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Indigenous Peoples and Natural Disasters: A Survey on Early Tsunami Awareness

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An Overview

The tsunami in late 2004 caused the deaths of nearly 300,000 people. A relatively large number of indigenous persons survived this disaster despite the fact that their villages were destroyed, which were iclose to the epicenter of the earthquake that caused the tsunami. The research institute *Structural Analysis of Cultural Systems* (S.A.C.S.) carried out a survey to find out the reasons for their survival. We focussed on the questions, to what extent do indigenous peoples have a perception of the signs preceding a tsunami, and to what extent do they have cultural knowledge that might be relevant to effectively protect people living in regions that are affected by a tsunami?

- (1) In a first step, reports of survivors from indigenous peoples were searched, collected and systematically analysed. This comprised the following:
 - Media research on reports of surviving indigenous people
 - Systematization of survival relevant warnings mentioned in the reports
 - Checking the reports for credibility and inconsistency
- (2) Then, in a second step, a questionnaire was designed, in order to collect data from indigenous representatives in Geneva during the 2005 session of the United

Nations Working Group on Indigenous Peoples. This questionnaire aimed at the collection of indicators relevant for the survival of Indigenous Peoples.

It turned out that Indigenous Peoples, both due to
(a) traditional knowledge and
(b) spontaneous interpretation of the natural phenomena of their habitat, reacted to different warnings, which was essential for their survival.

The findings made it clear that, as climate change proceeds, the traditional knowledge of peoples living in close connection with nature could play a vital role with regard to timely protection from natural disasters. These culture-based and nature-related early warning systems would be a helpful addition to technical early warning systems. In the following some details of the findings are given:

Indigenous cultures affected by the tsunami

<i>Ethnic Group</i>	<i>Islands / Island group / Country</i>	<i>Population</i>
Onges	Small Andaman	97
Great Andamans	Strait Island	43
Jarawa	South and Middle Andamans	240
Sentinelesen	North Sentinel Island	39
Nicobaresen/Shompens	Central Nicobars	
Moken	including Surin Islands/Thailand	More than 700
Minang	Sumatra/Indonesia	

The Andaman and Nicobar Islands consist of over 550 smaller islands, of which only a few are inhabited. 600 to 700 of the 33,000 indigenous persons live in isolated groups, partly as semi-nomadic populations. Many of the indigenous peoples of the Andaman and Nicobar Islands are integrated into the industrial culture or were resettled by the Indian government.

Examples from reports relevant for the survival of the tsunami

The indigenous ethnic group of *Onges*, who live on the small islands of Andaman, have a special awareness concerning the early detection of tsunamis expressed via oral tradition in their language by the word *Giyangejbey*.¹ This helped them to interpret the earthquake tremors to perceive changes in the air and especially to recognize the retreating water as a significant sign. They sought refuge in the nearby hills and thereby survived the tidal waves.

¹ "Giyangejbey" stands for the transition from matter to a fluid state and back into matter, this process plays a general role in the way of life of the Onges.

The indigenous ethnic group of the *Great Andaman* Island ran to a nearby mountain because of the knowledge passed on by their ancestors.

It has been reported that the *Jarawa* stuck arrows and bows into the earth during the earthquake in an attempt to decrease the intensity of the tremors and to increase their chances of survival on higher ground.

In the village of *Munack, Camorta* - Thomas, the Chief of Camorta Island, reported that he warned the inhabitants of the village of an imminent danger and urged them to run away from the beach area, because he remembered the stories of his grandfather and the warnings of his father about tsunamis and earthquakes.

A tradition of the *Moken* who mostly live on the Surin Islands in Thailand, warns that a "man-eating" wave comes when the sea withdraws.² The Moken recognized these signs and so survived the tsunami.

Examples from the results of the survey of Indigenous representatives during the meeting of the 2005 United Nations Working Group on Indigenous Peoples

The *Sentinelese* are one of the few indigenous cultures, who still live in an authentically traditional way. They reported that red ants formed long roads moving inland, this was recognised as a sign of the approaching threat.

The *Minang* people in Sumatra, Indonesia, did not notice the tsunami, as the preceding earthquake had confused many of them. Probably, there is no tradition in their culture regarding the early recognition of tsunami indications.

Credibility and inconsistency of the sources

Some of the reports, which can mainly be found on the internet, could not be verified, so that their credibility is insecure. The tribal leader Rasheed Yusuf of the Nicobar Islands stated that rumors about the "instinct" of the Indigenous peoples which allegedly warned them of the tsunami were "folkloric nonsense".³ Rasheed Yusuf and other tribal leaders of the Nicobar Islands visited the Ethnological Museum of Vienna after the tsunami to gain knowledge about their culture. It was mostly elderly people, who died in the floods of the tsunami. According to Rasheed Yusuf, the people who survived were either working on plantations located in higher ground, or they were fishing far out in the sea.

It seems necessary that in further research in-depth studies on the credibility of the reports about the tsunami survival of indigenous peoples be carried out.

² Krajick, Krajick: Die Geister im Stein (The spirits in stone), Süddeutsche Zeitung No. 254, p 13

³ Fenster in die Vergangenheit (Window into the Past), Der Spiegel 41/2005

General results

Although some of the sources could not be verified, some conclusions can be drawn both from the report based research and the questionnaire survey:

Among the factors claimed to be accountable for the survival of the tsunami, traditional knowledge had a high relevance. In most of the cases, in which traditional knowledge was held accountable, the existence of this knowledge had the effect that the peoples' flight away from the coast was successful, because it happened early enough. Already during the preceding earthquakes, or when the sudden retreat of the sea was perceived, the indigenous groups in these cases retreated to little hills that are inland; these actually are places where tsunamis lose their destructive force.

In other cases, the escape behaviour of animals before the tsunami was successfully interpreted as a prognostic symptom or an additional warning of an impending catastrophe. (Strikingly, there were almost no animal victims of the tsunami disaster of 26 December 2004.) In many places, unusual behavior of animals was observed already some time before the arrival of the tsunami wave, like the screeching of birds in distress, or elephants who refused to do their usual work and tried to flee inland. It should be noted that indigenous peoples watch the wildlife very thoroughly anyway, as this is the only way to survive as hunters and to obtain sufficient food. Therefore, they have obviously learned to interpret the warning signs of animals.

Perceived differences of sensoric perception could also have played a role for the tsunami survival, for example the perception of strange intense odors, or of dizziness (especially in children).

Outlook for further research

The research on the tsunami survival of indigenous peoples provides a platform for further theoretical discussion concerning aspects of traditions and collective memory. Assmann (1992) distinguishes between communicative and cultural memory.⁴ Oral traditional knowledge is lost according to Assmann if it has not been communicated within a period of 80 years as cultural memory in the form of rituals or festivals. Cultural memory thus plays a vital role in the preservation of traditional knowledge, and therefore also in the maintenance of cultural identity. Furthermore, this specific research can be linked to more general aspects of natural disasters that threaten indigenous peoples, as well as to issues of resilience and of culturally sustainable aftercare, be it with regard to aid measures or to trauma treatment.⁵

⁴ Assmann, J.: Das kulturelle Gedächtnis. Schrift, Erinnerung und politische Identität in frühen Hochkulturen. München, 1992
(trans.: Cultural Memory and Early Civilization: Writing, Remembrance, and Political Imagination. Cambridge University Press, 2011)

⁵ Cf.: Groh, A. (2003). Kulturspezifischer Zugang zu Holocaust-Überlebenden (Approaching Holocaust victims in a culturally specific way). Verhaltenstherapie & psychosoziale Praxis, 2003, 35, 2, 259-262

Recommendations

The issue of indigenous peoples and their survival of tsunamis should be discussed cross-culturally, as the findings within this context are not only interesting for seismological, anthropological, geological or geomythological (6) approaches,⁶ but they are also important for projects of minimally invasive field encounters. Researchers conducting field studies in indigenous contexts, as well as tourism projects with a minimally invasive approach should follow the recommendations of culturally sustainable encounters, in order to avoid the destabilisation of the indigenous cultures. Indigenous cultures with only oral tradition history of their history should be encouraged to continuously include the important knowledge of their ancestors in rituals, in order to prevent its loss.

The study has once more made it clear that Indigenous peoples live in accordance with their natural environment. However, the particular skills of Indigenous peoples are pertinent to the region in which they live. When they are expelled or forced to resettle, they cannot cope with their new environment in the same way as they did before.

It is clear that anyone living in regions, where tsunamis could occur, would benefit from further studies on this subject, regardless if they are indigenous to these places or not.

Arnold Groh
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Resources

Some references are given in the footnotes. This S.A.C.S. study has been carried out under the direction of A. Groh, and it has been presented by Fornalski, A.; Quatmann, J.; Vielgosz, C. & Pozsgai, K. at the 2005 INST Conference in Vienna <http://inst.at/trans/16Nr/12_1/fornalski_quatmann_vielgosz16.htm#2> (11 July 2014).

⁶ Geology is now turning to the traditional myths of Indigenous peoples, in order to detect impending natural disasters on time and to take preventative measures.