The 4C Factor: Community Conservation and Climate Change

Ashish Kothari

Abstract. ICCAs are sites of biodiversity significance that are being voluntarily conserved by Indigenous Peoples and local communities. They include those indigenous territories, catchment forests, coastal and marine ecosystems, heronries, individual wildlife populations, and many others. The key features include a high degree of community control and decision-making, and the actual or potential to achieve conservation of key ecosystem/biodiversity elements.

While the role of ICCAs in conserving various aspects of biodiversity and ecosystems is being increasingly documented and recognized, a seriously underestimated and understudied value of ICCAs is their role in mitigating and adopting to climate change.

The article will explore these aspects, focusing on them in a conceptual sense, bringing in the somewhat scarce empirical information that exists on these aspects, and putting out questions for further in-depth assessment. It will also briefly discuss the question of whether ICCAs can and should be brought into the discussions on carbon trading, especially into the debate on "avoided deforestation". This will include the views of Indigenous Peoples and local communities on this issue.

Authors' Address:
Ashish Kothari
Member, Kalpavriksh
Co-Chair, IUCN Theme on Indigenous/Local Communities, Equity, and Protected Areas
Pune, India

ashishkothari@vsnl.com
Website: www.kalpavriksh.org

THE ICCA PHENOMENON

In the last few years, the widespread phenomenon of Indigenous and Community Conserved Areas (ICCAs) has been recognized in international forums, especially the International Union for the Conservation of Nature (IUCN) and the Convention on Biological Diversity (CBD). The latter's Programme of Work on Protected Areas explicitly mandates countries to recognize ICCAs, and integrate them into national protected area systems.

ICCAs are sites of biodiversity significance that are being voluntarily conserved by Indigenous Peoples and local communities. The term 'conservation' here includes a range of actions from strict protection to sustainable or rational use, as defined in the IUCN World Conservation Strategy of 1980. They include many indigenous and mobile people's territories, catchment forests, coastal and marine fishery reserves, heronries and waterfowl wintering populations, populations of individual species, turtle nesting sites, sacred sites, and others. The key features include a high degree of community control and decision-making, and the actual or potential to achieve conservation of key ecosystem/biodiversity elements. (For more details and a number of case studies from around the world, see www.tilcepa.org, and www.ICCAForum.org).

It is important to make a distinction between ICCAs and community managed areas. The former are a subset of the latter. Not all indigenous territories, or mobile peoples' landscapes, or sites managed by other local communities, would meet the crucial criteria that distinguish ICCAs: a combination of community control in decision-making, livelihood and cultural links with the area, and the achievement of biodiversity or wildlife conservation. As an example, many community-based forestry sites are managed for commercial timber production, or many community-managed off-shore or freshwater sites are intensively harvested for fisheries. Conservation (in the sense of long-term maintenance of ecosystem integrity, survival of species of conservation importance, and so on), is neither an objective nor an outcome of such practices. On the other hand, many resource utilization areas are managed in ways that sustain or enhance their conservation values, and these would be considered ICCAs. A subset of ICCAs could also be considered *protected areas*, as defined by either the IUCN or the CBD.

While the role of ICCAs in conserving various aspects of biodiversity and ecosystems is being increasingly documented and recognized, a seriously underestimated and understudied value of ICCAs is their role in mitigating and adapting to climate change. This article explores the ways in which ICCAs are playing or could play such roles. *It should be mentioned at the outset that, because documentation of ICCAs is poor across most parts of the world, it is not possible to give many empirical illustrations for the various points made below.* Additionally, of course, the uncertain nature of the extent and impacts of climate change, make any conclusive statements on the role of ICCAs somewhat hazardous. This article is therefore a mix of hypothesis and evidence, and the author welcomes critical comments.

In general, however, it would be safe to state that in so far as ICCAs have been crucial in community adaptation to unusual climatic events (droughts, floods, hurricanes, diseases, etc), they are playing or will play a vital role when climate change increases the occurrence and intensity of such events. But in order for this to take place in as effective and widespread a way as possible, ICCAs need considerable support in various forms. I will deal briefly with this in the concluding section.

I should also state at the outset that the primary motivation and *raison d'être* of ICCAs is not climate change mitigation or adaptation. Any attempt to recognize and support ICCAs for this role should be in addition to their many existing values, both to the communities and species/ecosystems, and to wider society. This is crucial for the climate change 'bandwagon' could seriously disrupt or distort local initiatives, especially in the context of the dominant paradigms of mitigation and adaptation that are emerging. Secondly, like any other mitigation and adaptation strategy, this should not be used to take attention away from the most important way of dealing with climate change….stopping the sources of excessive carbon emissions and other climate damaging phenomenon, so that at least further and more damaging impacts can be avoided. ICCAs should not become an excuse for those most responsible for climate-changing activities, to avoid having to take the action most urgently needed to drastically cut emissions. This article must be read with both these caveats in mind.

THE VALUES OF ICCAS

Before we look at the specific role of ICCAs in climate change, it would be useful to list their ecological, social, and economic values (Kothari 2006). They perform one or more of the following functions:

- help conserve critical ecosystems and threatened species;
- maintain essential ecosystem functions, including hydrological stability;
- sustain the cultural and economic survival of tens of millions of people;
- provide corridors and linkages for animal and gene movement, including often between two or more officially protected areas;
- synergise links between agricultural biodiversity and wildlife, providing larger land/waterscape level integration;
- offer crucial lessons for community-based or participatory governance, useful even in government managed protected areas;
- offer lessons in integrating customary and statutory laws, and formal and non-formal institutions, for more effective conservation;
- build on and validate sophisticated ecological knowledge systems, elements of which have wider positive use;
- aid in community resistance to destructive development, saving territories and habitats from mining, dams, logging, tourism, over-fishing and so on;
- help communities in empowering themselves, especially to reclaim or secure territories, tenure, and rights to, or control over, resources;
- aid communities to better define their territories, e.g. through mapping;
- help create a greater sense of community identity and cohesiveness, and also a renewed vitality and sense of pride in local cultures, including amongst the youth who are otherwise alienated from these by modern influences;
- create conditions for other developmental inputs to flow into the community;
- lead to greater equity within a community, and between the community and outside agencies.
- conserve biodiversity at relatively low financial cost (though often high labour inputs), with costs of management often covered as part of normal livelihood or cultural activities; and
- provide examples of relatively simple administration and decision-making structures, avoiding complex bureaucracies.

ICCAs AND CLIMATE CHANGE

Given the above functions and values, one can hypothesize that ICCAs are, or could be, playing the following key roles in relation to climate change (though these would not be the primary motivation for the existence of the ICCAs, most of which would pre-date the climate change crisis):

- Forested ICCAs are helping in "avoided deforestation", where communities are acting to prevent forces of forest cutting and degradation, and thereby helping in carbon sequestration and also avoiding the release of carbon into the atmosphere.
- ICCAs are acting as corridors, linkages, and stepping stones in the larger landscape, including between formal protected areas or other important biodiversity sites, which could provide critical spaces for movement and crucial refuges when climate change causes vegetation and faunal shifts.
- ICCAs, particularly those encompassing mixed landscapes of 'wilderness' and human land use, are sustaining agricultural and cultural diversity, both of which could be crucial to community strategies for adapting to climate change.
- ICCAs are acting as important buffers or defences against 'natural' disasters such as drought, flood, cyclones, and others, all of which are expected to increase in intensity and in some areas in frequency, due to climate change.
- ICCAs would be amongst the last refuges for livelihood options in situations of extreme stress caused by climate change.
- The knowledge and wisdom embodied in ICCAs are providing observations and information on the dimensions and impacts of climate change, which will be invaluable in mitigation and adaptation strategies for humanity as a whole.

Each of these is explored in greater detail below.

ICCAs AS AVOIDED DEFORESTATION

Given that deforestation is believed to contribute up to 20% of global carbon emissions, one key strategy to avoid further emissions is to protect forests. ICCAs are likely to already be contributing substantially to this. A considerable part of the earth's forests are under some form of ownership, custodianship, or active management by Indigenous Peoples and local communities. Some scholars estimate that about 420 million ha of forests (11% of the world's total) are under community ownership or administration (Molnar *et al*. 2004), and that this could double in the near future due to increasing policies of decentralisation (White *et al*. 2004). By no means would all this comprise ICCAs in the sense of achieving conservation; however, about 370 million ha is reported to be under some level of conservation management by communities (Molnar *et al*. 2004).

Mapping and studies in the Amazon basin suggest that over a fifth of its forests are under indigenous protected areas and territories, and that these areas are most effective against illegal logging and other external threats (Oviedo 2006). Such areas are likely to be qualitatively superior to many areas outside the reserves, thereby possibly contributing more to carbon capture. Several thousand patches of forest in India, ranging from tiny one hectare plots to some spread over tens of thousands of hectares, are conserved by communities (Pathak *et al*. 2007). Community managed forests are also found in many industrial countries, such as in the New England region of USA (Brown *et al*. 2006) or examples like the Regole

d'Ampezzo of the Ampezzo Valley in Italy, which has a recorded history of about 1,000 years (http://www.regole.it/).

Decentralisation of forest management is seen to be a global trend, which means that more and more forest could come under community management (Molnar *et al*. 2004). If managed to achieve ecosystem integrity and conservation, the role of forested ICCAs in avoiding deforestation could also substantially increase.

ICCAs AS CORRIDORS AND LANDSCAPE LINKAGES

Climate change is already believed to be causing 'movements' in ecosystems and species, a phenomenon that will likely increase over the next few decades. As this happens, the inadequacy of the conventional protected area approach, creating islands of protection within a landscape of increasing degradation, will be badly exposed. Current boundaries of protection will no longer be relevant, as flora and fauna move along with climate, hydrological, and other changes. But will there be suitable ecosystems to move into? Increasingly therefore conservationists are focusing on the landscape (or seascape). It is here that ICCAs may play a crucial role, for many of them already provide the crucial corridors or linkages that ecosystems and species can use.

An ambitious programme to link the Kosciuszko and Namadgi National Parks in Australia uses precisely this potential; it brings together community groups, NGOs, government and private agencies to reconnect isolated woodlands and grasslands and the coastal forests of the country's southern coast (http://www.k2c.org.au/). This is an area where over the last 200 years considerable fragmentation of vegetation has taken place, impacting many native species. As a consequence the agricultural and ecological functions of the landscape are under severe stress, effecting productivity. This will only increase with climate change, hence the need to revive ecosystems and re-establish connectivity across the landscape. An approach combining various governance regimes, including ICCAs, appears to provide hope of reversing the degradation, and greater security against climate change impacts.

In India, the Foundation for Ecological Security has shown that two isolated government protected areas, Nanda Devi National Park and Askot Sanctuary, are actually linked through large van panchayats, forests that are managed by communities (FES 2003). If the entire landscape is seen as one, but with diverse forms of governance of various parts, and management regimes are appropriately adjusted, it provides the potential to provide space for moving ecosystems and species.

There are many other such examples, which are not presented here for lack of space. More importantly, there are probably very many more such examples that are not documented or known other than to the relevant communities themselves… and often even communities may not realize that their ICCAs are performing this function.

ICCAs AS STRONGHOLDS OF AGRICULTURAL AND CULTURAL BIODIVERSITY

It is well recognized now that diversity provides resilience to not only 'natural' ecosystems but also to human-made ones. An agricultural landscape with a diversity of crops, livestock, and management practices, such as found in many ICCAs, is more likely to withstand anomalous situations such as climatic flux, than those that have been homogenized. As climate change impacts agriculture and other land uses, systems with greater diversity could become crucial for communities to adapt. Crop varieties and livestock breeds that can withstand drought, floods, pest attacks, or other drastic changes, would be vital components of adaptability. Simultaneously, the knowledge base of diverse cultures, especially those that have evolved over generations and are also able to absorb modern inputs, could be crucial factors in adaptation.

The Parque de la Papa (Potato Park) in Peru, an area managed by a collective of 6 farming communities, uses its 'biocultural' heritage (a combination of biological and cultural diversity) to respond to climate change. This is part of the region where the potato originated, and has been diversified into an incredible number of varieties oriented to various social, cultural, economic, and other uses. The initiative has managed to sustain and revive several hundred varieties (eg. The International Centre for Potato in Lima, was assisted in repatriating many of the varities it had collected from communities in the past; see http://www.parquedelapapa.org/). Several thousand years of experience in responding to climatic phenomenon, altitudinal and horizontal variation, conflict, and other forces, has given the community the ability to respond to externally driven fluctuations and changes. It is actively using this experience, and the knowledge of crop diversity, to adapt to observed and felt climate change related impacts. This includes vertical movement of varieties, adapting to changes in growing conditions at various heights. But what is crucial is that there continues to be an active institutional mechanism for managing the landscape in ways that enhance conservation and sustainable use of natural resources, and the resilience that this provides (Pers. Comm. with Quechua representatives at the Park, 27.6.2008).

ICCAs AS BUFFERS AND DEFENCES AGAINST DISASTERS

Many ICCAs harbour ecosystems that provide crucial buffering against 'natural' disasters such as cyclones, earthquakes, floods and droughts. Well-managed coastal ecosystems such as littoral forests, coral reefs and mangroves, have been repeatedly shown as reducing the impacts of cyclonic waves and winds. In northern Vietnam since 1994, local communities with help from the Red Cross have planted and protected about 12,000 hectares of mangrove forests; these areas faced considerably less damage during the Wukong typhoon that devastated other areas in 2000 (IFRC quoted in Roe *et al*. 2007). In India, the impact of the devastating tsunami was considerably less where coastal vegetation and mangroves were intact. Learning from this, some institutions and NGOs are encouraging community led revival and protection of such ecosystems in the Sundarbans and the eastern coast (Swahilya 2007; Roy 2008). Across south-east Asia and the Asia-Pacific, hundreds of community managed fishery reserves are protecting vital marine ecosystems that could provide shields against disasters (Govan *et al*. 2006; Ferrari 2006; Lavides 2006).

ICCAS AS LAST REFUGES FOR LIVELIHOOD SECURITY

Many ICCAs contain ecosystems and resources that have been specifically maintained for times of crisis, and not otherwise used. For instance, in Ethiopia the Borana pastoral community maintained the wetter lands as forests or pastures to be used only as a last resort for grazing in times of severe drought (Bassi 2002). Scarce water sources in the arid region of western Asia and northern Africa, were also often similarly guarded for times of drought, e.g. in the widespread practice of himas (www.developmentcrossing.com/forum/topic/show?id=1018705%3ATopic%3A3599). Such practices are likely to be invaluable in community adaptation to the uncertain impacts of climate change, and also for biodiversity conservation. For instance, the Society for Protection of Nature in Lebanon is actively promoting the community-based revival of the hima system at two sites that are crucial for threatened bird species as well as traditional livelihoods (www.birdlife.org/news/news/2005/10/spnl.html) .

ICCAS AS REPOSITORIES OF KNOWLEDGE AND WISDOM

The maintenance of ICCAs is based on sophisticated knowledge, and deep-rooted wisdom. This is already helping to provide vital information on the dimensions and impacts of climate change. For instance, for over a decade the Inuvialuit of Canada have been reporting significant changes such as thinning of sea ice, delays in the autumn freeze, alterations in sea ice distribution, and changes in seal behaviour. A collaborative project between Indigenous Peoples of the Arctic (through the Arctic Council, an inter-governmental forum that formally includes several indigenous networks), and scientific institutions under the International Arctic Science Committee, is combining indigenous and formal western scientific studies and insights to better understand climate change impacts (Anon 2004). A number of institutions and Indigenous Peoples' organizations (including the UNU-IAS, ANDES, the Christiansen Fund, and IIED) are now proposing a series of indigenous climate change assessments to feed into the work of the Intergovernmental Panel on Climate Change, into national and international policies, and into the responses of Indigenous Peoples themselves (Sam Johnston, pers. comm. 2008). Increasingly, communities in ICCAs will have a crucial role in generating and providing knowledge of the full range of climate change impacts, and how to deal with them.

ARE CLIMATE FINANCIAL MECHANISMS AND ICCAS COMPATIBLE?

Given their crucial role, would ICCAs be eligible for receiving benefits from the various financial mechanisms being considered under climate change treaties and discussions? Equally important, should they be considered; what do the indigenous people and local communities themselves think about this?

There is no doubt that, under mechanisms like the proposed Reduced Deforestation from Deforestation and Degradation (REDD), or similar voluntary mechanisms, ICCAs would be eligible. In some international discussions, the sums being talked about under such mechanisms are huge; one review puts them at US$43 billion (Roe *et al*. 2007). According to a World Bank estimate, forests could be worth anything between US$1500 to US$10,000 per hectare, if the carbon market were to pay for their full value.

One complication could be that in REDD, similar to the current Clean Development Mechanism (CDM) principle, initiatives may be eligible only if they can show "additionality", i.e. that they are additional to what would have happened without carbon financing. ICCAs are backed by a diversity of community motivations, and are already in place, so at first glance there would not seem to be any additionality. However, many ICCAs also face serious threats, both from within and without the community (including at times decreasing tolerance to opportunity losses), and it can be argued that these threats can be faced if some form of funding is available.

ICCAs could also be a much better alternative to large-scale monocultural plantations that are being promoted for carbon sequestration (including as biofuels, see http://www.globalforestcoalition.org/paginas/view/66). These plantations have significant negative impacts on biodiversity, people, and ecosystem functions. Regeneration of forests/vegetation by community regulation, and afforestation with local species diversity as is often preferred by communities, would appear to be considerably more desirable than monocultural plantations.

However, a more crucial question is, do Indigenous Peoples and local communities themselves want carbon funding? At various international forums, indigenous networks have strongly opposed such mechanisms. They have good reason to. So far, most carbon funding has gone through governments, or even in the voluntary market, through corporations and formal institutions. There is hardly any involvement of, much less control by, the communities being impacted. CDM or other mechanisms have not challenged the skewed and iniquitous governance arrangements of ecosystem and landscape management. There is a genuine fear that mechanisms like REDD may in fact not only bypass communities, but in fact lead to further marginalization, if governments impose conventional forest and protected area management regimes in a bid to demonstrate 'effective' conservation to earn carbon credits.

ICCAs would seem to be ideal candidates to benefit from any financial mechanisms dealing with climate change. But these mechanisms will need to be drastically different from the ones that the global community has so far come up with, providing central decision-making powers to the peoples and communities that manage ICCAs, and being sensitive to the non-economic aspects of ICCAs. There is not much evidence of such rethinking on part of those dominating the discussions on carbon markets.

Most crucial is the recognition that ICCAs deserve recognition regardless of their role in climate change, and that it could be counterproductive to link them up only or even primarily to mitigation and adaptation strategies. Their climate-related benefits to humanity are incidental to many other values and motivations. Additionally, financial mechanisms are not the most important means of supporting ICCAs; much more crucial are tenurial and territorial rights, safeguarding them from external threats, and other such measures listed in the next section.

WHAT NEEDS TO BE DONE TO ENHANCE ICCA'S ROLE?

A number of urgent steps are necessary if the role of ICCAs in climate change mitigation and adaptation is to be strengthened or actualized:

- Greater documentation and studies, carried out by or with the relevant people/communities, on the various roles that ICCAs may already be playing, or have the potential to play, as described in Section 3 above. Some ongoing regional reviews commissioned by TILCEPA are beginning to cover this aspect (see www.ICCAForum.org).
- The opening up of western scientific work on climate change, to indigenous knowledge and wisdom; this requires a considerable paradigm shift towards respecting various forms of knowledge, and building bridges amongst them based on mutual respect (as is happening at the Potato Park in Peru, see http://www.parquedelapapa.org/).
- Recognition of ICCAs, as deemed appropriate by the relevant people/communities, in law and policy, or through social means; this would include their integration into protected area systems with free and prior informed consent, and backing through legal regimes that provide Indigenous Peoples and local communities their territorial and resource rights, and recognize their customary laws (such as the Indigenous Protected Areas of Australia, see Smith 2006). It is important to realize that this must be done regardless of the recognition of the role of ICCAs in climate change mitigation or adaptation. Also, it needs to be borne in mind that top-down, inappropriate recognition of ICCAs could at times lead to undermining the community initiative, such as by imposing a uniform management structure on a diversity of local institutional and cultural realities, or by exposing communities to unwanted external influences such as uncontrolled tourism.
- Facilitating community capacity to adapt to climate change impacts, including the revival of conservation practices that may have eroded (e.g. the hima system in western Asia and northern Africa, mentioned above), providing information and training on new technologies of mapping and forecasting that could complement their own observations and knowledge (used, for instance, by the NGO PAFID to help the Tagbanwa indigenous people in claiming ancestral domain rights to protect the islands they live in, such as the Coron ICCA in the Philippines; see http://pafid.org.ph/), and appropriate technological and institutional inputs that are acceptable to the communities.
- Consideration of incentives for continued or new community-based conservation of forests, with mechanisms in which communities are central decision-makers, and which directly benefit them in ways they find acceptable. Such mechanisms need to be able to counter the threats that ICCAs face from economic development processes, lost economic opportunities and livelihood crises, privatization and take-over by corporate interests, agrofuels and exotics, changing aspirations of new generations, and other such forces.
- Moving national and local level planning into landscape approaches, in which ICCAs are a crucial component; such approaches will need to centrally involve relevant communities in decision-making at not only the local but the landscape level (see, for instance, the approach for the Cape Floristic Region of South Africa, http://www.cepf.net/xp/cepf/resources/publications/cape_floristic_region/).
- Facilitating the participation of Indigenous Peoples and local communities in climate change negotiations (and related negotiations in international biodiversity or environmental agreements), to voice their opinions on mechanisms being discussed (e.g. REDD), and provide alternative visions of mechanisms that would help in avoidance, mitigation and adaptation.

These steps will by no means stave off all the threats that ICCAs face, or help revive all ICCAs that have gone defunct. But they will give crucial support to many, and greatly enhance the chance of their contribution to climate change solutions.

REFERENCES

Anon. 2004. Arctic Climate Impact Assessment Policy Document 2004. Issued by the Fourth Arctic Council Ministerial Meeting Reykjavik, 24 November 2004.

Bassi, M. 2002. The making of unsustainable livelihoods: an ongoing tragedy in the Ethiopian drylands. *Policy Matters*, Issue 10.

Brown, J, M.W. Lyman, and A. Proctor. 2006. Community conserved areas: experiences from North America. PARKS Special issue on Community Conserved Areas, 16(1).

Govan, H., A. Tawake, and K. Tabunakawi. 2006. Community-based marine resource management in the South Pacific. PARKS Special issue on Community Conserved Areas, 16(1).

Ferrari, M.F. 2006. Rediscovering community conserved areas in South-East Asia: people's initiative to reverse biodiversity loss. PARKS Special issue on Community Conserved Areas, 16(1).

FES. 2003. *A Biodiversity Log and Strategy Input Document for the Gori River Basin, Western Himalaya Ecoregion, District Pithoragarh, Uttaranchal*. A sub-state process under the National Biodiversity Strategy and Action Plan India. Foundation for Ecological Security, Uttaranchal.

IFRC. 2001. *Coastal Environment Protection: A Case Study of the Vietnam Red Cross*. International Federation of Red Cross and Red Crescent Societies, Geneva.

Kothari, A. 2006. Community conserved areas: towards ecological and livelihood security. PARKS Special issue on Community Conserved Areas, 16(1).

Lavides, M.N., M.G. Pajaro and C.M.C. Nozawa (Eds). 2006. *Atlas of Community-Based Marine Protected Areas in the Philippines*. Haribon Foundation for the Conservation of Natural Resources, Inc. and Panama Ka Sa Pilipinas, Philippines.

Molnar, A., S. Scherr, and A. Khare. 2004. *Who Conserves the World's Forests: community driven strategies to protect forests and respect rights*. Forest Trends and Ecoagriculture Partners, Washington DC.

Oviedo, G. 2006. Community conserved areas in South America. PARKS *Special issue on Community Conserved Areas*, 16(1).

Pathak, N., T. Balasinorwala, A. Kothari, and B.R. Bushley. 2007. People in conservation: Community conserved areas in India. Kalpavriksh, Pune/Delhi.

Roe, D., H. Reid, K. Vaughan, E. Brickell, and J. Elliott. 2007. Climate, carbon, conservation and communities. IIED and WWF-UK.

Roy, S. 2008. Local women give back Sundarban the mangrove forest. *Merinews*, http://www.merinews.com/catFull.jsp?articleID=136368.

Smith, D. 2006. Indigenous protected areas in Australia. PARKS Special issue on Community Conserved Areas, 16(1).

Swahilya. 2007. Green forts for the coast. *The Hindu*, August 19.

White, A., A. Khare, and A. Molnar. 2004. *Who Owns, Who Conserves, and Why It Matters*. Forest Trends, Washington DC.