Understanding Communities of Practice:
An overview for adaptation practitioners

February 2012
About the Adaptation Partnership

The Adaptation Partnership was formed in May 2010 in response to a recognized need for development practitioners to share information and lessons on adaptation efforts. Chaired by Costa Rica, Spain and the United States, the goal of the partnership is to encourage effective adaptation by serving as an interim platform to catalyze action and foster communication among the various institutions and actors engaged in the effort to scale up adaptation and resilience around the world, particularly in the context of fast start finance. The partnership is synthesizes lessons learned and good practices, highlighting needs and priorities, and identifying opportunities for cooperation and alignment of support to build resilience to the adverse effects of climate change. It is also enhancing communities of practice engaged in the adaptation effort.

Adaptation Partnership
Website: http://www.adaptationpartnership.org/

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### Abbreviations and Acronyms

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<tr>
<td>ACCCRN</td>
<td>Asian Cities Climate Change Resilience Network</td>
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<td>CAKE</td>
<td>Climate Adaptation Knowledge Exchange</td>
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<td>CoP</td>
<td>Community of practice</td>
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<td>CPPS</td>
<td>Communities of Practice for Public Service</td>
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<td>ELAN</td>
<td>Ecosystems and Livelihoods Adaptation Network</td>
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<td>ICT</td>
<td>Information and communications technology</td>
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<tr>
<td>ISET</td>
<td>Institution for Social Environmental Transition</td>
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<tr>
<td>KSO</td>
<td>Knowledge Sharing Officer</td>
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<td>MENA</td>
<td>Middle East and North Africa</td>
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<td>NGO</td>
<td>Non-governmental organization</td>
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<tr>
<td>ODI</td>
<td>Overseas Development Institute</td>
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<td>PIEVC</td>
<td>Public Infrastructure Engineering Vulnerability Committee</td>
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<td>SDC</td>
<td>Swiss Agency for Development and Cooperation</td>
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<td>UKCIP</td>
<td>United Kingdom Climate Impacts Programme</td>
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<td>UNDP</td>
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<td>UNEP</td>
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Executive Summary

Practitioners working in the field of adaptation to climate change have increasingly expressed interest in the potential role of communities of practice (CoPs) in supporting their work. A CoP is defined as a group of people who share a concern, set of problems, or passion about a topic, and who deepen their knowledge and expertise in this area by interacting with each other on an ongoing basis (Wenger, McDermott & Snyder, 2002). Through these interactions, CoPs facilitate informal, practice-based learning and promote problem solving. They have been widely applied as a knowledge management strategy by the private sector, governments and the international development sector since the 1990s. Based on these experiences, CoPs have proven to be an effective strategy for leveraging learning and innovation between individuals within and across organizations. As such, they are viewed as having the potential to help solve some of the world's complex and pressing problems, including the need to adapt to climate change.

In light of their potential benefits, an increasing number of CoPs focusing on the domain of adaptation to climate change are emerging. Some of these CoPs are open to any interested individual, while others only involve those working within a particular organization or those invited to participate. Several of these CoPs concentrate their efforts on understanding adaptation needs within a particular geographical area. Others focus primarily on a specific adaptation sector or sub-domain, while some CoPs facilitate a broad exchange of knowledge and research in the area of adaptation. In addition, there are long-standing CoPs involving practitioners from the fields of natural resource management, engineering, health and other sectors that are bringing concerns related to climate change adaptation into their discussions.

For these and other CoPs to create an environment in which tacit knowledge can be harnessed and enhanced, the interrelated components of a community of practice—its people, process/structure and use of technology—must function well together. However, there is no blueprint or step-by-step process that can be taken to ensure the establishment of an effective and active CoP. Rather, each CoP needs to be designed in a manner that reflects its own unique context. An active CoP is more likely to emerge if the originators of a community focus on ensuring the presence and smooth interaction of seven core functional elements that enable it to bring value to its members. These core functions are:

- Appropriate leadership and skilled facilitation provided by informed and active community animators
- Building community by creating public and private spaces in which members can interact (e.g., study tours, hallway exchanges, member profiles, virtual and face-to-face meetings)
- Providing a filtering function by summarizing, synthesizing and highlighting key information resources and discussions in different formats (e.g. newsletters, case studies, blogs, conferences and webinars)
- Amplifying the knowledge and insight gained within the community by disseminating it to others (e.g., via listservs, webinars and conferences)
• Providing financial and technological support that enables members to come together while not stifling their creativity
• Encouraging participation by creating trust within the community and addressing the different needs of members
• Monitoring and evaluating a CoP following established criteria to assess the outcomes that are being achieved and what value it is providing to its members

The use of CoPs within the field of climate change adaptation is likely to expand in the future. The success of these efforts will depend in part on the extent to which they understand the theoretical underpinnings of CoPs, and maintain the core elements and functions that have enabled CoPs active in other domains to thrive. Monitoring and evaluation of adaptation-focused CoPs, sharing the lessons learned through their work, ensuring stable provision of financial and technical support, and encouraging collaboration between emerging and established adaptation CoPs will help to ensure that their considerable potential is realized.
1.0 Introduction

Throughout the world, individuals, communities, businesses and governments are increasingly seeking to understand their vulnerability to the impacts of climate change and the actions that can be taken to adapt to this ongoing process. For decision-makers and planners, climate change adaptation\(^1\) presents new and unique challenges. Questions remain regarding how the climate will change and the physical and socioeconomic consequences of these changes. Yet within this uncertain context, practitioners still need to identify actions that can effectively reduce vulnerability to potential climatic changes, determine which tools are appropriate to use, and identify and manage potential trade-offs between different actions.

Through their efforts to address climate change, practitioners are becoming increasingly aware that adaptation is, in many ways, a learning and problem-solving process that can be facilitated by collaborating with others. This realization has led to a growing interest in the potential role and contribution of “communities of practice” (CoPs) in furthering efforts to better understand and undertake adaptation interventions across a range of geographic scales, sectors and time frames.

The concept of CoPs emerged in the early 1990s. CoPs have traditionally been defined as “groups of people who share a concern or a passion for something they do and learn how to do it better as they interact regularly” (Wenger, 2006). In CoPs, participants enhance knowledge and capability by sharing stories from their experiences and discussing the skills and techniques associated with their practice. In doing so, they build community and lay the foundation for future learning.

While practitioners active in the field of adaptation to climate change have expressed interest in the establishment of CoPs, uncertainty remains regarding how they might be used most effectively to facilitate learning and action. This paper therefore aims to serve as a backgrounder for adaptation practitioners interested in gaining a better understanding of how CoPs might support their work. It outlines the basic concepts, functionalities and characteristics of CoPs; discusses challenges and lessons learned related to the establishment of successful CoPs; provides examples of CoPs focused on climate change adaptation; and illustrates best practices for the establishment and management of CoPs.

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\(^1\)Adaptation in the context of climate change has been defined as “an adjustment in natural or human systems in response to actual or expected climatic stimuli or their effects, which moderates harm or exploits beneficial opportunities” (Intergovernmental Panel on Climate Control, 2001, p. 982).
2.0 Conceptual Overview

The term “communities of practice” was first coined by Jean Lave and Etienne Wenger in 1991, while studying apprenticeships (Lave & Wenger, 1991, as cited in Wenger, 2006). They described how knowledge, skills and understanding of best practices are shared through largely informal exchanges in the workplace. It was recognized that this type of social, practice-based learning taps into a more tacit and softer type of knowledge than what can be gained through formal classroom-learning processes. It was also noted that this type of tacit learning serves as a technique to solve complex or emerging problems that have not been explicitly described or understood.

Since first being identified and described, CoPs have been established in a variety of settings. They have been formed within organizations (intra-organizational CoPs) and collectively by a number of different organizations (inter-organizational CoPs). Initially, CoPs gained popularity in the private sector, where they were adopted by several major corporations (e.g., Xerox, IBM, Daimler Chrysler) to problem solve in the context of the new knowledge era (United Nations Development Programme [UNDP], 2004). They were also intentionally established by governments, where CoPs were seen as providing “a new tool for managing in a fast-paced, fluid environment where they need to reach beyond traditional organizational boundaries to solve problems, share ideas, and develop peer and stakeholder relationships” (Snyder & Briggs, 2003, p. 3). In the international development sphere, CoPs have been used since the late 1990s to collaboratively address specific development challenges and increase impact on the ground (Cummings & Ferguson, 2008; World Bank, 2003; Young, 2007).

Through their use, CoPs have proven to be beneficial for leveraging innovation, benchmarking, increasing productivity and work quality, and reducing learning curves and repetition of work previously completed. They have also benefited individual members by providing access to expertise, continual learning and professional development, a heightened sense of professional identity, and an ability to keep current in their field (Wenger, 1998). For these and other reasons, they are attractive as a potential means for facilitating efforts to support adaptation to climate change.

According to traditional theory, the success of CoPs in supporting innovation and learning stems in part from their capacity to combine three essential elements that, when they function well together, create an ideal environment for harnessing tacit knowledge (Wenger, McDermott & Snyder, 2002; Wenger, 2006):

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2 Leading examples include: bilateral agencies such as Helvetas, the Swiss Agency for Development and Cooperation and the United States Agency for International Development (USAID); multilateral organizations such as the Asian Development Bank, the Consultative Group on International Agricultural Research, the United Nations Development Programme (UNDP) and the World Bank; and non-governmental and not-for-profit organizations like BOND for International Development, CARE, Impact Alliance, the Overseas Development Institute and the World Wildlife Fund.
• **Community:** a group of people who voluntarily come together and build relationships as they exchange knowledge and learn from one another. Their interaction results in a feeling of trust, belonging and mutual commitment.

• **Domain:** a topic upon which the CoP focuses. The domain represents a common interest or passion that provides an incentive for people to come together and share their ideas, knowledge and stories.

• **Practice:** practitioners engaged in a CoP learn through action and knowledge exchanged directly in relation to the shared domain of activity.

Building on this original foundation, the Swiss Agency for Development and Cooperation (SDC) has identified three additional essential elements of CoPs (SDC, 2007):

• **Motivation:** A critical success factor for a CoP lies in the motivation of its members, which is demonstrated by a keen personal interest and willingness to participate.

• **Structure:** Successful CoPs achieve a balance between a formal and informal structure.

• **Mandate:** This defines the creation, thematic focus and expected concrete results of a CoP. The mandate of a CoP may be set by a single organization, by a group of institutions working to achieve joint goals or by individuals independent of an institutional context.³

A number of configurations of CoPs exist today, reflecting how the characteristics of community, domain, practice, motivation, structure and mandate can be combined in various ways in response to the needs of individuals and organizations. Several of these variations are expressed along the following dimensions identified by Hearn and White (2009):

• **Membership composition:** from homogenous to diverse, and from being open to anyone who wishes to participate to somehow being restricted (e.g., open only to individuals working within an organization)

• **Formality:** from structured and formal to unstructured and informal

• **Location:** from intra-organizational to inter-organizational

• **Focus:** from broad and far-reaching to closely defined

• **Dispersion:** from distributed to centralized; members of CoPs can be “co-located” (meet principally in face-to-face settings), or they can interact principally at a distance (using network technologies such as telephone, videoconference and the Internet).

In contrast to the original format of CoPs in the early 1990s, it should be highlighted that most CoPs today are characterized by increasing dispersion. With the evolution of information and communications technologies (ICTs), CoPs have increasingly begun to operate at a distance and in a distributed manner, and have become more focused on inter-organizational knowledge exchange rather than operating chiefly in co-located groups housed in a single organization. This transition has enabled CoP members to connect more easily with a wider network of peers, and to quickly gain

³ Some argue that having the management of an organization define the mandate of a CoP (its thematic focus and outputs) undermines their essence, given the traditional understanding of CoPs as self-organizing groups that voluntarily come together to develop knowledge in response to the needs of their members (Murillo, 2011a).
access to greater pools of information, recognized expertise and innovative ideas. However, this change presented new challenges in terms of information management and has also raised questions regarding whether the high degree of trust and mutual commitment achieved through face-to-face interaction—key elements of a community that promotes learning and innovation—can be replicated in a virtual context (Murillo, 2011a; Fontainha & Gannon-Leary, 2008; Agterberg, van den Hooff, Huysman & Soekijad, 2010).

3.0 Establishing CoPs: Challenges and Success Factors

Communities of practice are traditionally thought to emerge through people spontaneously finding one another, recognizing the benefits they may individually gain through collaborative sharing of knowledge, and voluntarily coming together to form a CoP. This new community then actively creates and shares experiences for a time, before it dissolves as the interests and needs of members change (Wenger, 1998). While highlighting the natural impermanence of CoPs, this understanding also implies that individuals and organizations need to wait for CoPs to “spring up.” In practice, however, CoPs are often “nurtured,” “fostered” or “cultivated” as a formal knowledge management strategy within and across organizations (Murillo, 2011b). The success of these efforts depends on the capacity of an organization or group to effectively bring together the three interconnected components of knowledge management: people, process/structure and technology. Understanding the barriers that prevent active participation in CoPs and the factors that promote their effective functioning can enhance the likelihood of successfully nurturing a CoP.

3.1 People

People and the knowledge they share and collectively create are at the heart of CoPs. In an ideal CoP, a heterogeneous mix of members share a high degree of trust, sense of purpose and common values; they create shared understandings and a feeling of belonging. Achieving this optimal level of active participation and environment of trust in a CoP is a major challenge.

In practice, achieving effective participation in a CoP requires overcoming a number of barriers, including: members not having enough time available to participate (Morrison, 2010), a weak sense of ownership, an unclear purpose (UNDP, 2004) and information overload when knowledge shared is insufficiently filtered. In some intra-organizational CoPs, high turnover of staff can cause the loss of knowledge (Loumbeva, Salokhe, Kolshus & Lamoureux, 2009) and impede the development of

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4 This discussion has led many researchers to re-examine the original premises of what makes CoPs successful and propose ways CoPs can be best adapted to the virtual context. See for example: Agterberg, Huysman & van den Hooff (2008); Agterberg et al. (2010); Cornejo Castro (2006); Gunawardena et al. (2009); Hildreth, Kimble & Wright (2000); Kimble, Hildreth & Wright (2001); Kondratova & Goldfarb (2004); and Murillo (2011a).

5 Note that “optimal” participation in a CoP does not mean that all members participate equally. Rather it means having a level of participation that enables the CoP to achieve its objectives.

6 The term “filtering” refers to sorting and synthesizing information in order to make it more accessible and easier to understand.
cohesiveness, trust and a shared history. Language can also be a barrier; participation and a sense of community can be seriously hindered if people cannot speak the same language or always have to work through a translator. Furthermore, CoPs also need to be designed in a manner that accounts for the specific context(s) in which they are being built. Cultural factors such as protocols of formality, willingness to share knowledge, concepts of community, gender relations and members’ relationships to technology influence their capacity to effectively participate in a CoP. Finally, the initial formation of ICT-enabled CoPs is especially difficult, as people who have never met are generally less likely to informally find commonalities related to their shared practice than in a face-to-face environment (Fontainha & Ganon-Leary, 2008). The design of a CoP—its structure, processes and use of technology—can aid in overcoming some of these barriers.

Attention also needs to be given to the number and composition of a CoP’s membership. While CoP membership size is variable, if a CoP becomes too large, it becomes more difficult to build a tightly-knit community—particularly when participation relies heavily on the use of ICTs (Murillo, 2011a). A balance also needs to be achieved between having too many new members, which can negatively affect cohesiveness, and failing to attract new members, which can lead to a community becoming dormant (Li et al., 2009; Fontainha & Gannon-Leary, 2008).

3.2 Structure and Process of CoPs

The structure of a CoP plays a strong role in influencing how members interact and therefore the degree to which mutual learning takes place. As CoPs are organic bodies, they should be structured to help the community develop and redesign themselves over time in response to members’ interests and (when applicable) the needs of the organizations in which they are based (Wenger et al., 2002). This requires mixing formal and informal structural elements and promoting flexible approaches.

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7 This issue is particularly relevant to CoPs focused on the field of climate change adaptation, as CoPs established solely in an international language (such as English) or in a national language may or may not be accessible to expert practitioners and will exclude local people fluent only in local languages who are critical actors in adaptation efforts.

8 The size of a CoP may range from a handful of individuals to thousands of members. It should be noted that as the number of people engaged in a CoP grows, the need for a more formalized structure supported by an identifiable core also grows. Some theorists suggest that the ideal size of any informal, unstructured group is 8 to 12 members, and that 150 members is the “ceiling for cognizance.” Beyond this size, the group requires hierarchy and formalized communication (Mayfield, 2005). It may also be noted that as the number of people engaged in a CoP expands, it is likely that sub-groups will be formed around particular areas of interest—potentially creating new communities.
CoPs are traditionally defined as being non-hierarchical or having a “flat” structure, but this does not mean that all members participate equally. As illustrated in Figure 1, participants can be classified as being either core/active members (or the core group and the inner circle) or periphery members (or the outer circle) (SDC, 2007; Wenger et al., 2002).

Core group members serve to coordinate the activities of the CoP, and include managers, facilitators, leaders and subject-matter experts. At the heart of this group is the CoP coordinator or “animator”—the individual responsible for day-to-day/week-to-week animation of the CoP through the provision of information, updates on planned events, responding to queries from CoP members and cross-linking members. This role can be voluntary or mandated, either by the organization or group of organizations supporting the CoP, or by the members of the CoP itself.

On the fringes of the core group, one finds the “active members” (or the “inner circle” within SDC’s typology). These members are strong contributors who participate in most of the CoP’s activities, help develop main topics and guide the learning agenda. As a general rule of thumb, the core group usually represents 10 to 15 per cent of CoP members, while active members represent 15 to 20 per cent of the CoP (Wenger et al., 2002, p. 56). Members of the periphery—the remaining 65 to 75 per cent of the CoP—serve to bring in outside information and help prevent the CoP from stagnating. It consists of interested people, contributors and readers, and forms the open, porous boundary of the CoP.

It is the interaction between core, active and peripheral members that promotes learning within a CoP. While the peripheral members allow a CoP to access ideas and information not currently prevalent in the core group, thereby serving as a catalyst for innovation, the core helps members to act on those ideas and information (Krebs & Holley, 2006; Borzillo, Aznar & Schmitt 2011).

The structure of a CoP—its leadership and the roles of different members—needs to work effectively with the processes or management style of a CoP if an enabling environment for knowledge sharing and creation is to be established. Within a successful or active CoP, guidelines and an accepted modus operandi should be in place to provide members with clarity regarding expected roles and actions. Time and space must be available for practitioners to participate in...
knowledge-sharing activities. As well, facilitation strategies (such as meetings and communications) that attract new members and freely allow members to move from periphery to core and out again should be used.

Practical barriers to the implementation of these processes often need to be overcome if a CoP is to be successful. For instance, within intra-organizational CoPs, organizational rigidities, bureaucracies and knowledge-sharing hierarchies can present challenges. A common organizational problem that can easily become replicated in CoPs is “silos,” or exclusive groups that prevent the integration of newcomers and the development of external collaborations (Li et al., 2009). When establishing CoPs involving multiple institutions, legal issues surrounding data protection and intellectual property may need to be addressed (Fontainha & Gannon-Leary, 2008). In networked CoPs, organizational structure and protocols can lead to bottlenecks in information clearance (Morrison, 2010).

While a suitable structure and appropriate processes can facilitate the emergence of an active CoP, determining what is “suitable” and “appropriate” in a given context can be problematic. A wide variety of possible management structures for CoPs exist, allowing those engaged in their formation to tailor its design to reflect factors like expected size and the availability of resources. However, it is unclear in the literature which model best suits which type of organization (Li et al., 2009).

### 3.3 Technology

A key success factor for CoPs today is their ability to harness ICTs in a way that optimally facilitates organization, storing and sharing of the information and knowledge they produce. In an ideal networked CoP, potential members can easily access information about it (such as membership expectations, participation guidelines and the main topic of the community), and easily share knowledge and collaborate on the creation of documents—while also feeling confident that their privacy is protected.\(^9\)

Issues surrounding privacy, user-friendliness and access to technologies also can create “fatal barriers” to effective participation in CoPs (Li et al., 2009), as described in Box 3. The extent to which these issues are a concern depends in part on a CoP’s domain, level of institutional support and geographical scope. However, many CoP facilitators struggle with the appropriate use and selection of ICTs. A chief difficulty is devising a systematic method of capturing and storing the knowledge and experiences of members so that they can be easily reused (Fontainha & Gannon-Leary, 2008; Loumbeva et al, 2009; Morrison, 2010). The continual availability of new Internet-based applications also presents a challenge, as CoP managers may feel a certain pressure to adopt the latest tools, despite the fact that newer technologies may not always be better at helping a CoP

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\(^9\) Ensuring proper and effective security features within a CoP is a critical technological issue (Morrison, 2010), particularly in light of growing concerns about the privacy of discussions. Addressing these concerns requires technical monitoring at all times to ensure a sense of security, along the use of items such as privacy settings, blocking of users, reporting of spam, reporting of abuse and providing safety tips.
achieve its objectives. Communication by email, for example, remains the principle way to engage developing country practitioners (Rüter, Williams & Mantey, 2007; UNDP, 2009; White, 2010a).10

In establishing CoPs, consideration needs to be given to the availability, cost and speed of technology,11 especially for potential members in under-serviced (rural, remote and/or developing) areas.12 Successful interaction often depends on whether CoP members are able to access a CoP through dependable network connections. A less technological but no less real barrier to participation can be a lack of experience with (or interest in) the use of some technologies. This knowledge or experience gap can happen in developed and developing country contexts, especially when CoPs contain participants from different age groups.

To address these various technology-related concerns, multiple platforms and access devices might need to be considered in the technological design of a CoP to ensure that the diverse needs and capabilities of members are met. Good use of technology can also involve providing information to members in a way that encourages them to engage in a community by making a comment, adding their own information, etc. This goal may be accomplished by, for example, establishing shared electronic calendars for inclusion in members’ email applications that contain links back into the CoP.

Box 3: CoPs in the Middle East and North Africa

In 2004, UNDP undertook a survey of 150 members of 36 different CoPs throughout the Middle East and North Africa (MENA). The survey’s outcomes highlighted a number of cultural and institutional factors that influenced the likelihood of CoPs successfully being established in the region. For instance, it was found that “the overall management context within large MENA institutions is not necessarily conducive to learning exchange or the free-flow of knowledge and ideas amongst field staff and professionals.” It was also noted that email use remained “relatively limited and highly concentrated in some particular sectors such as major public institutions, key financial and productive sectors as well as the media…” In most companies in the region, for example, staff may not have their own personal email, and even when they do, all correspondence may pass through management. These procedures severely limit and inhibit CoP activities.” In the region, verbal communication (either in person or via the phone) remained the primary and preferred form of communication. CoPs in the region that sought to engage members through electronic means therefore had less likelihood of success compared to those that focused on face-to-face meetings and conference calls.

(Based on UNDP, 2004: 16)

Box 4: Challenges and success factors related to the use of technology in CoPs

Challenges
- Issues of privacy and access
- Ensuring that platforms are user-friendly
- Lack of skills and interest in ICTs

Key Success Factors
- Appropriate use and selection of ICTs
- Effective information storage and retrieval
- Easy for members to contribute information

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10 A further risk is that network champions begin to allocate more time to developing the technology/ies that are facilitating community discussions than to the knowledge-sharing process itself (Loumbeva et al., 2009).

11 Publicly available, external applications used by CoPs to facilitate knowledge-sharing include: Google groups; Dgroups (www.dgroups.org), an email-based online application designed specifically for supporting development networks and virtual communities; and social networking platforms such as Ning (www.ning.com). These applications can be used by any individual wishing to set up a means of sharing knowledge, such as the Adaptability group in LinkedIn (www.linkedin.com/groups?home=&gid=934207&trk=anet_ug_hm).

12 In certain locations, access to a reliable energy supply sufficient to support the uploading and downloading of files or sustained real time chats or video conferencing remains a challenge.
3.4 Best Practices and Lessons Learned in the Functioning of Networked CoPs

An ideal community of practice is one in which practitioners deepen their knowledge and build expertise by collaborating with one another on a regular basis within an environment characterized by mutual trust and respect. Achieving this ideal requires effectively bringing together the three main components of a CoP—its people, structure/process and technology. However, there is no blueprint or step-by-step process to ensure that this is done effectively, as each CoP is entrenched in its own unique context. Rather, it is more productive to focus on the functions provided by the CoP using the “network functions” approach. Initially described by the Overseas Development Institute (ODI), this approach outlines six overlapping functions that can be found (to varying degrees) in thriving CoPs (Mendizabal, 2008; ODI, 2009). To this we add a seventh key function—monitoring and evaluation. Each of these seven functions is briefly described below, along with examples of how they are nurtured and perceived by CoP researchers and practitioners.

1. **Facilitating learning/providing appropriate leadership:** Networks require an active, well-informed leader or “animator” with subject matter expertise to ensure that the community does not stall or stray from its focus, and that it continues to seek out new and innovative solutions (Agterberg et al., 2008; Creech & Willard, 2001; UNDP, 2007; White, 2004; White, 2010a). Appropriate facilitation/leadership should allow for different levels of participation (active or passive) and promote flexibility with respect to the direction a CoP is taking (Wenger et al., 2002). As such, the development of a facilitation plan is crucial to the success of a CoP. Such a plan involves periodically determining issues of current interest, scheduling occasional topic discussions and encouraging shared facilitation (Fullan, 2009). The work of a CoP facilitator can also include moderating an e-consultation, creating dedicated websites and coordinating task groups for specific activities. A dedicated facilitator can be appointed or facilitation can be rotated among members (UNDP, 2007).

2. **Community building:** A CoP should bring members together in a way that promotes energy and creativity while sustaining their values and standards. Most CoPs build community through a routine of regular events (meetings, conferences, list postings and member profiles) that bring their members together electronically and/or face-to-face and provide a sense of familiarity and liveliness. Yet much of the building of community occurs through one-on-one interaction in private spaces between these different events, such as through hallway discussions, email exchanges and phone calls (Ramaswamy, Storer & Van Zeyl, 2005; Wenger et al., 2002; World Bank, 2003). A commonly understood key strategy for building a CoP is ensuring the presence of both public and private community spaces in which members can interact.

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13 As CoPs mature, they also need to create excitement by holding unique events or bringing in challenging outside perspectives (Wenger et al., 2002).
14 One widely cited best practice with respect to intra-organizational CoPs is for the management of an organization to resist the urge to ask the CoP to produce formal outputs or to drive the objective or interests of the CoP based on an organization’s mandate (Loumbeva et al, 2009).
3. **Filtering**: CoP members must decide what information is worth their attention and develop efficient strategies for its organization. As observed by the World Bank (2003) with respect to its internal CoPs, if CoPs provide effectively filtered information, they can enable staff to learn, apply and adapt knowledge from all over the world to their particular situation while avoiding the impact of information overload. Filtering can be accomplished through mechanisms such as regular newsletters, blogs, briefing notes, seminars, webinars and the preparation of summaries of recent discussions within a CoP.

4. **Amplifying**: A CoP must disseminate knowledge and help make little-known or little-understood ideas more widely accessible (ODI, 2009). CoP knowledge can be amplified by having facilitators create value-added content such as: consolidated responses to specific questions that have circulated within the CoP; multilingual summaries of specific dialogues (Fullan, 2009); and case studies that provide real-life examples of solutions to common problems. Regularly scheduled face-to-face events such as brown bag lunches, clinics, workshops and study tours, as well as websites and newsletters, also aid in the task of knowledge dissemination (Ramaswamy et al., 2005; World Bank, 2003).

5. **Funding**: To effectively participate in a CoP, members require appropriate financial resources to carry out their main activities—such as to support a facilitator, provide meeting space, register a website or cover telecommunication costs. The amount of funding required by CoPs varies depending upon their size and sophistication (e.g., the number and type of events held). CoPs often suffer from a lack of funding or inadequate attention from the organization(s) that initially may have encouraged their establishment. Paradoxically, CoPs also can easily be destroyed by excessive support and funding (UNDP, 2004), which may place pressure on members to participate and produce collaborative outputs beyond their natural volition. In some cases investors or sponsors, such as a group of interested organizations (White, 2010b), provide members with financial support. The African Capacity Building Foundation, for instance, provides technical assistance, skills and funding to its policy research partners (ODI, 2009).

6. **Convening, attracting and encouraging members to participate** are central activities of any CoP. This process may include purposefully selecting and inviting members, particularly when desired members are so dispersed that they are unlikely to find each other (Ramaswamy et al., 2005). In attracting members, attention should be given to the inclusion of insiders—those that recognize what knowledge is important, know who the experts are and can identify the key challenges within a field—and outsiders who can bring in new information and perspectives (Wenger et al., 2002). Some organizations, such as the World Bank, strongly encourage their staff to participate in at least one of its CoPs (World Bank, 2003), although this strategy has been shown to be less successful than letting CoPs develop on their own. Consideration should also be given to making more than one way of sharing knowledge available to people, to reflect the different needs of members (White, 2010a).

7. **Monitoring and evaluation**: Continuous, regular review needs to be built into the design of any successful CoP to understand if established processes and structures are working, to address concerns and to identify emerging issues of interest to members. Monitoring and evaluation
efforts should focus on assessing the outcomes of a CoP—the degree to which it is providing value to its members\textsuperscript{15}—as opposed to strictly giving attention to levels of participation and document sharing as commonly provided through statistical analysis. Collecting required information can be done through a range of methods, such as informally “checking in” with members and the use of formal surveys. However, the fundamentally fluid and responsive nature of CoPs can make it difficult to assess impacts and outcomes.\textsuperscript{16} The challenges associated with undertaking outcome-based analysis re-emphasize the need for strong leadership and facilitation within a CoP.

Experience has repeatedly shown that the success of a CoP depends primarily on how well it manages social, cultural and organizational issues. Addressing these issues when designing, establishing and managing a CoP is therefore of high importance. With the increasing role of technology in CoPs, it is also critical to apply commonly accepted good practices surrounding its use (privacy, security, accessibility and usability), while not seeking endlessly for the perfect technological platform. Good practices surrounding technology use can be embedded throughout the seven network functions.

\textbf{4.0 CoPs and Adaptation to Climate Change}

Adaptation to climate change is becoming an increasingly important issue for governments, the private sector and non-governmental organizations (NGOs) as its potential risks often have direct implications for their mandates and clients. While recognition of the need to incorporate the implications of climate change into planning, decision-making and implementation is growing, so too is an understanding of the challenges associated with acting on this knowledge. CoPs provide a venue through which some of these challenges may be addressed. They create a space in which practitioners can access explicit new knowledge generated by researchers and exchange tacit knowledge regarding effective processes for addressing a wide range of issues. CoPs can also help individuals within the same organization develop a shared understanding of how climate change relates to their work. For these and other reasons, a diverse range of CoPs directly or indirectly focused on adaptation has emerged in recent years.

\textsuperscript{15} What is key is gaining an understanding of the value that the CoP generates: Did knowledge sharing take place? Was it useful? Did something change (incrementally or significantly) as a result of the time and effort invested in participation?

\textsuperscript{16} In response to this challenge, evaluation practitioners are adapting various approaches to assess the success of CoPs, including outcome mapping and use of the Development Assistance Committee of the Organisation for Economic Cooperation and Development’s criteria for evaluating development interventions (Creech, 2010). Monitoring and evaluation systems also could explore the presence of critical success factors for networks, including focus management, leadership and coordination, short- and long-term benefits, risk management, and knowledge and communications management (Creech, 2010).
4.1 Overview of Adaptation CoPs

As climate change affects social, economic, cultural, political and ecological issues across a range of geographic scales, sectors and timelines, the potential topics upon which a CoP active in the adaptation domain might focus are innumerable. Combined with the range of CoPs that are possible—from spontaneous groups of professionals working together to build and share knowledge, to more formal and institutionalized arrangements (Cummings & van Zee, 2005)—there is an inherent diversity to the type of adaptation CoPs that are and will be formed.

A review of existing adaptation CoPs suggests that several focus their attention on a defined geographical area, ranging from the local to the country and regional levels. Examples include:

- **Climate Change Adaptation in Asia and the Pacific,** which compiles a range of adaptation knowledge related to the Asia-Pacific region. The CoP provides information about ongoing projects as well as access to available resources and knowledge products. It also hosts an e-community of practice and large face-to-face conferences.

- **Climate Community of Practice in the Gulf of Mexico,** which brings together elected officials, city planners, education professionals and others from the Gulf of Mexico region interested in learning “how coastal communities can adapt to sea-level rise, precipitation changes and other climate-related issues” (Climate Community of Practice in the Gulf of Mexico, n.d.). It aims to support these professionals in their efforts to incorporate adaptation into comprehensive community plans.

- **Argentina’s Program for Local Adaptation,** which was founded by a private individual and now is supported by Fundación Avina and the Organización Panamericana de la Salud. This social networking platform brings together citizens and local government based on climate change adaptation needs.

- **Climate Change Adaptation Community of Practice,** which brings Canadian researchers and practitioners together to generate ideas, discuss research and share expertise. It aims in part to support the integration of adaptation into planning and policies by helping researchers better understand the needs of government.

A diverse variety of other CoPs focus primarily on a specific adaptation sector or sub-domain, including:

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17 Climate Change Adaptation in Asia and the Pacific (www.asiapacificadapt.net) is an initiative of several partner organizations, including the Stockholm Environment Institute, the Asian Development Bank, the United Nations Environment Programme (UNEP), UNDP and WeAdapt.

18 Climate Community of Practice in the Gulf of Mexico (www.masgc.org/climate/cop/index.html) was established by the National Oceanic and Atmospheric Administration’s Gulf of Mexico Regional Collaboration Team and the four Gulf of Mexico Sea Grant Programs.

19 More information about this program may be found at www.placc.org.

20 Climate Change Adaptation Community of Practice (www.ccadaptation.ca) is hosted by the Ontario Centre for Climate Change Impacts and Adaptation Resources.
• **Climate Adaptation Knowledge Exchange (CAKE),** which focuses on the management of natural resources in a rapidly changing climate, particularly those found in North America

• **Red Temática sobre Adaptación al Cambio Climático y el Rol de Servicios Ecosistématicos en América Latina (Thematic Network on Climate Change Adaptation and Ecosystem Services in Latin America),** which seeks to foment relationships between investigators and specialists from different research centers, ministries, institutions and NGOs. It aims to promote discussion and the exchange of knowledge about climate change and the role of ecosystems in Latin America, and does this through face-to-face meetings, courses, seminars and workshops.

• **Ecosystems and Livelihoods Adaptation Network (ELAN),** which encourages the sharing of information on the role of ecosystems in supporting a people-centered approach to adaptation. ELAN combines face-to-face meetings with the sharing of knowledge resources, capacity building and informing policy.

• **Community-based Adaptation Exchange,** which is an online resource designed to bring together and expand the number of practitioners working in the field of community-based adaptation. It provides a site for the exchange of up-to-date information using a variety of tools.

Finally, a number of CoPs seek to facilitate a broad exchange of knowledge and research to further the sharing of best practices and facilitate the integration of adaptation into development decision making and planning. Examples of this type of CoP include:

• **Adaptation Learning Mechanism,** which officially aims to build a CoP that facilitates the systematic documentation and sharing of good adaptation practice, primarily within developing countries

• **WeADAPT,** which provides practitioners, researchers and policy-makers with high-quality information and enables them to share experiences and lessons learned. It also seeks to develop policy-relevant tools and guidance.

The CoPs described above vary with respect to their degree of participant engagement and level of activity. Yet all aim to build a community using either a set of online tools or through face-to-face meetings.

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21 CAKE ([http://www.cake-x.org](http://www.cake-x.org)) is a joint initiative of EcoAdapt and IslandPress.

22 Information about this network may be found at: [www.adaptacionvecosistemas.net](http://www.adaptacionvecosistemas.net)


24 Community-based Adaptation Exchange ([http://community.eldis.org/cbax/](http://community.eldis.org/cbax/)) is hosted by Eldis in collaboration with the International Institute for Environment and Development and WeADAPT.

25 The Adaptation Learning Mechanism ([www.adaptationlearning.net](http://www.adaptationlearning.net)) is hosted by UNDP in partnership with the United Nations Framework Convention on Climate Change, UNEP, the World Bank, and specialized United Nations agencies like the Food and Agriculture Organization.

26 WeADAPT ([www.weadapt.org/](http://www.weadapt.org/)) is an initiative of several knowledge partners, including the Stockholm Environment Institute, the International Institute for Environment and Development, the Institute for Development Studies, Climate Systems Analysis Group (University of Cape Town), UNEP, Swedish Environmental Secretariat for Asia, Oxfam Great Britain, Center for International Forestry Research, the United Nations Institute of Training and Research, Google.org, ENDA and Global Change SyStem for Analysis, Research and Training.
workshops and meetings, or a combination of both. A number of these CoPs also are highly visible examples of multi-organization initiatives that invite practitioners from different organizations, fields of experiences and countries to become members.

Less visible are the CoPs housed within various organizations that typically are open only to staff and invited members. It is assumed that adaptation is discussed within many of these CoPs, although they are more difficult to identify and assess. UNDP, for instance, provides an intranet as well as a collaboration platform called Teamworks that includes tools to support CoPs. As well, CARE International is establishing an internal CoP focused on adaptation that incorporates and builds upon the work of its adaptation thematic team. In time, this CoP will be expanded to include CARE’s key partners.27

CoPs in a wide range of other domains of interest also are beginning to discuss climate change adaptation. An example is Frameweb.org,28 a peer-to-peer network of natural resource management practitioners supported by USAID. Another example is the Canadian Association of Professional Engineers, which has begun to examine the implications of climate change for the built environment (PIEVC, n.d.).

To provide a deeper understanding of the opportunities and challenges associated with establishing and managing adaptation CoPs, the next three sections present case studies of the following active CoPs:

- **AfricaAdapt**, a widely networked, unbounded and informal CoP with a highly heterogeneous, purely voluntary membership base
- **Asian Cities Climate Change Resilience Network (ACCCRN)**, which contains a structured, formal core group comprised of a network of experts mandated to create a wider and more informal (though still bounded), inter-organizational CoP at the regional level
- **Communities of Practice for Public Service (CPPS)**, a technology-focused platform established to support public sector employees in the United Kingdom

These case studies are representative of the types of CoPs being formed within the field of climate change adaptation. All three have a particular geographic focus—two were developed specifically to focus on adaptation needs (AfricaAdapt, ACCCRN); one has a clear thematic focus (ACCCRN); and one is representative of adaptation-focused CoPs being established by practitioners working in a different domain of interest (CPPS). A review of these case studies provides some insight into how “aliveness” may be built into a CoP, and challenges that can impede success.

27 Personal communication, CARE International representative, March 2011.
28 Frameweb.org: [www.frameweb.org/CommunityBrowser.aspx](http://www.frameweb.org/CommunityBrowser.aspx)
4.2 AfricaAdapt Case Study

AfricaAdapt\textsuperscript{29} is an independent bilingual network (French/English) launched in 2009 that is focused exclusively on adaptation to climate change in Africa. Its aim is to facilitate the flow of climate change adaptation knowledge for sustainable livelihoods between researchers, policy-makers, civil society organizations and vulnerable communities. AfricaAdapt was set up collaboratively by the Institute for Development Studies, ENDA-Tiers Monde, Forum for Agricultural Research in Africa, and the Intergovernmental Authority on Development’s Climate Predictions and Applications Centre. It is funded by the United Kingdom Department for International Development and the International Development Research Centre through the Climate Change Adaptation in Africa program.

AfricaAdapt combines several online and offline knowledge-sharing strategies. Online, the platform provides access to synthesized information organized around nine thematic areas,\textsuperscript{30} with links to related projects contained within its database. These links reflect the site’s inclusion of user-generated profiles of adaptation projects, allowing members to showcase their work and exchange knowledge by uploading documents. Other user-generated content includes discussions and member profiles. The site also lists face-to-face events hosted by itself and others, periodically publishes the briefing document \textit{Joto Afrika}\textsuperscript{31} and provides blog-style news.

Offline, the network widens its reach to African communities and community-based organizations through a variety of initiatives. It collaborates with community radio—a key medium for local debate and awareness-raising, especially in areas with inadequate Internet connectivity—to increase and deepen discussion on climate change, produces print-based summaries of pertinent information and hosts forums for diverse stakeholder groups to exchange perspectives.\textsuperscript{32} The network also encourages local innovation in knowledge sharing through a competitive small grants program that supports initiatives that engage hard-to-reach communities.

One particularly innovative dimension of this network is its use of decentralized intermediaries called Knowledge Sharing Officers (KSOs). These individuals actively reach out to stakeholders and seek their contributions. The four KSOs, one from each of the main partners, work across stakeholder and linguistic groups, translating information and promoting new and diverse perspectives on adaptation (AfricaAdapt website; Harvey, Diagne, Nnam & Tadege, 2009).

The success of AfricaAdapt stems in part from conducting a detailed planning process prior to its launch and planning for continuous improvement. Before being set up, a needs and user analysis was conducted by the community’s developers. The analysis included a thorough examination of

\textsuperscript{29} AfricaAdapt’s website may be found at \url{www.africa-adapt.net/AA/}

\textsuperscript{30} These thematic areas are: agriculture, fisheries and food security, energy, gender, international climate negotiations, water, forestry, health, poverty and vulnerability, and cross-cutting issues.

\textsuperscript{31} Copies of \textit{Joto Afrika}, as well as its discussion forum, may be accessed at \url{http://community.eldis.org/.59c4d36d/}.

\textsuperscript{32} The first of these forums was held in March 2011 in Addis Ababa, Ethiopia, and brought together 200 people from civil society, academia, donor agencies, governments, NGOs and the media.
existing adaptation websites and meetings with other platform developers to discuss ways to collaborate (e.g., the Adaptation Learning Mechanism and WeAdapt). Significant consultation was also done with Eldis (a key partner) to ensure collaboration within the Institute of Development Studies (which hosts Eldis). Once established, the network continued to evolve in response to users’ needs. For example, surveys undertaken several months after launching AfricaAdapt revealed that users wished to be able to access other members’ profiles more easily—something not foreseen when planning the system. To accommodate this desire as the network grew, certain aspects of the platform needed to be revamped (Harvey et al., 2009).

Overall, AfricaAdapt incorporates many of the functions required to be an effective CoP. It is driven by informed and active animators; successfully bridges virtual and face-to-face knowledge exchange to build community and convenes a wide range of participants; serves to filter and structure information to active and passive members through thematic groups, case studies, the Joto Afrika newsletter and updates in both English and French; allows for user contributions and profiles; and provides funding that enables members to develop and disseminate their knowledge locally and internationally. In short, many strategies are employed by AfricaAdapt to cultivate a sense of community and to minimize the knowledge-sharing difficulties present in the African context. These difficulties include: poor and/or expensive Internet connectivity; a diversity of national and local languages; major gaps between rural and urban settings; and a wide range of adaptation issues across different regions.

4.3 Asian Cities Climate Change Resilience Network Case Study (ACCCRN)

The Asian Cities Climate Change Resilience Network is a US$59-million, seven-year, urban climate change resilience initiative designed and funded by the Rockefeller Foundation. It is being implemented by dozens of partner organizations under the guidance of an advisory group. Intended to run from 2008 to 2014, ACCCRN aims to help a network of cities in Asia develop robust plans to prepare for, withstand and recover from the predicted impacts of climate change. To date, 10 cities in four countries (India, Indonesia, Thailand and Vietnam) have been selected to participate in this project.

To foster learning and networking between cities, ACCCRN is taking a two-tiered approach involving the establishment of CoPs at the national and regional levels. At the national level, a variety of strategies are being applied in each participating country to foment knowledge sharing. In Vietnam, for example, ACCCRN’s country coordinator is establishing a CoP that combines face-to-face interaction (through activities such as study tours, exchange visits, workshops and capacity development) with electronic communication (including a listserv and a website for working documents, shared tools and archive materials). This interaction is entirely in Vietnamese, reflecting

33 Web address: www.acccrn.org/
34 Participating cities in India are Surat (Gujarat), Indore (Madhya Pradesh) and Gorakhpur (Uttar Pradesh); in Indonesia they are Bandar Lampung and Semerang; in Thailand they are Chiang Rai and Hat Yai; and in Vietnam they are Da Nang, Quy Nho and Can Tho.
the greater ease in fostering collaboration and learning when communicating in a shared language. Initially, 30 individuals will likely be invited to become members of this national-level CoP. After the network is solidly established, it will be opened to external members (Institute for Social Environmental Transition [ISET], 2010; personal communication, ISET representative).

At the regional level, a challenge for ACCCRN is networking among partners in four countries with different languages, cultures and contexts. A notable barrier, particularly at the regional level, is that most practitioners must work with translators in order to share knowledge. In addition, levels of formality and openness to information exchange vary between cultures, making it difficult for an inter-regional “community” to naturally emerge. Furthermore, although the climate vulnerabilities and priority concerns within the region are similar, the political and environmental contexts of India, Indonesia, Thailand and Vietnam are quite diverse. Thus, the adaptation needs and potential response strategies in each country vary, limiting the potential for experiences and insights to be exchanged. Another significant barrier to networking experienced by ACCCRN during its first three years of activity has been the time constraints of city partners.

Following an initial focus on building urban practitioners’ knowledge, capacity and experience at the national level, ACCCRN sought to draw upon its experience to date to strengthen collaborative learning at the regional level. To determine how best to encourage this process, semi-structured interviews were undertaken with ACCCRN partners in late 2010. A paper on networking was subsequently completed. A planning workshop was then held in mid-2011 during which basic principles, objectives and strategies for strengthening ACCCRN’s CoPs were agreed upon. The Rockefeller Foundation is now investing in a more modular regional network strategy. This strategy combines shared thematic platforms across the region in areas where there is energy and engagement by project members. It also involves a deeper emphasis on the facilitation of country-based networks for knowledge exchange and policy engagement.

To further promote the establishment of CoPs involving members from different countries, face-to-face conferences that bring together representatives from India, Indonesia, Thailand and Vietnam have been held. As well, a social networking site was set up on Ning (http://acccrn-km.ning.com) in May 2011. Called the “Knowledge Hub,” this English-language website aims to support the building of a body of explicit knowledge for all project members to access by providing a repository of information and documents. It also seeks to allow practitioners in different cities to connect virtually and share tacit knowledge through discussion and collaboration around themes.

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35 ISET, 2010; personal communication, ISET representative, May 2011.
36 Personal communication, Rockefeller representative, December 2011.
37 Personal communication, Rockefeller representative, December 2011.
38 The first of these conferences served mainly to introduce participants to the project and to each other. The second was able to facilitate more substantive interactions as participants completed the planning steps and developed a better understanding of regional commonalities.
Overall, ACCCRN has employed a number of recognized strategies for building “alive” CoPs. At the national and regional levels it is using a combination of virtual tools (such as its English language social networking site and, in Vietnam, the use of websites and listservs) and face-to-face events (including regional conferences, study tours and exchange visits). It provides filtered information through a periodic newsletter and by disseminating selected documents. It also serves a convening function by strategically inviting key individuals to participate in the network. Furthermore, ACCCRN has progressively adjusted its networking strategies in response to feedback gained through monitoring its efforts at the national and regional levels.

### 4.4 Communities of Practice for Public Service (CPPS) Case Study

Communities of Practice for Public Service\(^39\) is a community platform designed to support professional social networks across the public sector of the United Kingdom. It was initiated in 2005 by the private company Local Government Improvement and Development, which presented its business case and undertook intensive work with stakeholders to ensure management backing of CPPS as a knowledge management strategy for the public sector. A pilot platform was tested in 2006, and a revised version launched in 2007.\(^40\) By late 2010, CPPS reported 70,000 registered members and over 1,500 different communities.\(^41\) Today it is “considered the most advanced online practitioner group in the public sector” (Dale, 2010).

CPPS includes 15 CoPs focused on climate change adaptation that are led by a variety of government offices and programs, such as the Department for the Environment, Food and Rural Affairs’ Adapting to Climate Change Programme\(^42\) and the Sustainable Scotland Network’s Southwest Scotland Adaptation Group.\(^43\) Work within these groups ranges from sharing knowledge on government programs, to brainstorming on ways to reduce vulnerability, to helping businesses understand the economic impacts of climate change.\(^44\)

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\(^{39}\) Web address: [www.communities.idea.gov.uk](http://www.communities.idea.gov.uk)

\(^{40}\) The pilot version of CPPS built on the open source content management platform Drupal failed (Dale, 2008). The site currently operates using IBM WebSphere Application Server and DB2 Universal Database.

\(^{41}\) Approximately 20 per cent of the CoPs on CPPS are managed and facilitated by the developers of CPPS; the remaining CoPs are “self-organizing” (Dale, 2008).

\(^{42}\) This community facilitates the creation and diffusion of knowledge around adaptation to climate change between the Adapting to Climate Change Programme, local government and affected NGOs.

\(^{43}\) This group was set up for several local-level councils to share information, documents, ideas and queries on all work relating to climate change adaptation.

\(^{44}\) Other examples of adaptation-focused CoPs within CPPS include: Norfolk Climate Change Partnership led by the Norfolk County Council, which unites Norfolk’s businesses, communities and individuals to identify opportunities and to share best practice to actively reduce Norfolk’s vulnerability to a changing climate; United Kingdom Climate Impacts Programme (UKCIP)/Regional Climate Change Partnerships Business and Climate Change Adaptation, a group set up to share experiences, knowledge and work plans of the UKCIP business team and the managers of the Regional Climate Change Partnerships focusing on the impacts of climate change on business; and the private Local Adaptation Advisory Panel Community, which provides an online space for interaction and information sharing on climate change adaptation for those engaged with the Local Adaptation Advisory Panel working at national, regional and local levels.
CPPS places great emphasis on the use of ICTs in building communities. Its approach is based upon encouraging public sector workers to join and create online CoPs by providing access to a free online resource that contains a variety of features designed to support collaboration and learning. While CoPs may be open or private, anyone can search or view the full list of communities housed within CPPS and access a general information page on each. Upon registering, members can subscribe to an extensive and diverse selection of email bulletins. They can also access tips on how to use the platform, facilitate/participate effectively in CoPs, and communicate with ICTs. The platform also provides a range of supporting content related to the key topic areas upon which its CoPs are focused and publishes several bulletins that serve a filtering function. All members of the CPPS, as well as the general public, can access resources on a wide array of topics relevant to the public service, including an extensive resource base on climate change adaptation.

Finally, the CPPS website includes motivational and marketing elements. Positive quotes from members are posted and campaigns are used periodically by the CPPS management. An example of the latter is an “Everyone loves a sharer!” campaign, which offers a number of special thank-you prizes to the first 100 CoP members who make their first contribution to a forum each month. Prizes are also made to the “top sharers,” or members who make the most contributions.

CPPS developers note that their service faces three strategic challenges: nurturing the cultural change needed to make knowledge sharing and collaboration easier within the public sector; providing appropriate technological solutions; and ensuring that ownership and leadership of the platform is indeed in the hands of local government. Within this context, CPPS developers note that the leaders of most self-organized CoPs on the platform do not attend facilitator training (Dale, 2008). This limits their capacity to learn and share tried-and-true facilitation techniques with others. A further problem experienced within the platform is a lack of knowledge exchange among similar CoPs, which has led to repetition of content and discussions. In an effort to address such problems, CPPS is in the process of upgrading to a new system called the “Knowledge Hub,” accompanied by enhanced forms of content and increased online/face-to-face training sessions in the area of knowledge sharing.

Despite the challenges outlined above, monitoring and evaluation of the CoPs operating within the CPPS site has provided evidence of greater collaboration across councils, including more “joined-up” thinking and new ways of working. Other successes include greater knowledge (and use) of social media tools and a continued and growing enthusiasm for community collaboration (Dale, 2008).

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45 The main technological features provided to CoP members are: a forum where members can ask questions, post information or respond to other members’ posts; wikis where members can add and edit content collectively; a space to promote relevant upcoming events or meetings; a library where members can upload, share and track documents; blogs; a search facility that allows members to search for documents, wikis, blogs, people and events; and daily email summaries of activity in the communities in which members participate.

46 This page provides information on the lead organization, lead facilitator, quantity of members, the member visits and total contributions in the past month, and the “overall activity” as quantified by the number of forum topics, wiki articles, library items, events posted and a tag cloud of items in the community.

47 This resource base is accessible at www.idea.gov.uk/idk/core/page.do?pageId=9509775.

48 Information about this new system can be found on the Knowledge Hub website: www.local.gov.uk/knowledgehub.
As building trust and a sense of community within CoPs that rely heavily on the use of ICTs is generally more challenging than in CoPs based primarily of face-to-face interaction, the accomplishments of the CPPS are particularly noteworthy.

CPPS’s achievements may be attributed in part to its effective application of several network functions, along with the provision of a strategically designed internet-based platform. It supports facilitation of established CoPs by providing access to training; filters information through the publication of bulletins and email “round-ups”; makes information on a range of topics available to members and the public; and encourages participation through motivational and marketing initiatives, such as its “Everyone loves a sharer!” campaign. Another key component of its success likely is the buy-in of key stakeholders involved in the United Kingdom’s public sector that has been attained by CCPS’s developers. Due to this support, participants likely are encouraged at an organizational level to engage in CoPs through mechanisms such as being given time to partake in their activities.

4.5 Observations on Effective Adaptation CoPs

The three case studies illustrate the complex and multi-dimensional challenges associated with the development and management of CoPs. They also help demonstrate how the seven network functions can be successful applied within adaptation focused CoPs:

1. Facilitating learning/providing appropriate leadership: The case studies point to the importance of having informed and active animators facilitate the activities of a CoP. In the AfricaAdapt network, for instance, KSOs play an important role in translating information and promoting participation. Within the CPPS, training in the facilitation of CoPs is offered, and has been observed to enhance individual leaders’ capacity to support knowledge sharing.

2. Community building: The case studies demonstrate how a combination of virtual and face-to-face knowledge exchange can build community and engage a wider range of participants. Within ACCCRN, for instance, in-person regional meetings have been used to introduce participants from different countries to the project and to each other. The regional social networking site will provide an opportunity to enhance these relationships in a virtual environment. Similarly at the national level, the CoP being established in Vietnam is using a combination of workshops, exchange visits, study tours, a listserv and a website to build its community.

3. Filtering: Filtered information is provided by all three of the profiled CoPs. Within AfricaAdapt, synthesized information related to nine thematic areas is provided; ACCCRN’s social networking site includes a repository of information and documents; and CPPS publishes several email bulletins that support development of the knowledge of its members.

4. Amplifying: The profiled CoPs are contributing to the development and dissemination of new ideas to members and non-members through a variety of mechanisms. CPPS has developed an extensive resource base that can be accessed by the members of its various CoPs as well as the
5. **Provide funding:** Financial support has enabled establishment and continued operation of all three adaptation CoPs profiled. Their long-term sustainability will depend in part on the degree to which they continue to be supported by their existing funders and/or are able to transition from project-based financing to more self-sustaining models. AfricaAdapt also demonstrates how a CoP itself can act to fund innovative projects, the outcomes of which can help build the knowledge and experience of members locally and internationally.

6. **Convening, attracting and encouraging members to participate:** The case studies highlight the variety of ways in which participation in CoPs can be encouraged, such as through strong institutional support, marketing and periodic campaigns that reward active members (as with CPPS). They also demonstrate some of the barriers to effective participation, and the need to ensure that the designs of CoPs take into consideration the characteristics of expected participants—their language(s), culture(s), preferred learning styles and other contextual factors. These considerations are often critical determinants of the success of a CoP.

7. **Monitoring and evaluation:** The profiled CoPs show the importance of initial planning and of having monitoring and evaluation systems to identify concerns and track successes. A fatal flaw of many CoPs is that their originators assume that others are interested in the designated focus area of a community and want to gain tacit as opposed to explicit knowledge about this topic. Originators of a CoP must achieve a balance between serving a convening role and “contriving” the emergence of a CoP based on their perception of what is needed. To avoid this pitfall, AfricaAdapt was launched following a detailed design phase in which an analysis of needs and users was conducted. CPPS included a pilot phase from which lessons were learned and adjustments made prior to its formal launch. ACCCRN has modified its networking plans based upon a review of experience to date and feedback from partners. Although these efforts have contributed to their success, unexpected problems have arisen in each CoP. Continual monitoring has helped them identify existing and emerging concerns, and their individual structures have allowed for appropriate improvements to be made in response to lessons learned.

Finally, the case studies demonstrate how appropriate use of technology can facilitate knowledge sharing. AfricaAdapt, for instance, has combined the use of ICT tools such as blogs, member profiles and online discussions with the more traditional use of radio and printed materials to achieve its objectives. CPPS makes a variety of internet-based tools available to participants, and supports their application by providing tips on their use.

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49 If interested participants are identified, it may be important to clarify whether they are solely interested in gaining access to explicit information (i.e., a one-way flow of formal knowledge) or in building knowledge and understanding with fellow practitioners (i.e., shared development of tacit knowledge). While the needs of the former group may be met through the development of robust databases, user-friendly web platforms, targeted listservs and dynamic conferences and webinars, the objective of a CoP is primarily to meet the needs of the latter group.
5.0 Conclusions

CoPs can be effective tools for leveraging learning and innovation between individuals within and across organizations. As such they may play a key role in solving some of the world’s complex and pressing problems, including the need to adapt to climate change. However, research and experience has shown that there are a number of barriers and success factors that should be taken into consideration if CoPs are to achieve their potential.

This theoretical and practical understanding highlights the need to focus on the core functions that enable a CoP to bring value to its members, namely: appropriate leadership and skilled facilitation; building community by creating public and private spaces; providing filtered information through different formats (e.g., newsletters, listservs, blogs, conferences, webinars); amplifying the knowledge and insight gained within the community by disseminating it to others; providing financial and technological support in a manner that enables members to come together but does not stifle their creativity; encouraging participation by creating trust within the community and addressing the different needs of members; and monitoring and evaluating a CoP following established criteria to assess the degree to which its outcomes are being achieved and the value it is providing to its members.

Overall, experience with collaborative learning between individuals makes it clear that there is no blueprint or common set of steps that can be taken to establish and create a successful CoP; each emerges in a different context and therefore needs to be developed and nurtured in a manner that reflects its particular circumstances. While challenging, this fundamental characteristic of CoPs also opens up opportunities for experimentation and innovation.

Within the adaptation domain, the number of CoPs is growing, and this approach is being applied in increasingly innovative ways. Many of these CoPs are open to all interested individuals and contain mechanisms to promote and support community building. Individuals seeking to strengthen their capacity to facilitate and support climate change adaptation can do so by participating in these existing networks and by creating new communities. Given the need to adapt to climate change in numerous sectors and locations, and for action to be taken by diverse communities, businesses and governments, there is a vast array of niches in which CoPs may be established. Care will need to be taken to ensure that continued growth in the number of adaptation CoPs does not lead to duplication of efforts. To mitigate this potential, current work to enhance collaboration between existing CoPs should be continued, practitioners (and funders) should be encouraged to join and improve

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50 For example, the Climate Knowledge Brokers Group was established in 2011 following a meeting in Eschborn, Germany, that brought together representatives of a number of different online knowledge platforms focused on climate change and development. An emerging CoP in and of itself, the Climate Knowledge Brokers Group aims to foment closer collaboration between existing knowledge platforms and establish linkages within the broader field of climate change. One outcome of this initiative is an ongoing effort by AfricaAdapt, WeAdapt and the Climate Systems Analysis Group to refine and integrate three existing platforms based on user feedback. Financing for this initiative has been provided by the Climate and Development Knowledge Network (personal communication, Institute for Development Studies representative, February 2012).
established CoPs focused on adaptation and other relevant domains, and new CoPs formed only when ongoing initiatives do not meet the particular needs of a group of practitioners. Newly established CoPs should also seek to draw upon and contribute to existing resources bases. Within CPPS, for example, practitioners establish new CoPs to meet unique needs but also draw upon a shared set of knowledge resources, guidelines for facilitators, bulletins, etc.

Most examples of CoPs dedicated to the adaptation domain are new and their long-term success remains to be seen. Their achievements will likely depend on the degree to which they can maintain the core elements and functions that have enabled CoPs in other fields to flourish. Consistent monitoring and evaluation of these emerging CoPs will help inform adaptation practitioners of the degree to which these communities are improving their knowledge and interactions, and the good practices that are helping this to occur. By gaining a better understanding of the factors required for their success and incorporating these elements into new and ongoing initiatives, it is more likely that the considerable potential of CoPs to help communities, sectors and countries adapt to the impacts of climate change will be realized.
References


