

DISASTERS IN POPULAR CULTURES

Giovanni Gugg - Elisabetta Dall'Ò - Domenica Borriello
Editors

Preface by Joël Candau



IL Sileno
Edizioni

OPEN ACCESS
PEER-REVIEWED
SERIES



Geographies
of the
Anthropocene



Geographies of the Anthropocene

OPEN
ACCESS 
PEER-REVIEWED
SERIES
ISSN 2611-3171

Geographies of the Anthropocene

Open Access and Peer-Reviewed series

Editor-In-Chief: Francesco De Pascale (CNR – Research Institute for Geo-Hydrological Protection, Italy).

Co-Editors: Marcello Bernardo (Department of Culture, Education and Society, University of Calabria, Italy); Charles Travis (School of Histories and Humanities, Trinity College Dublin; University of Texas, Arlington).

Editorial Board: Mohamed Abioui (Ibn Zohr University, Morocco), Andrea Cerase (INGV Tsunami Alert Center, Italy; Department of Social Sciences and Economics, Sapienza University of Rome, Italy), Valeria Dattilo (University of Calabria, Italy), *Chair*, Dante Di Matteo (“G. d’Annunzio” University of Chieti-Pescara, Italy); Jonathan Gómez Cantero (University of Alicante, Spain; Young Scientists Club, IAPG), Nguvulu Chris Kalenge (University School for Advanced Studies IUSS Pavia, Italy), Battista Liserre (Aix-Marseille University, Campus ESSCA, France), Alessandra Magagna (University of Turin, Italy), Carmine Vacca (CNR-ISMAR, Venice, Italy).

International Scientific Board: Marie-Theres Albert (UNESCO Chair in Heritage Studies, University of Cottbus-Senftenberg, Germany), David Alexander (University College London, England), Loredana Antronico (CNR – Research Institute for Geo-Hydrological Protection, Italy), Lina Maria Calandra (University of L’Aquila, Italy); Salvatore Cannizzaro (University of Catania, Italy), Fabio Carnelli (University of Milano-Bicocca, Italy); Carlo Colloca (University of Catania, Italy); Gian Luigi Corinto (University of Macerata, Italy); Roberto Coscarelli (CNR – Research Institute for Geo-Hydrological Protection, Italy), Sebastiano D’Amico (University of Malta, Malta), Armida de La Garza (University College Cork, Ireland), Elena

Dell’Agnese (University of Milano-Bicocca, Italy; Vice President of IGU), Piero Farabollini (University of Camerino, Italy), Giuseppe Forino (University of Newcastle, Australia), Virginia García Acosta (Centro de Investigaciones y Estudios Superiores en Antropología Social, CIESAS, México); Cristiano Giorda (University of Turin, Italy), Giovanni Gugg (University of Naples “Federico II”, Italy, University of Nice Sophia Antipolis, France), Luca Jourdan (University of Bologna, Italy), Francesca Romana Lugerì (ISPRA, University of Camerino, Italy), Fausto Marincioni (Marche Polytechnic University, Italy), Cary J. Mock (University of South Carolina, U.S.A.; Member of IGU Commission on Hazard and Risk), Francesco Muto (University of Calabria, Italy), Gilberto Pambianchi (University of Camerino, Italy; President of the Italian Association of Physical Geography and Geomorphology), Silvia Peppoloni (Istituto Nazionale di Geofisica e Vulcanologia, Italy; Secretary General of IAPG; Councillor of IUGS), Isabel Maria Cogumbreiro Estrela Rego (University of the Azores, Portugal), Andrea Riggio (University of Cassino and Southern Lazio, Italy; President of the Association of Italian Geographers), Bruno Vecchio (University of Florence, Italy), Masumi Zaiki (Seikei University, Japan; Secretary of IGU Commission on Hazard and Risk).

Editorial Assistant, Graphic Project and Layout Design: Franco A. Bilotta;

Website: www.ilsileno.it/geographiesoftheanthropocene;

The book series “Geographies of the Anthropocene” edited by Association for Scientific Promotion “Il Sileno” (Il Sileno Edizioni) will discuss the new processes of the Anthropocene epoch through the various worldviews of geoscientists and humanists, intersecting disciplines of Geosciences, Geography, Geoethics, Philosophy, Socio-Anthropology, Sociology of Environment and Territory, Psychology, Economics, Environmental Humanities and cognate disciplines.

Geoethics focuses on how scientists (natural and social), arts and humanities scholars working in tandem can become more aware of their ethical responsibilities to guide society on matters related to public safety in the face of natural hazards, sustainable use of resources, climate change and protection of the environment. Furthermore, the integrated and multiple perspectives of the Environmental Humanities, can help to more fully understand the cultures of, and the cultures which frame the Anthropocene. Indeed, the focus of

Geoethics and Environmental Humanities research, that is, the analysis of the way humans think and act for the purpose of advising and suggesting appropriate behaviors where human activities interact with the geosphere, is dialectically linked to the complex concept of Anthropocene.

The book series “Geographies of the Anthropocene” publishes online volumes, both collective volumes and monographs, which are set in the perspective of providing reflections, work materials and experimentation in the fields of research and education about the new geographies of the Anthropocene.

“Geographies of the Anthropocene” encourages proposals that address one or more themes, including case studies, but welcome all volumes related to the interdisciplinary context of the Anthropocene. Published volumes are subject to a review process (**double blind peer review**) to ensure their scientific rigor.

The volume proposals can be presented in English, Italian, French or Spanish.

The choice of digital Open Access format is coherent with the flexible structure of the series, in order to facilitate the direct accessibility and usability by both authors and readers.

DISASTERS IN POPULAR CULTURES

Giovanni Gugg - Elisabetta Dall'Ò - Domenica Borriello

Editors

Preface by Joël Candau

IL Sileno
Edizioni



“Disasters in Popular Cultures”
Giovanni Gugg, Elisabetta Dall’Ò, Domenica Borriello (Eds.)
is a multilingual volume of the Open Access and peer-reviewed series
“Geographies of the Anthropocene”,
(Il Sileno Edizioni), ISSN 2611-3171.

Languages: English, French, Italian;

www.ilsileno.it/geographiesoftheanthropocene

Cover: Engraving of a giant sitting next to Vesuvius. From: Giacomo Milesio, “Vera Relatione del miserabile, e memorabile caso successo nella falda della montagna di Somma, altrimenti detto Mons Vesuvij”, Napoli, Ottavio Beltrano, 1631.

Copyright © 2019 by Il Sileno Edizioni
Scientific and Cultural Association “Il Sileno”, C.F. 98064830783.
Via Pietro Bucci, Università della Calabria, 87036 - Rende (CS), Italy.

This work is licensed under a Creative Commons Attribution-NonCommercial-NoDerivs
3.0 Italy License.



The work, including all its parts, is protected by copyright law. The user at the time of downloading the work accepts all the conditions of the license to use the work, provided and communicated on the website

<http://creativecommons.org/licenses/by-nc-nd/3.0/it/legalcode>

ISBN 978-88-943275-3-3

Vol. 2, No. 1, April 2019

CONTENTS

Preface 8

Introduction 12

Section I

Magnitude

1. L'isola nata in mezzo al mare. Mitopoiesi, disastri e microcosmi
Ugo Vuoso 22
2. The Papua New Guinea Liquefied Natural Gas Project and the moral decay of the universe
Michael Main 40
3. Pozzuoli, 2 marzo 1970: lo sgombero del rione Terra nella memoria dei puteolani
Maria Laura Longo 58

Section II

Eruptions

4. Il vulcano meraviglioso. Antropologia del racconto fantastico vesuviano
Giovanni Gugg 77
5. Les Volcans des Virunga à l'Est de la République Démocratique du Congo, une perception populaire: un mythe ou une réalité ?
Patrick Habakaramo, Gracia Mutalegwa, Justin Kahuranyi, Katcho Karume 102
6. *Ka wahine 'ai honua*, la donna che divora la terra: un'analisi eco-antropologica del mito di Pele
Emanuela Borgnino 118
7. The Veil of Saint Agatha in Popular Narratives of Etna Risk
Salvatore Cannizzaro, Gian Luigi Corinto 136

Section III

Conspiracies

8. Les théories du complot : entre croyances, légendes et menaces sociales
Christine Bonardi 160
9. Une esthétique de l'impensable. Miettes pour une anthropologie généralisée du conte vraisemblable
Charlie Galibert 176

Section IV

Impacts

10. I draghi delle Alpi. Cambiamenti climatici, Antropocene e immaginari di ghiaccio
Elisabetta Dall'Ò 197
11. Drought in folklores of India: Mapping the change and continuity in traditional knowledge through orality
Amit Kumar Srivastava 223
12. Unnatural Disasters and the Anthropocene: lessons learnt from anthropological and historical perspectives in Latin America
Virginia García-Acosta 237

The Authors 249

11. Drought in folklores of India: Mapping the change and continuity in traditional knowledge through orality

Amit Kumar Srivastava¹

Abstract

With one of the oldest traditional societies, India has a rich heritage of traditional knowledge passed on between generations through folklore and orality. This orality is often constructed around the agrarian life containing nature's events, daily life problems and extraordinary climatic observations by the people. This study is focused on the perspectives on drought and water scarcity as described in folklore in different parts of India.

Keywords: Drought, Traditional Ecological Knowledge, Folklore, Indian Orality, Disaster

1. Introduction

Natural disasters have always been challenging occurrence to human civilization. These extreme events have lasting impact on the society, particularly the drought as it affects the basic requirements for life such as water, food and fodder. Disasters are defined by their impact on society and environment. Disasters are social phenomena that occur when a community suffers exceptional levels of disruption and loss due to natural processes or technological accidents (Smith and Petley, 2009).

The historical context of disasters is important to study the local and social response to it. These responses are also responsible for the survival and progress of human society. Therefore, inter-generational transfer of knowledge plays important role in the progress of human civilization. Before recording techniques came in to practice, oral traditions were the main source of knowledge transfer. Orality, especially proverbs and folklore are some of the main vehicles of inter-generational transfer of traditional knowledge. This is, in turn compiled through observations of recurring

¹ Office of Registrar General & Census Commissioner of India, Ministry of Home Affairs, Govt of India, e-mail: *amit.sri@gov.in*, *amiitk@gmail.com*.

events or even historical events and transferred in form of stories. Indigenous knowledge is acquired through direct experience, constituting an integral part of culture (Leclerc *et al.*, 2013).

Indigenous knowledge and local traditions that conveyed through orality are found in every community around the world. It is often expressed as folklores, folksongs and the cultural customs. Traditional belief and practices serve as potential resources that help strengthen the resilience of the traditional communities to disasters (Paulraj and Andharia, 2015).

Folklores regarding drought conditions and famines can be found in almost all ancient societies. Aztec folklores too have climate related folk tale about 'one rabbit' corresponding to the situation of extreme drought condition.

The tree-ring data from Mexico validate the occurrence and timing of drought years described in these folk tradition (Therrell, Stahle, and Soto, 2004). Japanese folk traditions too have predictive folk tales referring to the occurrence of drought. As studied by (Bender, 2013), if "Yu-Bird" is seen by people, it is an omen of a great drought throughout the world."

African folklores on drought are also predictive and explanatory. Adeleke (2013) has narrated an African story, depicting rain and drought as person. Among *Pedi*, a South African tribe, it is believed that a drought in a village might be caused by the conflicts amongst the residents in the village (Semenya, 2013).

2. Disaster and Indian Oral Traditions

Indian oral tradition includes epics like Vedas to localized proverbs and folklore. Every aspect of the culture has imprints of these traditions. Owing to influence of Sanskrit on Indian languages, many oral traditions and cultural practices are Pan-Indian due to interactive and dynamic social system that exchanges and interacts. For instance, some sayings in Kashmir and Kannada have been found to have similarities. A proverb, a riddle, a joke, a story, a remedy, or a recipe circulates every time it is told. These oral traditions cross linguistic boundaries any time a bilingual tells it or hears it (Ramanujan, 1999). Due to the linguistic root and spiritual similarity, identical oral traditions are found across India with roots in Hindu epics and cultural practices.

Even a layman in India uses complex philosophical terms like Karma with ease. Proverbs, local terms and folklore are intricately woven into traditional religious believes, sometimes considered taboo. But these oral

traditions such as proverbs, local terms and folklore play pivotal role in conserving natural resources. As observed by Ray, Ramachandra and Chandran (2010), throughout India, local indigenous communities from immemorial time understood the importance of sacred groves for livelihood and nature's conservation. This understanding was based on numerous local customs, folklore, social and religious taboos.

Due to its geographical positioning and population base, India experiences tremendous amount of environmental problems and natural hazards. However, religion is a potential resource for raising people's consciousness about these problems (Narayanan, 2001). Rituals, proverbs and other oral traditions are the treasures of indigenous knowledge and communication. Examples of indigenous knowledge of climate change and disaster prediction has helped tribal communities cope with drought and flood situations in Rajasthan (Paulraj and Andharia, 2015).

The dynamic nature of folklore and the diversity present in India could make such exploratory studies highly promising and rewarding (Handoo, 1996). Along with the existing modern approach towards disaster management, the oral traditions can provide valuable local traditional information. Gupta and Singh (2011) have suggested systematic integration of cultural heritage and traditional technology, skills and local knowledge systems within the environment and development as effective means of reducing the impact of disasters as central needs for developing countries like India.

In drought prone areas like Bundelkhand region of Uttar Pradesh, Hindu spirituality has become part of the coping strategy for the farmers. In this region, most of the farmers conduct traditional prayers by reciting the holy *Ram Charit-Manas* and perform *Yagnya*. Farmers of Bundelkhand strongly believe that after reciting *Ram Charit-Manas* there will be rain (Sankhala *et al.*, 2016).

The historical account of Indian society explains the spiritual origin of social response towards natural calamities (Vatsyayan, 1992, Junghare, 2017). History has shown that India and its cultural tradition survived in the face of constant invasions by people or machines, natural disasters, drought, famine, and tsunamis. (Junghare, 2017) In this study on India's diversity, Junghare (2017) has credited resilience of society to the accommodative nature of Indian spirituality which entails acceptance of people irrespective of race, gender and ethnicity. The resilience of Indian society is deeply rooted in spirituality. History has shown that India and its cultural traditions survived to constant invasions by people or machines and natural disasters (Junghare, 2017).

Vatsyayan (1992) has studied the importance of ecology in Indian mythological literature and traditional literature. In context of water and its scarcity, the story of the Ganga River descending on earth has been told in Indian folklores. Prevailing drought conditions made *Bhagiratha* to undertake great austerities to bring the heavenly Ganga to earth. He was sorely in need of water to appease and gratify the ashes and souls of his deceased forefathers who had perished in a similar natural catastrophe of drought (Vatsyayan, 1992). Story of *Bhagiratha* could be found in almost every Indian language, including the folklores and proverb. Hindi proverb, '*Bhagirath Prayas*' (Efforts of Bhagirath) originated from the same story, and it is used to explain the great deal of effort for a greater purpose. This popular Hindi term Bhagirath prayas describes valiant efforts or difficult achievements of a person (Jain, Agarwal and Singh, 2007).

In continuation of ancient India's oral tradition, some communities in Afghanistan practice the water and rain related prophesies. Among 'pagan Kalasha' people who live on the border east of Afghanistan, the rainbow is regarded as the bow (Indradyumna; Indron) of the great warrior and rain god Indra (Witzel, 2015).

In context of creating framework for disaster management, indigenous knowledge can play vital role in facilitating disaster risk reduction (Pareek and Trivedi, 2011). As drought brings in the period of scarcity and stress for agriculture, natural resources and availability of food decrease, the role of indigenous knowledge becomes more crucial. This inter-generational knowledge tradition is based up on local cumulative experience (Leclerc *et al.*, 2013, Paulraj and Andharia 2015). Farming-related proverbs play very important role in transferring agriculture technological knowledge. Most of these proverbs are transmitted through speech and certain families are specialized in agricultural proverbs (Singh and Dorjey, 2004). These families belong to the cultivator communities, village head or the teachers' family.

India's culture is rich with folk traditions, each with a long history, and many of these traditions continue to thrive and proliferate. *Vedas* and *Panchatantra* are the largest oral traditions that are known world-wide. Many other oral traditions with origins in India can be found in Africa, Europe and throughout Asia (Claus and Korom, 1991).

3. History of Droughts and Famines in India

Despite its vast natural resources, droughts in India have been a recurring phenomenon since pre-historic time. Droughts have not only disrupted the local communities but have also caused highest mortality. Right from the earliest oral traditions like *Veda* and *Panchatantra* to folklore and folksongs of most recent origin, all have included detailed explanation of environmental disasters like drought. Seasonal proverbs widespread across the country are based upon the Hindu calendar and show an underlying uniformity.

Folklores have been source of record for drought and famines that have occurred in India for centuries (Das, 2005). Farmers' experiences accumulated into knowledge are preserved in the form of folklores and folk songs intermingled in their socio-cultural set-up (Tripathi and Singh, 2013).

Earliest historical records have cited several famines causing mass mortality. Year 1709 saw a widespread famine in India. Again, in 1768–71, northern and eastern India experienced droughts which resulted in high mortality, counting up to 10 million people (Grove, 2007). Later in the 19th and 20th centuries, the northern part of India faced several famines. Stories about colonial exploitations by British raj are found in local orality. Naithani (2001) narrates one of those stories in form of a rumour.

Documentation and studies in early nineteenth century help in systematic understanding of Indian oral traditions. Christian (1891), Rouse (1895), Crooke (1896) and Mitra (1897) did pioneering work in documenting the oral and ceremonial tradition related to rain, agriculture and society. These studies are instrumental in understanding the change and continuity of oral tradition pertaining to agricultural drought and water stress situation in an agrarian society.

Some of the studies also found the demon of drought and losing importance of Indra as God of rain. Crooke (1896) mentions Vritra or Ahi the demon who caused the drought. The old weather god was Indra, who wars with Vritra or Ahi, the dragon demon of drought; whom he compels to dispense the rain. Indra lost his prominence in due course of time and he has been replaced by a special rain god, Dalbhyeswara (Crooke, 1896). However, in many local folktales and folksongs, Indra continued to be the God of rains.

Indian orality related to agriculture, rains and natural calamity is based on observations by several generations. This historical context of Indian orality has a causative effect on folklores, folksongs, proverbs and saying. These traditional environmental knowledge systems are important tools for

environmental conservation and disaster management. In an important way, indigenous knowledge serves to empower local communities by valuing local knowledge (Briggs, 2005). An informal classification of these oral traditions can be done to understand the different phases of drought.

4. Predictive Folklores and Proverbs

Prediction of a multi-dimensional hazard like drought is very important for coping mechanism. Folklores from Rajasthan, where drought is very frequent, include the prediction based on weather, animal behaviour, vegetation, colour of clouds. These predictions support the early warnings issued by the elders to enable the community to cope with the anticipated natural hazard (Pareek and Trivedi, 2011).

Verities of practices are adapted at community level to predict onset of a natural disaster. The *Konyak* community of Nagaland uses chicken and an egg for making predictions of natural disasters, harvest results, rains etc. (Paulraj and Andharia, 2015). In General, Indian folktales and proverbs related to prediction of agricultural drought are based on the observations of weather event during month or *Nakshatra* (fortnight) based on Hindu calendar.

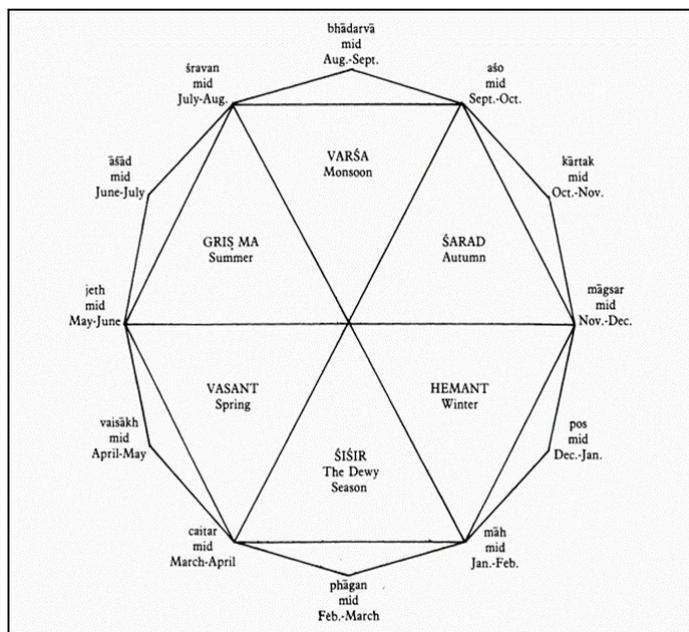


Figure 1 - Months and the seasons according to the Hindu Calendar. Adopted from Doctor, (1986).

A study on Gujarati sayings by Doctor (1986) classifies agriculture related proverbs as predictive sayings. Predictive sayings within the framework of Hindu calendar are primarily of two types: weather and astrological (Doctor, 1986). Among these sayings, he found that drought and the misery it brings about receives less mention. This might be because people find it a taboo describing the terrible situations caused by drought.

As illustrated in Figure 1, Hindu calendar and corresponding seasons are basis of predictive orality in every part of India. Proverbs, folksongs contain many observations based on this calendar.

Drought-related sayings composed by the poet, Ghagh are very popular among agricultural communities of north India, specially the Gangetic plains. Predictive proverbs from Bihar are also based on the observation of weather according to Hindu months. For example:

*Sawan Sukla saptami, udai jo dekhe bhan,
Turn jao piya Malwa, ham jaibo Multan.*

[When seventh day of Lunar month of Shrawan (second month of monsoon), cloudless morning is observed, it is a sure sign of upcoming drought. My dear, you go to Malwa, I am going to Multan (let us leave the country)!] (Christian, 1891).

This saying from Bihar was recorded by John Christian (1891). It is a modified proverb from Ghagh's work and added the seasonal migration part as consequence of drought.

Marathi proverbs and sayings also based on the Hindu calendar and climatic observations.

Falavani ale ani talavani gheuna gele

[Falva came and washed away the tank-water] (Manwaring, 1899). When it rains before the beginning of the monsoon season, it takes away even remaining water from the pond.

Na padatila chitra tara bhfta milena pitra

[If the Chitra rain does not fall, there will be no rice for ancestors] (Manwaring, 1899).

Na lagati magha tara varati bagha

[If the Magha rains don't fall, look up. Without its rain the farmer may sit and stare into space.]

Purva Main Mat Ropa Bhaiya. Ak Dhan Atharah Paiya.

[Paddy transplantation should not during Purva constellation. If it is done during this period, there won't be enough yields and most of the crop would be wasted].

5. Drought impact proverbs and folklore

Studies by Singh and Dorjey (2004), Tripathi and Singh (2013) have highlighted the significance of Ghagh's sayings in shaping up agricultural knowledge, perception and anticipation of farmers for weather phenomenon.

A proverb from Bihar explains the stress on farmer during drought:

Kheti kaillnjlye la, bail bikaile biye la.

[I took to husbandry to gain a livelihood, but the bullocks were sold for seed!].

This proverb is said when one exhausts his livelihood means in gaining an end, a misfortune which literally happens in seasons of drought (Christian, 1891).

Gujarati proverbs predictive of drought:

*Sravanna sarda, Parada, Bhadarvani heli;
jo ek varas nahi avu to raiyat bane gheli.*

['Intermittent showers in Sravan, steady rain in Bhadarvi; if these rains come one year, the people can go mad.'] (Christian, 1891).

Drought- related folklore and proverbs from Kalahandi, Odisha is studied by Mishra (2011). These oralities from Kalahandi, one of the poorest districts of Odisha, explain the understanding of drought in the context of sustenance and livelihood among the local population.

Judh bele pithir bhai, akal bele duhagai

['A brother in the battle and a milk-yielding cow in a drought are helpful.'](Mishra, 2011). This proverb highlights the importance of livestock in drought situation.

Garibar kaje akal, mahajanar kaje sukal

'Drought is a problem for the poor and an opportunity for exploitation for the money-lender' (Mishra, 2011). This proverb describes that while drought is stressful for the poor, it is an opportunity of exploitation by local money lenders during drought. The proverb underlines the importance of credit availability during drought.

A folksong from Kalahandi too highlights migration as a coping mechanism during drought.

*Dalkhaire;
desare kala akala
Ghara duara chhadi bidese ghara
Dalkhaire peta kaje harabara.*

[O leaf eater, drought occurred in the country. Sent us abroad, beyond homeland, Unrest for belly, O leaf eater.].

The saying depicts that drought has forced the residents of Kalahandi and Bolangir districts of Odisha to migrate and settle down in Raipur town of Chhattisgarh, where a slum is known as *Raipur ka Narak* (the hell of Raipur) (Mishra, 2011), highlighting the social impact of drought. This folksong narrates misery of people during drought. They are forced to eat leaf and forced to migrate. Yet, they suffer the inevitable hunger and even after migrating to nearby cities they are forced to live in slums.

Folktales from Maharashtra have highlighted hunger conditions caused by drought in several parts of the state. A collection of Maharashtra folktales by Sheorey (1973) has mentioned several stories on hunger and related social problems.

Another Telugu folktale explains how a drought caused war between kings. According to this folktale, mentioned by Pattanayak and Claus (1986), the *Katamaraju* epic in Telugu oral tradition describe the severe drought conditions. The Yadava king had migrated with his people to the fertile lands of Nellore, where situation led to a battle (Pattanayak and Claus, 1986).

6. Mitigative Folklore and Preventive Practices

In semi-arid regions of Maharashtra, where drought is quite frequent, the approach of the government found a place is orality. As this Marathi proverb says:

Dushkal he asmani nasoon, sultani aahe

[Drought does not occur due to lack of rains, but it happens due to poor governance.].

This Marathi saying highlights the role of the government in prevailing drought condition.

Preventive measures against drought are observed at community level. The local communities give utmost importance to conservation of sacred grove. It serves the purpose of vegetation conservation as well as buffer stock during the drought.

In Kannada folklore, there are many stories about drought and hunger resulting in migrations to safer places. These folklores, thus, depict both the cause and effect. An example is stated here:

'The rain god brought poverty to her parents. The drought in the kingdom forced them all to leave and wander through the land.' (Ramanujan, 1997).

The traditional societies have tried to continue the concept of sacred grove either out of fear or respect for God and ancestral spirits or due to the utilitarian values of biodiversity. Many sacred groves hold water resources in form of springs, ponds, lakes, streams, rivers. They provide a dependable source of water for organisms living in and around the sacred groves and reduce forest fires and help soil and water conservation (Panda, 2015).

Worship of rice plant during the drought is ancient practice of drought response. (Fowler-Smith, 2009). Drought mitigation strategies discussed in Athrva Veda and Arthashastra (4th Century BC) became part of folklore and form basis of coping mechanisms extant at community level today (Pareek and Trivedi, 2011).

Tree veneration helps in conserving some tree species with highest utility. The Banyan, Pipal, Neem and Tulsi are among the trees and plants that all Hindus consider sacred. Other trees are considered sacred in certain districts and during certain conditions.

The observations and experiences that gathered in oral traditions by several generations have helped the local communities in formulating resilient practices by predictive and mitigative measures. Owing to its resilient nature, Indian cultural traditions have helped survive recurring natural disasters (Junghare, 2017; Paulraj and Andharia 2015).

7. Conclusions

This study analyses the nature of Indian orality in context of various aspects of drought. These folk traditions and rituals are found to be predictive, alleviating and explanatory in nature. These traditions not only predict the drought, but also explain the reasons behind forthcoming drought based on the seasonality and the crop yield.

Panchatantra tales mentioning drought prophecies, continue to be a part of modern Indian folklore (Brown, 1919). These Indian oral stories can be found in almost every part of India. Ghagh's sayings based on seasons are found to be predictive and remedial for drought and drought like situation. As much of Indian oral traditions are linked to Hindu religious practices and rituals pertaining to nature worship, they have deep rooted spiritual links. Resilience towards drought is expressed in predictive proverbs and folklores. Diverse and accommodative nature of Indian spirituality facilitates the acceptance of people from different cultural and linguistic backgrounds.

There is speculation that tradition of orality could be declining due to urbanization. As observed by (Balbo *et al.*, 2016) urbanization led to deterioration of generalized ecological knowledge. In urban centres, agriculture related weather observation is no longer needed. People don't have to worry about agricultural production. Hence the oral traditions regarding weather and climate gradually disappear from the memory of urban life. This also caused physical and cognitive detachment of humans from the environment.

Religious conversion has negative impact on oral traditions and indigenous knowledge. Among the many traditional rituals which were practiced by the community over generations, only handful left today as the population converted to Christianity. In North-Eastern states of India, this impact is very visible. With the coming of Christianity, many of the ancient traditions were considered pagan and mystical and ceased to be practiced within the community (Paulraj and Andharia, 2015).

A better understanding of the traditional knowledge of weather and climate events is important for disaster risk reduction (Berkes, 2009, Paulraj and Andharia, 2015). There is a need to explore continuation of folklore and oral traditions in modern cultural expression. The traditional orality could be integrated with modern approach for drought management. Those oral traditions can be studied to understand peoples' perspective of disasters like droughts, should be emphasized through more intensive studies and research.

References

- Adeleke, J. (2013). How Rain Became Man 's Friend: A Story From Africa. *Australian Folklore*, 28, 1–7.
- Balbo, A. L., Gómez-Baggethun, E., Salpeteur, M., Puy, A., Biagetti, S., & Scheffran, J. (2016). Resilience of small-scale societies: a view from drylands. *Ecology and Society*, 21(2), art53. <https://doi.org/10.5751/ES-08327-210253>
- Bender, R. (2013). Auspicious omens in the reign of the last empress of Nara Japan, 749-770. *Japanese Journal of Religious Studies*, 40(1), 45–76.
- Briggs, J. (2005). The use of indigenous knowledge in development: problems and challenges. *Progress in Development Studies*, 5(2), 99–114. <https://doi.org/10.1191/1464993405ps105oa>
- Brown, W. N. (1919). The Pañcatantra in Modern Indian Folklore. *Journal of the American Oriental Society*, 39(1919), 1–54.
- Christian, J. (1891). *Behar Proverbs*. London: K. Paul, Trench, Trübner & Co., Ltd.
- Claus, P. J., & Korom, F. J. (1991). *Folklorists and Indian Folklore*. Udupi, India: Regional Resources Centre for Folk Performing Arts.
- Crooke, W. (1896). *The Popular Religion and Folk-lore of Northern India*. London: Archibald Constable & Co.
- Das, H. P. (2005). Agricultural drought mitigation and management of sustained agricultural development in India. *Natural Disasters and Extreme Events in Agriculture: Impacts and Mitigation*, 277–303. https://doi.org/10.1007/3-540-28307-2_16
- Doctor, R. (1986). Predictive Sayings in Gujerati. *Folklore*, 97(1), 41–55.
- Fowler-Smith, L. (2009). Hindu tree veneration as a mode of environmental encounter. *Leonardo*, 42(1), 43–51. <https://doi.org/10.1162/leon.2009.42.1.43>
- Grove, R. H. (2007). The Great El Niño of 1789-93 and its global

consequences: Reconstructing an extreme climate event in world environmental history. *Medieval History Journal*. <https://doi.org/10.1177/097194580701000203>

Gupta, A. K., & Singh, A. (2011). Traditional intellect in disaster risk mitigation: Indian Outlook-Rajasthan and Bundelkhand Icons. *Indian Journal of Traditional Knowledge*.

Handoo, J. (1996). Folklorismus: indian folklore and mass culture. *ELO: Estudos de Literatura Oral*, 2(1996), 136–141.

Jain, S. K., Agarwal, P. K., & Singh, V. P. (2007). River Basins of India BT - Hydrology and Water Resources of India. In S. K. Jain, P. K. Agarwal, & V. P. Singh (Eds.) (pp. 297–331). Dordrecht: Springer Netherlands. https://doi.org/10.1007/1-4020-5180-8_7

Junghare, I. Y. (2017). Diversity for Peace: India's Cultural Spirituality. *Journal of Cultural and Religious Studies*, 5(1), 1–16. <https://doi.org/10.17265/2328-2177/2017.01.001>

Leclerc, C., Mwongera, C., Camberlin, P., & Boyard-Micheau, J. (2013). Indigenous Past Climate Knowledge as Cultural Built-in Object and Its Accuracy. *Ecology and Society*, 18(4). Retrieved from <https://www.jstor.org/stable/26269400>

Manwaring, A. (1899). *Marathi Proverbs*. Oxford: The Clarendon Press.

Mishra, M. K. (2011). *Kalahandi drought lore*. Retrieved from <http://www.crbom.org/public/1534992275-SPS43-Kalahandi.pdf>

Mitra, S. C. (1897). On the Har Paraurī , or the Behāri Women's Ceremony for Producing Rain. *The Journal of the Royal Asiatic Society of Great Britain and Ireland*, (Jul. 1897), 471–484.

Naithani, S. (2001). An axis jump: British colonialism in the oral folk narratives of nineteenth-century India. *Folklore*, 112(2), 183–188. <https://doi.org/10.1080/00155870120082227>

Narayanan, V. (2001). Water, Wood, and Wisdom: Ecological Perspectives from the Hindu Traditions. *Daedalus*, 4(130), 179–206.

Panda, S. S. (2015). Tribal Cosmology and Conservation Ethics Shilpi Smita Panda. *Lokaratna*, VIII, 29–39. Retrieved from <https://indianfolklore.org/journals/index.php/Lok>

Pareek, A., & Trivedi, P. C. (2011). Cultural values and indigenous knowledge of climate change and disaster prediction in Rajasthan, India. *Indian Journal of Traditional Knowledge*, 10(1), 183–189. https://doi.org/DOI_unavailable

Pattanayak, D. P., & Claus, P. J. (Eds.). (1986). *Indian Folklore* (Vol. 1). Central Institute of Indian Languages.

Paulraj, J., & Angharia, J. (2015). Resilience of Indigenous Peoples To

Disasters: an Exploration of Practices of Konyak Community, Nagaland. *European Scientific Journal*, 11(10), 147–160.

Ramanujan, A. K. (1997). *A Flowering Tree and Other Oral Tales from India*. Berkeley London: University of California Press. Retrieved from <http://ark.cdlib.org/ark:/13030/ft067n99wt/>

Ramanujan, A. K. (1999). Who Needs Folklore?: The Relevance of Oral Traditions to South Asian Studies. *Manushi*, 69, 2–16.

Rouse, W. H. D. (1895). Folklore Items from North Indian Notes and Queries, Vol. IV. *Folklore*, IV(4), 407–411.

Sankhala, G., Singh, M., Kant, K., & Prasad, K. (2016). Drought coping strategies followed by dairy farmers in Bundelkhand region of Uttar Pradesh. *Indian Journal of Animal Sciences*, 86(10), 1181–1186.

Semenya, D. K. (2013). The making and prevention of rain amongst the Pedi tribe of South Africa: A pastoral response. *HTS Teologiese Studies / Theological Studies*, 69(1), 1–5. <https://doi.org/10.4102/hts.v69i1.1175>

Sheorey, I. (Ed.). (1973). *Folk Tales of Maharashtra*. New Delhi: Sterling Publishers Pvt Ltd.

Singh, R. K., & Dorjey, A. (2004). Farming proverbs : analysis of their dynamics and farmers ' knowledge. *Indian Journal of Traditional Knowledge*, 3(July), 276–286.

Smith, K., & Petley, D. N. (2009). *Environmental Hazards: Assessing Risk and Reducing Disaster*. Routledge (Fifth). New York: Routledge. <https://doi.org/10.1177/095968369200200221>

Therrell, M. D., Stahle, D. W., & Soto, R. A. (2004). Aztec Drought and the “Curse of One Rabbit.” *American Meteorological Society*, (September), 1263–1272. <https://doi.org/10.1175/BAMS-85-9-1263>

Tripathi, A., & Singh, G. S. (2013). Perception, anticipation and responses of people to changing climate in the gangetic plain of India. *Current Science*, 105(12), 1673–1684.

Vatsyayan, K. (1992). Ecology and Indian Myth. *India International Centre Quarterly*, 19(1/2), 156–180.

Witzel, M. (2015). Water in Mythology. *Daedalus*, 144(3), 18–26. https://doi.org/10.1162/daed_a_00338.

Generations pass on to each other a specific selection of memories, which is a “memory of the lived experience”. Through that narrative, the story of the present is measured day by day with forms of existential precariousness, in a vision of risk which is conceived as a perennial societal state. By investigating popular and oral literature, focus on narratives related to risk and disasters, as described in the social imaginary, from the most remote eras to the most stringent current affairs, this book is a precious element for a comprehensive reconstruction of cultural resources have allowed to face and manage material and spiritual concerns and problems arising from disasters.

PEER-REVIEWED
SERIES

Giovanni Gugg, PhD, is adjunct professor of Urban Anthropology at the department of Engineering of the University of Naples “Federico II” (Italy). His research focuses on Anthropology of Risk and Anthropology of Landscape: his studies concern the relationship between human communities and their environment, especially when there are territories at risk. He is member of LAPCOS (Laboratoire d’Anthropologie et Psychologie Cognitives et Sociales, University of Nice, France) and he teaches in some Erasmus Mundus+ masters.

Elisabetta Dall’Ò, PhD, is a Post Doctoral Research Fellow in Social and Cultural Anthropology at the department of Cultures, Politics and Society (CPS) of the University of Turin, Italy. She is conducting an eco-historical and ethnographic research on the perceptions, representations and socio-cultural effects of climate change in the Alps. Her academic interests focus on Environmental Anthropology and Anthropology of Disasters. She is a founding member of ANPIA, the National Professional Association for Italian Anthropology.

Domenica Borriello is a contract professor of Demo-ethno-anthropological Disciplines at Department of Letters and Cultural Heritage (Dilbec) - University of Campania “Luigi Vanvitelli” - Italy. She deals with oral sources, patrimonialisation and popular religiosity, intertwining field research with the analysis of archival and iconographic documentary sources. She has collaborated with the MAM (Multimedia Anthropological Museum) and with the CRA (Interdepartmental Center for Audiovisual Research) of University of Naples Federico II. She has taught in various Anthropological and Social Health Master's degrees.