

Indigenous Knowledge on Disaster Risk Reduction: Good practices from coastal regions of Kerala

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Introduction

Indigenous knowledge are methods and practices developed by a community based on their culture, traditions & beliefs, means of livelihood and geographical location they live. This knowledge is originated from the community, transmitted through generations by non-formal communication. The sustainability of the knowledge depends on the attitude and acceptance shown by the upcoming generation and initiative taken by the elders in disseminating the knowledge to next generation. In any case, indigenous knowledge can possibly be upset through the breakdown of traditional, oral correspondence channels; the movement of community to other places; and an absence of enthusiasm for learning indigenous knowledge [3]. Indigenous knowledge on disaster risk reduction is characterized as a cumulative knowledge and practices that aims to reduce disaster risks in the community. This knowledge originates from the cooperation between individuals from the community and the locale in which they live [5].

The relationship between indigenous knowledge and disaster risk reduction has developed more interest in recent years. Agencies working in the field of disaster management is proposing the integration of indigenous knowledge with disaster management to easy the process of managing community before, during and after the disaster events. Throughout disaster risk reduction literature, primary arguments have been made for the value of indigenous knowledge. First, indigenous practices can be transferred and adapted to other communities in similar situations. Second, an incorporation of indigenous knowledge in existing practices and policies encourages the participation of the affected community and empowers its members to take the leading role in all disaster risk reduction activities. Third, indigenous knowledge dissemination method adopted

by the community provides a successful model for other education on disaster risk reduction[9]. While this study focuses on collecting specific indigenous knowledge on disaster related to sea from the women in coastal regions of Kerala

Background of the study

India woke up to one of the most noticeably bad violent events on the 26th of December 2004 that the nation has ever found in the current history. The most perceptibly awful affected by the tsunami were the fishermen community who lives on two or three meters from the shore. The ocean was their world as that was their means of livelihood. The event had drastically affected the lives and property of Kerala too. Alappad village of Kollam district was the most affected area in Kerala. Alappad is a seaside town in the Kollam region of the Indian state Kerala. It is a ward of the panchayat of a similar name. Frequently, the entire panchayat is referred as Alappad; be that as it may, the panchayat really comprises of different wards/places, for example, Srayikkadu, Azheekal, Kuzhithura, Parayakadavu, Cheriazheekal, Pandarathuruthu. Portions of the town were harmed during the 2004 tidal wave. Alappad was the most exceedingly terrible influenced village in Kerala – a few people lost their lives. The entire physical and hierarchical structure of the group was changed. Homes were destroyed, individuals were displaced to other places, close relatives were dead, records and different resources were loosed. After the disaster, the state government acknowledged requirement for more bridges, and developed one bridge at northern Azheekal, and another at Cheriyaazheekal.

There are 16 wards in alappad panchayath and out of which fourth and fifth ward (Azheekal and Srayikkadu) are the radically affected wards. A disastrous calamity isn't the inescapable outcome of a hazard occasion, and much should be possible to decrease the exposure and vulnerabilities of people living in zones where natural hazards happen, regardless of whether as often as possible or occasionally (GFDRR). It is discovered that the areas where mangrove trees were planted had seen less harm to their lives and property. Subsequently the researcher thought that it was exceptionally interesting and conducted this study to discover more actualities about how much these sorts of indigenous practices adds to disaster risk reduction.

Methodology

The study aims to explore indigenous practices and beliefs related to disaster risk reduction from the community. Qualitative approach is adopted for the study. The respondents were chosen purposively in which semi structured interview schedule was used to collect data from women respondent. Content analysis was used to analyze the data. The major results and discussions includes the following:

We often talk about disaster risk reduction strategies that are developed in a top down manner, from national to state, state to regional and regional to community. But the peculiarity of indigenous knowledge based disaster risk reduction strategies are they are developed from bottom up approach. The acceptability, reachability and trust of community people to these

strategies are unquestionable. The indigenous knowledge used by the community which contributes to support their capacity to reduce disasters include the following aspects:

- Historical and intimate knowledge of marine environment

“Sea is our livelihood and apart from this, our men don’t have any other option. To tell about the people living here, that are the ones living in Azheekal, Azheekal by word itself we can know the meaning that which is related to sea. The people living here are the kids of sea itself. Most of the people living here depend on sea for livelihood.”

The general population of coastal area consider ocean as their livelihood since they are relying upon the ocean since birth. They frequently relate sea as Goddess and the people living there are the children of sea. People love to live as the kids of sea. As they view ocean as their mother, they don’t fear the ocean. The principle method for winning bread of the people living there is fishing and in view of it they could distinguish any progressions occurring in the ocean. Overall the people living there have a hardcore intimacy with the sea and consider sea as something sacred because their existence really depends on it. They think harming ocean is unsafe in personnel life and furthermore they shield ocean from pollution, mining and so on. In this manner it doesn’t prompts man-made hazards and consequently decreases the risk of disaster.

- Ceremonies, worship and belief system

“Here we have temple and have several rituals we follow which last for nine days where all the fisherman along with the women gather together and collect nivedyams from all the temples and go to sea. We consider sea as our goddess and also the vigraham of our temple here was the gift given by our goddess. So we believe temple visit and god here. Doing the pooja karmas was very difficult for us earlier. It was only a few months ago we were able to do that and we believe in it because we got good luck after doing that ritual.”

As a part of the temple pageant, the people of Alappad village pronounce one day as an open occasion and go to ocean to encourage fishing. This celebration is named as 'Meenoottu'. Typically this celebration occurs in the month of February consistently. This is the main day where ladies find the opportunity to go to ocean with their men. Women don't go to ocean on any other days. On that day every one of the people assemble and go to ocean keeping in mind the end goal to feed fishes and they trust that by doing as such they will be free from accidents related to sea.

“Women cannot enter to sea during menstrual periods. We women used to visit sea for collecting sand, but we cannot go for that during that time. We do that because we consider sea as our goddess.”

Another belief took after by the coastal women is that; they don't enter to ocean amid their menstrual cycle. Women used to go to ocean for gathering sand however they can't go for that

amid this time. They do it since they consider ocean as their goddess. Like what we do in temples, they don't go to ocean for four days and after that they can go. During those periods, their men go for fishing in the early morning only after having their shower. They do this as they trust that they are living with what their men is getting from the ocean. Henceforth these strong belief system and rituals practiced by the seaside individuals to spare them from any sort of ocean attacks helps them in building confidence and keeping up great emotional well-being.

- Seasonal calendar to forecast disasters

“Changes happen to the sea during the time of Karkidakam. During this month the chances for gigantic waves in sea are common”

Seasonal calendar is used to forecast disasters in sea. The community members are expertise in explaining the nature and behavior changes of sea according to the seasons. They could predict in which season they will get good harvest from sea and in which season they are not allowed to go for fishing and so on. Karkidakam is the last month of the customary Malayalam calendar that harmonizes with mid-July to mid-August. Amid that period, the ancestors of the people living in Alappad town have exhorted their relatives to not go for fishing as the ocean surge will be extremely serious around then. So they are encouraged to better remain at homes by their folks. They are advised to do so in order to save their lives from any sort of sea attacks. They don't go for work that time; they used to take debts from people or by other means they continue living.

- Natural Early Warning System

“During that time of tsunami, we were having a big nest full of birds. Few hours before tsunami they were all screaming unusually. My father was there at my home and he just made fun with the birds by asking that why you all are making lot of voice, we will give food, be patient enough. I also said that they all are crying please open the door of their nest and let them fly somewhere. But actually, that were all warned us that something bad is coming, unfortunately all have died.”

Variations in the conduct of animals are a critical early warning signs before any terrible event. The people living in the Alappad locale had told the researcher that, they had seen numerous signs shown by birds and animals. Some of the weird practices shown by them were, flying birds made abnormal screaming noises and they attempted to get out from their homes. Aside from this cows on the other side had given awful signs like they attempted to break the knot of the coir and fled from the coast.

“During that time, sea has moved miles back and to watch that all the people eagerly gathered there to watch the fishes lying on the land. at that time we were discussing with each other that some changes are going to happen to the sea”.

One of the respondents had informed that last time couple of minutes before the tsunami hits the Alappad village; individuals inquisitively went to the seashore to watch the ocean moving miles

in reverse. Unfortunately, the individuals who went to watch that had lost their lives. Another respondent added that the environment had extremely obscured and water in the lake had ascended with the progressions happened to the ocean. Individuals ended up tensed thinking whether those were the indications of something awful happening to the ocean.

- Local communication strategies

“After the tsunami experience we decided that if something unusual happens in the sea and it seems to be the warning sign of disaster just shout or whistle to neighbors to make them aware”

This includes oral communication about past and upcoming disaster in the community. All community members are aware about the previous disaster events occurred in their community through stories. The members can signal the upcoming disasters through strategies like shouting, whistling or hauling. They have communicated the evacuation routes within the community to the next generation which supports disaster risk reduction.

- Marine related skills

“Most of us know swimming from childhood itself and we used to swim in sea”

Community men are familiar with boat maneuvering skills from young age. In turbulent water they can skillfully manage boats. They can detect the movement of waves to avoid accidents. Both men and women are experts in swimming and diving in sea. Most of the community members are physically fit to climb up during the time of disasters. All this skills have helped them to evacuate easily during tsunami.

- Technical Indigenous Knowledge

“It was not in this home, this was built by Amma. That was a small hut and people shouted by saying that we have to climb upstairs for rescue and I have to run a lot to find such strong building. But after the tsunami experience most of our houses are concrete which is strong”

The technical knowledge includes measures related to house construction, construction of sea wall, bridges, coral reef and mangroves plantation. At the time of the Tsunami, individuals of Alappad village were living in small huts. Absence of solid buildings to live was one of the fundamental reasons behind loss of lives and property. But, after the tidal wave event, houses were reconstructed with the support of different associations. So as of now the general population living at Alappad panchayath is having all around developed houses with stairs in each house. The motivation behind the construction of stairs was to help the people to move upstairs to protect their lives if any such terrible occasion happens.

“Last time when tsunami happened, we were not having the seawall which was all built later, then (thinking) we don't had pulimuttu (a long path to the sea). It was only after that this path has built. After its construction we are not facing any much severe rising of the sea. Also

planted so many kattadi trees which was provided by ashramam. So many plants like kattadi, mangrove etc were planted after that.”

The respondents had told that, the development of the seawall and pulimuttu is exceptionally useful because these will help in lessening the strength of the waves and furthermore decrease the danger of any disaster. After the tidal wave, the areas where tidal wave was seriously affected had planted casuarinas tree close to the shore to decrease the impact of the strong tsunamis. The respondents have recognized that amid the tsunami occasion those place which were having seawall had not affected by the event because the seawall developed in those regions was very big. There were numerous casuarinas trees and loss of property and lives in those regions were comparatively less. In this way the people of Alappad panchayath firmly believe that these human measures will help in decreasing the risk of disaster.

Apart from the positive aspects of indigenous knowledge the researcher could find many limitations and barriers in integrating this indigenous knowledge in disaster management strategies. They are the belief that indigenous knowledge is unscientific and unsystematic, difficulty in validation, generalization and replication, lacks accountability with younger generations in the community, documenting the knowledge without losing its essence is a challenge for outsiders from the community.

Conclusion

Utilization of indigenous knowledge of rural groups for disaster risk reduction is a cheap and productive technique and is essential for lessening dangers of most regular, consistent and economically destructive disasters like tsunami in coastal regions. As this indigenous knowledge are passed from ages to ages and are trusted and seen effectively, this information is well acknowledged by the all-inclusive population of the community. This knowledge is possessed by the group itself and is culturally sensitive. Therefore, it enables individuals of the community to utilize and enjoy the advantages produced from it and helps in empowering the community, including the most vulnerable and disadvantage groups, to act instead of relying on external help only.

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