



## The Role of Oromo Indigenous Knowledge in Disaster Management and Protection: the Case of Kuttaayee in Ambo District

Terefe Mitiku\*, Waktole Hailu

College of social science and Humanities, Department of Oromo Folklore and Literature, Jimma University

Email: [terefemitiku46@yahoo.com](mailto:terefemitiku46@yahoo.com)

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### **Abstract**

This paper addresses the Role of Oromo indigenous knowledge in disaster management and protection. Oromo indigenous knowledge in disaster management and protection is essential for the sustainable disaster management and health of the natural environment and its inhabitants. It presented Oromo indigenous knowledge in disaster management and disaster prevention. Data were obtained from primary sources from key informants through interview, Focus Group Discussion (FGD) and observation and analysed qualitatively. The contribution of Oromo belief system, value, norm, custom and worldview in disaster prevention and environmental management is also discussed. The Oromo people have developed detailed interactive knowledge of the heavens, of the Earth, of the weather, of the animals, of vegetation, of the water, of the soil, of crops, of insects, and of environmental and nutritional requirements, properties and peculiarities

**Keywords:** Oromo; Disaster; Management; Prevention; Indigenous knowledge

### **1. Introduction**

Now days, environmental predicament around the world is the worry of government, NGO and scholars. The globe is suffering the destruction of species, pollution overload and resource depletion (E. Kwame Eshun 2011). Current challenges like climatic change, population change and rapid urbanization complicate the design of a sustainable living environment (Ulrike Klein and Hartmut Müller 2012). These factors are greatly affecting natural balance. According to (Vester, 2007) these problems can be minimized by holistic and sustainable approach.

Many scholars studied contribution of indigenous knowledge in Disaster management. According to (Posey, 1991) disaster management can be defined as the organization and management of resources and responsibilities for dealing with all humanitarian aspects of emergencies, in particular preparedness, response and recovery in order to lessen the impact of disaster. According to Claudia (2008) Indigenous peoples are a distinct population.

In the land on which they live and the natural resources on which they depend are inextricably linked to their identities, cultures and livelihood. Thus for Indigenous peoples, conservation of biodiversity and disaster management is not an isolated, compartmentalized concept but an integrated part of their lives.

This holds true for Oromo people. Many scholars like (Workineh, 2005; Lammessa, 2012; Kitessa, 2007) have studied the role of Oromo indigenous knowledge in environmental conservation. In line with, Lammessa (2012) stated the role of belief system in guarding natural forest. He discussed that for Oromo sacred forest is believed to have been endowed with a cosmic agent...which acts as the guarding of natural forest on behalf of waaqa. He added, the cosmic agents/ *ayyaanaare* a power responsible for sustaining waaqaa's order of nature on the earth. Thus, human attacks against culturally protected sacred place are believed to provoke retaliation from the *ayyaanaa* of the sacred places and this are said manifested in the forms of change in climate, a chain of droughts, a series of crop failures, air borne diseases, inter and intra-family and community conflict, and other natural and social affliction.

Similarly, Gemechu (1993) explains that as Oromo believe, demographic problems (infertility), environmental stresses (whirl-wind), economic problems (crop and livestock failures) usually emanate from human violations of the natural order, especially the entrenched establishments of revered natural setting. Therefore, the various types of customary ritual, observances are more adaptive strategies against all stresses. (ibid). Therefore, for forest resources conservation to succeed and its use to be sustainable, traditional management practices have to be considered at all levels of conservation efforts (Cotton, 1996 in Kitessa Hundera).

Again Workineh (2005, 2001) the Oromo people have fostered belief systems and social norms that encouraged or even enforced limits to the exploitation of biological resources. He tried to show the Oromo Eco-theology that teaches a positive relationship between God, humanity and nonhuman creation. He stated that Oromo eco-theology is mainly concerned with the nature of God, spirits, beliefs and the relationship between God and humans, and between humans and the natural environment. In addition Oromo indigenous knowledge is studied by many Oromo and non-Oromo Scholars.

Likewise, Geremew (2012) explore and describe the role of Oromo customary institutions in forest management among the Andode Dicho area. Gemechu (2005) explored Oromo world view and environmental ethics. In addition the works of (Kassam, and Garnatchu 1994; Kitessa, 2007; Bartels, 1990; De salvia, 1901 and Aneesa, 2002) touched about Oromo environmental Philosophy directly or indirectly. Desalegn (2013) investigated the indigenous knowledge of Oromo on Conservation of forests and its implications to curriculum development with particular reference to the Guji Oromo. In the above mentioned works the writers focused on the Oromo indigenous knowledge regarding environmental sustainability and the role Oromo worldview in forest and ecology conservation. Despite wide existence literatures on environmental and forest conservation, there are little literatures on Oromo Indigenous knowledge in disaster management and preservation. Therefore, this paper focused on the role of Oromo Indigenous knowledge in disaster management and preservation particularly by focusing on Kuttaayee Oromo in Ambo district.

## **2. Literature Review**

### **2.1. Indigenous Knowledge and Disaster Management**

Environment protection can play crucial role in disaster management. Many scholars agree that disasters have sometimes been a result of human interaction with nature, technology and other living entities. Sometimes unpredictable and sudden, sometimes slow and lingering, various types of disasters continually affect the way in which we live our daily lives. Human beings as innovative creatures have sought new ways in which to curb the devastating effects of disasters (Dewald van Niekerk 2011).

Many African peoples envision a kinship relationship between themselves and the natural world. They have developed an organic conception of nature that promotes an ecological interdependency among human, plant and animal life. For example the Oromo, the largest ethnic group in Ethiopia, believes that *Waaqaa* (god), *lafa* (earth), and all other creations are interconnected. *Safuu* governs the use of natural resources. They (Oromo) developed judicious use and conservation of the natural resources of their area (Jay L. Garfield et al 2011).

The knowledge and traditional practices of indigenous people have a vital role in environmental management and development. In addition it is the bases of community coping practices that have helped various communities survive natural calamities over centuries. For the Oromo, management of natural resources has dynamic relationship. In their worldview, land had created not bare, but with other constituents of natural resources, including forest and water. Hence, in the Oromo wisdom, the practice of land conservation is dynamic, which include conservation of forest and water. *Waaqaa* gave the laws of order and harmonious co-existence between, human beings and the natural environment. The Oromo use four concepts to explain the organization and interconnection of human, spiritual, and physical world. These four concepts are *Ayyaana* (spirit), *Uumaa* (creator), *Uumama* (nature), and *Safuu* (moral and ethical order) (Melaku 2016; Gemetchu, 2005 and Workineh 2001).

## 2.2. Causes of Disaster

A disaster is a situation in which the community is incapable of coping. It is a natural or human-caused event which causes intense negative impacts on people, goods, services and/or the environment, exceeding the affected community's capability to respond; therefore the community seeks the assistance of government and international agencies (Fichtl, R., & Admasu, 1994).

According to Dewald V. N (2011) and Usman et al (2013) hazards can be single, sequential or combined in their origins or effects. Some hazards may have a natural or human-induced origin. Hydro-meteorological hazards, Geological hazards, Biological hazards gradation of the environment concerns processes induced by human behavior and activities (sometimes combined with natural hazards) that damage the natural resource base or adversely alter natural processes or ecosystems. Potential effects are varied and may contribute to an increase in vulnerability and the frequency and intensity of natural hazards. Some examples of these processes are: Land degradation; Deforestation; Desertification; Veld fires; Loss of biodiversity; Land, water and air pollution; Technological hazards represent danger originating from technological or industrial accidents, dangerous procedures, infrastructure failures or certain human activities.

Natural disasters occur in proximity to, and pose a threat to, people, structures or economic assets. They are caused by biological, geological, seismic, hydrologic, meteorological conditions or processes in the natural environment (e.g., cyclones, earthquakes, tsunamis, floods, landslides, and volcanic eruptions (Ehrenreich J H 2001). Cyclones develop when a warm ocean gives rise to hot air, which in turn creates convectional air currents. Cyclones occur when these conventional air currents are being displaced. The term hurricane/typhoon is a regionally specific name for a "tropical cyclone". In Asia they are called 'typhoons'; in the Indian and Pacific Oceans they are called 'cyclones'; and over the North Atlantic and Caribbean Basin, they are called 'hurricanes' ([http://www.cuso.org/\\_file](http://www.cuso.org/_file)).

According to Garner (1999) disasters or emergency situations of which the principal, direct causes are identifiable human actions, deliberate or otherwise. Apart from “technological disasters” this mainly involves situations in which civilian populations suffer casualties, losses of property, basic services and means of livelihood as a result of war, civil strife or other conflicts, or policy implementation. In many cases, people are forced to leave their homes, giving rise to congregations of refugees or externally and/or internally displaced persons as a result of civil strife, an airplane crash, a major fire, oil spill, epidemic, terrorism, etc.

### **2.3. Disaster Management and Risk Reduction**

Disaster management and disaster risk reduction refers to the ability of people, organization and systems, using available skills and resources, to face and manage adverse conditions such as hazards, emergencies or disasters. Coping capacities contribute to the reduction of disaster risks (UNISDR, 2009).

In other hand disaster risk reduction is defined as the concept and practice of reducing disaster risks through systematic efforts to analyze and manage the causal factors of disasters, including through reduced exposure to hazards, lessened vulnerability of people and property, wise management of land and the environment, and improved preparedness for adverse effects. It includes application of many different types of scientific, technical, and other skilled abilities are essential features of disaster risk reduction (Dewald V N 2011). Among the many technique and skills indigenous environment protection system play significant role.

The course of disaster management is a cyclical process; the end of one phase is the beginning of another. Although, one phase of the cycle does not necessarily has to be completed in order for the next to take place. Often several phases are taking place concurrently. Timely decision making during each phase results in greater preparedness, better warnings, reduced vulnerability and/or the prevention of future disasters. The complete disaster management cycle includes the shaping of public policies and plans that either addresses the causes of disasters or mitigates their effects on people, property, and infrastructure(Otieno, K. 2006).

According to Nocera, A. and Garner, A (1999) the mitigation and preparedness phases occur as improvements are made in anticipation of an event. By embracing development, a community’s ability to mitigate and prepare for a disaster is improved. As the event unfolds, disaster managers become involved in the immediate response and long-term recovery phases.

Mitigation and reduction of disaster in cultural ways incorporate worldviews and indigenous knowledge. In Oromo culture disaster reduction starts from respecting social and cultural norms. There are many cultural practices that contribute disaster managements. For instance Lemmessa (2012) discussed regarding the Caattoo sacred forest and its contribution in balancing the ecology of the area. The Oromo believe demographic problems (infertility), environmental stresses (whirl-wind), economic problems (crop and livestock failures) usually emanate from human violations of the natural order, especially the entrenched establishments of revered natural setting. Therefore, the various types of customary ritual, observances are more adaptive strategies against all stresses.

In other hand Barters, (1983) demonstrated Oromo worldview regarding wild beast, for the Oromo beast are not simply beasts. They are not mistreated. Even if the beasts are damage their production the Oromo did not cheese wild animals to kill. This in turn helps the community to live in harmony with out catastrophe to wild beasts.

### **3. Materials And Methods**

The study followed descriptive research design. The data sources in this study were qualitative primary and secondary sources. Thus, primary qualitative data were obtained from key informants (both men and women) through interview, Focus Group Discussion (FGD) and observation. Through interview we collected from local elders and knowledgeable peoples about disaster management. Besides, people from concerned offices like culture and tourism office of the district were considered in this method to obtain valuable background information about the people.

In Focus group Discussion (FGD) we formed two groups which contains seven individual those have experience concerning topic under investigation. One of the formed groups contains farmer where the other contains expert and collect qualitative information about the subject under study. During course focus group discussion the researchers facilitated the discussion and taking notes, recording the discussion session and related activities with research guide. In addition we observed some activity and practices that Oromo performed to manage disaster. This method, enabled the researchers to understand issues and information that the other used methods failed to capture. Additionally observation/visiting enabled the researchers to capture real picture concerning the topic.

### **4. Result**

In contemporary world the value of indigenous knowledge has prompted for its use within environment and disaster management. The use of indigenous knowledge alongside scientific knowledge is gradually more supporting in disaster management. Though there is no developed framework demonstrating how the two maybe integrated to reduce community vulnerability to environmental hazards. Disaster management in both indigenous and scientific knowledge can be defined as the organization and management of resources and responsibilities for dealing with all humanitarian aspects of emergencies in order to prevent disaster or minimize the risk of disasters.

#### **4.1. Oromo Indigenous Knowledge on Disaster Management**

The Oromo have developed different mechanism of environmental managements over long period of time. These mechanisms are supported by worldviews and social norms. This is knowledge inherited from generation to generation in the form of oral tradition. In these work we categorize Oromo indigenous knowledge of disaster management in to disaster prevention and disaster Mitigation.

##### **4.1.1. Disaster Preventions**

These are knowledge's that designed to prevent the happening of disasters. In this the individuals in particular and community in general plays their own role based upon the tradition and worldview of the society. Normally the Oromo categorize the sources of disaster in to *Kan Waaqaa* (that of God) and *kan namaa* (that of human) or *kan olii* fi *Kan gadii* (vertical and horizontal causes). If the disaster is natural disaster it is supposed from super natural it is called *kan waaqaa* (that of God) and if the cause of the disaster is the interaction of people or group of people it is called *kan namaa* (that of human). Different social laws are there to prevent both natural and human cause disasters.

#### **4.1.2. Prevention of Natural Disaster**

Disasters; like rain fall, drought, flood, whirlwind, snow, over flow of rivers, are supposed natural. In some cases they are result of human action in one or other ways. The Oromo control these disasters through their cultural dealings. The prevention is supported by different ritual practices and spiritual performances.

In such cases taboos and worldviews play important role. In Oromo world view the every creature have spiritual value. Natural resource both living and non-living are protected under this taboo. In one way or other these protection of environment contribute for the well-being of the society, the environment and balance of ecosystem.

In the study area the farmers do not cut down big and old trees in their farm land. Big trees are here and there throughout the farming land. In turn the trees protect soil erosion caused by rain and wind. They make different rituals and scarifying under trees and in forest. Beside spiritual value scarifying in forest have indirect advantages. Once they become the place of ritual and sacrifices, no body cut them down for fear of the spirit. Such kind of forests are considered as sacred forest

The sacred forests are believed to have been endowed with cosmic agents who are guardians of human and nature. Thus, the one who attacks against culturally protected sacred place are believed to provoke retaliation from the agent of the sacred places and this are said manifested in the forms of change in climate, a chain of droughts, a series of crop failures, air borne diseases, inter and intra-family and community conflict, and other natural and social affliction.

For thousands of years the Oromo have survived due to their understanding of forest importance for ecology, animal and human economic facility, and systems of the management of natural resources, all of which are the products of complex processes of tradition and worldview. Therefore, for ecology conservation to succeed and its use to be sustainable, traditional management practices have to be considered at all levels of conservation efforts. But presently these traditional practices are being eroding because of several reasons.

Among the reasons urbanization, market oriented economies and other socio-economic, political and cultural changes has took the first place. Traditional institutions enforce codes to protect the forests and clearly prohibit activities which affect the natural resources such as felling trees from natural forests, commercial logging, charcoal making, timber extraction, unwise use of fire in the forest, debarking girdling, and indiscriminate under slashing. In the research area some tree considered as *Abdaarii* and *Dakkii*, which are sacred and respected, cutting, of these trees is strictly prohibited. These are tree under which different religious prayers and cultural practices are conducted during thanks giving, prays during drought, famine, disease out breaks, unexpected disasters. In ecology conservation the roles of such sacred trees are noticeable. Thus by protecting tree in particular and forest in general the Oromo protects their environment from degradation. Usually, Oromo people use different ethical code in conservation and bring in their own varying conservation codes and principles. But, in changing global thinking the experts are overlooking the fact that local communities' knowledge are playing the primary role in protection of forests and that they have the practical knowledge and skills of resource management.

## **4.1.2. Disaster Mitigation**

### **4.1.2.1. Abstaining**

Abstaining is one of Oromo disaster mitigation mechanisms. In Oromo belief system there are many taboo words and actions. If these taboos are broken they believe that Waaqa cause a damage or disaster to them and what belongs to them. According participant elders the primary taboo is fear of Waaqaa and giving respect for his creatures. Because everything has its own value and spirit. Activities like cutting infant trees, killing pregnant and infant beasts, burning grass, burning crops and domicile, disabling domestic animals, wasting water, stepping on crops or food tables are taboos among the *Kuttaayee* Oromo. One who did not respects the above things may face defy from *Waaqaa*. Sometimes the fault of single person can cause disaster to whole society. So that whole societies take equal responsibility to protect the taboo to get sustainable life and prevent the disaster. In Oromo worldview everything has safuu. The elders said fire has safuu, rain has safuu, water has safuu, grass has *safuu*, trees has *safuu*, soil has *safuu*, lightning has safuu, beast has *safuu* after all respecting these all's *safuu* give peace and prosperity for the community.

Even wild animals are not hunted and killed for of no consequence. For example, it is believed if somebody hit or kill hyena while he is on his way the group of hyena revenge by damaging or eating the properties of killer. So that, to avoid ambush of hyena people did not kill or cheese during night time without reason. If they killed unintentionally, they pay blood price for the living hyenas. The price will be aged donkey or horse with some rituals. In addition the family did not allow the children to talk about wild animals like hyena, lion, leopard and tiger while sitting fire side during night, because it is thought that the beasts have *ayyaama* (spirit) that communicate to them what people talks. This is done to abstaining children from calling beast name which may bring risk to them. These action show that the Oromo live peace fully with beast by respecting creatures. This concept is a fundamental in Oromo ecological harmony and disaster management.

## **4.2. Indigenous Farming and Hunger Alleviation Mechanisms Among the Kuttaayee**

To increase the fruit fullness of edible plants and fertility of non-edible plants they use different indigenous mechanism. Among the mechanisms burn up the farming field, using different local made organic fertilizers and shifting cultivation are popularly known. Burning includes both burning of farm field and living edible plants. The burning takes place in bounded time in a year and by endowed professionals of this system. It is believed that the plants give good products if they are burned. Burned plants produce new branches and existing branches are refreshed and also give good products. The shell and leaf growth newly and give high products. In addition to plants and trees, sometimes grassing field is burned to increase the population of grass. It believed that if the grasses are burned the roots of old grasses which are not fast growing is replaced by new and fast growing. In some cases '*citaa*' (a long grass used for tradition house roof) is also burned to refresh and increase it's the growth speed and also its population. A *citaa* which is cut from newly growing field has durability and not composite merely/simply. The farming fields are burned ones in year after the yield is harvested. The wastage of the harvest is scattered of the field and set to fire. This supposed it increases the fertility of the soil and kill the seeds of unnecessary plants in the field. The burning of all farm field, trees and grass are take place at specific time, during the end of dry season and at the beginning of wit season. The burning takes place if and only if, they are confident about the coming of rain. Unless, burning may cause damage like human and animal food shortage, damage of the plant and other environmental crisis. The burning is directed by elders and traditional rain forecaster. During burning the fire guided by elders to protect over flow of fire by unexpected wind to the place where unintended to burn. Suddenly, if the fire came out of control soil, water and wit tree leaves are used to distinguish. These firefighting materials are organized before the fire

is set. The burning is takes place to increase the productivities. This in turn helps to alleviate hunger and social crisis.

### **4.3. Indigenous Responses to Disaster**

The research participants classified the responses to reduce risk in to two (spiritual and physical) responses. The response is varied depending the nature of the disaster where it is man or nature. Some natural and manmade disasters are solved by physical responses. There are two intervention mechanisms to solve the problem or manage extent of its risk: short and long term intervention. Some man-made disasters, like fire need immediate interventions. If some one's home, property or domicile is fired, everybody has to contribute his level best to distinguish the fire or take away moveable things to reduce the risks. If somebody is poisoned and suffering to death, there are different traditional first aid. The milk is poured to the mouth of poisoned man. If the milk is unavailable at the place animal dung or soil is used instead. Animal dung or soil poured in to the mouse of the victim in the form of juice to reduce the toxic content of the poison in the body and assist the victim to vomit. In other hand the milk reduces the power of the poison while the dung and soil make the person to vomit and reduces the amount poisons in his body until milk is gained. Sometimes water is used instead.

On the other hand, it also used to stops bleeding. If somebody is injured by different causes there are different indigenous actions to be taken to block the flow of blood and to dry the wound in short period of time. To block bleeding soil, plants (leaf, root, and fruit) and human urine are the primary ingredients/components. Soil and different parts of medicinal plant rubbed together and placed on the wound. Human urine helps as alcohol to stop bleeding. The victim uses his/her own urine to control of the bleeding.

To dry the wound in short period of time the wounded should have taken the responsibility. By eating, smearing and/or drinking different animals and plants products which are processed by traditional healers. Sometimes the injury is coated or tied by healers. Insects such as ants and bees are sometimes used to heal injury. If someone is injured and the scar is refused to bleed bee and ants are allowed to bit it. The chemical or substances found on sting of bee or mandible of ants believed as it have healing power. If somebody is bitten by snake Oromo use different traditional mechanisms to dissolve its poisons. If traditional healers are available at near distance they gave medicinal plants. If there is no healers in the area the victim himself or someone with him tie the blow and above the bitten place to hinder the flow of poison to other body parts through blood tube and cut the place to bleed out the poison from his/her body. In addition different medicinal Plants and grass are used to weaken the poison of the snake.

In some cases Oromo response in spiritual for natural disasters, for example, if lightening is hit some body's home or properties and fired the people response in both physical and spiritual. Like that of manmade fire, they try to minimize the risk by escaping movable objects from the fire and add soil to it which are physical. On the other hand, they did not add/spry water to the fire. It is believed that thunder fire is friend with water. So, syringe water on it is strengthening the flame. Instead of water milk is used. If milk is poured to it, especially fresh water the flame disappears soon. In addition no body shout to get assistance, instead they say, '*Isaa bagaa*' meaning 'it is good because it is willing of '*Waaqa*' they say this to show /express their gratitude to *waaqa* and note blaming for the damage because they fear that he can cause other damage to them.

To avoid the again happening of thunder light the owner of the attacked property and his families did rituals and ignore working and borrowing different things at the date thunder happened. They did not sell, borrow give or exchange, not use metal tools and not go out of their domicile at that date. Within a two or less week they went to traditional prophet and made some rituals according to the order of



prophesy to reconcile with *Waaqa*. Crop for libation and sheep for sacrifice are collected from kin and neighbors in cash and kinds by family members. If the collected cash and kind are excesses from the ritual the family keeps with them and gives it for the one who need it for the same purpose. Unless, if they used for other purposes it believed that the same disaster occur to them.

These kinds of response have double side advantages. In one hand, it is believed that it is a management of disasters after it is occurred, re-building of the psychology of the family. In other hand it is the mechanism of reconciling the family to *Waaqa* and avoiding the again happenings of the accident.

Different animals, plants and human epidemic diseases are handled, prevented and managed in different ways in Oromo culture. The majority of Oromo are farmers and pastoralist. So they use different spiritual and physical mechanisms to prevent their animals, plants, families and themselves from natural and human made diseases. Preventing has the first place, because they believe, "*dhukkubsataa wal'aanuu irra fayyaa kununsuu wayya*" meaning taking care while healthy is productive rather than healing after infected. To protect man-made animal diseases like, disabling, paralyzing and blinding are prevented by taking care and directing the animals at right grassing field and not hitting/treating inappropriate place, like nerve system .

The Oromo protect their animals from natural disease by different mechanisms. The animals are not taken to grassing field by earl morning. They should have to stay in kraal until the dew is fall, down and before releasing the animals Oromo take smoke to kraal and all animas smell the smoke. It is believed that the smoke protects the animals from evil spirit. After the dew is fall down, the adult men take the animals to grassing field and check whether all are healthy and able to consume grass.

#### **4.4. Interlink of Oromo Worldview and Natural Disaster Prevention and Management**

In Oromo worldview natural disasters are the consequence of human behavior. It is believed that it will happen if human behave badly or if *safuu waaqa* (moral/creature law) is disobeyed. Natural disasters are believed that it is punishments for human misbehave. So they respond for natural disasters spiritually by praying, sacrificing, libation, revealing one's own mistakes to *Waaqa (God)*, revealing hidden truth and paying blood price for shaded blood. By doing these, Oromo negotiated to their creature and save the self and their environments from disaster. The Oromo celebrate different rituals for insuring of peace and prosperity. These rituals have their own setting. If they are done at right time the life people become smooth. Otherwise life turns into disorder and full of misfortunes. If drought persist for long time, speedy winds, lightening thunder, irregular heavy rain and ice happens continuously, animals and human suffered from untreatable diseases; sun, moon, stars and rainbow are visited at irregular positions and shown unobserved characteristics, domicile spirits are cry the people come together and pray, make libation, sacrifice and search for solution.

### **5. Discussion**

The use of indigenous knowledge alongside scientific knowledge is increasingly advocated but there is as yet no clearly developed framework demonstrating how the two may be integrated to reduce community vulnerability to environmental hazards. People like Jessica Mercer, and Ilan Kelman (2009) argue that growing awareness of the value of indigenous knowledge has prompted calls for its use within disaster risk reduction. Indigenous populations have adjusted their livelihood strategies to adapt to gradual change for centuries, but new global pressures have significantly changed people's social, economic, political and environmental contexts (Dekens, 2007). The capacity of indigenous people, such as Oromo, to survive environmental hazards is evidence of the applicability of indigenous knowledge. In order to

engage indigenous knowledge productively in development, Agrawal (1995) argues that there is a need to move beyond the dichotomy of indigenous versus scientific and work towards building bridges across the indigenous and scientific divide. This requires parity and integration between traditional and scientific knowledge systems, demanding a mutual understanding of the cultural, material and epistemological basis of each (Agrawal, 1995). Currently in different parts of world applicability of indigenous knowledge within disaster risk reduction is increasingly being recognised.

The data gathered from field confirm the arguments of Social science scholars like Warren, 1991; Tekwa and Belel, 2009 and Morris, 2005). Indigenous knowledge is the local knowledge that is unique to a given culture or society. It is the basis for local-level decision making in agriculture, health care, food preparation, education, natural-resource management, and a host of other activities in rural communities. Indigenous *knowledge* is now considered to be cultural knowledge in its broadest sense, including all of the social, political, economic and spiritual aspects of a local way of life. Spiritual beliefs about nature may influence how resources are managed and how willing people are to adopt new resource management strategies.

The integration of traditional knowledge systems in disaster management was reported in a research conducted in different area. Aneesa and Gemetchu (1994) explored the Borana environmental law and methods of conservation. Their finding depict that the Borona know that over grazing, over cultivation and deforestation leads to soil erosion and desertification (addaala). The Borana recognize that forested zone attract rain clouds and that they play an important role in the cooling of the environment. They know that when the trees are cut down and these woods zones destroyed, climatic change and overheating of the atmosphere occur. This research also showed indigenous knowledge of Kuttaayee Oromo developed over generation regarding mitigation and management of disaster. This Indigenous Knowledge has been practiced in communities over time. There different mechanisms on how Indigenous Knowledge has been effective in the protection of the lives and properties of people and communities. They have developed their coping mechanisms over time, which is reflected in the form of Indigenous Knowledge.

## **6. Conclusion**

Indigenous Oromo ecological protection, management and deployment of resources are integrated into their traditional life (religion, politics and culture). Their environmental consciousness primarily stems from their efforts to struggle with their practical, immediate, and pressing problems which arise in everyday living. Also, their cultural practices and beliefs contribute to the development of their consciousness. They have been improving their environmental consciousness in response to new ideas and environmental hazards over time. This view is reinforced by the fact that indigenous knowledge is dynamic and in a process of change Oromo preserve and nurture the already existing knowledge and create new knowledge and culture. The level of individuals' environmental consciousness has considerably influenced environmental protection. The people also employ effective management systems in order to minimise resource depletion. Farmers and pastoralists environmental management involves the use of improved pest- and drought-resistant crop varieties over other crops, planting of fast growing trees, diversification of farming strategies, seasonal use of water and grazing-lands and agro forestry. Accordingly, they know what grows where, under what conditions and what is needed to improve it. Thus, Oromo's environmental consciousness, protection, management and use are interconnected with each other.

On the other hand, Oromo worldview is environmentally friend, and encourages a positive relationship with the environment. Creator and creatures are united in various ways. For the Oromo natural resources are not only a resource for man's utilitarian. It needs care, because it has been given to

them by their ancestors, and has its own value given to it by *Waaqa*. Accordingly, the present generation is obliged to preserve it and hand it over to future generations. The Oromo, thus, believe that the natural environment and human beings are correlated. The rationale behind Oromo traditional religion has an important message for modern environmental ethicists.

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