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CONNECTING COMMUNITY ACTION AND SCIENCE TO COMBAT DESERTIFICATION: EVALUATION OF A PROCESS

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Abstract. Combating desertification requires the involvement of many people ranging from communities who experience the effects on a daily basis and scientists attempting to understand the biophysical and socio-economic causes and consequences of desertification, to developers and policy makers on all levels. In many instances, however, the understanding, approaches and actions of these different groups contradict rather than support one another. Over the period 2000 to 2002, a conference process undertaken in southern Africa brought together communities, scientists, and development workers to test the concept that they could connect and work together to combat desertification, given an appropriate framework. The conference was a success, and communities, scientists and developers did exchange experience, knowledge and information. Many lessons were learned, although some pitfalls were experienced. Time, funding, enhanced communication, and good will are the primary ingredients for ensuring that different sectors complement one another in their efforts to combat desertification.

Keywords: alternative livelihoods, capacity building, combating desertification, community interaction, conference process, information exchange, traditional knowledge, training

1. Introduction

International concern about desertification was first registered within the United Nations (UN) system, when stronger and more frequent droughts were experienced in 1968 in the Sahel. Currently, over 110 countries, including 80 developing countries in the one-third of the world that encompasses drylands, are estimated to be affected by land degradation (UNEP n.d.) Various negotiations, declarations, policies and conferences focused on desertification leading up to the UN Conference on Environment and Development in Rio de Janeiro, 1992. In Rio de Janeiro, amidst widespread concern for biodiversity and global climate change, the African countries asked for a UN Convention on combating desertification and the effects of drought. The resulting United Nations Convention to Combat Desertification (UNCCD) presents a unique mandate and potential support to people affected by drought, loss of productivity and declining quality of livelihoods in the world's drylands (UNCCD, 1996).

Based on the assumption that the scientific background to desertification was known, the UNCCD focused on mobilising the involvement of affected



communities to address their own challenges at their own local level. Distinguished from the UN Convention on Biodiversity (UNCBD, 1992) and the UN Framework Convention on Climate Change (UNFCCC, 1992) by its focus on community action rather than scientific solutions, the UNCCD was available to support drylands countries to address loss of productivity and decline in the quality of rural livelihoods. Despite the good intentions of the desertification convention, however, the importance and absence of support structures at different levels, including the scientific level, has become more apparent.

Many conferences, workshops and seminars addressed this new convention. The Bureau of Land Management (BLM) of the US Department of the Interior organised one of these conferences in 1994 drawing attention to desertification in developed countries (BLM, 1994). In 1997, a second conference highlighted desertification issues in developing countries under the title of 'Connecting Science with Community Action' (BLM, 1997; IISD, 1997; Mouat and McGinty, 1998; Norton *et al.*, 1998; Seely, 1998; Singh, 1998; van Rooyen, 1998). This second conference was one of the first to address the issue of support to community action from the research community, but provided neither an example of this connectivity nor a blueprint for its implementation. This attempt to connect was continued under the experimental approach adopted in southern Africa in 2002 under the title: *Alternative Ways to Combat Desertification—Connecting Community Action with Science and Common Sense* (Seely and Moser, 2002).

The importance of connecting science with community action to combat desertification is not a new one. The Desert Margins Initiative (DMI) in 1995 included as one of its objectives 'to facilitate the exchange of information, skills, and technologies between community based groups, NGOs, research organisations, and extension agencies' (DMI, 1995). Other projects and reports have somewhat similar objectives ranging in application from organic agriculture in the UK to rangelands in Africa (Bayer and Waters-Bayer, 1999; CGIAR, 2000; Davies, 2001; Kiros, 1994; Maseru, 1998; Maiga, 1999; Mauro and Hardison, 2000; Øygard *et al.*, 1999; Squires, 1999; Tvedten and Hangula, 1993).

The purpose of this paper is to examine the basic hypothesis that scientific and community action approaches can augment one another, and to identify factors involved (e.g. Auerbach, 1995; Milton, 2000; Seely and Wöhl, 2002). The conference process undertaken in southern Africa from 2000 to April 2002 served as a test case. Four questions were examined:

- What is needed to facilitate connection of community action and science?
- Have scientific researchers understood the value of integrating community inputs?
- Do communities see any value in science?
- How best can science and community action become mutually understandable?

2. Materials and Methods

This paper investigates the entire conference process: *Alternative Ways to Combat Desertification—Connecting Community Action with Science and Common Sense* to examine the questions identified (Ward, 2002). The conference process was not an isolated event, but was firmly embedded within a suite of community-based organisations (CBOs), non-governmental organisations (NGOs) and government institutions in Namibia, South Africa and Zambia, all of which were involved in a number of ongoing projects and programmes (Table I). These institutions participated in and contributed to the conference process in different ways.

3. Conference Preparations

Preparation activities for the overall conference process extended over a period of three years. Interested persons who had initially attended one or two of the conferences organised by BLM in 1994 and 1997 formed a volunteer organising committee. Additional members joined during the course of the ongoing preparations. The purpose of the organising committee was to oversee the conference process, including identifying and securing funds.

In the early stages, greatest emphasis was placed on community involvement and preparation. This included identification of communities and their representatives, establishment of a community-based steering committee and capacity building for individual community participants in terms of hospitality, and communication of information concerning the combating of desertification. This preparation was essential for the overall process and involved many of the associated institutions in different capacities and components of the process. Indirect and direct funding came from many of these associated institutions to support discrete preparatory activities.

3.1. COMMUNITY PARTICIPATION

Identification of participating communities was based on several criteria:

- presence of functioning institutions within the community
- identification of land degradation/desertification as a threat to livelihoods
- established projects and programmes to manage natural resources and combat desertification
- interest expressed by the community itself to participate in a three-year programme, including hosting international visitors in April 2002
- identified communities located in several countries.

The identification of communities was carried out from 1999 until 2001, through visits and negotiations by the organising committee, or based on recommendations

TABLE I

Institutions and projects that provided a basis for the conference process, listed by countries and organisations in alphabetical order

Name of organisation	Type of organisation	Involvement in community action (1-3)	Involvement in science (1-3)
Namibia:			
Anker youth development association	CBO	3	1
Desert research foundation of Namibia	NGO	3	3
Environmental learning and action in the Kuiseb river basin project	NGO project	3	3
Forum for integrated resource management (FIRM); at Grootberg and at Gibeon (including, <i>inter alia</i> , Desert research foundation of Namibia, Integrated rural development and nature conservation, Ministry of agriculture, water and rural development, Ministry of environment and tourism, Namibia development trust, Namibia nature foundation, Rural institute for social empowerment, Sustainable animal and range development project)	CBO	3	2
Goâmus tourism project	CBO	3	1
Grootberg farmers' association	CBO	3	1
Gründoring farmers' cooperative	CBO	3	1
≠Khoadi //Hôas (Elephants' Corner) conservancy	CBO	3	2
Ministry of environment and tourism	GOV	2	2
Namibian CBO support organisation	NGO	3	1
Namibian community-based tourism association	NGO	3	1
Namibia's programme to combat desertification	NGO/GOV Programme	3	2
Namibia's biomass energy conservation project	NGO project	3	1
!Nara project	CBO project	2	3
Nico-Noord campsite	CBO	3	1
Oike farmers association	CBO	3	1
Oskop conservancy	CBO	3	1
Rössing foundation	NGO	2	1
Spitzkoppe community campsite	CBO	3	1
Topnaar (≠Aonin) community foundation	CBO	3	1
Tsub Gaus community campsite	CBO	3	1
Women's desk (Grootberg)	CBO	3	1

(Continued on next page)

TABLE I
(Continued)

Name of organisation	Type of organisation	Involvement in community action (1-3)	Involvement in science (1-3)
South Africa:			
Environmental monitoring group	NGO	3	2
Heiveld cooperative	CBO	3	1
LandCare project at Paulshoek	CBO	3	3
Namaqualand sanitation and water project	CBO	3	1
National botanical institute, Kirstenbosch botanical gardens	GOV	1	3
Paulshoek development forum	CBO	3	1
Rooibos farmers' study group	CBO	2	1
University of Cape Town	University	1	3
Wupperthal tourism project	CBO	2	1
Zambia:			
Mukune community	CBO	3	1
Muwele community	CBO	3	1
Zambian alliance of women	NGO	3	1

Note. CBO = Community based organisation; NGO = Non-governmental organisation; GOV = Governmental organisation.

1 = no or little involvement; 2 = involved; 3 = very much involved.

This assessment was made by the authors who are not familiar with all activities of each institution.

from institutions directly involved in activities with these communities. Communities themselves selected representatives to serve on the steering committee. The steering committee was established in 2000, to facilitate contributions and guide preparation and participation of communities in the conference process.

3.2. WORKSHOPS

During the three-year conference process, two major workshops were held as part of the overall preparations. A workshop on Dryland Ecotourism at Gobabeb Training and Research Centre, Namibia, in April 2000, facilitated information sharing and provided a platform to support capacity building for desert and drylands tourism, to raise awareness and to prepare for the international conference in April 2002 (DRFN, 2000a). A total of 80 people participated, including three representatives and one community leader from each of five southern African communities; the University of Botswana representing Botswana communities; government and NGO CCD focal points from ten Southern African Development Community (SADC) countries; the conference organising committee as well as resource people from different sectors.

Fourteen representatives from six communities plus ten resource people attended a workshop on Communication Preparations at Gobabeb in November 2001 (DRFN, 2001a). Overall objectives were to enhance information and knowledge exchange amongst the communities, to establish the process and context of the Desertification 2000–2002 conference process and to further preparations of communities for their participation. Information about Sustainable Development, the Johannesburg World Summit on Sustainable Development (WSSD) and Namibia's preparations towards it, as well as a review of desertification issues, were presented. Participants reviewed the background of the conference process as well as future activities. Plenary sessions and group work with community participants facilitated development of brochure and poster material.

3.3. COMMUNITY EXCHANGE VISIT

This step in the preparations was designed to increase knowledge and understanding about community-based tourism-related activities as an alternative way to combat desertification and to enhance skills of the communities to visit others and to receive visitors. Four communities visited one another for five days in April 2001 (DRFN, 2001b; DRFN, 2001c). This experience involved extensive preparation ranging from organising transport and planning accommodation and meals to developing programmes of information exchange. During the 2000–2002 period, individual associated institutions (Table I) also arranged exchange visits in which some of the conference participants took part.

3.4. PLANNING VISITS BY SECRETARIAT¹

Two planning visits (July 2001 and November 2001–January 2002) by the conference secretariat facilitated preparations of communities to receive visitors in April 2002 (Moser, 2001; Moser and Wolf, 2002). Members of the secretariat distributed information about activities of communities and the conference process and identified information needs and gaps. Support visits by associated institutions (Table I) also contributed to planning by communities for the conference process.

3.5. SCIENTIFIC PREPARATIONS

Between 1999 and 2001, three announcements were designed and distributed to relevant institutions and organisations world wide (OC, 1999; OC, 2000; OC, 2001). They informed potential participants about the conference process, requirements for paper and poster presentations, the preliminary programme of the Cape Town International Symposium and the involved rural communities hosting guests in April 2002. Two web pages acquainted potential participants with the conference process (www.drfn.org.na/des2002 and www.des2002.az.blm.gov/homepage.htm,

BLM, 2002; DRFN, 2002). The organising committee undertook additional information dissemination focused on younger, practising researchers and development agents, particularly from Africa.

At side events of the Conference of Parties (COP 4 and 5) of the United Nations Convention to Combat Desertification, the international community was informed about the Desertification 2000–2002 conference process. Here too encouragement was provided to practising researchers and development agents, from Africa and from drylands throughout the world, to participate in the process. In February 2002, the SADC–DRFN Desertification Interact (SDDI) programme of the Desert Research Foundation of Namibia reinforced information to SADC focal points about the upcoming conference in April 2002.

3.6. CONFERENCE PROGRAMME

The conference programme consisted of three main components directed toward enhancing interaction between science and community action: a three-day International Symposium from April 8–10 (in Cape Town, South Africa), a seven-day Community Interaction in Namibia or South Africa (11–17 April) and a three-day Synthesis Workshop at Gobabeb, Namibia (18–20 April) (Ward, 2002). During the entire process, scientists, development practitioners and dryland community members exchanged experiences, knowledge and expertise. Participants examined the interpretation and dissemination of information, the experience of innovative working examples of community action to combat desertification, and the understanding of the value of linking local knowledge with scientific research.

3.7. MONITORING AND EVALUATION

The organising committee provided opportunities for participatory evaluation at the Dryland Tourism Workshop, Communication Workshop, steering committee meetings and the Synthesis Workshop at Gobabeb. Individual evaluations using structured questionnaires took place at all three components of the conference programme in April 2002.

4. Outcomes and Results

4.1. FACILITATION OF INTERACTIONS BETWEEN COMMUNITY ACTION AND SCIENCE

The entire conference process was designed to facilitate interaction between practitioners involved in community action, development and science. The preparation steps contributed in different ways with varying degrees of success.

4.1.1. *Identification of Participating Communities*

Participation of six of 11 communities involved at any stage was directly negotiated between community representatives and the organising committee. Supporting institutions identified five of the communities. Full involvement of the organising committee ensured application of established criteria in the selection process. The identification of communities by supporting organisations resulted in the involvement of relatively inexperienced communities as well as very experienced groups. Participants from communities with little experience drew great benefits from their participation, but needed strong support. Benefits for participants from very experienced communities were smaller, due to their past experience and exposure to similar events. Direct communication between the communities and the organising committee proved to be vital. Absence of direct interaction resulted in the automatic withdrawal of one community, when their support institution withdrew. Tables II and III display the involvement, contributions, and characteristics of each community. The legend below Table II also applies to Table III.

The communities themselves have very different characteristics, although all have some livestock and live in rural areas. Their major differences encompass development strategies and approaches as well as primary sources of income.

4.1.2. *Workshops*

For many participating communities, the April 2000 workshop on Dryland Eco-tourism was their first experience with a donor funded programme (DRFN, 2000a). Funding for the workshop was designated for specific preparatory activities to be undertaken by the communities. In some cases, community members perceived that direct cash benefits to individuals of a community were a condition of further involvement by their community. Some participants saw capacity building, an important concept promoted during the workshop, as a one time event and not part of an ongoing process. One outcome of this first workshop was the participatory formulation of a common goal for the overall process: *Participating communities in the SADC region have an increased capacity to combat desertification through community-based tourism by the end of 2001*. To meet this goal, eight objectives were established (Table IV). Objective 1 was immediately put into place. The steering committee (Objective 1) included one elected representative from each community, the SADC NGO focal point (Zambia Alliance of Women) plus the already existing organising committee (DRFN, 2000b).

During the Communication Preparation Workshop in November 2001, communication visualisation methods were the main topic, e.g. oral presentations, brochure and poster development (DRFN, 2001a). Each community developed an advanced draft of a general brochure and outlined further brochures. As a result of the workshop, community members stated that they felt more comfortable and better equipped for receiving visitors in April 2002.

TABLE II
Community involvement and contributions

Community:	1 ^a	2 ^b	3 ^c	4 ^d	5 ^e	6 ^f	7 ^g	8 ^h	9 ⁱ	10 ^j	11 ^k
Identified by org. comm.		x	x	x			x	x	x		
Identified by institution	x				x	x				x	x
Year of identification	2000	1999	2000	1999	2000	2001	2002	1999	1999	2001	2001
Member of SC		x	x	x			x	x		x	x
Host community		x	x	x				x		x	x
Participating community					x	x	x		x		
April 2000 workshop		x	x	x				x	x		
May 2001 exchange		x	x	x				x			
November 2001 workshop		x	x	x				x		x	x
April 2002 conference		x	x	x	x	x	x	x		x	x
CT poster		x	x	x	x	x	x	x		x	x
CT crafts		x	x	x	x	x	x	x		x	x
Brochures		x	x	x	x	x	x	x		x	x

^aBotswana Community.

^bKuiseb/ Topnaar Community Foundation, Namibia.

^cGibeon area Conservancy, Farmers' Cooperative and Tourism Projects, Namibia.

^dGrootberg Farmers' Association and Conservancy, Namibia.

^eMuwele Village, Zambia.

^fMukuni Village, Zambia.

^gOnkani/ Oike Farmers' Association, Namibia.

^hPaulshoek Development Committee, South Africa.

ⁱRichtersveld, South Africa.

^jSuid Bokkeveld, South Africa.

^kWupperthal Tourism project, South Africa.

4.1.3. Steering Committee Meetings

During each of the three preparatory steering committee meetings, the role and involvement of communities as well as of all committees was identified and clarified. In the first meeting, the steering committee constituted itself and established the Terms of Reference. Members also discussed and decided upon the community exchange visit plan, arrangements for participation by community representatives in the conference programme, as well as training and infrastructure development for community members. During the first meeting, steering committee members wrote the funding proposal to finance their planned exchange visit and conference participation. During the second meeting, members established the goal and objectives (Table V) of the exchange visit. Goal: *(All) Participants have increased knowledge and understanding about community-based tourism related activities in selected pilot areas as a tool for combating desertification. They successfully visit others and receive visitors.*

TABLE III

Characteristics of involved communities (community identification number as in previous table)

<i>Community:</i>	2	3	4	5	6	7	8	10	11
Conservancy		x	x						
Co-operative		x						x	
Community foundation	x								
Development committee							x		
Farmers union			x			x			
Tourism activities	x	x	x	x	x		x	x	x
Women's desk			x		4				
Youth club	x		x						
<i>Cash income from:</i>									
Livestock		x	x			x	x		
Indigenous natural products	x							x	x
Crafts		x	x	x	x	x			
Tourism	x	x	x	x	x		x	x	x

TABLE IV

Objectives identified at workshop

No.	Objective
1	A representative, transparent, consultative and effective steering committee in place and functional.
2	A multi-media network including all interested communities and partners established, functional and maintained.
3	Adequate financial and material resources in line with project goal for 2001 provided.
4	Appropriate community involvement in the 2001 process ensured.
5	Appropriate training and skills development to individuals and communities provided.
6	Ongoing exchange of information and sharing of knowledge and experience among communities facilitated/secured.
7	Participatory monitoring, evaluation and adjustment mechanism developed and implemented.
8	Other SADC countries are appropriately involved in the process.

Steering committee members approved involvement of additional communities (two Zambian communities, two South African communities, and one Namibian community) during the steering committee meetings. The communities also reported back on their different preparation activities. In the course of the third meeting, members discussed arts and crafts marketing including quality and transport of crafts, and development of information leaflets. Meetings were used to formalise changes in plans that arose in the interim.

TABLE V
Objectives identified at second steering committee meeting

No.	Objective
1	Participants are fully prepared for the exchange visit.
2	Exchange visits run smoothly and participants gain maximally.
3	Experiences with specific reference to diversified, sustainable livelihoods and combating desertification which were noted during exchange visits are documented and shared with others.
4	Contributions to Desertification 2002 events prepared for Cape Town and/or Gobabeb and for Johannesburg World Summit on Sustainable Development.

4.1.4. *Community Exchange Visits*

At the time scheduled for community exchange visits (April 2001), the proposal written during the first steering committee meeting was not yet approved. This delayed preparations until the organising committee took the decision to provide advance funding for this exchange. Benefits for communities included upgrading of guest facilities, hospitality training and income generated through provision of accommodation and food. Communities were able to establish requirements and experience what is necessary for hosting visitors (DRFN, 2001c). Complications of logistics for the April 2002 visits, especially transport, were also recognised and relevant plans made at this time.

4.1.5. *Planning Visits by Conference Secretariat*

All participating communities elaborated their conference programmes during planning visits from the secretariat. Together they established enhanced communication channels. Information products, e.g. brochures, were reviewed and collected. Time scales and activity plans were developed. However, the conference secretariat did not manage to convey the time scale of the conference process sufficiently, as the main preparations of all communities only started after January 2002.

4.1.6. *Scientific Community*

Facilitation of participation by scientists, researchers and the development community including desertification focal points took a very different form from that established for communities. The results varied accordingly. Over 460 people applied to participate in the conference of which approximately 120 researchers responded to the call for abstracts in mid-2001. Based on a set of pre-determined criteria related to, *inter alia*, applicability to the overall theme, active involvement in current research related to desertification and representation from a diverse geographical distribution, 35 authors of abstracts were invited to present their papers orally and 85 were invited to present posters. At the time of acceptance of the abstracts, funding for participants was still under negotiation and firm programme arrangements could not be made. Participating researchers supported by

the conference to present papers or posters were given less than three months to prepare presentations, when availability of funding was confirmed.

4.1.7. International Symposium

The final programme included a total of 32 oral presentations and 26 poster presentations (OC, 2002; Ward, 2002). Translation services from English to Afrikaans, facilitated communication between scientists and community members. As expected, the papers varied in their coverage of the conference theme and many overlooked community action or included it during their closing statements only. Strong, but still insufficient, representation from Africa included many younger, less-experienced participants currently involved in research and programme implementation.

An important outcome of this International Symposium was the recognition by all present, including the high-level decision-makers, that it is possible to have communities, scientists and development workers present at the same gathering and to successfully exchange information using a variety of formats. Even such seemingly ancillary activities as the arts and crafts preparations and marketing opportunities provided a vibrant, informal venue to exchange information and experiences while generating income for community members.

4.1.8. Community Interactions

More than 100 people participated in the community interactions, not counting those residents who helped to host visitors to their communities (Ward, 2002). Visits to communities resulted in income generation for the communities concerned, through provision of accommodation and food as well as the sale of crafts, and constituted a learning experience for hosts and visitors. Community interactions represented the core component of the conference process with respect to facilitation of connections between researchers and communities.

4.1.9. Synthesis Workshop

Approximately 100 people came together at the Synthesis Workshop held at Gobabeb, Namibia (Ward, 2002). After ten days together, familiarity amongst participants facilitated communication. Most importantly, all groups had a similar platform in the workshop format. Lack of formal translation facilities remained a deficiency for two international participants, but was not a barrier in view of the informal workshop setting. The Synthesis Workshop reinforced to community members, scientists, donors, and decision-makers about how interactions between these diverse sectors can be facilitated.

4.1.10. Monitoring and Evaluation

All workshop and conference participants contributed to the scheduled participatory evaluations. These results are included in the conference proceedings (Ward, 2002). In addition, participants filled in and submitted evaluation forms (59 for the

international conference, 49 for the community interactions, 43 for the synthesis workshop) and 209 daily log sheets covering the entire process. Although these submissions represent approximately 43% of the expected evaluation forms, and 26% of the expected log sheets, the results provided an indication of the main concerns and issues raised by various groups of participants (Ward, 2002).

5. Discussion

5.1. PREPARATION ACTIVITIES TOWARDS APRIL 2002 CONFERENCE PROGRAMME

Preparation activities during the conference process were various and successful in different degrees. Identification of participating communities proved to be more complex than originally envisaged. Working directly through members of the organising committee and their institutions allowed clear and direct communication with communities throughout the preparation process. Further interactions between communities and associated organisations not directly connected to the conference process, facilitated reinforcement of conference preparation messages and demonstrated the conference message itself. Here the Namibian communities had a clear advantage due to close co-operation with two projects related to the conference secretariat, the Namibian Programme to Combat Desertification (Nacod) and the Environmental Learning and Action in the Kuiseb project (Elak). Other communities not associated with institutions related to the organising committee perceived participation in the conference process as representing a new alliance with unfamiliar groups. Recommendations for a future event addressing this theme include application of a standard set of criteria for participant identification and as much ongoing interaction between community representatives and conference organisers, with support of associated institutions and projects, as is financially and logistically feasible.

Linking all partners in the conference process needs to happen at an early stage. The Dryland Eco-Tourism workshop in April 2000 was such an opportunity (DRFN, 2000a). This workshop not only addressed a topic of immediate interest to many communities in southern Africa, but it also provided a dynamic start to the conference process. At a very early stage, all involved parties, communities as well as NGO and government representatives including development practitioners and scientists, came together to discuss and plan the conference process. This was an important step, especially for community representatives having less experience of conferences. With knowledge and information gained from this workshop, they were able to go back to their communities and reassess their participation and interest in the proposed process. The establishment of a steering committee of community representatives clearly demonstrated to participating communities their own role in planning, budgeting, proposal writing, logistics and finances.

The steering committee proved invaluable for preparation of the symposium process, despite difficulties with communication and changes of representation

within communities. Such early mobilisation of community members is important to assure commitment and active participation (Tvedten and Hangula, 1993). Through meetings at different stages of the conference process, up-to-date information could be transmitted from the organising committee via steering committee members to communities, and vice versa, keeping all partners informed about preparation progress. Communication between steering committee members and their own community members was at times difficult. The main reason was limited access to either transport or infrastructure such as telephones. A greater use of radio messages, a crucial communication tool in these rural areas, could have supported a wider distribution of information and therefore, a broader involvement of community members.

Through these steering committee meetings, participating communities also reached a level of involvement that is reflected in the commitment shown throughout the process. These meetings were regular platforms for decision-making. The explicit mandate for taking binding decisions, with which the community representatives were empowered by their communities, was essential for successful functioning of the decision-making process. However, the terms of reference that members had formulated for themselves should have been revisited and formally revised where necessary. This would have helped to identify difficulties representatives faced, particularly in comprehensive communication with all community members.

Similarly, it would have been useful to set up communication structures among projects and institutions closely involved with participating communities. The organising committee could have taken advantage of the Drylands Tourism Workshop to establish such a joint platform. This would have enhanced communication and information transfer as demonstrated informally in some cases, for example through Napcod's programme. Interactions with communities were severely limited by distances and financial constraints of the organisers. Steering committee representatives interacting with their own communities experienced similar constraints. A recommendation for similar innovative conferences is that the organisers ensure a close integration into ongoing programmes, so that support is available from a number of sources. It is understandable that funding agencies prefer unique events with a high profile. Yet, funding agencies need to be aware that adequate funding during the preparation and follow-up stages is crucial to ensure successful and equitable participation by involved parties from all sectors.

The Community Exchange Visit in May 2001, planned during the first and second steering committee meetings, illustrated the value of communication and information transfer. Steering committee members were involved from the very beginning, e.g. proposal writing, logistics and finances (DRFN, 2000b; DRFN, 2001b). Being exposed to the problems and livelihoods of other communities was a new experience to some of them (DRFN, 2001c). Furthermore, all communities had the opportunity to assess and upgrade their tourism facilities. Communities and organisers gained valuable experience in preparation for the planned visit by international participants in April 2002. Logistics with an emphasis on transport, as

experienced again in April 2002, are important factors that need consideration. To the organisers, this exchange visit showed that although community representatives committed themselves to full financial and narrative reporting, in reality, it is very difficult to generate appropriate documentation of expenditures as agreed upon beforehand. This could be explained by inexperience in financial reporting and lack of back up for responsible representatives or prioritisation of financial gain on behalf of their community, rather than a contribution to a larger process.

Although the conference process had started formally in April 2000, it was only as April 2002 approached that the understanding of and expectations from community members became clearer. Important for that development were two planning visits by the conference secretariat (July 2001 and Nov, Dec/Jan 2001/2) and the Communications Workshop in November 2001 (DRFN, 2001a; Moser, 2001; Moser and Wolf, 2002). Generally, communities appreciated the planning visits. However, despite ongoing discussions and information, all community participants remained uncertain about their role, especially at the Cape Town International Symposium. Although information was continuously distributed, the conference secretariat gave more attention to logistical support than to role and programme clarification. This became obvious through the low priority given to poster development by communities. Also the high rating of paper presentations, attributed by some community members as a preferred tool for information exchange, underlines this lack of clarification.

In general, the second visit in November 2001—January 2002 proved to be superior to the earlier July visit. The second visit was planned well in advance and more time was available at communities. In addition, a good working relationship had been established after the July visit, but more so during the Communications Workshop shortly before. Unfortunately, this visit conflicted with the approaching Christmas festivities and holidays at some communities. The preparations and travelling of many community members at this time of year was probably one of the reasons why main preparations only started in January 2002. The last-minute establishment of organising committees within some communities contributed positively to preparations, organisation and planning. The incorporation by other communities of the conference process into their annual workplan was even more valuable and helped to avoid a last-minute rush. Earlier availability of final programmes for the Cape Town International Symposium and the Gobabeb Synthesis Workshop could have supported a better visualisation and realisation of the need for earlier preparation.

The Communications Workshop in November 2001 proved important for advanced preparations, especially provision of information material for visitors (DRFN, 2001a). This marked a turning point in the preparation activities. The value of brochures as a technique to distribute information to a large audience was quickly realised. Some communities had previously been exposed to brochures and their value. In addition, the potential to use brochures for ongoing advertisement motivated communities to produce a large variety. Familiarisation with

techniques, focused on brochure development, meant that provision of information to conference participants in other ways received lower priority.

The role, and particularly the value, of the poster session scheduled at the Cape Town International Symposium were not made clear to participating communities at the November workshop. The organising secretariat should have provided more support in application and reinforcement of lessons learned during the workshop. In addition, a clearer picture of the value and potential of poster sessions as a tool for two-way information exchange and as a platform for making personal contacts with interested parties, would have helped communities put more emphasis on poster development.

In this evaluation, it is important not to forget, however, that each community in the conference process is essentially a group of individuals living in a particular rural environment. As such, individuals work for a common purpose if they perceive the outcomes as beneficial both to themselves and to the group. The alignment of individuals to a particular purpose requires finding common ground, defining broad visions, and reconciling diverging perspectives (Wenger, 1998). The preparation for community involvement in processes such as this conference may benefit by more seriously acknowledging individual needs, aspirations, and contributions within participating communities. Furthermore, rather than having the course of action imposed from outside, individuals in a community could engage in a process of negotiation and participation, the end point of which would be a commonly accepted purpose that everyone understands and supports. This point was reached late in the overall process but, nevertheless, represents an enhanced capacity on the part of all involved.

Compared with the ongoing community preparation support, little was provided to the scientific community and development practitioners. Three explicit information brochures were distributed, in addition to information on internet. Yet many scientific papers overlooked community action. Contributions from the scientific community as well as from development practitioners may have been closer to the conference theme, if the organising committee had been able to ensure earlier funding support for conference participation. This may have led to more appropriate and interesting abstracts being submitted, which could have been honed during the ensuing dialogue to develop papers and presentations more closely related to the conference theme.

5.2. APRIL 2002 CONFERENCE PROGRAMME

In general, scientists and development workers realised the value of a variety of opportunities for communication: oral presentations, poster presentations and informal social gatherings. During the Cape Town International Symposium, the value and impact of different presentation methods were discussed. Community representatives interpreted standing in front of an audience as more effective than exchanging information through poster sessions. This may result from more

traditional experience with politicians and extension workers. On the other hand, the organising committee and many scientific participants identified the poster sessions as the most successful process for exchanging information, allowing time for clarification and explanation of points between participants with very different backgrounds, languages, and levels of understanding of desertification and its control. Poster presentations by scientists and development workers also provided a better opportunity for an integrated report, while many presenters had difficulty integrating their work with the conference theme.

Similar to the poster sessions, the informal setting of the arts and crafts market presented an ideal opportunity for community members to discuss their rural livelihoods and alternative approaches toward combating desertification. The relaxed and market-like atmosphere facilitated communication and information exchanges. Furthermore, the market contributed to increased awareness among some participants of the value that traditional products have as an alternative income source.

While information exchange during the International Symposium worked well during the different functions, visitor-community information exchange during community interactions appeared to be somewhat less successful. In most instances, the visits involved communities demonstrating aspects of their livelihoods, based mainly on a one way transfer of information. Visits with integral mini-workshop components and a greater use of field facilitators who are focused on information exchange, as took place during some community interactions, could be a solution to this challenge. Moreover, visitors expressed disappointment at meeting primarily project staff and traditional leaders rather than community members. Communities know about the difficulties involved in visiting individual community members or households with larger groups, but neither organisers nor community members informed visitors about these difficulties, or suggested breaking up into sub-groups with fewer people. Visitors need to understand that these community leaders have the mandate to speak on behalf of the community and represent its members. To accommodate the wish and interest of international visitors for exposure to individual community members and households, one solution could be that each visitor spends a day at one individual household. Language barriers, often a hazard in larger groups, could be overcome through closer interactions. During the visits, it became noticeable that the number of translators proved insufficient and would need to be increased significantly to ensure a successful one-on-one interaction. With regard to scientists and development practitioners, facilitated meetings to reflect and synthesize the day's activities, as well as to prepare for the next day, would contribute to a more dynamic interaction.

Close interaction amongst all parties cumulated during the Gobabeb Synthesis Workshop. The similar platform for all participants and the common experience during the community visits enhanced the constructive working relationship. It became clear that some community members expected direct solutions to their problems, including funds from the visitors. Some community representatives had the feeling that they had fulfilled their role and that it was time for them to

benefit directly from the conference process. The concept of this conference process, the establishment of working partnerships, and especially the concept of capacity building and empowerment of people, had not been clearly understood by all. At the same time, some scientists and practitioners used to criticising and making recommendations wanted to give direct recommendations and advice to communities. This would have been based on an analytical approach to the situation as it was presented during community visits and as they interpreted it, without a full understanding of the overall context. The concept of development and improved livelihoods with regard to combating desertification being an ongoing process that needs lasting partnerships and long-standing involvement is not familiar to, nor on the agenda of, the fast moving world of science.

5.3. MONITORING AND EVALUATION

Through the comments on the monitoring and evaluation forms, the organisers gained a good understanding about the perception of different components of the conference process. Although, conference organisers encouraged participants to fill in and submit various evaluation forms, submission was generally slow. During the Cape Town International Symposium, where all the forms were handed out, participants returned completed forms to the registration desk without records being kept of who submitted forms. A similar approach was followed with all other evaluation components. More persistent field assistants managed to get a higher return during the Community Interaction visits than assistants who left the responsibility to individual participants. At Gobabeb, where participants were constantly reminded to submit their forms, a greater turnout was achieved. Forms were often incomplete, however, leaving organisers with less information and feedback than expected.

Participatory evaluation proved to be more successful. The workshop programme at Gobabeb set aside time to meet and review activities. Therefore, results from the participatory evaluations are representative of all participants, disregarding their professional backgrounds. At international conferences, such as the Cape Town International Symposium, participatory evaluations are not a common tool. Yet especially in the frame of experimental approaches, it would have been worthwhile to explore the application of participatory methodology. A recommendation for similar activities would be to place more emphasis on participatory evaluation after each component, with only one final evaluation form covering the entire process.

6. Conclusions

In answer to our first question: "What is needed to facilitate interaction between communities, development workers and scientists?" *A number of points arise:*

1. Adequate preparation is essential to 'level the playing field,' which means all sectors should be provided with sufficient information and necessary support to interact in all formats. Unless a regular group of 'community conference goers' develops, which is to be expected although it is not a desirable outcome, such support and preparation will be required on an ongoing basis and should be included in any conference preparation process and budget.
2. Communication between groups that otherwise would hardly meet (Seely and Wöhl, 2002) needs to be strengthened through common communication platforms. The concept of community involvement in research is still unfamiliar to scientists (Van Rooyen, 1998), especially as collection of traditional knowledge often goes hand in hand with suspicion of the scientists involved (Mauro and Hardison, 2000).

During this conference process, communities did not take full advantage of all opportunities, as the International Symposium was a new experience for which they were not fully prepared. The conference organisers focused on community participation through posters, brochures and crafts, but did not facilitate oral presentation of formal papers by communities. Similarly, the scientists did not take full advantage of all opportunities, as the community interactions were a new experience for which they were not fully prepared. More explicit information to scientists about their role during community visits—not just as observers but as analysers and discussants—should have been provided. The government and NGO focal points viewed the several conference components as an opportunity to make comparisons with their own circumstances, as they were familiar with both the conference and the community situations. Again, even more explicit recommendations to focal points during the lead-up to the April conference may have contributed to this comparative approach to enhance later application.

In answer to our second and third questions: "Has science understood the value of integrating local knowledge?" and "Do communities see any value in science?" we draw the following conclusions:

- a) Based on the content of the oral and poster presentations, scientists are only partially aware of the value of integrating local communities and their knowledge into their research activities. This lack of acknowledgement of traditional and local knowledge (Huntington, 2000; Mauro and Hardison, 2000) and limited involvement of communities into research projects (Seely, 1998; Van Rooyen, 1998) needs to be reversed. Although, the integration of local knowledge as information has been practised more over the past years (Seely, 1998), many involved communities providing valuable local knowledge rarely see any benefits. From their perspective, nothing changes after the scientist finishes with data collection and little if any information is returned to the community in an appropriate format (Mauro and Hardison, 2000). Scientists, being part of the community interaction component of this conference, have gained

experience of interactions with local people. Therefore, an increased understanding of the support, be it information or services that communities can provide, can be expected from these scientists. Understanding the value of local knowledge is not enough. These scientists need to start a long-term approach of erasing the imbalance in participation with these communities. As long as communities are only seen as information providers, but not fully integrated into research projects, and the understanding of their unique social and cultural background remains low (Norton *et al.*, 1998), connection between community action and science will remain limited. At the same time, if communities are not fully integrated there will be less willingness to share their knowledge with scientists.

- b) Projects that have tried to find a way to connect community action with science can look back on significant changes. In this way, involved community members develop greater interest in and understanding of scientific activities and their application (Napcod, 2001). Integration of communities does not need to be confused with turning community members into scientific researchers (Van Rooyen, 1998). Their involvement in planning and decision making processes is a major stronghold of community integration, difficult to put into practice, but not impossible. At the same time, research activities can be carried out by community members, e.g. farmers with appropriate facilitation from the scientists (IDRC, 1994), if this is required. This conference process made scientists, community members and development workers aware that the challenges faced by rural communities in drylands today can only be addressed through working partnerships involving all parties.

In answer to our fourth question: "How best can science and community action become mutually understandable?" some strong views have evolved:

1. In the conference situation, organisers need to ensure that expectations of participants are as close to reality as possible. This requires thorough preparation by organisers and participants alike through pre-conference dialogues based on adequate preparatory information. Problems such as language barriers make it difficult for international visitors to speak directly with individual rural community members. Good poster presentations provide the opportunity for quality exchanges and learning experiences between participants from different backgrounds.
2. Outside the conference process, during ongoing interactions usually based on written publications, it is essential that scientists, communities and development practitioners all focus on 'translating' their results, experiences, recommendations and other outputs so that they are mutually intelligible (BLM, 1997; Van Rooyen, 1998; Seely and Wöhl, 2002; Seely and Wöhl, 2004, this volume).
3. For all groups, the essence of good communication in support of combating desertification means identifying and focusing on a few primary 'take home

messages' that can always be elaborated, but often are entirely lost in poor formulation and presentation.

Based on analysis of this entire conference process: 'Alternative ways to combat desertification—connecting community action with science and common sense' we conclude that it is possible for community action groups and scientists to interact. This depends on adequate time, timely funding, and attention to preparation by all sectors to fully interact in a variety of fora, and on willingness to translate important messages for easy understanding by all.

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