

Scoping Study Summary: International assessment of the value of Indigenous Knowledge to improve resilience to environmental change (Africa-K/N).

There were two main aims of this scoping study: (1) to provide an up to date survey of the current use of Indigenous Knowledge (IK) for building resilience to environmental change; and (2) to assess whether some of these strategies might be transferable by bringing together key stakeholders from different regions to share their experiences and management approaches. A summary of the outcomes of the longer report for Kenya and Nigeria follows. For further information please check: sharingknowledge.net.au

Although the relevance of African IK to sustainable development is becoming widely accepted, the continued existence of IK in Africa is threatened, among others, by the lack of formal mechanisms to disseminate and adapt this knowledge. The major mode of transferring IK in Africa through oral tradition, from the older generation to the younger generation, is at risk of disappearance due to changes in the socio-culture of many Africa societies – the increasing rural-urban migration, the increasing value accorded western-cultures and the diminishing direct contacts with the natural environment.

Kenya

1) In Kenya, an in-depth analysis was carried out of IK use in two institutions, namely the Kenya Meteorological Department (KMD), a government department and the Milirubushi Organisation of Kenya (MIBOK), a local NGO. Information was also collected from local people.

The government organisations, NGOs and local people identify environment and climate change through a range of ways that included unreliable rainfall, drying up of rivers that were initially perennial, recurrence of climate extremes more frequently than before, low farm productivity, decreasing biodiversity, and erosion due to degradation amongst others.

The KMD is the major institution in Kenya that collects climate data and monitors weather and climate. The areas of interest of the KMD can be summarised under climate data management, climate variability and change, and disaster management. The first two have direct relations to IK while disaster management is related to subsequent effects of climate variability and change, e.g. the effects of drought. Activities carried out by the KMD involve the analyses of historical climate data to see whether there are any trends and explaining the reasons for any trend. KMD informs local people about climate change through the media and when carrying out awareness campaigns by mainly making reference to things that never used to occur, but are now observed. For example, mosquitoes were rare in Nairobi and in the Central Highlands but they are now plenty. Such imparted knowledge creates awareness and then one can provide reasons for introducing some adaptation strategies.

According to the KMD official, the best persons or institutions to carry out this knowledge transfer-work at the community level are the government administration and elders with support from scientists. IK related-activities that KMD promotes among the communities it works with include seasonal rainfall prediction and efforts to understand the IK and develop a scientific explanation. The reasons for incorporating IK at community level is because it is what the communities understand and one has to understand local culture prior to introducing anything new and implementation becomes easier if the process is community owned.

It is now recognised that the promoted IKs have some scientific basis. The local administration and elders who own the IK and are respected by the community implement such IKs at community level. To increase the participatory process and enhance IK adoption at community

and household levels, there is need to start off by documenting IK, to look for ways of how it can be passed over from generation to generation and to provide resources for the process.

In order to effectively enhance IK to increase resilience of communities to environment and climate change MIBOK requires support in the form of donor funding for activities such as tree nursery operations, organisation for planting and nurturing.

Most farmers say that promotion of IK can only be successful if each individual farmer practices IK on their farms. It would be a good beginning for other people to copy over time. The farmers are willing to take part in IK implementation and especially if they can be provided with seedlings of indigenous tree species that can survive in their areas, while at the same time be provided with seeds of certain tree species they would be happy to integrate IK in their farming practices.

They also report that should there be education and creation of awareness about IK it could greatly improve the implementation of such technologies. However, they want all the stakeholders to be involved so that efficient sharing and exchange of information about the technology can be achieved. They suggest that the funding of the interested groups that would implement selected IK techniques should be considered and especially to provide incentives for such farmers and groups. The introduction of other activities that go hand in hand with tree planting (like bee keeping), would encourage most farmers and individuals to plant trees on their farms.

The barriers to reducing vulnerability and increasing resilience identified related to population increase, environmental degradation, lack of awareness at the grassroots and negative attitudes of some people (especially youths): E.g. most people believe that IK may not work and its old, primitive and barbaric, inadequate information flow – local levels may be ignorant of organisations that promote IK use, poverty and unreliable forecasts of the Meteorological Department.

This small study on the potentials of IK to improve resilience to environment- and climate change shows that at all levels, national, district and local, that actors are aware of the changing environment and climate variables. They also practice IK and are convinced of the benefits of using IK to improve resilience to environment and climate change. However, there is still a lot of doubt as to the truth of IK. Since IK is not general knowledge, recognising the holders of IK and institutionalising their knowledge is important. This study shows that documenting the existing IK is a first step to understanding this knowledge and making it available to the general public.

2) Despite concurring on the benefits of exchanging IK-related information with others, the KMD official saw no need for an international event that brings together individuals to discuss the issues of how best to increase local resilience to environment and climate change. The official noted that such issues are already well articulated through IPCC and it is a matter of downscaling them to the local level. It was suggested that this would best be handled at the local level through a government initiative.

The MIBOK official saw value in an international event that brings together individuals to discuss how best to increase local resilience to environment and climate change as it would encourage sharing of ideas and dissemination, and enhance information flow among the locals, thus encouraging them to embrace IK.

Some benefits in sharing existing IK strategies with other people in other regions were identified. These included that through coming together, a forum for sensitising and encouraging one another in use of IK can help tackle the aspect of associating IK with old age and primitiveness. Working with other groups to exchange information on IK at national- and international levels can serve as a platform for adaptation and adoption of IK methods that are attractive and also as a way of disseminating information on IK across the world. Exchange of new knowledge could be useful as similar IK can be documented, tested and adopted for use in a broader scope, other communities might be having IK suited for climate change and it may widen scope of knowledge on IK.

Nigeria:

1) In Nigeria, information on IK use was collected from representatives of the Centre for Arid Zone Studies, Maiduguri, the National Meteorological Agency, Abuja, and the Centre for Environmental Resources and Hazards Research, University of Jos, as well as from respondents in three villages in Bornu State.

The respondents from the villages, research- and government organisations identify decrease in biodiversity, increased level of desert encroachment, deforestation, erosion, decrease in rainfall quantity, increased variability of onsets, longer period to recharge groundwater, delayed stream flow, increase drought frequency, loss of pasture grounds, lower yields in agricultural outputs, disappearance of watering points as signs of environmental and climate change.

Climate fluctuations characterized by wide and frequent swings in rainfall levels and spatial distribution are the major determining variables in the daily life of the inhabitants of the Nigerian Sahel. This has contributed to the reduction in the quantity of available pasture, acute water shortage, and increase in incidences of animal and crop diseases.

The IK of the local respondents on rainfall trends were found comparable to scientific knowledge: The drought trend line collected from the locals and the rainfall trend computed empirically yielded similar results. In advent of extreme climatic conditions, most of the pastoralist suggested migration as the best form of adaptation to find pasture in the southern part of the country and retreat back to the north when the rains sets in.

The villagers adapt to environmental and climate change through various ways: The use of drought resistant crop varieties, early mature crop varieties, high yield varieties, low input varieties, irrigated crops, crop and livestock diversification, replanting, herd movement, - supplementation and sedentarization, culling animals, labour migration, selling assets, water and food storage are some of the IK that they use to maintain their resilience to environmental and climate change.

Most of the organizations work in a structured environment. However, IK has not been used by most of them in addressing environmental and climate change. The respondents suggest that IK could be integrated into some of their programmes without necessarily interfering with the environment created by the government agencies, but rather in a complimentary manner.

2) Improving outreach to the local communities was preferred to an international event that brings together individuals to discuss how best to increase local resilience to environmental and climate change through IK use. The institutional participants suggest that IK could be integrated into some of their programmes without necessarily interfering with the environment created by the government agencies.

They find that agricultural extension can be reinvigorated by integrating IK components. They also suggest the introduction of mobile veterinary health care services for the pastoralists on their migration routes or to locate clinics at strategic points to render services, since migration has been a strong indigenous practice to adapt to lack of pasture.