

# ROLE OF RESEARCH IN COMBATING DESERTIFICATION

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*the accreditation system  
not conducive for  
adept research*

## Introduction

Since the global recognition of processes of desertification during the 20<sup>th</sup> century, research has been a prominent tool applied by scientists to address emerging issues (UNCOD 197\*). Currently, desertification as officially defined is: (Helmut, not correct wording but will adjust when reference is at hand) 'land degradation in arid, semi-arid and dry sub-humid areas, particularly Africa, caused by various factors including climate variability and human activities' (UNEP 199\*). This definition, at a first glance, clearly supports the basis for a vigorous research programme to combat desertification. Inclusion of climatically defined, geographical areas in the definition reflects early research activities and has reinforced the role of and shaped ongoing research. Attributing causation, at least in part, to climate variability has also encouraged this direction of research.

*M. Seely*

Research on desertification has been undertaken in all relevant academic disciplines although efforts have tended to focus on bio-physical manifestations of desertification (Jacobson 1995\*). Extensive research has been undertaken to describe the climate in areas where desertification has been most prominent and to establish the extent of variability or directionality of change through time (Mark\*). Land degradation is also a central principle in desertification and much research effort has been directed toward a description of its extent and its change through time, the bio-physical processes involved and potential remedial measures and their impacts (Mark\*).

Recognition of the central role of human activities in processes of desertification has taken a longer time to become established (Darkoh 199\*, Seely 199\*, Seely and Jacobson 199\*). Supporting research in socio-economic fields, in policy and government, in economics, in communication and similar fields has slowly gained increasing acceptance. *but far from sufficient*

*Despite knowledge gained from*

Despite ongoing research efforts, desertification continues to affect millions of people and millions of square kilometers of land (Mark\*). Although Africa is the focus of attention, land degradation is affecting significant numbers of people in Asia, South and North America, and southern Europe. In view of the long-term recognition of processes of desertification and long-term application of research to improve understanding of these processes, questions must be posed concerning the value of research and its role in combating desertification.

*continues to affect*

*Seem to be very weak links between research, research result and implementation of programmes to combat desertification funded by governments, multi- and bilateral donors. What are the reasons for this?*

4. lack of inclusion of resource users
5. lack of funding
- 1) non-conducive environment = academic accreditation system not conducive environment
  - 2) = no system of adequate regulation for scientific results
  - 3) = lack of adequate channels, communication links

Although research has a major role to play in combating desertification, most research undertaken in the name of desertification has not contributed to reducing or reversing its impacts (e.g. Jacobson 199\*). Reasons for this are manifold but can be largely attributed to participation and communication. These factors have been recognised and have a central focus in the UN Convention to Combat Desertification (CCD) (UNEP 199\*), however, to date rhetoric has overshadowed their application. *very little concrete action*

*implicitly*

?  
*not clearly stated in Conv.*

Academically, the strongest research capacity lies in areas where desertification is not taking place. This research is driven, funded and evaluated by peer review, predominantly in the form of literature in recognised journals. This system eliminates participation by researchers in most developing countries, by persons involved in development programmes and by people affected by and affecting processes of desertification. Similarly, the aim of communication is also muted as academic, peer reviewed journals are not necessarily accessible to persons outside of the developed world's research community. The media may occasionally report on something highlighted in a peer reviewed journal, but this happens infrequently and is usually sensationalised.

*not accessible for implementers, resource users, transnational links - esp. national, countries not functioning - are mostly leading*

*an academic accreditation system based on*

*maybe explain in more detail  
Problem: "translation" of results in language +*

*Lack of proper communication channels, networks / problem of maintenance - a user friendly practical*

Academic research in the developing countries where most desertification is taking place is often under funded. This may lead to researchers leaving the country but also to resident researchers focusing on questions that will lead to enhanced funding rather than questions that beg for answers. Literature is expensive and relatively unavailable and confirmation of published research done elsewhere is frequently undertaken.

*academic grades, reputation boom, tend with*

*Lack of research capacity, systematic approaches*

*or non-existent*

Numerous development programmes are directly or indirectly addressing the causes or manifestations of desertification (e.g. GTZ \*\*\* Helmut some references). Application of research to formulation and implementation of these programmes is usually limited to common understanding of causes and solutions as understood by developers and their stakeholders (e.g. Napcod 1994). Because of programme requirements as well as funding and time constraints, rigorous research is difficult to integrate into development projects.

*Negative attitude of donors to include research in development projects  
reasons as given above*

*adapted would be necessary to include more adapted*

Meanwhile, development programmes could benefit from rigorous research into the causes and manifestations of desertification under a particular set of conditions as well as research into the process of combating desertification. Nevertheless, academic requirements for researchers do not necessarily lend themselves to making such a contribution while development programmes are not flexible enough to facilitate these additions to their activities.

*and also conditions of implementation*

*once no focus on research*

### Integration of research into combating desertification

*restrictive*

Role of Committee of Science and Technology (CST)  
Should be a driving force. Up to now not able to face this challenge

While recognising that research has a potential role to play in combating desertification, how can that role be better defined and more effectively realised? The answer may lie in reexamining the contribution that research can make. At the same time, while recognising the importance of participation and communication, these two issues must be addressed in a more creative fashion than has been done heretofore.

of resource users

systematic

The central role of research should revolve around enhanced understanding of the processes of desertification and its reversal. Since the ultimate causes of desertification are recognised to range from inappropriate policies and their application to an increasing population expecting improved livelihoods from diminishing natural resources to inappropriate development interventions causing reduced rather than increased overall productivity, the topics for research are boundless. The main issue for desertification research is, however, how can the understanding generated be applied to reducing or eliminating desertification.

How can it be integrated into development work

how can research address the urgent questions of resource users

Enhanced understanding as a result of desertification research often refers to scientific understanding of the involved researchers. However, such enhanced understanding is of no value to combating desertification if the results are not accessible to and used by decision makers at all levels including those making policies, using natural resources or involved in development. Consideration should be given to three essential points.

- Identification of questions that decision makers and resource users feel would enhance understanding of desertification and contribute to its reversal, could contribute to overall enhanced understanding.
- Participation of local researchers, of resource users and of people involved in development programmes is one of the ways that enhanced understanding can be generated.
- Interpretation of research results, so they are in context and understood by academics but also by decision makers, resource users and people focused on economic development, is another essential step for enhancing understanding based on research.

translation

For example, on a global or national scale it is important for decision makers to know the types and extent of desertification, for economic planning, for monitoring increase or decrease of the extent of degraded lands, to prepare for possible movements of refugees and for a myriad of other reasons. However, researchers using remote sensing and similar tools are often based far from the areas they are studying. Nevertheless, this research should continue to be undertaken as a support for decision making at all levels. Such information can be disempowering, however, if it is not accompanied by an understanding of the connections between local and national scale phenomena. It is essential that the results be interpreted and communicated so that national to local decision makers, resource users and development workers in affected areas can all benefit from this or any other research undertaken in the cause of combating desertification.

role of networks

link to CST

*accessibility and translation to  
resource users  
specific language  
format*

Rather than uncritically assuming that any research will contribute to combating desertification or rejecting all research out of hand, it is perhaps time that the potential contributions from research be reexamined. What research can be done to contribute to combating desertification? An answer to this question might be broadly summarised in the following four statements:

- Identifying, describing and understanding linkages between the political, economic and socio-economic environment and land degradation
- Identifying, describing and understanding linkages between policy, decision making on all levels and the way people use natural resources
- Monitoring changes in the bio-physical and socio-economic environment where land degradation is a threat or taking place
- Monitoring changes in the political, economic, policy and decision making environments directly or indirectly influencing desertification

While this encompasses a very broad range of research topics, it is not the research *per se*, but the way it is undertaken and communicated that is critical.

*What is needed: clear description of the way forward*

*the way it  
is credited*

An essential component of research undertaken to contribute to combating desertification is a clear understanding of the application of the research results and the manner in which they will be communicated, before the research is undertaken. This does not preclude serendipitous discoveries but would prevent undertaking research simply to produce a peer reviewed publication. A second component is ensuring some level of participation, whether this be in the identification of the research topic or the undertaking of the actual research itself. This does not mean that every academic researcher must include resource users on the pay roll. It is suggested, however, that consideration be given to an exchange of views and information outside the confines of the narrowly defined research community or that opportunities for training be identified.

*repetition?*

Development programmes could incorporate such a framework so that results of relevant research can be identified, understood and used by resource users to decision makers working at the national and local levels and they, in turn, can contribute to generating research ideas. To establish such a formal or informal framework, a basic component is capacity building of those who must use the research information generated. Moreover, development programmes are in a better position to establish or at least contribute to this framework than are academic researchers. Both academic researchers and development agencies must be aware of the need for such a framework and be willing to communicate needs and potential contributions.

### **A case study from Namibia**

When Namibia's Programme to Combat Desertification (Napcod) (funded by the German Government (BMZ) through the GTZ) was being designed in 1994 (Wolters 1994), the usual mistrust existed between researchers and development

*Creation of implementation oriented information networks.*

Lack of mutual understanding about concepts

advisors. Researchers felt that the advisors were applying past experiences to a unique Namibian situation that required special attention while development advisors thought of research as a basic activity with no applied relevance. Over several years this division of view points existed during which time a review was undertaken of research opportunities in support of Napcod (Jacobson 199\*). Although funding did not allow direct implementation of any of the recommended research activities, the report did encourage a more research oriented approach and overall framework to the entire programme. Each of the results of the programme, whether it focused on policy or information exchange, was not only implemented but formally or informally evaluated in a critical fashion based on a research oriented approach.

is that  
me?

One of the first research activities under the Napcod programme was the economic evaluation of the cost of desertification in Namibia (Quan 1994). This has served to inform a variety of aspects of Napcod ranging from press releases and parliamentary information sheets, to design of Napcod as well as Namibia's Drought Policy and Strategy (in which Napcod played a pivotal role) to design of subsequent projects related to Napcod.

but  
actual role  
of record  
these would  
not have  
been  
considered  
records

Another important research activity under this framework was an assessment of the existing policies relating to natural resource use in Namibia – agricultural policy, water policy, forestry policy and land policy (Dewdney 199\*\*). This research was then applied to design of the Drought Policy and Strategy, to enhancing the interaction of the several ministries involved in natural resource management (environment, agriculture and lands) and contributed to further policy development and analysis in related fields.

Funding for research activities, in support of Napcod under the established framework, was more often identified from additional sources. Prominent amongst these projects was that undertaken with funding from the Flanking Programme for Tropical Ecology (TÖB) project aimed at establishing biological indicators for land degradation. Bio-physical and socio-economic data were collected from sites with different land use and land tenure regimes but with similar rainfall and landscape. There was a strong focus on actively involving the local population in data collection and analysis and effort was put into reporting back with research results and other information to land use decision makers at all levels. One PhD, two MScs and six diploma projects were generated from this project (Zeidler 2000).

Another allied research and training project under this framework was the Summer Desertification Project supported by Sida and undertaken by the Desert Research Foundation of Namibia. Each year during Napcod, up to 12 students from the University and the Polytechnic of Namibia participated in a research reconnaissance experience. Topics ranged from the 'Impact of illegal fencing in communal lands upon land degradation' to questions such as 'how to distinguish

Example  
Cooperation  
with UCT



between the impacts of desertification vs. normal rainfall variability on reduced productivity' in arid areas.

Yet another valuable research contribution came in the form of MSc projects undertaken within the auspices of Napcod by students from the University of Cape Town. Two of these topics were: A Retrospective Study of Environmental Impact of Emergency Borehole Supply in Gam and Khorixas Areas of Namibia, on the impact of drought policy measures (UCT 1998a); and A Retrospective Assessment of Environmental Implications of Resettlement in the Oshikoto and Omaheke Regions of Namibia, on the impact of resettlement policy measures (UCT 1998b).

While the research undertaken in support of Napcod did not necessarily address the most important research questions first, and some still require attention, the projects fulfilled the dual aims of participation and communication of the understanding generated. They have, consequently, provided valuable input into the programme and also served to guide further interventions.

Selected references:

Dewdney, R 199\*

Jacobson, K M 1997.

Quan, J 1994

Seely, M K 199\*

Seely, M K and Jacobson, K M 199\*

UCT 1998a

UCT 1998b

Way forward:  
CT/Gobabel Symposium  
Training

Attempt in Tucson, continuation  
of dialogue → CT/Gobabel

Outlook: role of Nat. programmes

CT

Everything are written

Course: documentation of 2002  
with view to advertise for 2003

IPRA pics

1994 W'shop

Elby - Transcript

Update

Reg water

Garza

Netwise - draft

SADC - report

Diagramme

Indicators - graph

Nat Progs

not felt in Sci. Community

Tucson Symposium

CT/Gobabel away  
toward



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Leitartikel:  
(editorial)

- Desertifikation: Ursache, Wechselwirkungen, Ausmaß Folgen für das Leben der Menschheit in Stadt und Land  
(Desertification: causes and interactions impact for livelihood in urban and rural areas)  
Autor (author): Bettina Hausmann, UNCCD Sekretariat, Bonn oder UNEP???
- Die Ziele der Konvention zur Wüstenbekämpfung und ihre Umsetzung durch die Vertragsstaaten (Rückblick zu Konferenz) - Verbindung zu anderen Konventionen wie Biodiversität und Klima  
(The objectives of the UN-Convention on desertification and its implementation - implications from the COP 4 conference in Bonn)  
Autor (author): Frau Hoven, BMZ, Bonn, Referat 412
- Welche Auswirkung hat die Konvention zur Wüstenbekämpfung auf Armutsbekämpfung und Entschuldung?  
(The impact of the convention on poverty reduction the debt relief)  
Autor (author): Helmut Asche, Eschborn und Günter Riethmacher, Washington
- Der Beitrag der Wissenschaft im Kampf gegen die Desertifikation  
(Research competence in combatting desertification)  
Autor (author) Mary Seely, Desert Research Foundation, Namibia
- Partizipation auf Dorfebene in einem Transformationsland- Erfahrungen aus Turkmenistan  
(First experiences with communal participation in a transition country - the example of Turkmenistan)  
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(No tillage technique against droughts - the case of Kenya)  
Autor (author) Dr. Kurt Steiner, GTZ. Eschborn
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