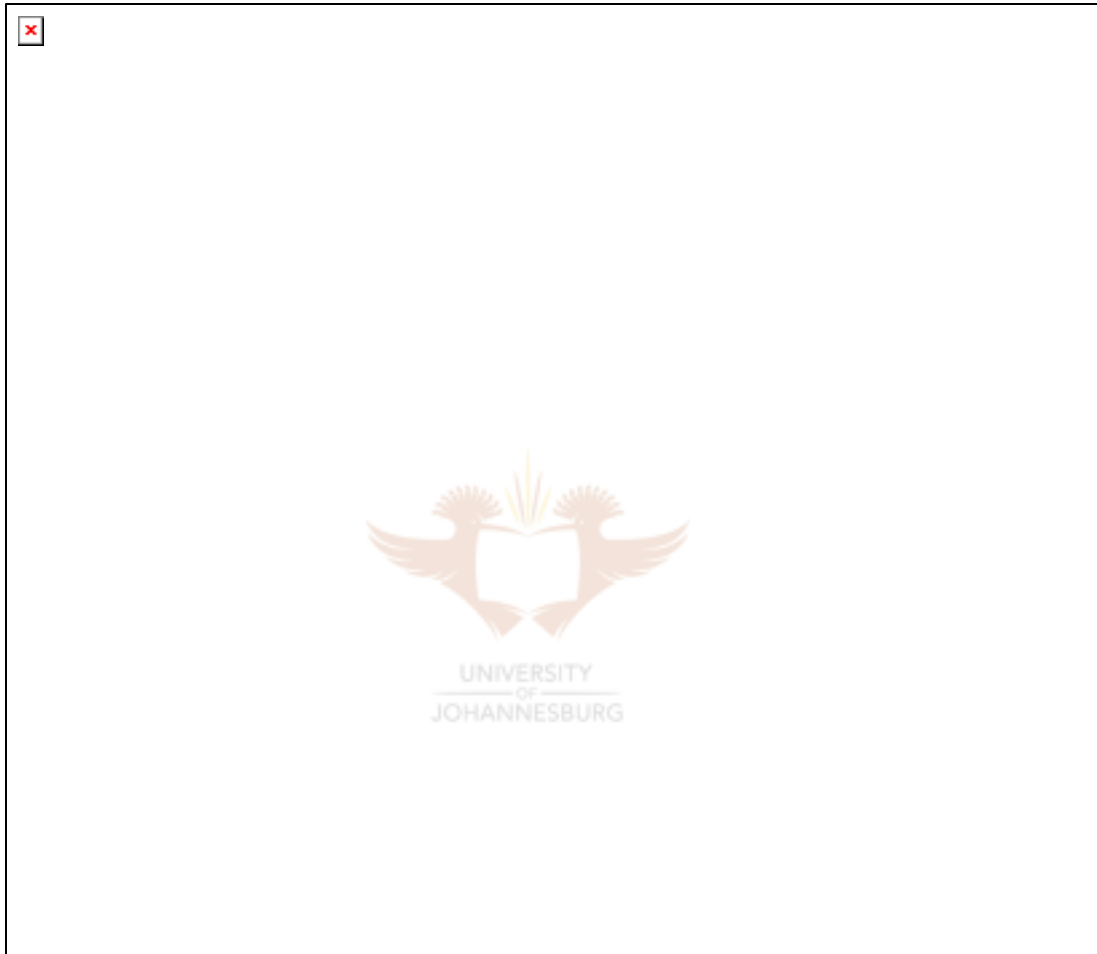


Figure 3: Universities of Southern Africa (Anon, 1996)

Universities of Southern Africa

- 1 University of Cape Town (UCT)
- 2 Universiteit van Wes-Kaapland (UWC)
- 3 Universiteit van Stellenbosch (US)
- 4 Vista University (Port Elizabeth) (VISTA)

- 5 University of Port Elizabeth (UPE)
- 6 Rhodes University (RU)
- 7 University of Fort Hare (UFH)
- 8 University of the Transkei (UNITRA)
- 9 University of Zululand (UZ: Umlazi Campus)
- 10 University of Natal (Durban) (UND)
- 11 University of Durban Westville (UDW)
- 12 University of Natal (Pietermaritzburg) (UNP)
- 13 University of Lesotho (Roma)
- 14 University of the Free State (UFS)
- 15 Vista University (Bloemfontein) (VISTA)
- 16 Vista University (Batho) (VISTA)
- 17 University of Zululand (UZ: Empangeni Campus)
- 18 University of Swaziland (Roma)
- 19 Potchefstroom University for CHE (PUCHE)
- 20 Vista University (Soweto Campus) (VISTA)
- 21 Rand Afrikaans University (RAU)
- 22 University of the Witwatersrand (WITS)
- 23 University of Pretoria (UP)
- 24 University of South Africa (UNISA)
- 25 Vista University (Mamelodi Campus) (VISTA)
- 26 Medical University of Southern Africa (MEDUNSA)
- 27 Vista University (Pretoria) (VISTA)
- 28 University of North West (formerly UNIBO)
- 29 University of Botswana (Roma)
- 30 University of the North (UNINO)
- 31 University of Venda (UNIVEN)
- 32 University of Namibia

CHAPTER 2: REVIEW OF TERTIARY INSTITUTIONS WITH SPECIAL REFERENCE TO CHOSEN INSTITUTIONS

2.1 Introduction

“From space we saw a small and fragile ball dominated not by human activity and edifice, but by a pattern of clouds, oceans, greenery and soils. Humanity’s inability to fit its doings into that pattern is changing planetary systems fundamentally. Many such changes are accompanied by life threatening hazards. This new reality from which there is no escape must be recognised and managed” (Gro Harlem Brundtland, 1987, Our Common Future).

The apparent impasse on intellectual direction notwithstanding, various factors combined to give strength to the environmental focus. The then President of the South African Geographical Society, the late Dr. Francis Gamble, used the 1991 conference platform to advance an environmental orientation of the discipline. The opportunities for consultancy; the closing of job opportunities traditionally associated with geography training at tertiary institutions; the political and educational imperatives of curricula changes; evolving environmental laws and the commercialisation of universities and education, all combined to create more space for environmental research and teaching. The renaming of university geography departments, and the realignment of geography curricula towards environmental issues placed further focus on this aspect (Ramutsindela, 2002).

2.2 Name changes of geography departments

Environmental consciousness had a great influence on geography. Environmental Management Programmes and Environmental Impact Assessments became very important. Thus there were shifts that took place within South African universities as the relationship between geography and environmental management strengthened.

Geography Departments integrated environmental studies into their curriculum to lecture students on how to become Environmental Managers and everything it may entail. Subsequently there came about a renaming of Geography Departments to incorporate some or other 'environmental' aspect, such as, for instance, the Department of Environmental and Geographical Science.

There is an acceptance by 75% of academic geographers that concepts of environmental science are now driving the structuring of South African geography (Davies, 2001). However, geography on its own still matters and Davies (2001: 2), notes that '...the majority view is that the scientific integrity of the discipline must be retained if we are to provide an effective foundation upon which to develop in the applied field of environmental management' (Davies, 2001: 2). The most positive outcome of this shift is that environmental management requires integration of knowledge from a variety of disciplines and this practice of integrative science has always formed an essential geographical skill (Davies, 2001).

In the different names of the departments one can clearly identify differences. This is one of the main reasons for some published papers being environmentally orientated and others not. Staff members at some departments also publish more research papers than some at other departments. One of the reasons for this may be a more favourable student : lecturer ratio in some departments than in others. Both available time and

funding for generating research publications are also some of the problems that need to be taken into consideration.

The following section briefly lists some of the geography departments name changes:

1. Rand Afrikaans University (RAU) was established in 1967 and the Geography department's name changed from Department of Geography to Department of Geography and Environmental Management in 1995.
2. Free State University was established in 1904, and its Geography department in 1919. It is still known as the Department of Geography.
3. Rhodes University was established in 1937 and its Geography department's name changed from Department of Geography to Department of Geography and Environmental Sciences after 1997.
4. Natal University in Durban was established in 1949 and its Geography department's name changed from Department of Geography to Department of Geography and Environmental Sciences after 1997.
5. Potchefstroom University was established in 1934 and its Geography department's name changed from Department of Geography to Department of Geography and Environmental Study in 1997. They have since been incorporated into the School for Environment and Development.
6. Durban-Westville University was established in 1961 and its Geography department's changed from Department of Geography to Department of Geography and Environmental Studies in 1997.
7. The University of Cape Town was established in 1936 and its Geography department's name had already been changed to the Department of Environment and Geographical Science, as early as 1993.
8. Stellenbosch University was established in 1920 and its Geography department in 1914. It is now known as the Department of Geography and Environmental studies.

9. Pretoria University was established in 1920 and its Geography department's name changed from Department of Geography to Department of Geography & Geoinformatics in 2000.
10. Western Cape University's physical geography department only is known as the Department of Earth Sciences (where physical geography is incorporated with geology).
11. The University of the Witwatersrand was established in 1922 and its geography was already known as the Department of Geography and Environmental Studies as early as 1992.
12. The University of South Africa was established in 1946 and its geography was called the Department of Geography & Environmental Sciences from approximately 1997 to 2002. They have since amalgamated to be called Department of Anthropology, Archaeology and Geography.

Table 4 summarises the above.

From studying Table 4 it is noticeable that at least half of the current geography departments, at South African universities, have included “environmental science” in their name. Three of the universities actually have separate geography and environmental departments (Rhodes, Western Cape and Free State). The University of Port Elizabeth still has only a Geography Department.

This gives the reader a clear indication that since approximately 1992 environmental geography has become institutionalised in societies, periodicals, textbooks, curricula and consulting practices. It could also indicate that we are clearly approaching the end of systematic physical and human geography, and that a more broad-visioned environmental geography is ready to take over.

Table 4: Geography Departments in South Africa

University	Name of Department
Rand Afrikaans University	Department of Geography & Environmental management
University of the Witwatersrand	Department of Geography & Environmental Studies
University of Cape Town	Department of Environmental & Geographical Science
University of Stellenbosch	Department of Geography & Environmental Studies
University of Port Elizabeth	Department of Geography
Potchefstroom University	School of Environmental Sciences & Development
University of Natal	Department of Life & Environmental Sciences
University of Pretoria	Department of Geography, Geoinformatics and Meteorology
University of Zululand	(Not available)
University of Durban-Westville	School of Life & Environmental Sciences
University of the Free State	- Department of Geography - Centre for Environmental Management
University of the Western Cape	- Geography Department (Human Geography only) - Department of Earth Science (Physical Geography and Geology)
University of Venda	School of Environmental Science
University of the Transkei	School of Environmental Science
Rhodes University	- Geography Department - Environmental Science Department
UNISA	Department of Anthropology, Archaeology and Geography

2.3 Background and curricula of the chosen tertiary institutions

Different models exist at university level for environmental management training. Some universities require that graduate students studying towards environmental management have undergraduate training in geography. It is suggested by the researcher that those trained in geography will have the knowledge and skills to make a significant contribution to environmental management in South Africa. It seems that the future of geography will be determined by the importance put on the foundational concepts of geography in environmental management training.

The researcher includes the following information regarding the policies, curricula and staff members for each of the selected universities. This is done in view of highlighting how each of these institutions incorporates environmental studies at under- and postgraduate levels. The rest of this research paper will be dedicated to proving whether it is true in practice or not.

2.3.1 University of the Free State (UFS)

At present the department resides in the Faculty of Natural Sciences, but also caters for students from the Faculty of Humanities. It claims to be a focused and dynamic department where students are more than just numbers. They are taken on excursions regularly to expose them to practical environmental and development problems. Geographical Information Systems (GIS) features strongly in undergraduate as well as postgraduate programmes of the department. The most sought after course is the structured Masters' degree in Geographical Information Systems (full- or part-time) (UFS, 2003).

The curricula entail the following:

Undergraduate courses:

First Year: Emphasis is placed on human and physical geography, as well as cartography. A very small component, called environmental geography, is also presented.

Second Year: A rather large emphasis is placed on environmental studies and environmental management. GIS also forms an important component of the second year syllabus.

Third Year: An intense study of Applied Environmental Studies and Environmental Management, and extensive practical work related to these subjects are also conducted. Once again GIS also forms an important part of the third year syllabus.

Postgraduate courses:

They do offer an Honours degree with extensive Environmental Geography studies. Both the masters- and doctorate degrees are offered as Environmental Geography degrees.

The department has a staff compliment of six lecturers (UFS, 2003). The above indicates a strong commitment towards environmental studies.



2.3.2 Potchefstroom University for Christian Higher Education (PUCHE)

Various Environmental Management and training modules have been developed: A prospect analysis model; the introduction of IEM principles for decision making at the policy level; inadequacies of the EMPR system; standards and guidelines to formulate environmental management mission statements, policies, objectives and targets; environmental management systems: a training module; EIA training module to meet industrial/corporate needs; environmental audit protocol for asbestos mining rehabilitation (De Villiers, A.B., 1995).

The curriculum entails the following:

Undergraduate courses:

First Year: No mention is made of any Environmental Studies.

Second Year: They only incorporate the impact of urbanization on the environment, as part of urban studies. There is no separate section devoted to Environmental Studies.

Third Year: Fairly extensive emphasis is placed on Environmental Management, Impact Assessment and GIS. They also include practical work on Environmental Management.

Postgraduate courses:

They do offer an Honours degree that is dedicated to being a preparation phase for the Masters degree. Masters degrees are offered as either a tutored or thesis course in Environmental Science. Their doctorate degrees are also devoted to Environmental Studies, in that it is termed: Geography and Environmental Studies.

The department has an academic staff compliment of five. From the above it is clear that the biggest emphasis is placed on Environmental Studies, only as from the 3rd year (PUCHE, 2003).

2.3.3 University of Stellenbosch (US)

During the past four years Environmental Studies became, together with urban studies and GIS, one of the three main research foci of this Department. The recent extension of the Department's name to "Geography and Environmental Studies" reflects this shift in research emphasis. Among the diverse themes studied, land use and agriculture-related topics at the national, rural and local urban scales, are prominent. The development impact of land use, water consumption, communications and specific economic activities on the environment and the implications for management and planning are analysed (Van der Merwe, 1995).

The university has the oldest Geography department in the country (Established in 1914, as part of the then Victoria College) and now has the options of Geography as a major subject in BA, BSc and BEcon degrees. The staff compliment is nine in total.

Here they place a substantial focus on Environmental Studies.

The curriculum entails the following:

Undergraduate courses:

Environmental Studies are offered, fairly limited, in the undergraduate courses.

Postgraduate courses:

They do offer Environmental Studies rather extensively in all the Honours, Masters and Doctorate degrees. This is also offered as a choice, as apposed to studies in other disciplines of Geography.

It is clear, from the above, that they do put emphasis on Environmental Studies in their postgraduate courses (US, 2003).

2.3.4 University of Cape Town (UCT)

Recently, the Department of Environmental and Geographical Science has played a leading role in the development of a progressive interim syllabus for school Geography at the primary and secondary levels in the Western Cape. The syllabus guide and documentation was developed with the co-operation of a fully representative teacher study group and in conjunction with the Western Cape Education Department (Fuggle, 1995).

In a rapidly shrinking world in which the pace of change is accelerating, people and their institutions are facing unprecedented challenges. Although

there is an explosion of knowledge in both the natural and social sciences, this has been paralleled by an increasingly complex range of biophysical and socio-economic problems. There is, therefore, a need for an integrative discipline, providing a holistic perspective, a broader understanding, and focused analysis and management of today's pressing environmental issues. The Department of Environmental and Geographical Science at the University of Cape Town is dedicated to meeting these needs.

UCT has a major environmental pulse running through their Environmental and Geography Science department. Their head of department is Prof Richard Fuggle. He is strongly in favour of the idea of: "Integrated Environmental Management and Environmental Quality Assurance". UCT has linked their geography department and the Environmental Management Science department. They all fall under one roof.

They seem to be a very pro-active department.

Their curricula entail the following:

Undergraduate courses:

First Year: Environmental Science forms an integral part of the 1st year syllabus.

Second Year: Environmental problems are looked at extensively as a course offered.

Third Year: Two sections are devoted to Environmental Studies, namely Environmental Analysis and Environmental Change.

Postgraduate courses:

The Honours degree does offer Environmental Management as an option. Both the Masters- and Doctorate degrees offer extensive options for Environmental Studies.

It is thus evident that the integration of Environmental Studies is extensive in both the undergraduate and postgraduate courses (UCT, 2003).

There are 10 permanent staff members at UCT, (see Table 5) of which three are practicing Environmental Sciences. There are thirteen long-term contractor staff

members, of which six are practising Environmental Sciences. There is a strong environmental contingent in the UCT Geography department. Fuggle believes that these metamorphisms can be contributed to the continual development of the geographical scientist in their pursuit of continual improvement in their scientific discipline. The one common denominator between all the geographical disciplines is that their environmental aspects or correlations are the influence of the head of the departments. This thought is well proven by the UCT staff representation. The interaction between humans and their environment, and the variability of this environment, is a common theme in the geographer's research. One other aspect, that is also unique to UCT, is that they seem to be the only Geography department in the country that boasts research staff, devoted only to research.

2.3.5 University of Pretoria (UP)

The Department of Geography, Geoinformatics and Meteorology comprises three former groups from the University of Pretoria, namely: the Geoinformatics section of the Department of Town and Regional Planning, the Meteorology section of the Department of Earth Sciences and the Department of Geography.

The Department is established in the Faculty of Natural and Agricultural Science and has close ties with the Faculties of Humanities and Education, as well as the Centre for Geoinformation Science and the Centre for Environmental Studies. Undergraduate and graduate programmes are presented in the School of Physical Sciences (Faculty of Natural and Agricultural Sciences) and in the School of Social Sciences (Faculty of Humanities). There are eighteen staff members and a healthy student base.

The department's curriculum consists of the following:

Undergraduate courses:

First Year: No components of Environmental Studies are offered.

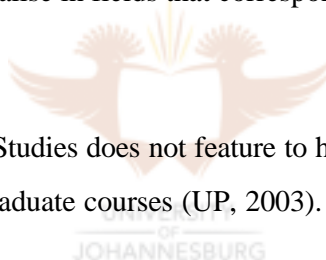
Second Year: No Environmental Studies are offered at this level either.

Third Year: Environmental Geomorphology and Natural Resource Management form part of this year's study.

Postgraduate courses:

For the Honours degree students may compile their own specification in either the Geographical or Environmental field. The department offers research Masters and PhD. Degrees in the Faculty of Natural and Agricultural Geography, Geoinformatics and Meteorology, and in Geography in the Faculty of Humanities. Candidates are however encouraged to specialise in fields that correspond with the expertise of the teaching staff.

It seems that Environmental Studies does not feature to highly on the agenda of both the undergraduate and postgraduate courses (UP, 2003).



2.3.6 University of Natal (Durban) (UN)

The Geographical and Environmental Science Department consists of forty-four personal, sixteen of which are currently working on research projects. The course coordinator is Prof. Fred Ellery.

Main topics of research are:

- Environmental toxicology of fluorides and metals in terrestrial ecosystems degraded by mining wastes and atmospheric deposition.
- Revegetation and Restoration of degraded land.
- Ethno-ecology
- Ecophysiology of birds, marine ornithology

- Behavioural and Evolutionary Ecology
- Dispersal and colony founding in social spiders
- Evolutionary Biology and Speciation Mechanisms
- Plant Biotechnology and Physiology
- Plant / Animal Population Genetics
- Seed Biology
- Plant Ecophysiology and Seed Physiology
- Environmental geomorphology
- Freshwater Malacology, Parasites of Human and Non-human Primates
- Plant Physiology

One can clearly see that there is a strong zoology, botany field of expertise running through the Geographical and Environmental Science department.

At the undergraduate level the option of specialising in Geography and Environmental Management does exist, although the above-mentioned fields of study do take preference. At the postgraduate level there are also Environmental options. Seemingly the department does offer Environmental Studies at all levels (honours, masters and doctorate). It does however seem to only be incorporated, as a section, to the other fields of study (UN, 2003*). (They do however also have a Centre for Environment and Development (CEAD). A geographer Professor Rob Fincham is the director. FCEAD focuses on Environmental training, and further investigation may reveal that this centre does produce environmentally orientated papers).

2.3.7 University of South Africa (UNISA)

The impression is created that the department is fairly pro-active in the incorporation of Environmental Studies in their curricula. The reason for studying Geography is stated as follows:

“Geography deals with the world we live in - a world rich in cultural diversity and natural beauty, but plagued by human misery and threatened by environmental degradation. Geography is concerned with the environmental problems, which affect our daily lives, our future existence, our quality of life and the quality of our environment. It involves both the human and the natural sciences and studies the relationship between humans and their environment. Geography aims at making a better world for all - a world free of pollution, erosion, poverty and famine.”
(UNISA, 2003).

The staff consists of eleven members, and the curricula entail the following:

Undergraduate courses:

First Year: A special section is devoted to Sustainable Development, resource use and misuse, Environmental Monitoring, Conservation and many other Environmentally related aspects.

Second Year: Environmental Monitoring and Sustainable Development once again receive attention during this year.

Third Year: A substantial amount of Environmental Studies is included during this year.

Postgraduate courses:

Environmental Studies features at the forefront of choices at the honours, Masters- and Doctorate levels.

From the above, it is clear that the department is very pro-active as far as Environmental Studies are concerned. If this will be proven to be true, as far as their publications are concerned, remains to be seen (UNISA, 2003).

2.3.8 University of the Witwatersrand- Department of Geography & Environmental Studies

Geography was established as a separate university department at Wits in 1918. Between then and 2000, the department has been chaired by only six professors, the late John Wellington, the late Stanley Jackson, Peter Tyson, Keith Beavon, Chris Rogerson and associate-professor John Earle. In 2001, in line with broader changes throughout the University, the Department of Geography and Environmental Studies joined with the Department of Archaeology to form the School of Geography, Archaeology and Environmental Studies. The present Head of the School is Professor Bernard Moon. There is a staff compliment of nine academics.

The discipline of Geography and Environmental Studies at Wits occupies a prominent position in South African Geography, based on the research and publication record of its academic staff. Each year, undergraduate students are admitted to read for degrees in the Humanities, Science, Commerce, Law, and Town and Regional Planning. At postgraduate level there are courses for students studying for Honours degrees and there are facilities for students working towards Masters - by dissertation or

coursework and research report - and Doctoral degrees. The discipline also provides a course in Geography teaching methodology as part of the Postgraduate Certificate in Education (PGCE), and the B.A. (Ed.) degree. The lecturers in the discipline are well known, both locally and internationally, for cutting edge research as well as teaching excellence at both undergraduate and postgraduate levels.

It does seem, however, that Environmental Studies is not at the forefront at either the undergraduate or postgraduate level. It is however incorporated as an important part of Geography itself.

Wits aims to produce graduates with (a) a broad understanding of major Environmental Issues and the concept of Sustainable Development (b) the ability to effectively analyse and manage environmental resources and problems, with emphasis on the southern African situation (WITS, 2003).

In conclusion to this section the researcher would like to add Table 6, which indicates some of the key differences in knowledge production in the disciplines of geography and environmental management (Davies, Pers. Comm., 2001).

Table 6 illustrates how the discipline of geography provides a body of theoretical knowledge about people (the social realm) and the environment (the biophysical realm) and the relationships between them. Geography, as a discipline straddling both the social and natural sciences, is therefore well placed to serve as a foundation for the applied science of Environmental Management.

Geography Departments and geographers are therefore in a strong position to respond to the demand for environmental training.

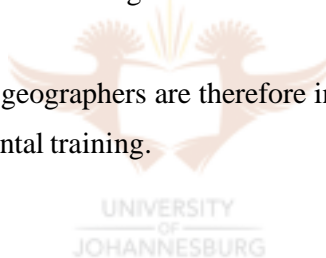


Table 5: The Terrain of Geography & Environmental Management

	GEOGRAPHY	ENVIRONMENTAL MANAGEMENT (EM)
Type of knowledge	Theoretical, Positive and Normative	Applied
Goal of discipline	<ul style="list-style-type: none"> • To understand people-environment relationships & the outcomes thereof (environmental problems). • To provide conceptual frameworks for explaining/interpreting this reality. • Deriving solutions for environmental issues. 	<ul style="list-style-type: none"> • To manage the environment • To provide a set of formulae for environmental management.
<u>Content</u>	<ul style="list-style-type: none"> • Approaches to knowledge • Research methods • Sub disciplines: <ol style="list-style-type: none"> a) Physical Geography, e.g. biogeography, geomorphology b) Human Geography, e.g. political, urban and cultural geography c) Integrated Physical and Human Geography, e.g. Sustainable Development 	Tools and techniques for EM: <ul style="list-style-type: none"> • Environmental policy • Environmental Assessment (SEA, EIA, SIA, HIA) • Environmental Management Systems • Environmental Auditing • Environmental Indicators • Public Participation
Type of learning	Education: <ul style="list-style-type: none"> • Acquisition of substantive knowledge • Application of theory to applied problems • Problem-solving • Critical thinking 	Technical Training: <ul style="list-style-type: none"> • Application of tools for managing the environment
Relevance to environmental issues	Relevance to techniques for the management of environmental issues through intervention	Provides substantive knowledge and theoretical frameworks for understanding environmental issues and potential solutions

2.4 Trends in Geography departments

2.4.1 Changes

Substantial changes took place in the discipline of Geography. These will be highlighted in the following section. It may also serve as a backdrop as to the reasons for decisions that are currently made. Geography as an academic discipline had to function within a dramatically changing social, political and economic environment, thus making the need for restructured academic Geography inevitable (Nicolau & Davis, 2002). Academic Geography in South Africa must therefore “position itself anew within an evolving and transforming environment” (van der Merwe, 1996, p.56). South African geographers have undoubtedly attempted to reposition and respond to the changing environment, because today, geography departments at many of the tertiary institutions bear evidence of significant structural shifts engineered to meet new challenges (van der Merwe, 2001). Also, Fairhurst *et al.* (2001, p.3) report that “many of the [geography] departmental curricula have experienced structural change, including the establishment of new courses and programmes and in many instances the content of existing courses have been modified to include applied work.” The restructuring of academic Geography in South Africa at present is as a result of a move towards a discipline that is more skills and vocationally based: and a change in the structure and management of tertiary institutions at which Geography is taught and researched (Nicolau & Davis, 2002).

The situation faced by most departments can be summarised in the following:

“Decreasing student numbers, new and less favourable funding formulae, the partial phasing out of Geography as an independent subject in the school curriculum and a decrease in the staff complement of academic departments are some realities which had to be faced and for which solutions had to be found.” (Vlok and Zietsman, 2001, p.1).

To emphasize the above, the following information is given: The number of students (1996 to 2001) taking geography as a subject, on the undergraduate level, is depicted in Figure 4. From the figure it can be noted that the number of first year students gradually declined during 1996 to 1999. First year student numbers started to show an upward trend in the years 2000 and 2001; the second and third year student numbers however fluctuated and in 2001 numbers are still lower than that of 1996. This is a trend at most universities. The fact that geography lost its status as an independent discipline at schools could be cited as the most important reason for a drop in student numbers. This was because most students taking Geography on the undergraduate level were usually students who, upon graduation, entered the education profession. Another reason could be that potential students did not see Geography as an attractive option because the discipline was perceived as not having a specific vocational output. The reason for the upward trend experienced as from 2000, can most likely be found in the fact that most South African Geography departments started to react to societal demands for more skills-based and vocational training, that could ensure specific employment. This echoed the global shift towards more skills-based or vocational training (Christie, 1997), to ensure a better absorption rate into the job market and higher paying incomes (Nicolau & Davis, 2002).

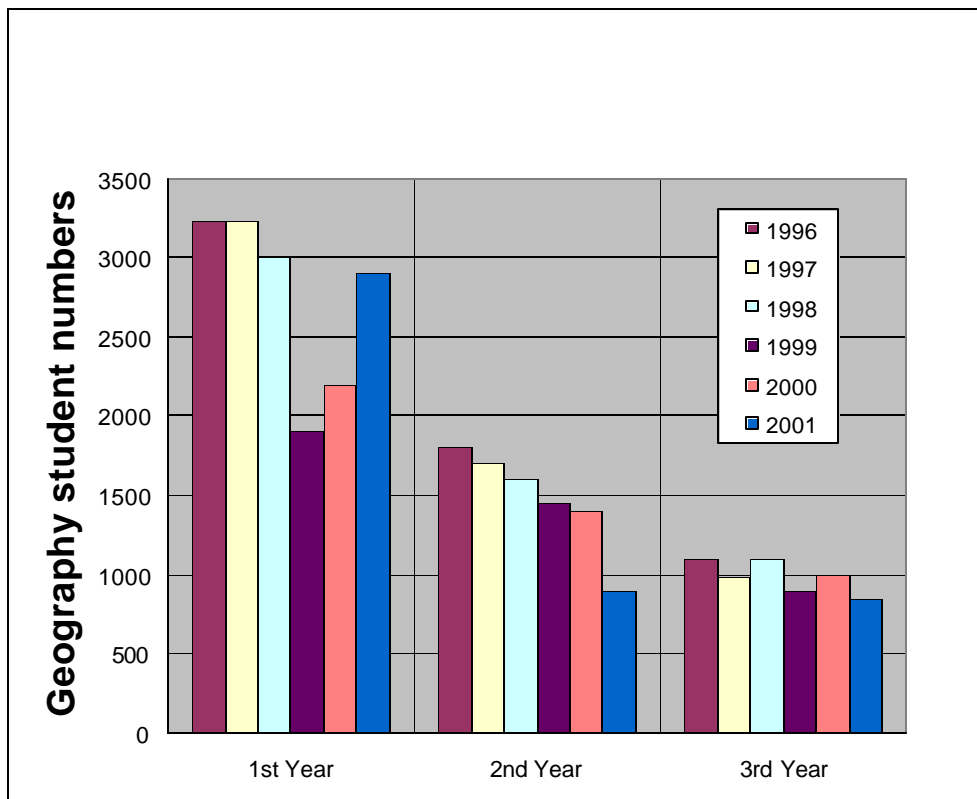


Figure 4: Undergraduate Geography Student Numbers, 1996-2001 (Fairhurst *et al.*, 2001 & SAGG Newsletter, 2001)

This shift towards more skills-based training, linked to greater environmental awareness, have resulted in many Geography departments restructuring their curricula between 1996 and 2001. More environmentally orientated and computer-based training were included. An initial survey conducted as part of the State of the Discipline project, concludes that 15 (71%) of the 21 Geography departments in South African universities, have changed their name to incorporate environmental science and/or Environmental Studies and Management. The survey also found that the majority of Geography departments in South-Africa, now present courses or programmes in Environmental Science or Environmental Management. It should also however be noted that, in addition to the introduction of new environment-based programmes and courses in Geography, as a result of global trends, the last decade also experienced a ‘...rapid rise in the prominence of Geographical Information Systems (GIS) in Geography curricula around the world’ (Hill et al, 2000). South African Geography departments have also followed the international trend and, in this

respect, most departments are now offering training in Geographical Information Systems at undergraduate and postgraduate level (Hill and Nel, 1996). More skills based and vocational training courses and programmes at the postgraduate level were implemented and the effect of these changes is depicted in Figure 5. The number of postgraduate Geography students in South African universities, started to rise consistently during 1996 to 2001. The only exception is the decrease in numbers observed between 2000 and 2001 at Masters level. This rise in postgraduate student numbers certainly seems to be linked to the time frame within which the new environment-based programmes and GIS-based programmes had been introduced. Also, Vlok and Zietsman (2001, p.1) maintain that:

“...devising postgraduate courses specialising in especially geo-informatics and environmental management have resulted in a situation where some of the geography departments now boasts large enrolments for Master’s degrees which even sometimes exceed enrolment in one or more of the undergraduate levels” (Nicolau & Davis, 2002,p.12-20).

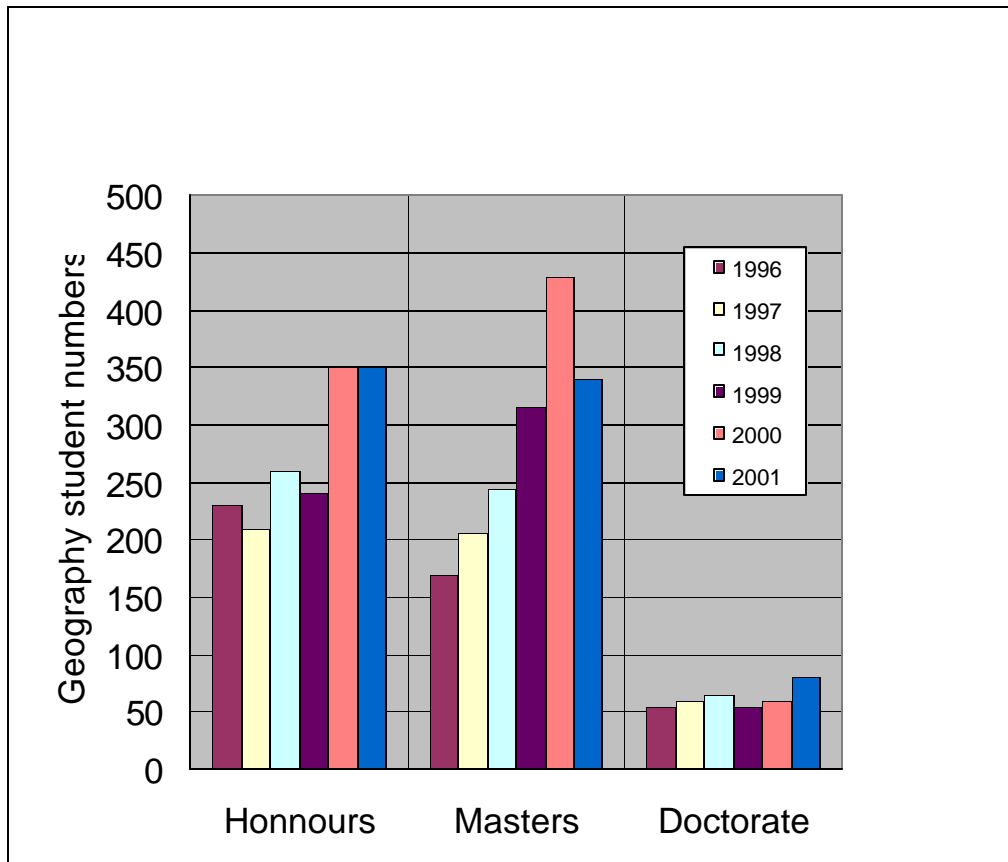


Figure 5: Postgraduate Geography Student Numbers, 1996-2001 (Fairhurst et al, 2001 & SAGG Newsletter, 2001)

Restructuring at the postgraduate level took place before restructuring at undergraduate level, and this fact can be seen when figures 4 and 5 are compared. An upward trend in undergraduate students taking Geography only started to take place as from 2000, while the number of students on the postgraduate level showed a steady rise as from 1996.

The rise in Geography student numbers at the postgraduate level might be an indication of the ability of geography practitioners to respond to important global trends. A crucial question confronting many academic geographers today, however, still is what the price will be that geographers will have to pay in the future for these steps, that had to be taken to ensure the immediate survival of geography as a discipline.

Heavy debate with respect to, the introduction of Environmental Management courses at the undergraduate level also occurred. It is argued that the traditional Geography sub-disciplines that actually enhance environmental understanding have been abandoned to deliver programmes that will 'sell'. Concern has also been raised that Geography departments internationally that chose the same route as their South African counterparts, have '...worked themselves into extinction and if we in South Africa follow the same path we could also become extinct' (Comment made by Dr. I. Meiklejohn (Pretoria) attending the SSAG Conference in 2001).

However, based on the rise in Geography student numbers at the postgraduate level, it seems that the restructuring of academic Geography from 1996 to 2001 was a successful endeavour. The moral dilemma facing geographers today seems to echo that of Chorley and Haggett (1965, p.375) captured eloquently with the following prophetic passage:

"If geography trims its sails to the vicissitudes of every profitable wind of social and educational demand that blows, it is likely to lose any sense of a distinctive intellectual purpose, will fail to attract its most necessary growth ingredient (research students) and is likely to be eventually replaced by or amalgamated with other subjects which serve the purpose of society as well as possessing some intellectual identity" (Nicolau & Davis, 2002, p.12-20).

Thus, the changes (towards GIS and Environmentalism), have not been viewed by everyone, as being positive.

2.4.2 Geography of the Future

The following section highlights possible trends for Geography, as an academic discipline, in the future. It also shows why some geographers may feel inhibited to put too much emphasis on environmentally orientated publications. Proposals have already been made for the merger of a number of higher education institutions in South Africa. Van Der Merwe (2001, p.5) asserts, that "...perhaps 21 Geography departments in South Africa are too many!" and that "...unnecessary overlapping and duplication can harm our discipline and the future survival of the subject". In this instance, all Geography departments are urged to discover a unique "niche" (a brand for itself) nationally, and perhaps internationally, which makes it different from other geography departments and then market this unique product professionally (Nicolau & Davis, 2002, p.12-20).

It is necessary for South African geographers to decide how to respond to this changing institutional milieu, that stresses high levels of accountability and relevance. Some difficult choices will have to be made, and more than ever, our choices have to be informed by our moral obligation, not only to preserve the integrity of the subject, but also towards ensuring an accountable and just transition towards a new South African democracy.

Geography's relevance to society as a whole can only be retained if the discipline is not seen as compartmentalised sub-disciplines (for example as social geography, or cultural geography, or urban geography, or biogeography, or geomorphology), but that there is a larger degree of interlinking and integration between the different sub-disciplines. A better sub-disciplinary integration would also imply that practicing geographers would be able to work across paradigms, and in such a way connect 'the local and global', and be able to interpret "... the environment as social construct as well as material reality" (Archer & Dobson, 1997, p.155).

Human-environmental problems played a prominent role. It is thus implied that there will have to be greater integration of the work done by human and physical geographers, in the future.

Many geographers may find such integration disconcerting. It will however provide the discipline with more intellectual coherence. This will encourage a variety of fields of study, of which Environmental Geography is but one. The researcher is in complete agreement with Barnard (2001, p.86) when he explains the importance of this field of study:

“Of all the present fields of study within geography an environmental geography based on a critical rationalist tradition has the best chance to salvage something of the discipline’s original mission. Environmental geography accepts the earth’s surface as real, it re-establishes human- environmental relations as the central theme of the discipline, remains in contact with the natural sciences without ignoring the social sciences, and allows geographers to specialise in general as well as in specific applied themes.”

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Integration of the traditional sub-disciplines of geography, will provide the discipline with a better position to contribute towards the transformation process through which South Africa is currently going (Van der Merwe, 1996).

In order to fulfil their social and environmental responsibilities within the changing needs and challenges they are faced, researchers and teachers of Geography should encourage links with the life sciences, the earth sciences and the social sciences in their research and teaching (Crofts, 1999). The researcher agrees with van der Merwe (2001) that Geography and geographers cannot survive in isolation. He encourages geographers to discover fellow role-players in other disciplines (multi-disciplinary programmes), at other universities (regional co-operation) and in the public and private sector (third stream financing).

This practice should only be encouraged if the academic and conceptual base of the discipline is protected.

Geographers have proven their value and worth over the last decade and Fairhurst *et al.* (2001, p.2) reports that "...the earth of geographical expertise has played a significant role in the endeavours of national and international significance." In this instance Fairhurst *et al.* (2001) in the State of the Discipline Project highlight some of the most 'significant contributions' from geographers as: The role of geographers in the demarcation of South Africa's provinces and municipal boundaries; the importance of Geographical Information Systems during the first and second national elections and municipal elections; census process and data collection; and the declaration of world heritage sites.

Analysis, however, reveals once again that Geographical Information Systems and the contribution of geographers specialising in Environmental Management, to a large extent dominate the contribution made by geographers. This leads to the question of : Where are the contributions from the other Geography sub-disciplines?

A more aggressive marketing of Geography, as a vocation should be cautiously pursued, to ensure that the intellectual base of the subject remains protected. This results in a challenge for all academic Geography departments to recognize that although Geographical Information Systems and environment-based programmes attracts students, and ensures job placement upon graduation, these programmes should not become all-encompassing disciplines, but in the context of Geography departments, should rather be taught as tools and skills within the discipline (Nicolau & Davis.2002).

In the light of the above mentioned, the researcher has to consider this as being one of the reasons why geographers publish the way they do.

Geography departments should be cautious when taking the vocational route; they have to ensure that the students graduating from the various departments are still in essence geographers and not 'environmental managers' or Geographical Information Systems specialists. Students should acquire a sound balance of conceptual and applied skills.

The researcher is of the belief that a moral principle should always be one of the guidelines for the restructuring of South African geography. Just as geographers at the beginning of the eighties were confronted with crucial choices, we need to make some hard decisions pertaining to the teaching and research of our discipline.

It might be considered that instead of restructuring the subject to meet market demands, one should start by stimulating a market for the discipline as a whole.

Any endeavour to restructure South African Geography should always be guided by our moral obligation to firstly, protect the integrity of the discipline, secondly to ensure the credibility of our research for future generations, and thirdly, to respond and aid in the development of South Africa into a new democracy (Nicolau & Davis, 2002).

Thus, the choices that have to be made are not always as easy as they seem. The above information forms part of possible reasons for the trends that will be discovered in the following section in this research.

CHAPTER 3 REVIEW OF PUBLICATIONS FOR THE CHOSEN INSTITUTIONS

3.1 Introduction

The following information was obtained mainly from the selected universities web pages. The results will provide information as to what the geographers in these departments published for the period 1996-2001.

3.2 Articles published per university (1996-2001), as well as a comparison between environmental and other geographical articles.

3.2.1 University of the Free State (UFS) – Department of Geography



The percentages of physical and human publications, as opposed to environmentally orientated publications, are depicted in Figure 6. Department of Geography and the Centre for Environmental Management are two separate departments at the University of the Free State, but do work together (inter-departmentally - the Environmental Management Degree is presented inter-departmental, with Geography playing a minor role). The data depicted in Table 7 are, however, only representative of the Geography Department. One interesting phenomena, depicted in Figure 6 is that, being only a Geography department, their staff has published more environmentally oriented articles than physical geography articles (two vs. eight, which is 400% more environmentally orientated).

Table 6: Number of publications by Geography Staff at the University of the Free State (1996-2001) (UFS, 2001)

YEAR	PHYSICAL GEOGRAPHY	HUMAN GEOGRAPHY	ENVIRONMENTAL ORIENTATED
1996	0	5	1
1997	0	2	0
1998	1	3	2
1999	1	5	1
2000	0	3	2
2001	0	3	2
Total publications for 1996- 2001	2	21	8
Percentages			
1996	0	83.3	16.7
1997	0	100	0
1998	16.7	50	33.3
1999	14.3	71.4	14.3
2000	0	60	40
2001	0	80	40
Percentages for the total publications (1996- 2001)	6.5	67.7	25.8

This may indicate that the ir staff has gone through a transition and do collaborate with the Environmental Management department. This could be viewed as a good sign for the Geography and Environmental Management departments.

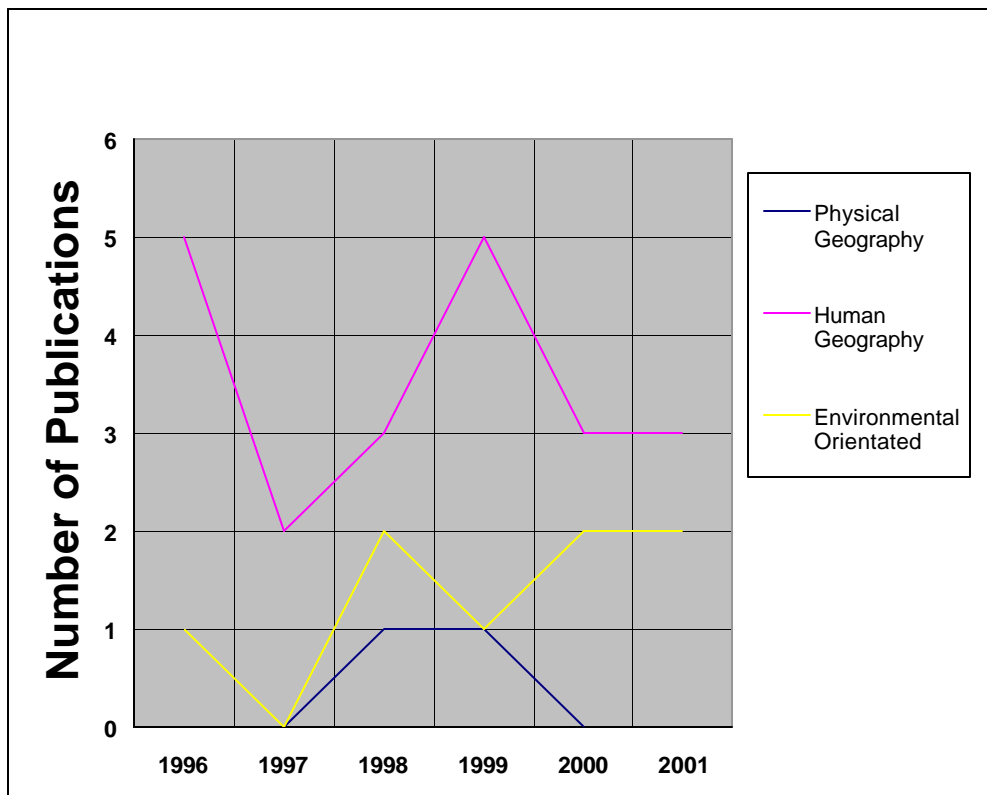


Figure 6: Publications of the University of the Free State (UFS)
(UFS, 2001)

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3.2.2 Potchefstroom University for Christian Higher Education (PUCHE)- School of Environmental Sciences & Development

The publications numbers of staff member, are shown below:

Table 7: Number of publications by Geography Staff at Potchefstroom University (1996-2001) (PUCHE, 2001)

YEAR	PHYSICAL GEOGRAPHY	HUMAN GEOGRAPHY	ENVIRONMENTAL ORIENTATED
1996	0	0	1
1997	2	0	0
1998	1	0	0
1999	1	0	2
2000	1	0	1
2001	0	0	0
Total publications for 1996- 2001	5	0	4
Percentages			
1996	0	0	100
1997	100	0	0
1998	100	0	0
1999	33.3	0	66.7
2000	50	0	50
2001	0	0	0
Percentages for the total publications (1996-2001)	55.6	0	44.4

The percentages of physical and human publications, as opposed to environmentally orientated publications, are depicted in Figure 7. Thus there were only a few

publications delivered by this department over the past six years. Of all publications, 55.6% were physically orientated, 44.4 % were environmentally orientated, and there were no human geographical publications. There was no apparent in- or decrease in these specific publications for the six years. A substantial number of publications were, however, environmentally orientated, thus indicating a slow but sure inclination to be more environmentally active.

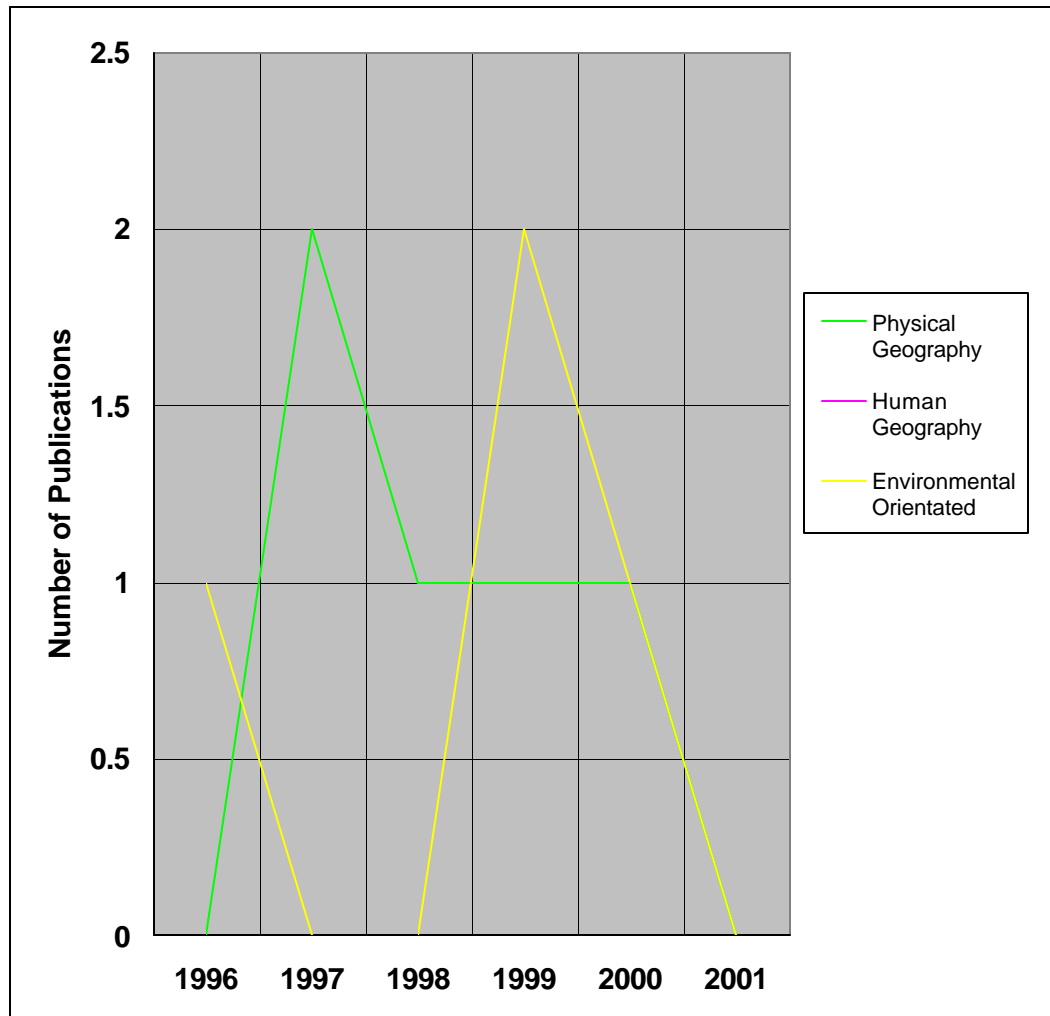


Figure 7: Publications of the Potchefstroom University for Christian Higher Education (PUCHE) (PUCHE, 2001)

3.2.3 University of Stellenbosch (US) – Department of Geography & Environmental Studies

It seems that the Department of Geography and Environmental Studies at Stellenbosch concentrates on human geography, rather than the other two disciplines (Figure 8). This however cannot be seen as 100% conclusive proof, as not every single staff member's publications could be found. It does however give us an indication of the general trend.

One positive outcome is that the environmental publications, shown in Table 8, have come recently, and that may be an indication of departmental evolution, perhaps a shift to the environmental side.

A decision can only be made based on the given data, and according to the above information, the Department of Geography and Environmental Studies at Stellenbosch is relatively environmentally orientated. There was a definite increase in the amount of environmentally orientated papers over the past six years.

The information also indicates, that this department still publishes physical and human geography papers. A fairly balanced publication trend can thus be observed between the three sub-disciplines, with more human geography publications generated than in the other two sub-disciplines.

Table 8: Number of publications by Geography staff at the University of Stellenbosch (1996 – 2001) (US, 2001)

YEAR	PHYSICAL GEOGRAPHY	HUMAN GEOGRAPHY	ENVIRONMENTAL ORIENTATED
1996	0	1	0
1997	2	2	1
1998	0	2	0
1999	0	5	1
2000	1	1	1
2001	2	0	4
Total publications for 1996- 2001	5	11	7
Percentages			
1996	0	100	0
1997	40	40	20
1998	0	100	0
1999	0	83.3	16.7
2000	33.3	33.3	33.3
2001	33.3	0	66.7
Percentages for the total publications (1996-2001)	21.7	47.8	30.5

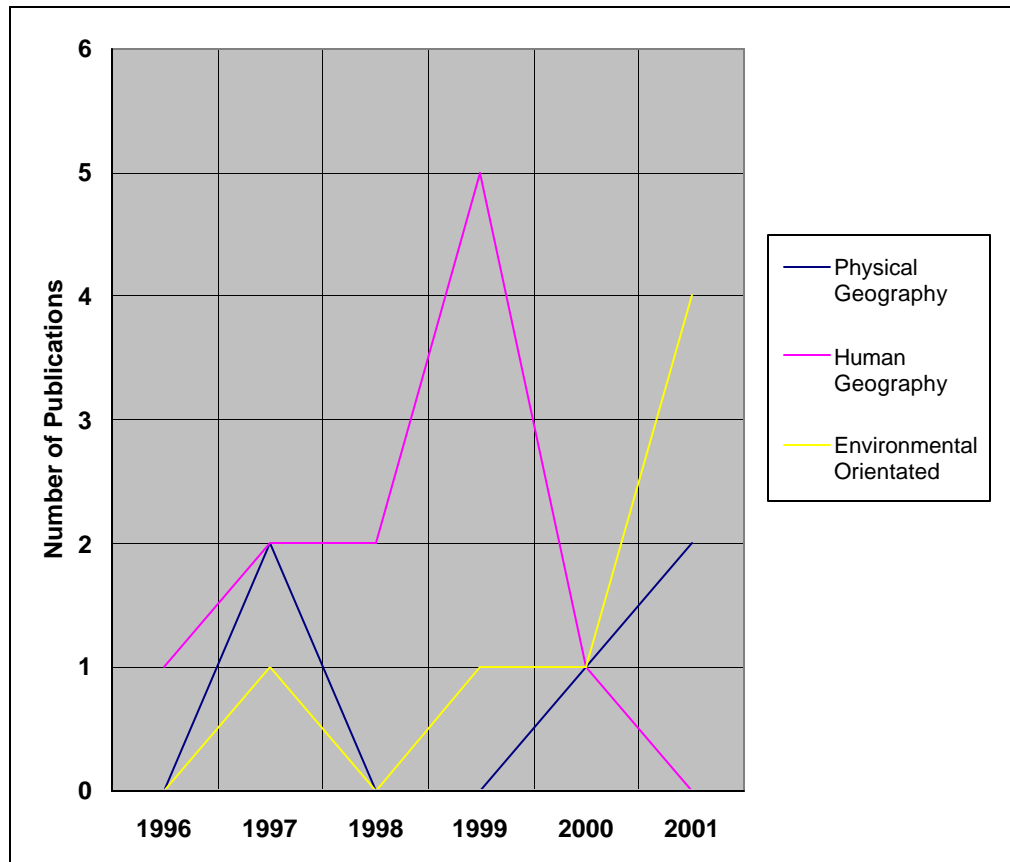


Figure 8: Publications of the University of Stellenbosch (US) (US, 2001)

3.2.4 University of Cape Town (UCT) -Department of Environmental & Geographical Science

The following is evident from table 10 and figure 9: At the University of Cape Town most publications are physical geographically orientated. At 56.8 % it is more than double the number of human geography papers published (27.1%). Nearly one out of every six publications is, however, environmentally orientated (13 of 81 [16.1%]). This could indicate a fair commitment to an environmental focus. An interesting fact, gathered from all the information about the University of Cape Town, is that they have a research staff allocation for every year of the study period. This will definitely

also influence the number of publications positively, as well as assisting in the environmental focus of the department.

Table 9: Number of publications by Geography Staff at the University of Cape Town (1996-2001) (UCT, 2001)

YEAR	PHYSICAL GEOGRAPHY	HUMAN GEOGRAPHY	ENVIRONMENTAL ORIENTATED
1996	7	4	3
1997	11	1	3
1998	3	5	3
1999	13	5	2
2000	12	7	2
2001	0	0	0
Total publications for 1996- 2001	46	22	13
Percentages			
1996	50	28.6	21.4
1997	73.3	6.7	20
1998	27.3	45.4	27.3
1999	65	25	10
2000	57.2	33.3	9.5
2001	0	0	0
Percentages for the total publications (1996- 2001)	56.8	27.1	16.1

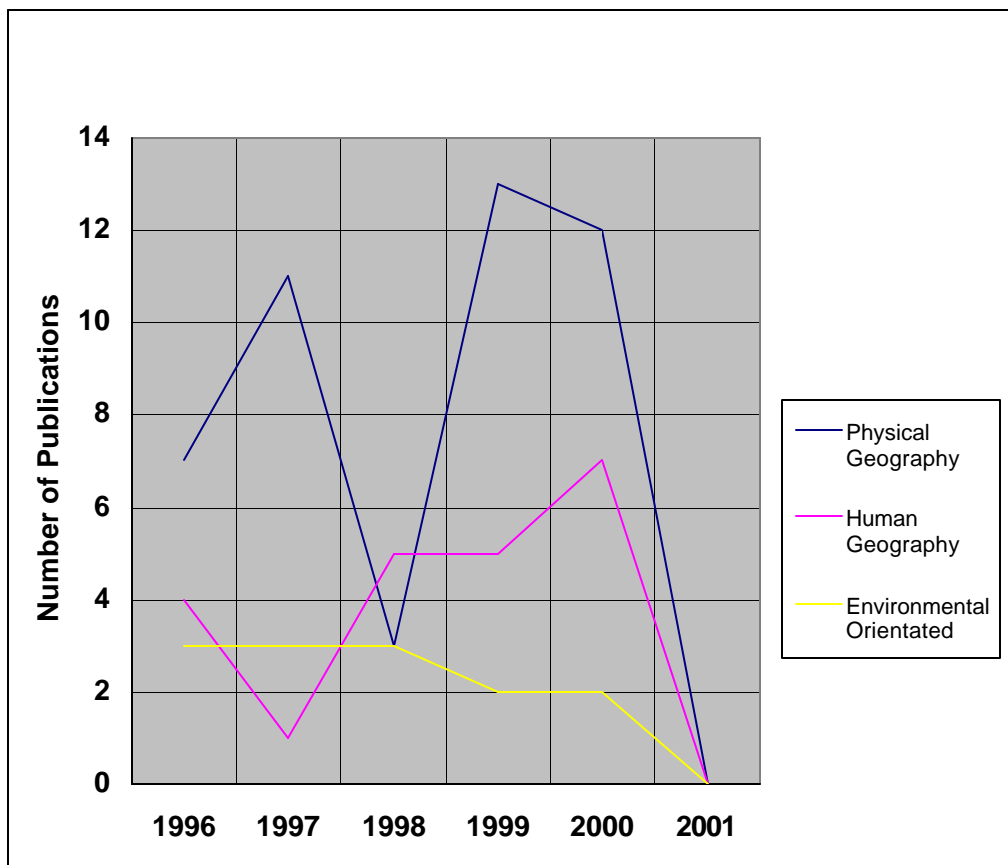


Figure 9: Publications of the University of Cape Town (UCT) (UCT, 2001)

3.2.5 University of Pretoria (UP) – Department of Geography and Geo-Informatics

The University of Pretoria published, according to Figure 10, quite profusely over the past six years, under investigation. There are indications of an even distribution of publications amongst the three sub-disciplines.

Human geography seems to have the upper hand for the period from 1995 to 2000, with physical geography papers being published mostly during the same period. The environmental oriented publications show a steady increase over the past six years,

with a slight drop as from late 1999. Seemingly, all the disciplines show a steady decrease since 1999.

The exact number of publications are depicted in Table 11.

Table 10: Number of publications by Geography staff at the University of Pretoria(1996 – 2001) (UP, 2001)

YEAR	PHYSICAL GEOGRAPHY	HUMAN GEOGRAPHY	ENVIRONMENTAL ORIENTATED
1996	5	16	2
1997	8	11	3
1998	4	12	3
1999	0	13	4
2000	3	10	2
2001	1	5	0
Total publications for 1996- 2001	21	67	14
Percentages			
1996	21.7	69.6	8.7
1997	36.4	30	13.6
1998	21.1	63.1	15.8
1999	0	76.5	23.5
2000	20	66.7	13.3
2001	16.7	83.3	0
Percentages for the total publications (1996- 2001)	20.6	65.7	13.7

The researcher views the number of publications in Table 11 as a good representation of the publications by the staff members. There is a substantial number of publications in each of the three sub-disciplines. This is a clear indication that although the human geography section has published more, the other two disciplines have received fair coverage.

The department at the University of Pretoria does not imply anything about environment and environmental management in their departmental name, but they definitely have collaboration and expertise in this field.

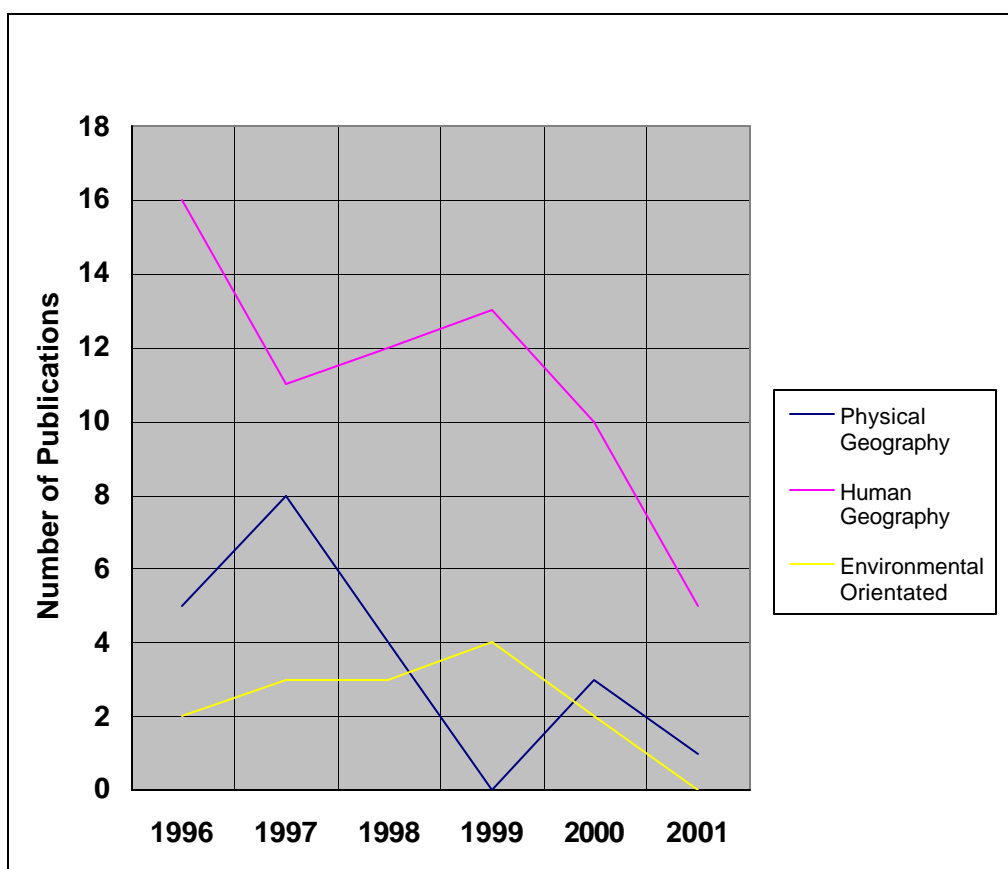


Figure 10: Publications of the University of Pretoria (UP) (UP, 2001)

3.2.6 University of Natal (Durban) (UN) – Department of Life & Environmental Sciences

Natal University staff has published a large number of articles over the past six years. Their substantial publication output may be ascribed to the fact that they work in collaboration with the other two geography departments at Pietermaritzburg and Durban-Westville. As can be seen from Figure 11, the physical geography sub-discipline is the clear front- runner when it comes to publications. Here in both the human and environmentally oriented sub-disciplines the number of publications are more or less equal.

The exact numbers are depicted in Table 11. There seems to be a consistency in the number of total publications in all of the years under study.

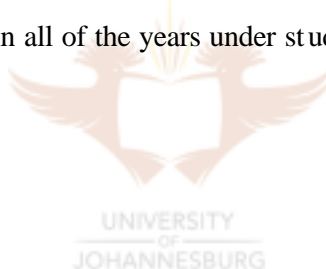


Table 11: Number of publications by the Geography staff at the University of Natal (1996 – 2001) (UN, 2001)

YEAR	PHYSICAL GEOGRAPHY	HUMAN GEOGRAPHY	ENVIRONMENTAL ORIENTATED
1996	14	11	5
1997	20	4	5
1998	5	1	4
1999	2	4	0
2000	6	1	2
2001	3	1	2
Total publications for 1996- 2001	50	22	18
Percentages			
1996	46.7	36.7	16.6
1997	69	13.8	17.2
1998	50	10	40
1999	33.3	66.7	0
2000	66.7	11.1	22.2
2001	50	16.7	33.3
Percentages for the total publications (1996- 2001)	55.6	24.4	20

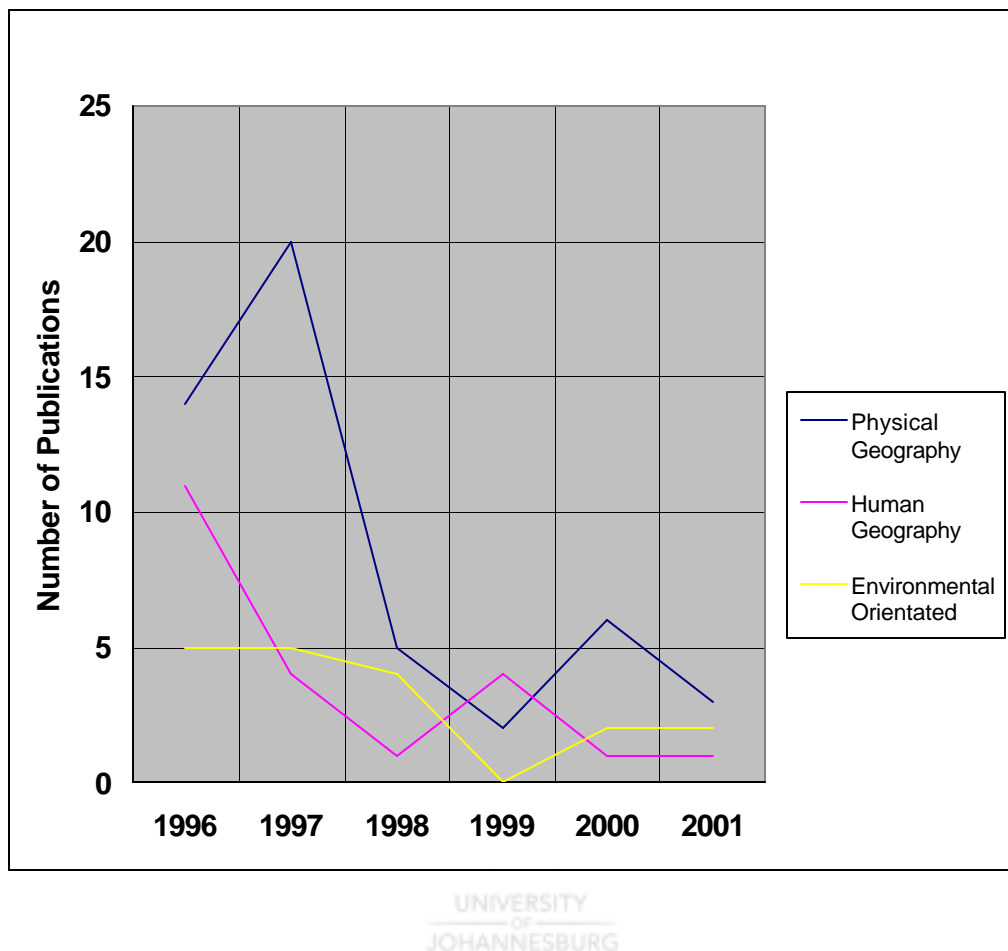


Figure 11: Publications of the University of Natal (Durban) (UN, 2001)

3.2.7 University of South Africa (UNISA) – Department of Anthropology, Archaeology and Geography

It can be seen in Table 12 that physical and human geography publications enjoyed the most interest over the past six years. Information is not always 100% representative of what it could be, as only a few publications could be traced. One is, however, forced to draw conclusions based on what one can find.

Figure 12 further indicates a reasonable number of physical and human geography

related publications, and a small number of environmentally orientated publications. Once again, it seems that the department is not living up to its name. Another alternative can also be, that, due to their small staff compliment (eleven), in relation to their student numbers, their publication numbers are inhibited.

Table 12: Number of publications by Geography staff at the University of South Africa (1996 – 2001) (UNISA, 2001)

YEAR	PHYSICAL GEOGRAPHY	HUMAN GEOGRAPHY	ENVIRONMENTAL ORIENTATED
1996	0	1	0
1997	0	1	0
1998	1	1	0
1999	3	3	0
2000	1	2	0
2001	0	0	1
Total publications for 1996-2001	5	8	1
Percentages			
1996	0	100	0
1997	0	100	0
1998	50	50	0
1999	50	50	0
2000	33.3	66.7	0
2001	0	0	100
Percentages for the total publications (1996-2001)	35.7	57.2	7.1

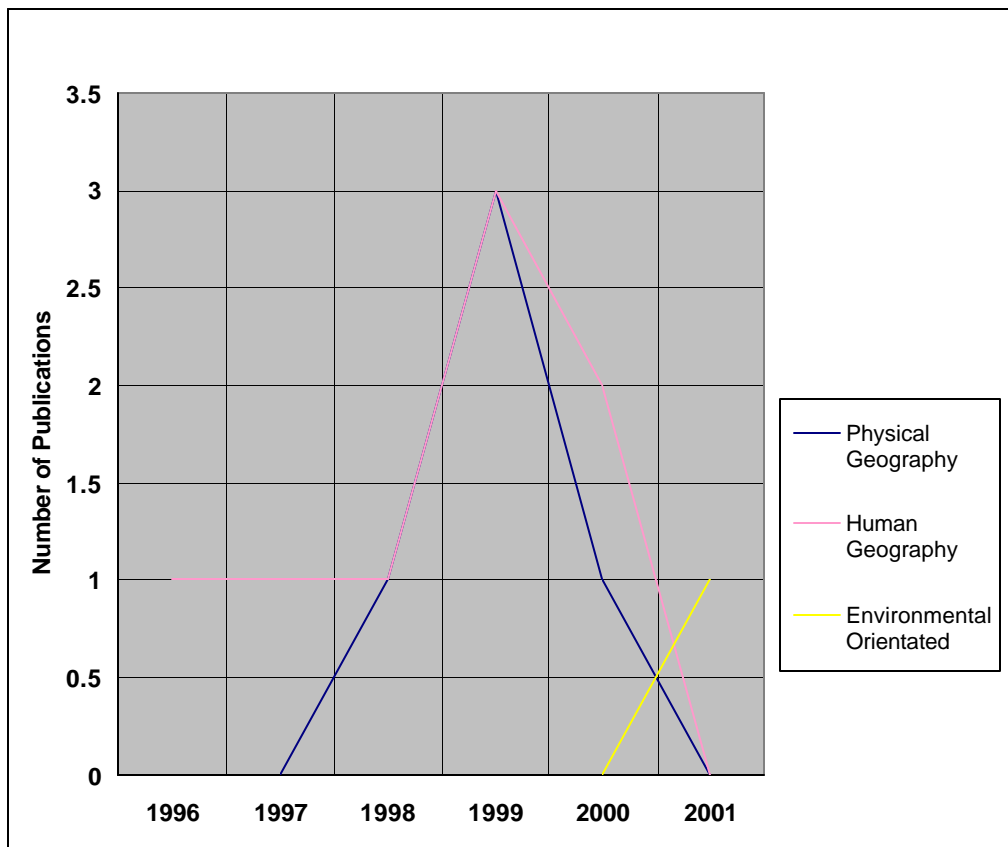


Figure 12: Publications of the University of South Africa (UNISA)
(UNISA, 2001)

3.2.8 University of the Witwatersrand(WITS)– Department of Geography & Environmental Studies

Table 13 shows that the physical and human geography sub-disciplines are published the most, with eight and 12 publications respectively in each category for the period under study. Even during the past three years, the environmentally oriented publications have not increased at all.

Figure 13 indicates how the number of publications have increased and decreased in the three different sub-disciplines. Human geography has displayed an increase in publications from 1996 to 1998. Physical geography was reasonably well represented for the years 1996 and 1997, with a rapid decrease over the past four years. Environmentally oriented articles, were few and far between.

Table 13: Number of publications by the Geography staff at the University of the Witwatersrand (1996 to 2001) (WITS, 2001)

YEAR	PHYSICAL GEOGRAPHY	HUMAN GEOGRAPHY	ENVIRONMENTAL ORIENTATED
1996	3	1	0
1997	3	0	0
1998	1	8	2
1999	1	3	0
2000	0	0	0
2001	0	0	0
Total publications for 1996- 2001	8	12	2
Percentages			
1996	75	25	0
1997	100	0	0
1998	9.1	72.7	18.2
1999	25	75	0
2000	0	0	0
2001	0	0	0
Percentages for the total publications (1996-2001)	36.4	54.5	9.1

There is a clear indication that the Department of Geography and Environmental Studies at Wits is not as environmentally oriented as they should or could be, with no environmental publications over the past three years.

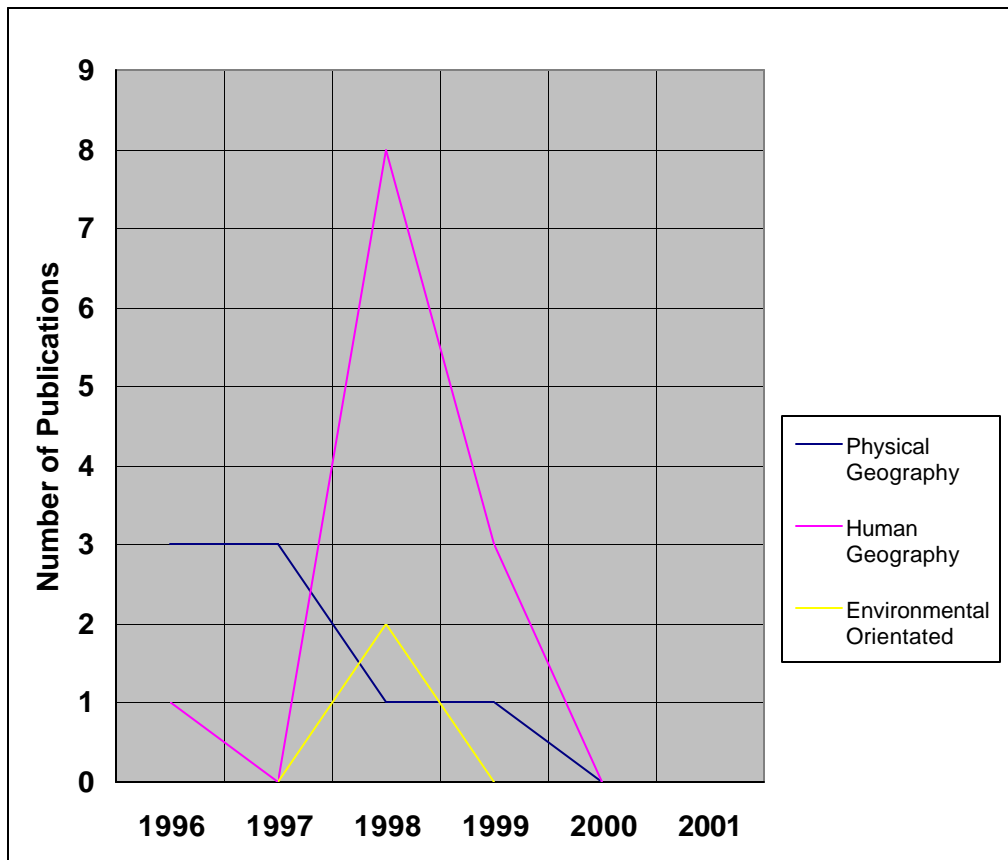


Figure 13: Publications of the University of the Witwatersrand (WITS)

(WITS, 2001)

3.3 Identification of the most pro-active South African geographers, at the selected institutions.

From Table 14 it is evident that various universities excel in different sub-disciplines. Pretoria published the most in human geography and Natal University published the most in physical geography, and they also published the most environmentally orientated papers for the period 1996-2001.

Table 14: A publication comparison amongst the various selected universities.

	UFS	PUCHE	US	UCT	UP	Natal	UNISA	Wits	Total for eight universities	%
Physical Geography	2	5	2	46	21	50	5	8	139	38.9
Human Geography	21	0	5	22	67	22	8	12	157	44
Environmental Oriented	8	4	1	13	14	18	1	2	61	17.1

Figure 14 gives a more vivid indication of the comparison between the various universities selected for this study. When looking at Figure 14, one can see that Natal and UCT publish respectively the most and second most Physical Geography orientated papers, while Pretoria published the most Human Geography orientated papers. Natal and Pretoria published respectively the most and second most Environmentally orientated papers.

For all eight selected universities one out of every six papers was environmentally orientated (61 out of 357 [that is 17.1%]). The researcher deems this as a positive indication towards a move in the direction of being environmentally orientated.

As for environmentally oriented departments and publications, it seems that not one department stands out, not even marginally, head and shoulders above the others.

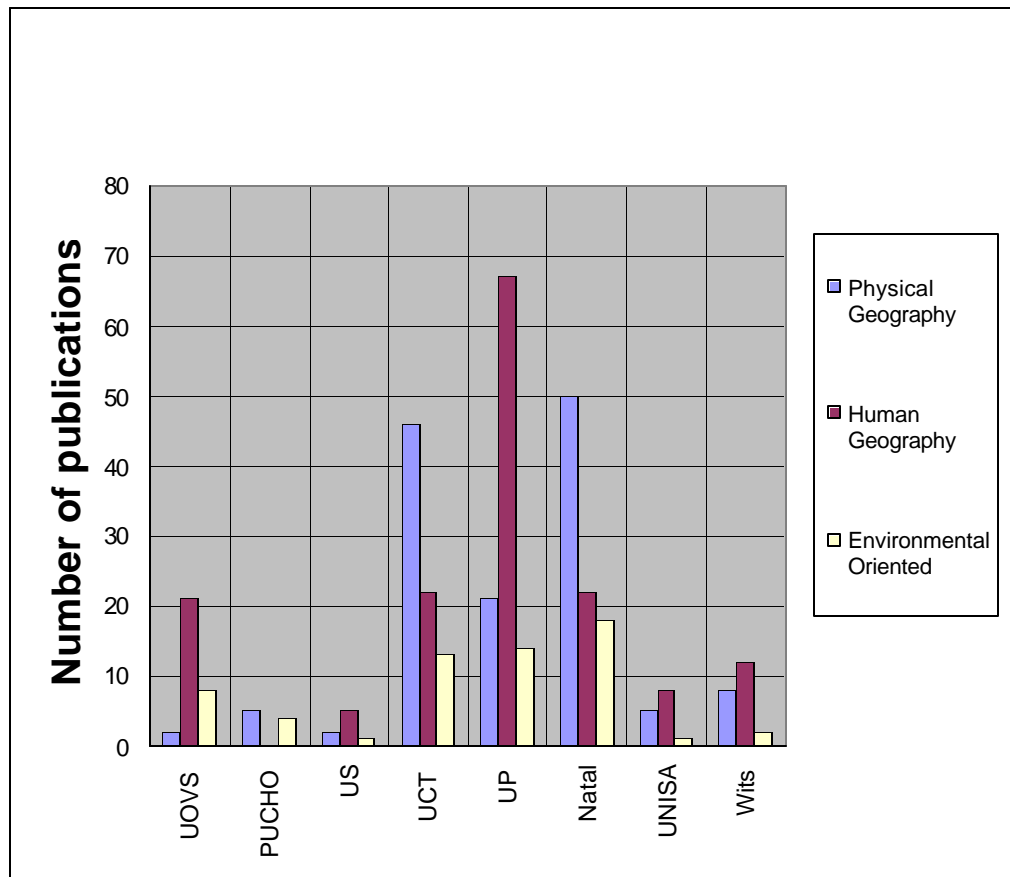


Figure 14: Institutions compared

3.4 Journal Publications of South African Geographers

There are many different journals that South African geographers published in. However, there were some journals which contain the most publications. Figure 15 shows the most popular journals in which South African geographer's papers are published in, based on the research conducted for this survey.

It is clear that most papers appear in 'The South African Geographical Journal', while the 'South African Journal of Science' is also prominent. 'African Insight' and 'Geoforum' are also major contributors with many other journals hosting papers by South African geographers. Many of these journals are available at libraries and some are available online.

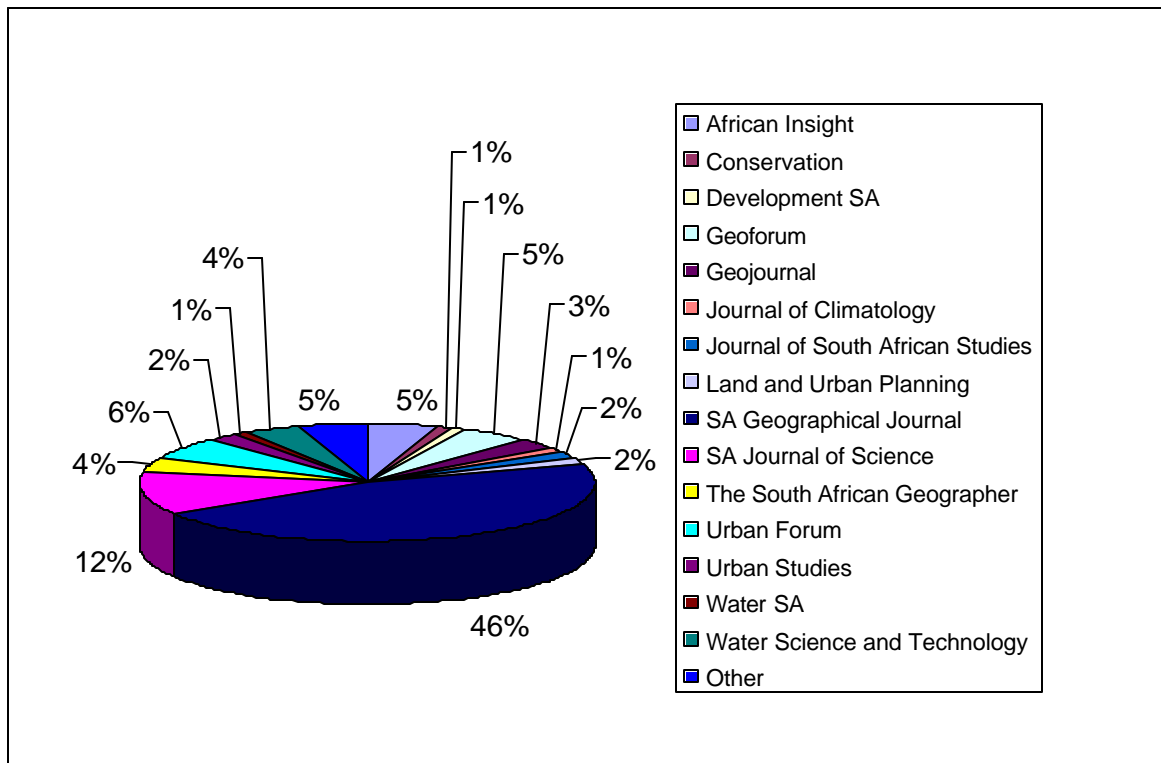


Figure 15: Journals publishing the papers of South African Geographers

Detailed information with respect to the years, authors, title of article, and classification can be found in Appendix A. Figure 16 shows the percentage publications for each of the three sub-disciplines.

Table 15: Number of publications by University Geographers in the South African Geographical Journal from 1996 to 2001 (SAGJ, 1996 – 2001)

YEAR	PHYSICAL GEOGRAPHY	HUMAN GEOGRAPHY	ENVIRONMENTAL ORIENTATED ARTICLES
1996	4	4	1
1997	18	12	9
1998	3	9	2
1999	3	18	4
2000	7	9	5
2001	2	8	2
Total publications for 1996-2001	37	60	23
Percentages			
1996	44.4	44.4	11.2
1997	46.7	30.8	23
1998	21.4	64.3	14.3
1999	12	72	16
2000	33.3	42.9	23.8
2001	16.7	66.6	16.7
Percentages for the total publications (1996-2001)	30.8	50	19.2

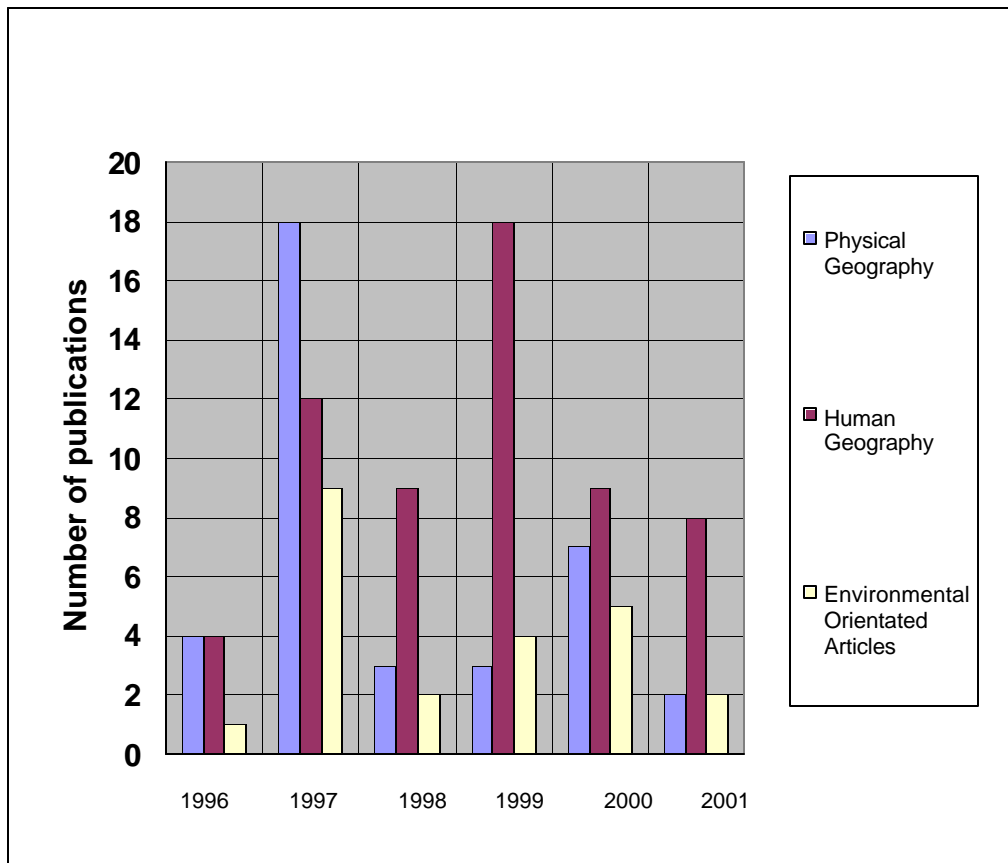


Figure 16: Publications by University Geographers in the South African Geographical Journal for 1996-2001 (SAGJ, 1996– 2001)

3.4.1 Assessment of the pro-activeness and effectiveness of the evaluated publications

When evaluating Figure 16, it is clear that Environmentally Orientated Geography has not received as much publication attention as the other two sub-disciplines of Physical and Human Geography. However, the publication percentage of 19.2% indicates that almost one in five publications are Environmentally Orientated. This value indicates that the environmental approach has been at the bottom of the agenda at those geography departments selected for this study, and it also shows a substantial

fluctuation over the past six years. Physical and Human Geography still are the main foci, as they have been since the two World Wars in the early and mid 1900's. The technological revolution, fuelled by scientific advancements has led to an increasingly negative impact on the environment, especially since the 1960s. Therefore one would expect that there should be more environmentally orientated publications presently among geographers.

Scientists with a vast knowledge of both the physical and human geographical disciplines have to come to terms with environmental issues, which encompass both the mentioned sub-disciplines. With detailed knowledge in both fields, geographers are in the ideal position to become practising environmental managers, but it seems that this is taking place only at a very slow rate.



3.5 Analyses of Questionnaires

Responses to the questionnaires (Appendix B) were very poor (only three of fifteen were returned), therefore this researcher does consider it important to give a detailed analysis of the complete contents of the filled out questionnaires. Due to the confidential character of these questionnaires, the responses will be discussed in general.

With respect to the question stating reasons for departmental name changes, the overall response was that it was done purely based on studies indicating that the altered name usually resulted in higher student numbers, and that research grants were obtained more easily. Many departments decided to focus on the Environmental Science, whereas others decided to focus on the Environmental Management field.

Answers to the question “Why the name change took place specifically when it did?” gave diverse reactions. Some indicated it was incidental, some others said that it was due to other factors, whereas a few indicated that there were some departmental staff members who were opposed to the idea, and they subsequently retarded the process of name change.

As to the configuration of Environmental Management in the undergraduate courses, some indicated that they only start emphasizing this aspect as from the third year level. The reason given was that there needed to be a sufficient number of systematic building blocks before the environmental material becomes of value to the students.

Other environmental ‘issues’ are, however, addressed earlier in the form of environmental problems and –processes. Some indicated that the number of first year students soared by incorporating these in their first-, second- and third year syllabi.

A diverse response was thus received, indicating some hidden agendas relating to this question. All departments indicated that their postgraduate courses were intensively

directed at Environmental Management or Environmental Science. Most responded that the fact that graduate students holding Masters degrees in Environmental Management or Science are very highly remunerated, deterred them from entering Doctoral research in these fields.

Relating to the question whether the emphasis had changed with respect to the contents of publications, the overall impression given was that it has not changed significantly. It was stated that the environmental aspects were not as productively pursued as it could be. Some respondents indicated that the contents of publications did, however, start to incorporate more environmentally orientated aspects, but that the traditional fields, such as Physical- and Human Geography publications, still take preference.

The Masters- and Doctoral dissertation contents seemed to be more environmentally orientated in most cases. Thus the response, with respect to publication contents, was also diverse.

Response to the question on the choice of the contents of Conference papers, highlighted the following. There seems to be an environmental focus across the board, seeing that this concept is regarded as the 'topic of the moment'.

In response to the choice of scientific journals in which to publish, and whether there was any change in choice of journals, many different reactions were received. Some respondents indicated that there were no changes, while others indicated that the majority of lecturers seemed to concentrate on publishing in non-subsidy carrying journals. The reason cited was that these journals did not require such in-depth research, as those who do receive subsidies. Others stated that there was a reduction in the number of journals published in, purely based on financial reasons.

Most of the respondents indicated that the journals of preference for publishing in are the same as those indicated in Figure 15, and as stated in section 3.4.

In response to the future of their departments and the role of Environmental Management, -Science in these future plans, the following was found.

One respondent stated that Environmental Management, -Science, would definitely, in future, form on of the 'pillars' of the department. It was indicated though that it would not become their main focus to the detriment of the other fields of expertise in Geography. Thus Environmental Management, -Science would form an integral part of the future plans of their department.

Another respondent indicated that Environmental Management would mean the survival of their department, and claimed that even if the chairmanship had to change, they would need to stress and emphasise the environmental aspects. This and this only, will ensure the survival of their department.

Another response was that, even though Environmental Studies were incorporated, the survival of their department was still at threat. It is threatened by other disciplines, such as Engineering, hoping to take over their role in the environmental field. Rightfully the respondent then stated that it was due to just these disciplines, and their practices, that the environment suffered the most destruction. Engineers, for example, do not have the geographical knowledge to evaluate or implement any engineering projects.

This researcher is overawed by the diverse responses. Are all these responses coming from Geography departments in our on country of South Africa? One aspect that definitely came to this researcher's attention was that name changes did not really mean all that much. Everyone just jumped on the "Green Bandwagon", so to speak, to ensure the survival of Geography as a discipline at university level.

The reactions are of grave concern. It may indicate that suggestions made in section 3.3 (the merging of departments), might be the better alternative for the survival of both Geography and the vital role Environmental Studies will play in the future



CHAPTER 4: CHANGE AND GEOGRAPHY

4.1 Introduction

Goudie (1993) stated that a wide difference of feelings/interest has developed between those who teach geography at school and those who teach at universities. He said that there were three main reasons for this.

1. An increasing desire among academics to do research
2. A burgeoning of textbooks (rapid growing of textbooks)
3. Changes in Geographical Associations itself. (Academic Geography)

Theory and model-based texts suggest that the teaching of secondary geography in the latter part of the 1960s and throughout the 1970s and early 1980s remained heavily influenced by the research agendas of university geographers. However, towards the end of the 1970s a dramatic change began to occur. Secondary education was increasingly being seen by society in general, and by the teaching profession in particular, as being concerned with more than simply training for university entrance. Advances in educational theory and practice, including greater attention to curricula design, assessment methods and teaching skills, meant that increasing emphasis was being placed on the needs of the vast majority of pupils who were to go to higher education. Consequently, the practice of teaching within schools, and the learning environments of pupils within the primary and secondary educational systems, were becoming increasingly separated from the practice of university research and teaching.

The Geography 16-19 Project, used in the UK education system, provided curriculum developers with a clean sheet, enabling them to ask basic questions about the needs of students and about how geography could contribute towards fulfilling these needs. Development work could

then take place to try to construct geography courses pertinent to the students taking them, and to the world in which those students and their teachers live.

The result of this was the innovative and enquiry-based GCE A-level course. It was first examined in 1982 and by 1991, over 10 000 candidates sat the examination. A direct effect of this for teachers in higher education was that by the late 1980s growing numbers of students were coming from this new A level, with very different skills and knowledge backgrounds from those with traditional A level qualifications. However, some university geographers complained about the decrease in the knowledge levels of the many new first-year students. Others blamed the 16-19 Project for the demise in scientific skills necessary for undergraduates to satisfactorily undertake university courses in physical geography.

Another good indication of the demise of university influence on primary and secondary curriculum design, is the lack of participation by university geographers in the introduction of the National Curriculum in England and Wales. Thus there was little active involvement in the development of the Geography National Curriculum

Some university geographers continue to play a role in the A-level examining, However, few are aware of the enormous changes that have taken place in the secondary education system in recent years. Thus, it is essential that good communications be established between those in the secondary and tertiary sectors so that the most appropriate learning experiences can be provided for the growing numbers of students passing from the one to the other.

Geography that is taught at the primary and secondary level should provide one of the essential elements of an education for life; it should provide a sufficient

grounding for those wishing to embark on a Geography degree to be able to achieve the highest levels of analysis and research.

The lack of knowledge by university geographers about the educational backgrounds of incoming students is a problem of sufficient magnitude itself. However, with the rapid increases in the numbers of Geography undergraduates since the mid-1980s, this problem has been greatly exacerbated. Additional resources and staff appointments have not matched the increases in student numbers. Staff believes that the increasing numbers have adversely affected students' learning experiences, however this is not reflected in the quality of degree results gained (Rawling & Daugherty, 1996).

4.2 Shifts/Changes in Geography as discipline

Geography literature is rife with calls for the protection of the integrity of the discipline, with specific reference to the preservation of the space-in-time-perspective. There are also abundant calls for the discipline to start responding to the transformation imperative of South Africa. Emphasis has thus far always been on the need for geographers to ensure that their skills and research are applied, and are useful in promoting the transformation process in this country. It is however this researcher's opinion that the relevance and contribution of the discipline has been proven unquestionably, whilst the issue of possible costs or compromises, that the discipline may have to endure, as a result of ensuring "usefulness", is not always discussed. It therefore can be argued that we as geographers need to pledge a commitment, not only to protect the integrity of the discipline (space-in-time-perspective), but also to ensure that our skills, knowledge and research are used in an accountable and uncompromising manner during the transition toward a 'new South African democracy'. We ultimately need to ensure that any restructuring of geography does not take place at a cost that is detrimental to the integrity of the discipline (Nicolau & Davis, 2002).

Geography, like all other disciplines, constantly shifted its focus and methodology to meet demands from both internal (from within the discipline itself) and external (from outside the discipline) sources for the period of its existence. According to Barnard (2001), there are many reasons why geography underwent changes and transformation, during the second half of the 20th century. These include: The uncovering of new facts developed into new concepts, the evolution of new methodologies, the replacement of any older generation by a younger one, the changing meaning of language, and society transformations. It can thus be assumed that most geographers believe that their research should include an educational mission, to enhance the individual and collective awareness of the world. This would imply that geographers should continually respond to both internal and external forces in an attempt to make their discipline relevant (Johnston, 1993).

Many changes have thus taken place, in the discipline Geography, of which a few are discussed below:

Until the late 1970s the geography practised by South African geographers, mirrored the geography practiced by their counterparts elsewhere in the world. The research output was dominated by Physical geography (in the positivist tradition) until the 1940's (see Table 16). Human geography started to show more prominence by the 1950s, and by the end of the seventies, geographical research in human geography fell predominantly in the spatial organisation tradition, "...imported directly from the heart of geography's quantitative revolution in North America and Britain" (Crush, 1993, p.62). According to Rogerson (1985), South African geography traditionally exhibited a cultural cringe complex; this is further described by Crush (1993, p.62) as '...a thoroughly colonial sense that imported theories and methodologies that are inherently and necessarily superior'.

Table 16: The four traditions of geography as reflected in research papers published in South African Geographical serials* (Beavon & Rogerson, 1981, p.163).

	1917-29 %	1930-39 %	1940-49 %	1950-59 %	1960-69 %	1970-79 %
Earth Science	47	55	62	40	40	43
Man-Land	29	25	23	35	26	12
Area Studies	24	20	14	24	12	1
Spatial organisation	0	0	1	1	22	44

*The South African Geographical Journal 1917-79 and the South African Geographer 1957-79 (1957-71 known as Journal for Geography).

With the advent of apartheid in 1948, geographical skills were increasingly used to entrench 'race in space' (Crush, 1993, p.61). More and more Geography graduates were employed by government departments in the 1960's, "...to plan the grand and petty designs of apartheid" (Barnard, 2001, p.44). Most geographers seemed to be content to avoid controversial topics (Crush, 1993, p.61). This period can be described as the heyday of positivist human geography, where the legitimacy of the apartheid ideology was rarely challenged. Some political events (for example the Soweto riots) in the seventies, were to be the catalysts for paradigmatic change in the approaches of a small minority of South African geographers. A watershed period is thus depicted by the seventies - for human geography and human geographers throughout southern Africa.

The eighties proved to be a time for geographers, in this country, to start responding to a number of external sources for change. A twofold change was evident: On the one hand, South African geographers started to respond to a number of political and social changes that were occurring in the country. On the other hand, a larger number of South African geographers, who had left the country in the seventies to study abroad, returned to the region and brought with them a neo-Marxian critique of the orthodox development theory, and other geographical variants that were within the boundaries of radical geography.

The most important characteristic of the eighties was thus the growing distance of South African geography from its European and American counterparts. Instead South African geographers were:

“...shedding its cultural cringe complex, and no longer looked to the metropolises (first world) for validation, seeking instead to make a contribution to the political struggle against apartheid. Euro-American geography, in turn, cast off its offspring, paying less and less attention to the innovative work being done in South Africa” (Crush, 1993, p.63).

A brief review of the literature on South African geography over the past ten years reveals a spectrum of implied and direct calls for a restructured Geography to contribute and respond to the transformation of South African Society (Rogerson 1990, Gamble 1992, Crush 1993, Hart 1994, Fairhurst 1999 and Binns 1999).

The major external incentive which probably led to change and restructuring in South African Geography, was inspired by the major political transformation that this country underwent in 1994. With the elimination of apartheid, geographers were provided with endless research opportunities. It had the potential of making their discipline relevant and vital to the transformation process in the country.

Issues and concepts that could play a major role in the transformation of South Africa into a new democracy were highlighted by the White Paper on Reconstruction and Development in South Africa released in 1994, and the present GEAR initiative. Issues such as urbanisation and demographic pressure, social equality and social justice, the convergence of the world and third world, reconstruction of the administration of the country, ethno-cultural development, quality of life and sustainable development were all included.

The Geography researched and practised by South African geographers in the nineties, was representative of the concepts and issues highlighted in the White Paper. A variety of traditions, all addressing space and place problems, in both first world and third world communities provided geographers with the ideal opportunity to address issues related to the transformation to a new democratic South Africa. The focus of research during this period was broadly aimed at evolving and improving conditions in post-apartheid South Africa.

In the early nineties there was another change; which involved a shift away from the dominant involvement and employment of Geography graduates in the educational profession. The skills of geographers now started to receive greater recognition in the wider private and public sectors. The main reason for this shift was the conscious attempt by the then South African Geographical Society (SAGS) to market geography to the wider public, and in so doing becoming more involved in the wider community, and enabling geographers to contribute in a meaningful way, to the human and physical environmental scenario as a whole. The educational role of the geographer would not be played down, overlooked or neglected, because of this shift. The SAGS still increasingly addressed the importance of sound geographical education, and the potential contribution of geographers to the total socio-cultural and physio-biotic environment (Gamble 1992, p.72).

At present, the need for restructuring academic and school Geography is predominantly a result of nationally driven transformation initiatives, and an implicit demand for more skill-based training.

Any decrease in the trend of environmentally focused publications would be a worrying matter. This decrease could negatively affect all the work done to try and increase concern for the state of the environment and human impacts on it in our country (and world wide). Environmental management and its related fields are not a perfect science tending to fall under humanistic geography and the soft bluff. This author understands, through personal communication with Harmse (2002), that there is a move back towards the natural sciences in the country's geographic community. The cause of such a move back towards the hard bluff is uncertain and not reflected through the research performed in this analysis. A possible explanation may lie somewhere within the abuse of researchers results by politicians to give the green movement more momentum. Another explanation could be the country's desire to maintain its primary research capabilities even though this does not make economic nor financial sense, due to lack of research money and grants in South Africa for such research. It is this researcher's understanding that such funds would be better spent on secondary research, in adapting other countries primary research, to this country's individual and unique problems. Two explanations, for the lack of scientific articles, are: Firstly, many environmentally orientated geographers may have published more books and non-accredited articles on subjects which did not follow the scientific method, and were therefore not recognised as scientific articles. Secondly, the field is still very new in South Africa and it may take some time for research to be done on certain subjects, or perhaps they are so busy trying to solve the problems, that they do not have time to write articles. Whether this is proven to be true will only be revealed in the years to come.

CHAPTER 5: RECOMMENDATIONS AND CONCLUSIONS

5.1 Limitations of the study

In order to ensure that the authors are South African, one needed to check the authors' details in the journals. However, most of the online journals did not have these author details. Thus, one could not establish if they were from South African or not. This was frustrating and meant a lot of cross-checking.

In conducting such a review, it would have been ideal to have access to *all* of South African geographers' publications, but it was found that obtaining data for this review proved to be rather difficult. This was due to the lack of proper indexing and administration of South African Geographers, and the publications that they produced. A search of all geographical journals could not be done, as geographers tend to publish in a wide array of subject and disciplinary journals, making it unfeasible to adopt this approach. The two most reliable sources relating to South African geographers were the university geography departments themselves and the South African Geographical Society (SAGS). It was also discovered that it is difficult to obtain all the published papers from the universities, because of the fact that not all the libraries contain the research reports of these universities. Also, all of the universities did not include all published articles/reports on an up to date schedule. SAGS does publish a newsletter, with all the publications made during that year by the universities and registered geographers, but the problem with this source is that not all of the universities submit their publications to the SAGS newsletter on a regular basis. This thus became an incomplete and inconsistent data source.

Another problem was that not all the geographers in South Africa are registered with one scientific body, and so it is difficult to locate them all. The main problem, with obtaining and using data, was the incompleteness and inconsistency of the data sources that were vital for the review. The review could also only be as complete and consistent as the data used. To overcome this, the South African Geographical Journal was used as a review of all publications. This journal is the most popular, accredited, scientific journal that geographers of most sub-disciplines in South Africa use to publish their research. All the volumes and copies of this journal could be obtained, and so this was a complete and consistent data source. The journal could be used as a representation of the general type of papers published by South African geographers. Using the journal helped, to an extent, to overcome the problem of locating all the geographers and their publications.

Other problems, which also inhibited the study, were: Many requests for information directed at staff in geography departments were continuously ignored, or responses were generally very poor. As the topic does not always allow for the use of books, journals, etc., one has to rely on personal communication, and the lack of response hampered and limited the quality of the study material available.

5.2 Recommendations

According to Sir David Phillips (1985), British universities can be classified by a tripartite division that he termed, R, T, and X.

Where R = Research Universities,

T=Teaching Universities and

X=Universities with a mix of the two.

Over the past decade research funds have been given to the leading “R” Universities. Research resourcing is becoming greatly concentrated in research of a few institutions (Rawling and Daugherty, 1996). This is something to look at in South Africa. The twenty-one Departments could be split into these categories, and the lecturers could collaborate to ensure that all lecturers specialise in one of these divisions.



Environmental Education will be one of the future solutions to the environmental degradation of the world, for people is the source of destruction (Oelofse, 2000).

To supply foolproof solutions to the research problem, is not the easiest thing. As the saying goes: ‘You can please *some* of the people *some* of the time, but you cannot please *all* of the people *all* of the time’. This is the trend displayed during the course of this study. To pay lip service to a cause is one thing, but to put the lip service into action is another.

Throughout the study it was clear that words have spoken louder than actions. Other than the ideal stated by the U.S.A’s president George Bush, in his address to the other heads of state, at the Rio Summit (1992), which stated:

“The Chinese have a proverb: ‘if a man cheats the earth, the earth will cheat the man’. We must leave the earth in a better condition than we found it. Some find the challenges ahead overwhelming. I believe that their pessimism is unfounded. It has been said that we don’t inherit the earth from our ancestors; we borrow it from our children. When our children look back on this time and place, they will be grateful that we met in Rio and they will judge us by the actions we take from this day forward. Let us not disappoint them” (Dodds, 1997, p.5).

We have not complied fully with this noble intention. An analysis done just before the World Summit on Sustainable Development of 2002, held in Johannesburg South Africa, showed that not much has changed, at a global level. Even on a global scale nations have failed, to a great extent, to realize this ideal. This gathering held in August/September again concentrated on poverty eradication, Sustainable Development, technology transfer, global trade agreements and access to environmental health focal points like the atmosphere, ecology, vulnerability to natural disasters, land degradation and exploitation of marine resources (Cox, 2002, p.3).



The above statements may create the impression of negativity, but in highlighting this the researcher is only trying to adhere to the Constitution, Section 24. In defence, it should be stated that it was not for the lack of trying, but it proves how difficult it is to put theory into practice.

Bush’s address started the era of thinking about the environment. This also included a new ‘green’ buzzword, namely Sustainable Development. The universities worldwide all saw the potential of the use of this new concept in the names of their Geography departments, and that includes South African tertiary institutions. Who can blame them? It proved to be a means to an end, but this does not however change the fact that the environment does need dire attention.

5.3 Conclusion

From the publication analysis, it can be seen that every university has a different focus when it comes to departmental publications. This can probably be explained by looking at the departmental heads, and the various fields the staff practice in.

This review shows the current diverse nature of Environmental Geography in South Africa. In some instances papers have been written and remained within the boundaries of its discipline, such as the geomorphological papers. But even though the papers remain in these pure realms, their application to an Environmental Management field cannot be ignored, and hence they are of environmental relevance.

There is an increasing awareness amongst all geographers for greater integration to solve problems holistically. This has been reflected, increasingly, in the papers published towards the end of the study period reviewed. The interaction of human, economic and environmental issues is not being ignored, and greater consciousness of this is blurring the sub-divisional lines in Geography.

The survey conducted of the various environmentally orientated papers by South African geographers over the past six years, has revealed the broad and diverse subjects that geography can cover from an environmental perspective. By using their vast knowledge and specialised skills, geographers are able to make insightful interpretations from data collected. Also identified problems and impacts, as well as the formulation of solutions, using scientific and managerial principles, may help with interpretations.

It can be said that there is a growing trend among South African geographers to publish papers that are environmentally orientated. Whether or not this trend will persist into the future, and will grow at the same rate, cannot be identified here. Further research will most certainly be necessary to answer this question. It is

however this researcher's belief that there will be continued growth in environmentally orientated papers.

This may be due to the increasing awareness that has risen among the general public over environmental impacts (Park, 2001) over the past few years.

The identification of key contemporary environmental problems, including the depletion of the ozone layer, global warming, acid rain and the destruction of tropical rainforests and other biomes, have firmly entrenched environmental research for the future. It nevertheless remains to be seen if this research will be classified as truly environmental. As the environmental discipline of Geography develops, its challenge will be to develop a distinctive environmental philosophy, and to operationalise its vision, with integrating constructs such as the general systems theory (Barnard, 2001). Only when these measures are implemented in the future, can truly environmentally orientated papers be critically evaluated.

Environmentalism is thus becoming a widely used phrase all around the world. Every country on the earth is beginning to realise that something needs to be done in order to preserve the world, and its valuable resources for future generations.

After the name changes of the different Geography Departments, more environmentally orientated papers were published. The amount published is however still not very heartening. South African geographers should be willing to address the problems of their times, and to use the opportunities available to them in order to solve these problems.

From this survey, it can be concluded that South African geographers have published environmentally orientated papers, especially since 1995, when the departments started becoming environmentally orientated. Publications of the other conventional sub-disciplines, are still receiving wide attention, for example Geomorphology (Physical Geography). But, most of the other sub-disciplines like Climatology,

Biogeography, and Population Geography etc. are integrated into the environment, and are therefore environmentally orientated. Before 1995 there were some annual Journal publications that contained no environmentally orientated papers.

Since 1995 environmentally orientated publications of South African geographers have not increased exceptionally, but the consistency of which environmental papers are published is much higher.

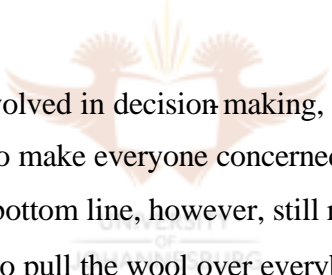
It is very important to look at the changes that came within the geography departments, and not to judge a department on the amount of papers it has published. Yes, the latter is important, but just as important is the real work of a lecturer conveying knowledge to his/her students.

The emerging discipline of Environmental Studies requires a new generation of graduates, capable of facing the challenges posed by this trans-disciplinary subject, as well as expanding and rapidly changing market requirements. A sensitive balance between subject related specialisation (research expertise) and a broad understanding of the varied and interacting dimensions of environmental problems is required (generalist). Graduates will be equipped to pursue new insights and alternative solutions to complex environmental challenges. The predominantly reductionist approach employed in other fields, is clearly not sufficient for addressing the discipline of environmental studies, and there is an obvious need to broaden the horizons of graduates (CFES, 2003).

The call for environmental specialists, from government agencies and captains of industry, to drive environmental compliance and performance of both National and International production systems, has forced universities across the globe to re-evaluate their ability to serve this growing market. Students from different academic backgrounds will be exposed to complex environmental issues through

multidisciplinary course work; trans-disciplinary cross-fertilisation and participation in problem orientated group projects (CFES, 2003).

A much wider and deeper scope is needed. In Geography's recent South African history, we have seen a much stronger emphasis on the environment, as well as the geographers' of South Africa's claim that they play an important and integral role as an environmentally orientated science. Geographers claim to be vital in understanding and managing the environment, but by the results of this review, it can be stated positively that their research does not backup their claim. A finding was made that the geographers are still focusing more in their research on their specialised areas of interest, but simultaneously doing fairly little to promote and understand the environment. It is disheartening and disappointing to realise what growth still is required in this area.



As many people that are involved in decision making, as many ideas and different approaches there will be. To make everyone concerned, see eye-to-eye, will be a most formidable task. The bottom line, however, still remains. We need to stop 'window dressing', and try to pull the wool over everybody's eyes. We need to take serious action and implement environmental management plans into our discipline of Geography. It is not only about saving Geography departments *per se*, but saving the environment.

In order to develop a more critical approach to the management of the environment and the solutions of environmental problems, it is clear that the theoretical foundation offered by Geography, with its wealth of philosophical and methodological approaches and substantive bodies of theory, is a vital necessity. South African geographers need to engage with the debates in international theory around issues such as sustainability, development, climate change and poverty in order to bring a more critical approach to the discourse of environmental management. Since geographers have always applied theory from other disciplines, now is the time for geographers to engage further with theory from discourses such as environmental

justice, political ecology, environmental politics and environmental ethics. Without this theoretical foundation, the environmental management literature becomes a litany of repeated attempts to manage the environment through the development and application of better and cleverer tools and techniques (Hajer, 1995). Along with engagement, South African geographers need to publish their environmental management research in international journals, thereby participating in international debates.

This researcher concludes by quoting the following: “It is the nature of the universe to strive for and slowly, but in ever-increasing measure, to attain wholeness, fullness, blessedness. The real defect for men as for other grades of the universe would be to ease the pain by a cessation of effort, to cease from striving towards the Good” (Smuts, 1987, p. 344).



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APPENDICES



APPENDIX A

YEAR	Author		Environmentally orientated (Yes or no)	Other sub-discipline
1996	Brincate, R.A. & Hanvey, P.M.	Perceptions and attitudes towards soil erosion in the Madebe community, Northwest Province	No	Human Geography
	Grab, S.W.	A note on the morphology of miniature sorted stripes at Mafadi summit, High Drakensberg	No	Physical Geography/ Geomorphology
	Rowntree, K.M. & Dolllar, E.S.J.	Controls on channel form and channel change in the Bell River, Eastern Cape, S.A.	No	Physical Geography/ Geomorphology
	Simpson, A.J. & McGee, O.S.	Analysis of the fumigation effect on pollutants over Pietermaritzburg	No	Physical Geography/ Climatology
	Watson, H.K.	Short and long term influence on the soil erosion of settlement by peasant farmers in KwaZulu Natal	Yes	Human Geography
	Le Roux, N.J and J. Olivier	Modelling Hail Frequency Using a Generalized Additive Interactive Technique	No	Physical Geography
	C. Mather	The View from Outside? Interpreting Oral Testimonies from Rural South Africa	No	Human Geography
	Kilian, D. and B.J. Dobson	Forging a Postmodern Waterfront: Urban Form and Spectacle at the Victoria and Alfred Docklands	No	Human Geography

1997	Ahmed, F.B.	Assessment of soil structural stability using ultrasonic dispersion	No	Physical Geography/ Geomorphology
	Boelhouwers, J.C.	Soil movement by frost in the Hex River mountains, Western Cape, S.A.	No	Physical Geography/ Geomorphology
	Bootsman, C.S.	On the evolution of the Upper-Molopo drainage	No	Physical Geography/ Geomorphology
	Gondwe, M.P. & Jury, M.R.	Sensitivity of vegetation (NDVI) to climate over Southern Africa: Relationships with summer rainfall and OLR	No	Physical Geography
	Irving, S.J.E. & Meadows, M.E.	Radiocarbon chronology and organic matter accumulation at Vankervelvei, near Knysna, S.A.	No	Physical Geography
	Mabote, M.E., Meadows, M.E. & Rogers, J.	Sedimentology of Terrigenous mud from the Orange River Delta and the inner shelf of Namaqualand, S.A.	No	Physical Geography/ Geomorphology
	Marker, M.E.	Evidence of Holocene low sea level at Knysna	No	Physical Geography/ Oceanography
	Midgley, J. & Garland, G.	Economics and landforms: An approach to valuation of a small Catchment	No	Physical Geography
	Nash, D.J., Meadows, M.E., Baxter, A.J., Shaw, P.A. & Grieske, A.	Late Holocene sedimentation rates and geomorphological significance of the Ncamaserie Valley, Okavango Delta, Botswana	No	Physical Geography/ Geomorphology

Watson, H.K. & Ramokgopa , R.	Factors influencing the distribution of gully erosion in KwaZulu Natal's Mfolozi Catchment-Land reforms Implications	Yes	Human Geography
J.A. Binns	People, environment and development	Yes	Human Geography/ People- environment relationships
M.M. Khosa and Y.G. Muthien	The use of the Geomagnetic Polarity Time Scale in Elucidating Pleistocene Landscape Evolution: an Example from South Australia	No	Physical Geography
E.M.Makha nya	Factors Influencing the Viability and Sustainability of Smallholder Sugar Cane Production in Umbumbulu	Yes	Human Geography
C.L. Macpheil	Poetry and Pass Law: Humanistic Geography in Urban South Africa	No	Physical geography
C.M. Cockerton	Documenting the Exodus: The Dimensions and Local Causes of Bechuanaland Women's Migration to South Africa, 1920-1966	No	Human Geography
J.J Barclay and M.R Jury	Meteorological Inputs to Dispersion Models Along Complex Coasts: A Study of the SW Cape and South Africa	No	Physical Geography
R.P. Bourman and P. Pillans	The use of the Geomagnetic Polarity Time Scale in Elucidating Pleistocene Landscape Evolution: an Example from South Australia	No	Physical Geography

M.A.T. de Oliveira	Towards the Integration of Subsurface Flow and Overland Flow in Gully Head Extension: Issues from a Conceptual Model for Gully Erosion Evolution	No	Physical Geography
N.J. Rossouw	Mapping Vegetation and Erosion Changes on the Northern Slopes of Table Mountain using Multi-Temporal Aerial Photography and GIS, 1944-1992	Yes	Physical Geography
E.R.M. Archer and B.J. Dodson	A Postmodern Geography for a Postmodern Planet: Perspectives on Global Change Research in South African Geography	No	Physical Geography
U.J. Fairhurst and M.J. Mashaba	Institutional Intervention Affecting the Lives of Women in the Rural Community of Masemola, Lebowa, South Africa	No	Human Geography
J. Olivier	Fog: A Possible Solution to Rural Water Problems?	No	Human Geography
V. Moodley, B. Zama, D.V. Soni	Women's Health: Voices from Amandawe	No	Humna Geography
D.S. Krige	Post-Apartheid Development Challenges in Small Towns of the Free State	Yes	Human Geography
A.C. Vakil	Community-Based Housing Organizations in the Developing World: Toward a Policy Agenda	Yes	Human Geography
N. Dewar	A Home is More than a House: Environmental Considerations in Low Cost Housing Development in Khayelitsha, Cape	Yes	Human Geography
S.M. Biermann	The Strategic Identification of Suitable Land for Low Income Residential Development	Yes	Physical Geography

	A.K. Terry	The Economic and Environmental Sustainability of the Sugar Industry in the Northern Lowveld of Swaziland	Yes	Human Geography
	K.I. Meiklejohn	The Role of Moisture in the Weathering of the Clarens Formation of the KwaZulu-Natal Drakensberg: Implications for the Preservation of Indigenous Rock Art	No	Physical Geography
1998	Horn, A.C.	The identity of land in the Pretoria district, 19 June 1913: Implications for land restitutions	No	Human Geography
	Khan, F.	Public participation and Environmental decision-making in South Africa- The Frankdale Environmental Health Project	Yes	Human Geography
	Marker, M.E.	Cenozoic participation and Environmental decision-making in South Africa: The evidence from geomorphology, 1967 - 1996, a personal view	No	Physical Geography/ Geomorphology
	D.F. Scott, D.B. Versfeld & W.Lesch	Erosion and Sediment yield in relation to afforestation and fire on the mountains of the Western Cape Province, South Africa	Yes	Physical Geography/ Natural resources Sustainability
	P. Bond	A History of Finance and Uneven Geographical Development in South Africa	No	Human Geography
	M.M. Khosa	Employment and Asset Creation Through Public Works in KwaZulu-Natal	No	Human Geography
	R.A. Gibb	Flexible Integration in the 'New' Southern Africa	No	Human Geography

	F.C. Lochner and H. L. Zietsman	Using Geographical Information Systems (GIS) for Policing in South Africa: A case study in Paarl	No	Human Geography
	G.C. Macoloo	The Relevance of Kenya's Urban Settlement Policies for Independent South Africa	No	Human Geography
	B. Lohnert, S. Oldfield and S. Parnell	Post-Apartheid Social Polarisation: The creation of Sub-Urban Identities in Cape Town	No	Human Geography
	S.J. Brooks and P.J. Harrison	A slice of Modernity: Planning for the Country and the City in Braitain and Natal, 1900-1950	No	Human Geography
	A. Stephens	Co-Managing the Boundaries Between Urban and Natural Areas: A case study of Scarborough (Cape Peninsula)	Yes	Human Geography
	R. Fox and E. Nel	Pension Payouts, Periodic Marketing and the Continuance of Urban Dependence in Rural South Africa	No	Human Geography
	E.C. Liebenberg	Teaching Map use in a Multicultural Environment	No	Physical Geography
1999	Boelhouters, J.C., Jager, D.F. & De Joode, A.	Application of relative-age dating methods to openwork debris flow Deposits in the Cederberg Mountains, Western Cape, S.A.	No	Physical Geography/ Geomorphology
	Grab, S. W.	A pilot study on needle ice induced Stream-bank erosion in the Mashai Valley, Lesotho Highlands	No	Physical Geography/ Geomorphology
	Lutchmiah, J.	Soil erosion in the Central Midlands of KwaZulu-Natal: A comparative Study	Yes	Physical Geography

B.N. Tapela P.H. Omara- Ojunga	Towards bridging the gap between wildlife conservation and rural development in the post-apartheid South Africa: The case of the Makuleke community and the Kruger National park	Yes	Human Geography/ Environment Interaction
U.J. Fairhurst	Routes and Roots of Geographical Realities: Identity as Catalyst	No	Human Geography
J. Crush and C. Soutter	Natural Family Conditions: Narratives of Stabilisation	No	Human Geography
C. Kelso	Ideology of Mapping in Apartheid South Africa	No	Human Geography
S.C. Goudie, F.Khan and D. Killian	Transforming Tourism: Black Empowerment, Heritage and Identity beyond Apartheid	No	Human Geography
C.M. Rogerson	Place Marketing for Local Economic Development in South Africa	No	Human Geography
E.M. Makhanya and M.M. Ngidi	Poverty and Rural Livelihoods in Umzumbe	No	Human Geography
C. Wood	Pastiche or Postiche?	Yes	Human Geography
U. Bob	Engendering Geography Education in South Africa: The Need to "Put Women on the Map"	No	Human Geography
T. Binns	Is Geography Going Places?	No	Human Geography
R. Ballantyne	An Analysis of Geography Teacher Educator's Perceptions of Curriculum 2005	No	Human Geography
U. van Harmelen	Where has all the Geography Gone? A Social Constructivist Perspective of Curriculum 2005	No	Human Geography

	R. Ballantyne, C. Oelofse and K. Winter P.D. Wilmot	Geography Educators' Perceptions of Teaching Environmental Education in South African Schools Graphicacy as a Form of Communication	Yes No	Human Geography Human Geography
	Anthony Lemon	Shifting Inequalities in South Africa's Schools: Some Evidence from the Western Cape	No	Human Geography
	L. Stevens and S. Rule	Moving to an Informal Settlement: The Gauteng Experience	No	Human Geography
	P.R. da Cruz	GIS as a Social Technology	No	Human Geography
	M. da Silva	The Rise and Fall of an Enterprise Cluster in Africa: The Jewellery Industry in South Africa	No	Human Geography
2000	Rouwntree, M.W., Rogers, K.H & Heritage	Landscape state change in the semi-arid Sabi River, Kruger National Park, in response to flood and drought	No	Physical Geography
	T O'Riordan, R. Preston-Whyte, R. Hamann and M. Manquele	The Transition to Sustainability: A South African Perspective	Yes	Human Geography
	R. Hamann, L.Booth and T O'Riordan	South African Environmental Policy on the Move	Yes	Human Geography
	R. Hamann and T O'Riordan	Resource Management in South Africa	Yes	Physical Geography
	C.Oelofse and Z.Patel	Falling Through the Net: Sustainability in Clermont Township, Durban	Yes	Human Geography

L.T. Dube and M.R. Jury	The Nature of Climate Variability and the Impacts of Drought over KwaZulu-Natal, South Africa	No	Physical Geography
C.R. Twidale	Scarp Retreat, Slope Stability, and the Evolution of Piedmont Assemblages	No	Physical Geography
H.J. Smith, A.J. Van Zyl, A.S. Claassens, J.L.Schoem an and M.C.Laker	Soil Loss Modelling in the Lesotho Highlands Water Project Catchment Areas	No	Physical Geography
J.H.Botha and P.S. Fouche	An Assessment of Land Degradation in the Northern Province from Satellite Remote Sensing and Community Perception	No	Physical Geography
S.L.A. Ferreira and A.C. Harmse	Crime and Tourism in South Africa :International Tourists Perception and Risk	No	Human Geography
T.R. Hill, E.L. Nel and A.M. Bodington	Integrating Geographical Information Systems with Tertiary Level Geography in South Africa	No	Human Geography
S.S. Nhlabathi	The Role of Community Based Organizations in Housing Low-Income People	No	Human Geography
M.C. Allison and T. Harpham	Relevance of a Governance Framework to Environmental Health in South Africa	No	Human Geography
C.Vogel	Usable Science: An Assessment of Long- Term Seasonal Forecasts Amongst Farmers in Rural Areas of South Africa	No	Human Geography

	A.C.Chipanshi	Relationships of Non Rainfall Events and Total Rainfall to Maize Yields at Selected Climatological Stations of Zambia	No	Physical Geography
	R.Chanda	Towards Contextualizing Urban Environmental Quality in the SADC Region	Yes	Human Geography
2001	Boelhouwers, J., Creamers, F. & Helsen, M.	Geomorphic evolution of debris fans in the Du Tiotskloof, Western Cape Mountains	No	Physical Geography/ Geomorphology
	T.R. Hill, N. Motteux, E.L. Nel and G.Papaloizou	Integrating Rural Community and Expert Knowledge through applied participatory Rural Appraisal in the Kat River Valley, South Africa	No	Human Geography
	S.Krige	The role of Universities in Capacity Building for better Human Settlements	No	Human Geography
	A.K. Terry	Who benefits from Rural Development Projects? A Case Study of the Komati Pilot Project, Swaziland	No	Human Geography
	H.J.Bijker, P.D. Sumner, K.J. Meiklejohn and G.J. Bredenkamp	Documenting the Effects of Veld Burning on Soil and Vegetation Characteristics in Giant's Castle Game Reserve, KwaZulu-Natal Drakensberg	No	Physical Geography
	C.M. Rogerson	Knowledge-Based or Smart Regions in South Africa	No	Human Geography

N.Dewar	Seeking Closure: Conflict Resolution, Land Restitution, and Inner City Redevelopments in 'District Six', Cape Town	Yes	Human Geography
I.V. Mashinni and G.du T. De Villiers	Lesotho's Sustainable Development Challenges for the 21 st Century: A Geo-political Perspective	Yes	Human Geography
S.Grab and M Nüsser	Towards an Integrated Research Approach for the Drakensberg and Lesotho Mountain Environments: A Case Study from the Sani Plateau Region	No	Human Geography
A.E. Todes	Newcastle: The Development of a Model Apartheid Town and Beyond	No	Human Geography



APPENDIX B

English Questionnaire:

The following questionnaire was compiled to aid the researcher in obtaining answers to very relevant questions concerning Environmental Awareness among South African Geographers.

The proposed study field is as follows: “Environmental Study / Management / Science orientated papers, published by South African Geographers during the period 1996 – 2001.”

Your co-operation with respect to answering the following questions will be sincerely appreciated. Where does Environmental Management begin? With education. And where do Environmental Managers receive their education? At universities and other institutions. Thus the focus of this study will be on universities and the staff members of these institutions. In order to produce a logical and reasonable answer as to the mentioned study, the researcher will be able to provide your Department (University Department of Geography and Environmental Studies / Environmental Management / Environmental Science) to receive valuable exposure, as the contents of this research will be submitted for national and international publication.

The following definitions of how certain terms have been used in this study are provided in order to assist you in your responses to the questionnaire (as there are several different definitions to the same term):

1. Geography: “Geography’s goal is nothing less than an understanding of the vast, interacting system comprising all humanity and its natural environment on the surface of the earth.” “It seeks to explain how the subsystems of the physical environment are organized on the earth’s surface, and how men (sic) distribute themselves over the earth in relation to physical features and to other men (sic).” (Anon, 1965, p.1).
2. Environmental Science: Environmental Science is a multi-disciplinary field:
“Environmental Science is the application of knowledge from many disciplines to the study and management of the environment. Environmental Science is the study of how we and other species interact with one another, and with the non living environment (matter and energy).” (Anon, 1983, p.3 and 50).
3. Environmental Studies: “Environmental studies is an approach that is aimed at developing attitude, skills and behaviour. It is an all-embracing concern for everyone. It is directed towards improving the existence of all living and non living things.” (TED, 1986, p.1-2).

4. Environmental Management: “Environmental Management is not about the management of the environment by an environmentalist, but rather about the organisation controlling its activities, products and services that have or could have a significant impact on the environment.” (Lucas, 1999, p.3).
 “Omgewingsbestuur is ‘n filosofie wat ‘n holistiese benadering en metode vir besluitnemingsproses en prosedure voorstel. Dit moet gedoen word deur ‘n multi-dissiplinêre benadering en analise.” (Hugo et al. 1997, p.200).

With respect to the above-mentioned information, please be so kind as to complete the following questions:

1. Many Geography Departments, country wide, made the decision to undergo a name change, to include the concept of Environmental Study / Environmental Management / Environmental Science. What were your reasons / motivation for changing the name change of your Department?

2. When did this name change occur?

 Why did this change occur at this specific point in time?

3. In what way does Environmental Study / Environmental Management / Environmental Science configure in the content of your undergraduate courses?



4. In what way does Environmental Study / Environmental Management / Environmental Science configure in the content of your post-graduate courses?

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5. Since the recent emphasis that was put on Environmental Study / Environmental Management / Environmental Science, has there been any change in the research contents (topics) of your department, with respect to the following:

The publication of subsidised articles / publications?

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The contents of Masters and Doctoral Dissertations prepared by your post-graduate students?

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The choice of, and contents of, Conference papers?

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6.
6.1 Was there any change as to the choice of scientific journals that your department published in since 1996?

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Additional information required:

1. A list of any 5 scientific journals in which your Department published from 1996-2000, as well as a list of 5 scientific journals in which your Department published in 2001.

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2. The researcher will also appreciate the input of the Chairperson and staff members to their views in connection the future of their department, and the role Environmental Study / Environmental Management / Environmental Science will play in the future.

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Lucas, D., 1999: RAU student notes on Environmental Management. RAU: Johannesburg.

TED, 1986: Syllabus for Environmental Studies. Johannesburg: via Africa (Pty) Ltd.



Afrikaanse vraelys:

Die meegaande vraelys is saamgestel om die navorser van hulp te wees, t.o.v. die verkryging van antwoorde op baie relevante vrae aangaande Omgewingsbewustheid onder Suid-Afrikaanse Geograwe.

Die studieveld is soos volg: “Environmental Study/ Management / Science orientated research papers, published by South African Geographers for the period 1996-2001.”

U samewerking m.b.t. die korrekte voltooiing van die volgende vrae sal hoog op prys gestel word. Waar begin Omgewingsbestuur dan nou eintlik? Met opvoeding en onderrig. En waar word omgewingsbestuurders dan opgelei? By universiteite en ander instansies. Dus is die fokus van die studie op universiteite en die personeel betrokke by diesulke instansies. Om ‘n logiese en redelike antwoord te verskaf op die bovermelde studie-onderwerp sal die navorser in staat gestel word om u instansie (Departement Geografie en Omgewingstudie / Omgewingsbestuur / Omgewingswetenskappe) die welverdiende blootstelling / bekendstelling te gee aan ander instansies en voornemende studente. Die inhoud van die gevolgtrekkings / afleidings sal dan ook aangebied word vir plaaslike (nasionale) en internasionale publikasie.

Die volgende definisies, wat in die studie gebruik is, word aan u voorsien om sodanig u te help (‘n riglyn te verskaf, daar soveel verskillende definisies bestaan) met u antwoorde op die vraelys:

1. Geografie: “Geography’s goal is nothing less than an understanding of the vast, interacting system comprising all humanity and its natural environment on the surface of the earth.” “It seeks to explain how the subsystems of the physical environment are organized on the earth’s surface, and how man (sic) distributes himself over the earth in relation to physical features and to other men (sic).” (Anon, 1965, p.1).
2. Omgewingswetenskap: Omgewingswetenskap is ‘n multi-dissiplinêre veld:
“Environmental Science is the application of knowledge from many disciplines to the study and management of the environment. Environmental Science is the study of how we and other species interact with one another, and with the non living environment (matter and energy).” (Anon, 1983, pp.3 and 50).
3. Omgewingstudies: “Environmental studies is an approach that is aimed at developing attitude, skills and behaviour. It is an all-embracing concern for everyone. It is directed towards improving the existence of all living and non living things.” (TED, 1986, p.1 – 2).

4. Omgewingsbestuur: “Environmental management is not about the management of the environment by an environmentalist, but rather about the organisation controlling its activities, products and services that have or could have a significant impact on the environment.” (Lucas, 1999, p.3).
 “Omgewingsbestuur is ‘n filosofie wat ‘n holistiese benadering en metode vir besluitnemingsproses en prosedure voorstel. Dit moet gedoen word deur ‘n multi-dissiplinêre benadering en analise (Hugo et al. 1997, p.200).”

Aan die hand van meegaande definisies sal dit hoog op prys gestel word in die volgende vrae so volledig moontlik voltooi kan word:

1. Landswyd het Geografiedepartemente die besluit geneem om ‘n naamsverandering te ondergaan. Wat was die redes / oorwegings vir die naamsverandering van u Departement Geografie?

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2. Wanneer het hierdie departementele naamsverandering plaasgevind.

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Hoekom het dit juis op daardie spesifieke tydstip plaasgevind?

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3. Op watter wyse figureer Omgewingstudie / Omgewingsbestuur / Omgewingswetenskappe in die voorgraadse kursusse wat in u Departement aangebied word?

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4. Op watter wyse figureer Omgewingstudie / Omgewingsbestuur / Omgewingswetenskappe in die nagraadse kursusse wat in u Departement aangebied word ?

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5. Sedert die toenemende klem wat op Omgewingstudie / Omgewingsbestuur / Omgewingswetenskappe geplaas is, is daar enige ommeswaai in die navorsingsinhoud van u Departement t.o.v. die volgende:

Die publikasie van subsidiedraende artikels/publikasies?

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Die inhoud van die Magisterverhandelings en Doktorale proefskrifte, gepubliseer deur u nagraadse studente afgehandel?

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Die keuse en inhoud van Konferensiereferate ?

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6.
6.1 Was daar enige verandering in die tydskriftitels waarin u departement hoofsaaklik sedert 1996 gepubliseer het?

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Verdere inligting verlang:

1. Die name van enige 5 wetenskaplike tydskrifte waarin u Departement sedert 1996 - 2000 gepubliseer het, asook enige 5 waarin daar in 2001 gepubliseer

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2. Die navorser sal 'n inset vanaf die voorsitter en personeel waardeer, aangaande hul standpunte aangaande die toekoms van hul departement en die rol wat Omgewingstudie / Omgewingsbestuur / Omgewingswetenskappe in hierdie toekomsvisie gaan/kan vervul.

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GERAADPLEEGDE BRONNE:

Anon, 1965: Ad Hoc Committee on Geography, The Science of Geography. Academy of Sciences, Washington DC, 1965. Washington.

Anon, 1983: Environmental Science Managing the environment. (2nd Ed.) Columbus: Purdon & Anderson.

Hugo, M.L., A.T. Viljoen & J.M. Meeuwis, 1997: The ecology of resource management: the quest for sustainable living. Pretoria: Kagiso.

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