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CBNRM Net: Knowledge management and networking for the global CBNRM community of practice

Lars T. Soeftestad

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Postal address: P.O. Box 1600, NO-4688 Kristiansand, Norway

Telephone: +47 380 44 655

Fax: +47 381 08 199

Cell (roaming): +47 908 23 006

Email: mail at cbnrm.net

URL (CBNRM Net): cbnrm.net

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This issue is a revised version of a paper that was presented at the 9th Biennial Conference of the International association for the Study of Common Property (IASCP), Victoria Falls, Zimbabwe, 17-21 June 2002. The paper was presented in the panel "Transcending barriers: The role of networks in natural resource management", co-chaired by the author. The overall panel presentation (in English and French), together with the slide presentation of the paper, are available for downloading together with the link to download this *CBNRM Net Paper*, at: www.cbnrm.net/resources/papers

CBNRM Net: Knowledge management and networking for the global CBNRM community of practice

Lars T. Soeftestad ^{1/}

Abstract. Community-Based Natural Resource Management (CBNRM) as a separate focus of inquiry and practice is growing fast. Its attraction would appear to lie in its marrying of – and dialectic between – theory and practice, and its focus on adapting to the political-economical and social-cultural contexts within which the constraints – as well as incentives – to optimal and sustainable community-based NRM is located. It is this long-term and broad approach that has led to CBNRM being accepted as a realistic approach and model for local-level change mechanisms.

CBNRM Net is, at one and the same time, a corollary of these developments and is, in turn, contributing to furthering this agenda. The paper briefly spells out the history of CBNRM Net, before addressing its rationale and mode of operation. CBNRM Net was established to address expressed needs to develop and manage adequate networking capabilities, as voiced by members of the global CBNRM community of practice. Given the characteristics of this community of practice, the only feasible way of creating and maintaining such a networking capability was through use of the Internet, and a CBNRM portal web site was established. At the same time, reliance on the Internet alone would have been limiting, and a Newsletter is a key element in the overall networking and communication strategy. The rationale for CBNRM Net's operation is built upon a few key principles: (1) management and sharing of CBNRM knowledge, (2) use and production of CBNRM knowledge and (3) a decentralized management structure. CBNRM is currently in a pilot phase. There is a focus on Africa.

The exposition is divided in two: (1) CBNRM Net as a network with a local agenda and (2) CBNRM Net as a network of networks. The former is exemplified by CBNRM Net's evolving agenda in Francophone and Anglophone West Africa. A major factor preventing networking across borders, sectors and issues are the existence of two languages and the corollaries of this. CBNRM Net is, in collaboration with other initiatives, both in the sub-region and elsewhere, working to address this.

Second, a major problem is that the networks are defined – strategically and operationally – within specific geographic, thematic or other contexts. This creates barriers to the kind and amount of communication and networking that is possible. CBNRM Net aims to address these problems by linking these networks and, in effect become a network of networks.

Keywords. Africa, Capacity building, Community of practice, ICT, Information and communication technology, Internet, Knowledge management, Knowledge production, Knowledge sharing, Local level, Natural resource management, Networking, Networks.

1 Introduction

The evolution of the aid sector has reached a point where civil society, including NGOs, are about to 'take-off'. Northern-based individuals and organizations have, over the last several decades, functioned as important birth helpers. Today this service is less and less needed. Not only is the initiative increasingly taken over by southern-based NGOs and other local initiatives, in two other

^{1/} Coordinator, Community-Based Natural Resource Management Network (CBNRM Net). Email: mail@cbnrm.net.

respects dramatic changes are underway. First, the South-South paradigm is increasingly becoming important.^{2/} Second, there is a growing emphasis on new types of activities. This is a move away from the traditional and limited research-focused activities that were spearheaded by academic institutions in the North. The emphasis increasingly is on context and relevance. The operative terms are ‘knowledge’ (including management, dissemination/sharing, and (local) production), transparency, inclusion, and process. Extrapolating from the present tendencies, the North may gradually become limited to providing funds and capital, as well as doing research that may or may not be operationally relevant.

Some large stakeholders have seen this coming and are preparing themselves. The best example is perhaps the World Bank, which already in the mid-90s saw the development of the future aid-sector and initiated a process aimed at adapting and meeting the new challenges. The World Bank (specifically the International Bank for Reconstruction and Development, or IBRD) is now increasingly understanding itself, and marketing itself, as a knowledge provider. One important reason why this shift was seen as necessary has to do with the growing importance of private sector investments in developing countries and countries in transition. Other stakeholders involved in development activities, in one way or another, will likely rethink their current mode of operation.

In doing such ‘introspection’ and regrouping, it will be important to approach the means with which to realize it cautiously. The IASCP is one example of an activity that very recently has seen the need for rethinking its role, mandate, and activities. This began with the “regionalization initiative” that was presented at the conference in June 2000. The participants at this conference were invited to take part in regionally based meetings that aimed at organizing regional chapters. I have followed the regionalization work in Africa closely, and, for this continent at least, it is correct to say that the results so far are not impressive. The paper can, in part, be understood as a comment on this initiative.

The means at disposal for this work are, by and large, understood to be information and communication technologies (ICTs). The available list of communication means, and the given or perceived *modus operandi* of networks, are often not critically analysed or problematized.

Using the experiences with the Community-Based Natural Resource Management Network (CBNRM Net), this paper aims to contribute to assessing some of the issues currently facing the global NGO-sector, but specifically civil society and NGOs in the South. Along these lines, the paper will comment on efforts to rethink and regroup in order to meet the challenges of the future, including as exemplified by the World Bank and IASCP. At the same time this is a preliminary exploration of the ways and means with which to achieve the stated goals. The latter basically means approaching the almost universal credo of buying wholesale into ICTs with a strong measure of caution.

2 The context

The context consists, on the one hand, of globalisation and localization, and, on the other hand, of communication, public involvement, and production of knowledge.

^{2/} The term “South” is used here to mean developing countries and countries in transition.

2.1 Globalisation and localization

Globalisation is as much a backdrop as anything else. It is a process and development we are seemingly part of, without being able to impart anything on it. It is a process that goes on *above* us (macro), *between* us (micro) and *within* us. The other side of this coin is localization, that is, an increasing focus on the local level. The growing importance of NGOs, and the increasing emphasis that is placed on decentralization and devolution in the South, is an important characteristic of this.

Taken together, the two processes of globalisation and localization are responsible for the growing interconnectedness and interdependence in the contemporary world. ICTs are, at one and the same time, the most visible expression of these seemingly converging processes, as well as the vehicle that makes it possible – for good and for bad (Servaes 2002).

2.2 Communication, public involvement, and knowledge production

Communication^{3/}

Communication is, essentially and at its most fundamental level, a relationship between people. There are, however, marked differences between traditional and modern communication. While communication is inherently complex, modern communication is characterized by taking place between a large number of persons that invariably are located on different societal levels as well as physically apart from each other. As a consequence, the number of arenas has multiplied (Long 2000). The medium of communication is more and more written, and communication is increasingly in electronic form. The advent of ICTs changes the form and content of communication in dramatic ways. One implication of the concomitant increase in the need to interpret information and data transmitted between, for example, societal levels, and across cultural and language borders, is to limit the content of information to data without contextual frames of reference. In this paper communication will be understood as information and data situated in a context. This, admittedly, represents a problem in as much as ICTs communicate data, and interpretation and use of these data, as knowledge, often are separate exercises, both in time and space.

ICT as applied to development cooperation represents an effort to scale up traditional means of communication, and the ‘networked society’ has been touted as the outcome (Castells 2000). Whether this applies equally well to the often extremely complex and heterogeneous situations that ICTs are being applied to, within North-South and South-South communication, is less certain.

Public involvement

Public involvement came to the fore in the late 1980s and early 1990s, in connection with the World Commission on Environment and Development and the Earth Summit in Rio de Janeiro in 1992. As an instrument in achieving sustainable development its emphasis on public consultation in environmental decision-making has, together with the focus on communication – but somewhat contrary to the rationale behind the use of ICTs – been understood as a bottoms-up approach. It follows that public involvement is being used and understood in conjunction with emphasis on a number of other and related approaches, including participation, stakeholder consultation, and social assessment.

^{3/} The following is partly adapted from Soeftestad (2001).

The World Bank has been working on these approaches and their interaction (Davis 1996). Public involvement represents a scaling up and mainstreaming of these other approaches. It also consists of capacity-building and social learning. Public involvement as an instrument of environmental decision-making follows from a reorientation of governments away from 'command-and-control' and market mechanisms towards what has been referred to as 'societal instruments' in order to enable widespread public and civil society involvement.

Public involvement can be considered a social communication process, whereby various social actors collaborate with the public sector authorities in development decision-making.^{4/}

Knowledge management and knowledge production

The new forms of communication are, together with public involvement in environmental decision-making, the key contributing factors for what has been referred to as a 'new mode of knowledge production' (Gibbons et al 1994). According to Gibbons et al, this new mode, that is appearing alongside the traditional one,

... affects not only what knowledge is produced but also how it is produced; the context in which it is pursued, the way it is organized, the reward systems it utilises and the mechanisms that control the quality of that which is produced. ...

The new mode operates within a context of application in that problems are not set within a disciplinary framework. It is transdisciplinary rather than mono- or multi-disciplinary. It is carried out in non-hierarchical, heterogeneously organized forms which are essentially transient. It is not being institutionalized primarily within university structures. [This mode] involves the close interaction of many actors throughout the process of knowledge production and this means that knowledge production is becoming more socially accountable. (p vii)

This paper argues that the emerging emphasis on networks in natural resource management is contributing in an important way to realizing the new mode of knowledge production.

Management of this knowledge, or knowledge management (Soeftestad 2001a), is understood as a broad and applied context for communication within development cooperation on natural resource management.^{5/}

2.3 On networks

A network is here understood as more or less formalized communication between a number of like-minded stakeholders. These stakeholders share knowledge in various ways on a more or less regular basis. What sets a network in contemporary society dramatically apart from earlier networks is the advent of ICTs. This understanding of a network is akin to, or perhaps a special case of, the idea of 'community network'.^{6/}

^{4/} The 'social actors' are identical with the 'stakeholders' as used in the Network Analytical Model (see section 2.4). The theoretical and philosophical foundation for the communications approach to public involvement has been put forward by Jürgen Habermas. See, especially, *The structural transformation of the public sphere* (1989), *Communication and the evolution of society* (1979), and *Moral consciousness and communicative action* (1990).

^{5/} For specifics on some important dimensions to knowledge management, as well as further issues, including balancing connecting and collecting, creating a social process within which knowledge sharing can occur, the use of alliances and partnerships, and choice of information technology, see Soeftestad (2001b).

^{6/} A community network is a generic term used to define different kinds of uses of the Internet and ICTs to transform societies. Community networks gather people around using ICTs for the renewal of their communities. Community networks are ways of using ICTs by local, national, and global stakeholders for the purpose of generating a social transformation in various ways.

According to this understanding of a network, some ‘traditional’ organizations and structures can be included. These include, for example, development projects with a clear strategy for communication between staff and others involved in the project’s activities.

There is a fine line between a community of practice and a network. A network is a type of, or a further development of, a community of practice. A network, as used here, bases its internal and external communication on ICTs, whereas a community of practice may or may not do so. Thus, a community of practice is not necessarily a network. There is a difference also in scale, and in whether communication between the members is direct or not. The advent of ICTs made possible the growth of networks, in scale and in space.

While a traditional community of practice was marked by physical co-location, this is not the case with most networks that are created based on use of ICTs. The separation of members – and, accordingly, of the communication between them, both in space and time – of many present-day networks necessitates a discussion of the special characteristics of their specific community-aspect. Traditionally, a community was permanent, as in a village, or in the context of a community of practice. Gradually, some communities of practice could be characterized as having a temporary community-aspect – they existed when the members were physically located in the same space. With the advent of ICTs, a further development of communities of practice – and, accordingly, of networks – took place. With ICTs the community of practice exists for a particular member when he or she is connecting with the other members through email and/or the Web. In other words, the resulting networks have an on-off community aspect to the way they operate.

Networks are a visible effect of the growing clout of local NGOs and other initiatives. At the same time, and as a corollary, networks are a key avenue to further this growing importance. This is so because in the current situation and level of globalisation, the logic and rationale behind further development of the NGO sector lies in establishing and maintaining contact and communication between local people and activities across a number of obstacles, both natural and man-made.^{7/} The effect of globalisation on this emerging global NGO sector has been to realize that other people are striving with the same or similar activities and problems. Likewise, a key element of globalisation, namely ICTs, provides the means with which to realize this increased level of contact and communication.

2.4 The Network Analytical Model^{8/}

This paper presents some data from the CBNRM Net membership database, and is also based on experiences with managing CBNRM Net. The Network Analytical Model, which is proposed as a framework for analysing networks, consists of three interacting elements:

^{7/} These obstacles are a consequence of the divisions resulting from the interaction of same or dissimilar units of the following (but not necessarily limited to them): biomes, ecosystems, subsistence practices, sectors, national borders, regions, sub-regions, political system, ethnic groups, social organization (including castes and classes), ethnicity, language, and religion.

^{8/} A preliminary version of the Network Analytical Model is included. The complete model will be presented in a paper to be prepared for the conference “Developing countries and the network revolution: Leapfrogging or marginalization”, organized by the Norwegian Network on ICT and Development and the Norwegian Association for Development Research, in Trondheim, Norway, 14-15 November 2002.

- Modes of coverage,
- Modes of organization, and
- Modes of integration.

Modes of coverage

These are identical with the stakeholder categories commonly recognized in the aid sector (cf. the social communication process in para 2.2). They can be linked, organised, and integrated in various ways. The traditional tri-partite understanding of a society as consisting of public sector, private sector, and civil society (in the borrowing/cooperating country) underlies the following list of stakeholder categories, which are not mutually exclusive:

1. Practitioners (local, not part of or connected with local NGOs),
2. NGOs (local),
3. NGOs (international),
4. Agencies (bilateral),
5. Agencies (international),
6. Funding,
7. Administration/management (public sector),
8. Research,
9. Consulting (often a cross between private sector, NGOs, and research), and
10. Private sector (commercial firms).

Modes of organisation

These are the ways in which the stakeholders define, understand, and organize themselves, or, alternatively, are being organised. The modes of organisation are:

1. Sector,
2. Project,
3. Issue (e.g. biodiversity, CBNRM, common property, conservation, and research, cf. 'modes of integration' below), and
4. Donor (e.g., many activities funded by one donor within, for example, a country, are connected and networked).

'Sector' and 'project' are older modes of organising. The mode 'issue' is, to some extent, more recent, and carries the possibility of being able to break out of its own constraints, to cross over and connect (for example, scientific disciplines), and thus cover more broadly. The mode 'donor' is also more recent, and represents possibilities for expansion beyond the confines of sectors and projects. Broadly speaking, whereas the 'issue' mode is the result of academic/research-based thinking, the 'donor' mode came around partly as a result of donors' wish to control, oftentimes vertically, the whole operation, among other reasons in order to ensure quality and to achieve economies of scale, and partly because of a broadening of the number of categories of stakeholders that are involved in funding development activities, and the concomitant increase in the means and goals with such activities.

Modes of integration

This addresses a more recent phenomenon (cf. para 4.1). It follows, among others, from the new way of producing knowledge, emphasis on participation and public involvement, and, most importantly and fundamentally, from the process of globalisation. The modes of integration are, or can be, connected or overlapping, and can also be causally related. They can be found on all societal levels, from micro to macro, but are more prevalent on the higher levels. The modes of integration are:

1. Space, and
2. Issue (cf. 'modes of organization' above).

'Space' may be understood as a 'mode of organisation' but this is largely as a secondary effect of the recognised 'modes of organisation'.^{9/} With the advent of ICTs, together with interdisciplinary and participatory approaches, 'space' can become a 'mode of integration'. In order to maintain the contact and cohesiveness in networks when they scale up, what is lost in direct communication and connectivity between members will have to be compensated for by a new form of integration on the macro-level. 'Issue', as a 'mode of organisation', remains largely unfulfilled in that issues (understood as resulting from scientific disciplines and endeavours) largely have had a divisive effect. It is only when 'issue' is understood in an inter-disciplinary way that it can and will function as a 'mode of integration'.

The modes of integration have to be understood in conjunction with a number of societal levels, including: local, sub-national, country, sub-region, region/continent, and global.

There are two fundamentally different ways in which networks can be established, maintained, and integrated along the dimensions of space and issue, namely: (1) horizontally, and (2) vertically (cf. para 4.1). Horizontal integration means integration of stakeholders within the same level, specifically on the local and country levels. On the lower level, horizontal integration mostly will be around issues. As one moves upwards to more macro-levels the integration increasingly will be found to take place also in space, that is, geographically. Vertical integration takes place between stakeholders located on different levels. Vertical and horizontal integration are often found side-by-side, or occurring together. This is especially so on the higher levels. Vertical integration can be likened with 'co-management' or 'collaborative management.' Where horizontal integration takes place *within* levels, vertical integration takes place *between* these same levels.

Data on networks can be presented and analysed on several societal levels. For Africa, the sub-region and country levels are two useful levels on where to begin analysis of networks (see Table 1).

3 Presenting CBNRM Net

CBNRM Net is, in every way, an example of the above discussion on changes in communication, the importance of public involvement, and the importance of a new mode of knowledge production, within the underlying context of globalisation and availability of ICTs. More than that, CBNRM Net is an embodiment and integration of these very developmental tendencies and processes.

^{9/} In this sense, viewed as having a narrow geographical association, it can perhaps be understood as a mode of coverage.

Table 1. Africa, sub-regions and countries

Sub-region	Members
North Africa	Algeria, Egypt, Libya, Morocco, Tunisia, Western Sahara
West Africa	Bénin, Burkina Faso, Côte d'Ivoire, Gambia, Ghana, Guinea, Guinea Bissau, Liberia, Mali, Mauritania, Niger, Nigeria, Sénégal, Sierra Leone, Togo
Central Africa	Cameroon, Central African Republic, Chad, Congo (Brazzaville), Congo (Kinshasa), Equatorial Guinea, Gabon, São Tomé and Príncipe
Horn of Africa	Djibouti, Eritrea, Ethiopia, Somalia, Sudan
East Africa	Burundi, Kenya, Rwanda, Tanzania, Uganda
Southern Africa	Angola, Botswana, Lesotho, Malawi, Mozambique, Namibia, South Africa, Swaziland, Zambia, Zimbabwe
Indian Ocean Islands	Madagascar, Mauritius

Source: CBNRM Net.

3.1 History and rationale

CBNRM Net grew out of several intellectual lines of thought and practical and operational activities in the World Bank in the 1990s in which I was actively involved (cf. para 2.2). More specifically, it builds upon two specific events and activities. The first was the World Bank's Common Property Resource Management Network (CPRNet), which may have been the first in-house effort to network between World Bank staff and outside practitioners and experts, and that was aimed primarily at serving the needs of World Bank investment operations, that is, projects. The second was the international CBNRM workshop that was organized by Ford Foundation, IDRC, and the World Bank Institute, with the latter as host, in Washington D.C. in May 1998. Some NGOs, organisations, and networks (including CPRNet) were involved in supporting roles. The applied context of this workshop was training and capacity building in natural resource management, within the World Bank as well as in cooperating countries.

As the members of CPRNet and the participants in the May 1998 workshop realized, while CBNRM activities and lots of learning are now taking place on a global scale, there were no means of collecting, structuring, analysing, archiving, and disseminating the knowledge that is produced in this way. A network of these stakeholders, supported by ICTs, seemed the right thing to set up in order to help this learning take place on a global scale.

Both these events and initiatives were success stories, but neither were followed up and mainstreamed in World Bank operations. This paved the way for combining and organizing them within a larger and global network aimed at the stakeholders in the global CBNRM community of practice. In the case of the May 1998 CBNRM workshop, this was a direct implementation of one of the key recommendations that the workshop presented to the World Bank. Thus CBNRM Net was established in 2001.^{10/} The rationale behind CBNRM Net is that, as individual CBNRM stakeholders – whether located in public sector, private sector, or civil society – we all experiment and learn from our work. CBNRM Net provides an opportunity as well as the means with which to share our experiences with others. The key organizing principle for CBNRM Net's activities are a structured

^{10/} Most of the important material from the May 1998 workshop is available on, or via, the *CBNRM Net* web site at www.cbnrm.net. CPRNet is hosted on the CBNRM Net website at www.cbnrm.net/web/cprnet. CPRNet has in effect merged with CBNRM Net, and the CBNRM Net Newsletter is a continuation of the CPRNet Newsletter, available at www.cbnrm.net/resources/newsletters.

and detailed approach to knowledge management (Soeftestad 2001a). The organization of the web site and the knowledge architecture it presents is a testimony to this.

3.2 Management

CBNRM Net is structured around the following two principles: One the one hand it is geared towards dissemination of CBNRM-related information, primarily through the web site and the Newsletter. On the other hand it aims to produce new CBNRM knowledge, through the active involvement of its members. Such knowledge already exists in large quantities – the challenge is to harness it, to repackage it, and to disseminate it.

Initially, the emphasis was on the web site. From the very beginning a cautious strategy was adopted, including using straightforward HTML without any embellishments of any kind, in order to minimize download time and increase access for members with low hardware and software configurations and/or slow connection. Gradually it became clear that members requested knowledge dissemination also through the Newsletter.^{11/} At the present time the Newsletter is increasingly becoming the preferred means of communication between the members and the CBNRM Net management, and between the members.

The management structure in the present start-up and consolidation phase is simple. The web site and the Newsletters is managed by a Coordinator (currently myself). Although there is increased interest among members and others in submitting knowledge, be it to the web site or the Newsletter, the resources required to manage the network are manageable within the present administrative set-up. Requests for help and advice from members are increasing, and this, together with management of the membership database is, however, gradually becoming a time consuming task.

Membership is free, and carries the right to submit knowledge for posting in the Newsletter and the web site. The only obligation attached to membership is that members are requested to be actively involved in the CBNRM community of practice, in producing knowledge, and in sharing it with fellow CBNRM stakeholders.

For a number of reasons there is an emphasis on Sub-Saharan Africa (Soeftestad 2001a). A majority of the members that work on Africa also live in Africa, while several reside in the North (see Table 2). In addition to the individual members there are also some institutional members, mostly NGOs and projects.

CBNRM Net operates under a set of constraints and incentives that are partly identical with those that other networks experience. CBNRM Net is, however, situated apart from other networks in some respects:

- It is very much a bottoms-up approach,
- It has no formal institutional affiliation (specifically not to a development project, an NGO, or an academic institution),
- So far virtually no funding has been available,

^{11/} On some of the reasons for this, see section 4.

- It is situated in between the accepted ways of doing networking, that is, it crosses sectors, cultures, national borders, administrative areas, language areas, etc., and
- It has developed a unique niche as a provider of special abstract, global or community of practice-related services. In fact, it contributes in a major way to developing this community of practice that, as a network, to a large extent is identical with CBNRM Net.

Table 2. Africa, CBNRM Net members in sub-regions and countries

Sub-region	Members per country	Totals
North Africa	Algeria, Egypt, Libya, Morocco, Tunisia, Western Sahara	
West Africa (37)	Bénin (2), Burkina Faso (19), Côte d'Ivoire (2), Gambia, Ghana (2), Guinea (2), Guinea Bissau (2), Liberia, Mali (20), Mauritania (9), Niger (62), Nigeria (6), Sénégal (12), Sierra Leone, Togo (1)	176
Central Africa (1)	Cameroon (4), Central African Republic, Chad (4), Congo (Brazzaville), Congo (Kinshasa), Equatorial Guinea, Gabon, São Tomé and Príncipe	9
Horn of Africa	Djibouti, Eritrea, Ethiopia (3), Somalia, Sudan (1)	4
East Africa (6)	Burundi, Kenya (5), Rwanda, Tanzania (2), Uganda (1)	14
Southern Africa (5)	Angola, Botswana (4), Lesotho (1), Malawi (2), Mozambique (1), Namibia (6), South Africa (13), Swaziland, Zambia (3), Zimbabwe (4)	39
Indian Ocean Islands	Madagascar (1), Mauritius	1
Totals (100)		343

Source: CBNRM Net membership database.

Notes: (1) The column 'Totals' includes members living outside Africa, and only limited information is available on the sub-region(s) in which they work, in several cases they also work on continent-wide issues, (2) the sum of totals for countries may not add up to the totals for sub-regions, partly because some members are counted twice, and partly because some members (i.e., those living outside Africa) cannot be classified within a country because of lack of information. For the same reason, the totals for the sub-regions do not add up to the total for Africa, (3) in several cases members listed under a particular country will also be working on the relevant sub-regional level and/or Africa, (4) the variable 'sub-region' is identical with the Network Analytical Model's 'modes of integration' variable 'space' (cf. para 2.4).

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- So far virtually no funding has been available,
- It is situated in between the accepted ways of doing networking, that is, it crosses sectors, cultures, national borders, administrative areas, language areas, etc., and
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4 Experiences and lessons

CBNRM Net is still in its infancy. The experiences so far that have a bearing upon the issues discussed here are accordingly somewhat limited, and also partly anecdotal in nature. The first effort to elicit members' experiences and views is a survey that was administered to members in the period April-May 2002. This questionnaire provided some interesting – and partly also somewhat surprising – information about members' needs, priorities, time use, and preferences as regards CBNRM Net's ICT-based communication strategy. While a few results are presented here, most of the material is not yet analysed and will have to await publication, likely in a future CBNRM Net Newsletter.

The key issue that comes out of the correspondence with members over the last several months, as well as the CBNRM Net survey, is a concern with the web site. While a few people have suggestions for improving it – mostly through beefing it up with frames and images – a much larger group in the South report having problems in accessing it (cf. Rozemeijer 2002). Many cannot access it all. In addition a not unsubstantial number of CBNRM Net members in the North report that they do not access the web site (and other web sites, for that matter). In their case the reason is not, as a rule, because of technical problems, but because of little time, fear of getting lost in cyberspace, and/or a general feeling of information overload. This speaks to a serious problem with communicating knowledge via the Web, and has the consequence of giving increased emphasis on the Newsletter.

However, also in the case of the Newsletter there are some technical hurdles that speak to the existence of the digital divide. Recently some members, staff at a project located in a remote corner of Mali, wrote to request that they be taken off the CBNRM Net distribution list, as mails with attachments (i.e., the Newsletters), created problems. It turned out that they were hooked up via cell phone and satellite, and the provider had set very low levels for the size of attachments. This, together with 'store-and-forward,' likely explains this problem. We finally agreed on a solution whereby the Newsletters will be emailed to the project's head office in Bamako, from where they will be sent on via the regular mail service.

In terms of selecting, packaging, and presenting knowledge, be it on the web site or in the Newsletters, it is clear that it is difficult to please everybody. The researcher needs different knowledge than the practitioner. Likewise, a fisheries projects manager in Bangladesh is looking for different knowledge than the veterinarian in Mali working on rangelands issues. What I tell them all is that, if you would like specific niche knowledge to appear, the first step to take is to contribute such knowledge in order to establish a mini community of practice around it. If there is an interest in it others will follow. Otherwise, there are clear indications that especially practitioners, which probably is CBNRM Net's most important stakeholder category, would like to see knowledge packaged in brief and concise articles that point to the practical implications of specific lessons and experiences. This, again, requires people with particular writing skills, combined with detailed knowledge about specific subject fields and sectors.

It is important to search for new ways of communicating with members, aside from the Web and email. Web-to-mail may be an option, distributing material on CD-ROMs is another. Open source solutions would contribute to decreasing costs as well as to development of local and specific-purpose web-based applications. Digital radio is a promising avenue. Finally, although CBNRM Net, as a network, is horizontal in decision-making and devolved in management, there are further benefits to be harnessed along this route. One member suggests that CBNRM Net should support people at the

local level to form community-based organizations (CBOs) with a broad mandate. These CBOs can set up resource centres where people can access email and the Web. Another suggestion is to get experienced writers to visit communities, record their experiences through, for example, articles, audio and video, and share this information through email.^{12/}

4.1 Networks and scale

Networks and scale bring in the issue of the Network Analytical Model's 'modes of organisation' and 'modes of integration'. The scale of networks is to be understood both along a horizontal and a vertical vector (c.f. para 2.4 on 'modes of integration'). Table 3 presents data from a 'mode of integration' (space), as well as one of the several variables that characterize the operation of networks (activity).

Table 3. Networks: Space vs. activities

		Activities					
		Listserv	Newsltr.	Website	Publ.	Training	Comments
Space	Country			B	B	B	
	Sub-region	C/P	C, C/P	C, C/P, W (to come)	C/P	C/P	W currently being organized. C/P phase 1 over, what happens next is not clear
	Region		C	C			
	Global	I	C, I	C, I	I	I	I mostly active in Asia, but also in Africa, focuses on research

Sources: Ba (2002), CBNRM Net, Rozemeijer (2002).

Notes: (1) 'Sub-region' refers to West Africa and Southern Africa, and 'region' refers to Africa; (2) B = CBNRM Support Programme in Botswana, C = CBNRM Net, C/P = CASS/PLAAS CBNRM Network and Africa Resource Community Outreach Programme in Southern Africa, I = IDRC CBNRM Programme, W = IASCP - West Africa.

This table visualizes some of the choices and foci that can follow from locating networks on specific levels. The networks that are presented in this panel have the potential of complementing each other. On the global level IDRC has been included for comparative purposes. The table points towards how specializing on a particular level can give a network a comparative advantage in building alliances with other networks. Activities like newsletters, web sites, and publications are examples of core CBNRM community of practice activities that each network not necessarily must do itself. There are very obvious benefits from networks joining forces and pooling resources and in this way achieve economies of scale, as well as creating a broader knowledge production and dissemination program that will appeal to further categories of stakeholders.

However, the promise on networks, as viewed from the perspective of scale, remains largely a potential one. Thus, the use of the variable 'space' should be understood as pointing to the potential for synergies and economies of scale of aligning networks along horizontal and vertical axis.^{13/} At the present time, I am not aware of any collaboration between the networking capabilities listed in Table 3, with two exceptions. One exception is that there is a connection between the CBNRM

^{12/} I would like to thank the several members of CBNRM Net that have proposed these and other interesting ideas.

^{13/} Cf. the discussion of the modes of integration 'space' in para 2.4.

Support Program in Botswana and the CASS/PLAAS CBNRM Network and Africa Research Community Outreach Programme in Southern Africa. The other exception is, of course, CBNRM Net: staff and members of the other networks are members of CBNRM Net and are integrated and connected on that level, and CBNRM Net is currently discussing ways and means of more concrete collaboration with IASCP - West Africa (Ba 2002), as well as with other space- and issue-focused networks in Africa.

It is in this light that an assessment of CBNRM Net's function, operation, and comparative advantage as a network in its own right, and as a network for like-minded networks, should be made (cf. Soeftestad and Maung 2002). Sub-Saharan Africa is to be the testing ground for this.

5 Conclusions

Networks as tools

The overall theme for this conference is globalisation, and this particular panel is placed in the sub-theme: 'new tools for CPR management'. That is, 'networks' and 'networking' are understood as new *tools* for NRM and CBNRM management in the contemporary context of globalisation. This raises the following important question, which is underscored by this paper's theoretical framework that focuses on communication, public involvement and knowledge management and knowledge production: what kind of criteria can be identified for networks to function as such a tool? The following are some issues that should be considered in this connection:

- Focus on making knowledge available,
- Democratic,
- Egalitarian ethos,
- Easily accessible,
- Available and useful for all stakeholders,
- Focus on knowledge and not on data/information,
- Aimed at producing, analysing and disseminating knowledge, and
- Result oriented.

On CBNRM Net

CBNRM Net is contributing in a major way to connecting CBNRM stakeholders globally while, at the present time, targeting Africa specifically. The network appeals to stakeholders that work or operate alone, and that are not part of a local network or other organizational set-up that provide opportunities for exchange and for learning, as well as to those that are part of functioning organizational and/or network set ups.

Postulates

1. The term and idea of "network" is often understood in a limited way. As a general rule, it is understood largely as a horizontal – and sometimes as a vertical – integration of stakeholders. In either case, the coverage is further limited by it applying to only specific categories of stakeholders, defined either in terms of their specific interests and/or responsibilities (e.g., researchers), or by their relationship to each other (employed in a

specific project, or working within a specific sector). The idea of networks is most dynamic and productive when it manages to, first, integrate a multitude of stakeholders, and, second, do so both along vertical and horizontal axes,

2. There is a tendency to understand networks as a tool in connection with specific types of foci and types of stakeholders. This is usually limited to include civil society in general, and to research-oriented agendas,
3. Networks have optimal relevance when they span the public sector, the private (commercial) sector, and civil society,
4. The problem with lack of communication is by many addressed at the macro-level (the country level and beyond), or primarily there. The macro-level is understood to be a bottleneck, and is given much attention. Following an alternative rationale, if we manage to make the micro-level work, the macro-level will follow. The most important thing the macro-level can contribute to facilitate changes at the micro-level is possibly legal reform,
5. The communication strategy of networks, specifically decisions on the type of ICTs to use where and when and for/with whom and what purpose, should follow from a needs assessment that differentiates and connects needs with available resources, goals, tools, and means of communication,
6. ICTs are mostly overused and misunderstood. The Web needs to be balanced with other means of communication. The goal should be a broad communication strategy that can reach all stakeholders, and is relevant to all,
7. The present-day use of the Web is largely built on, and reinforces, a traditional North-South axis of communication,
8. Web sites have official and ideal purposes. They also have less obvious or declared purposes. One of them is to inform stakeholders in the North about what the network does. The aim is often to attract resources, especially funding. Even when the overt aim with web sites is to communicate with and engage local stakeholders they often fail. The rationale is that once information is placed on a web site it is considered as published. These are two examples of traditional North-South communication,
9. There are huge benefits to be reaped in increased communication established along networks that span the traditional lines of division – in terms of time use, results, and economics,
10. Traditional thinking, partly based on traditional lines of division between subject areas, together with a proprietary attitude towards knowledge, is the biggest obstacle to increased networking. Problems like language and culture are, surprisingly, of less importance,
11. Traditional networks, specifically those relying on web-based communication strategies, focus on disseminating knowledge to members, staff, and/or subscribers. Such top-down approaches are fundamentally one-way monologues, and are less likely to succeed,
12. The best, most active and functional networks are those that evolve from the bottom-up, and that gradually organize, formalize and acquire funding, and
13. In the not too distant future, networks, specifically those that connect communities of practice, will become key producers of development relevant knowledge.

Networks and poverty alleviation

The most fundamental rationale for assessing the use of networking, and the use of ICTs in networking, is its ability to achieve sustainable development and alleviate poverty. While there appears to be a consensus as to the causes of poverty and its current increase, and that the connection between knowledge and power ('knowledge is power') is being used to advocate increased use of ICTs, the verdict is still out as to whether ICTs manage to limit the digital gap – and correspondingly the knowledge and power gaps. What is needed is increased South-South communication, and it is in this connection that networks can make a real difference and contribution.

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