

Indigenous knowledge needed for small island disaster mitigation

Isolated and disaster-prone small islands are typically situated in relatively remote areas where less modern infrastructure is available. Lines of transportation are often disrupted by extreme weather of sea, isolating residents for days, if not weeks, from the mainland. Local and indigenous knowledge systems (LINKS) have long been used to counter the effects of the extreme conditions. Inherited customs, traditions, beliefs and practices form a cultural system that supports the sustainable practices with several traditional regulations.

As an example, the keuneunong is a traditional calendar found in Aceh that is used by communities to anticipate high waves and strong winds. Other examples include a traditional early warning system for smong (tsunami) on Simeulue Island, the awig-awig system used on Bali and in several parts of West Nusa Tenggara (NTB) to guide environment preservation and the use of natural resources, the pranoto mongso traditional calendar that guides farmers on Java and many more.

Some LINKS are used by coastal region and small island (CSI) communities for interpreting extreme natural phenomena. However, limited scientific validations have been done to give a scientific basis to LINKS. Global cultural influences have degraded the practices among CSI communities. To some extent the influences contribute to indifferent responses and they lead people to only rely on modern, but unavailable technology for anticipating extreme natural events. This may uproot a community from its cultural identity and discourage efforts to develop resilience toward disaster by using local heritage.

Scientific validation should be supported by scientists or academicians. Some government institutions still do not recognize research for disaster management purposes as part of their research roadmaps. CSI communities need to be equipped to anticipate disaster and to strengthen their strategies to adapt to climate change impacts. A number of small islands in Indonesia are showing some danger of being submerged by rising sea levels, if not by sinking land. Either way, people on small islands will have to cope with the fact that rising water is flooding their yards.

Traditional calendars were used by farmers to start their cropping seasons. They have already been proven effective for anticipating drought seasons. Since the traditional calendars used by the local communities have sometimes disagreed with actual seasonal changes, the communities need to extend their knowledge to adapt to the changing situations. However, few answers have been provided by scientists to the communities to show them ways to adapt to the recent seasonal changes. Farmers need to start to sow and tend their crops, but the question remains, "When would be a good time for them to start, since they cannot use the old traditional calendar any more because of the changes?"

Local knowledge has been acknowledged to contribute to modern science and technology. Therefore, it is reasonable to preserve, to protect and to promote the use of such knowledge. Some LINKS have been recognized by the United Nations Educational, Scientific and Cultural Organization to be intangible heritages, such as the subak, which is a traditional irrigation system in Bali. There are many more LINKS throughout Indonesia that need similar attention and advocacy to revitalize them in the communities. We need to revitalize them by properly documenting the LINKS and trace the history of LINKS as close as possible to their origins.

In addition, theories on adopting LINKS to use in disaster management are not new. However, when it comes to real practices in disaster management, LINKS are not given ample consideration in terms of actions and concrete programs at district disaster management levels. The superficial use of the knowledge in formal communications should be extended into real actions. That should firstly be proven at the national level to become a benchmark for the lower ranks of the disaster management organisation. Simultaneously, scientific efforts to expose the relevancy of LINKS for disaster management should be performed by scientists or academicians.

Multi-entry approaches to revitalize local knowledge will give a better opportunity for LINKS to assist disaster prone communities to create more resilient coastal regions and small islands in Indonesia.

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