

**Natural Resource Management and Conservation Practice with
Particular Emphasis on Community- Based Watershed
Management: The Case of Alekit River in Farta Woreda, South
Gondar**

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Abstract

The very purpose of this paper is to deal with the natural resource management and conservation practices in giving emphasis on community- based water shed management at Alekit River there in south Gondar. It is a common truth that Natural resources are exploited and consumed by living things for their survival though the utilization mechanisms may vary from one to another. Resources management and conservation practices system and community participation as well yet not developed to minimize damages appear. To this regard there are a lot of arguments that discussed about poor utilization and misusing of natural resources with beneficiaries that require solutions at present time. Related to this unless applying adequate and methodical ways in managing the misuse of such natural resources and practicing un healthy conservation practices a lot of damage and disastrous situation will be resulted. Hence to find out certain suggestive solutions this research based, at conversing on a following issues, analyzing the existing natural resource management and conservation practices. Examining the level; and status of awareness creation task to this regard, and as what has been done up to now to improve the prevailed practices. In doing this study the student researcher employed the qualitative data collective strategy. Further in addressing the above mentioned objectives, both primary and secondary sources of data collection techniques have been used to conduct the research. On other hand the result of this research believed to provide researchers various ideas as an input for further study on the same subject matter. Above all the research may give a good insight to identify the opportunities and challenges in line with the issue of Natural research management and conservation practice in the study area.

Keywords: Natural Resource Management, Watershed Management, Conservation Practice

1. Introduction

Natural resources are resources which are utilized and exploited by living things for their existence. These resources cover a wide range of both renewable and non-renewable resources (Tesfaye, 2010:9). Throughout the world, people cut more and more trees and mine more minerals. This led to the occurrence of environmental problems. Sometimes resources misused, as a result their quantities become smaller and smaller. This process is called environment degradation. To overcome these problems renewable and non-renewable resources should be wisely or sustainable used (Harishankar et al, 2003: 168).

Not all countries of the world have similar environmental problem. The policy also differs among countries, for example, in developed countries environmental problems are the result of industrialization. On the other hand in developing countries of the world major environmental problems are deforestation, soil degradation, and wild life destruction and misused of water resources. Therefore, environmental policies of the developing countries focus on such problems (Ibid: 186).

For several decades, integrated and sustainable community based watershed management has been suggested and tried in several countries in the world, as effective way to address complex water and land resource challenges. However its implementation has not been successful in most cases, due to various barriers (Tesfaye, 2011: 3).

Ethiopia among one of the countries in sub-Saharan Africa where its economy is mainly dependent on rain fed agriculture is one among the countries affected by environmental degradation. The agriculture sector is the main sources of employment for about 80% of the population. It also contributes to a very large population of the country GDP (Bekele 1998) cited in Adugnaw and Desalem, 2013:2). Land, forests and trees are the major foundation of any economic development, food security and other basic necessities of its people depend on these resources(CSA 1998) cited in Adugnaw and Desalew, 2013 :2). However, the unwise usage of these resources led's different kind of environmental hazards.

In Ethiopia, community- based watershed management and conservation approach is new and requires appropriate strategies to overcome the

barriers and practice effective integrated and sustainable community based watershed management (Tesfaye, 2011: 3).

Due to various internal and external pressures, Ethiopia has not been able to maintain in its economic, political and social development for many years. Natural resources are particularly affected by the slow progress in economic development. To relieve this problem the government has adopted a policy called Agriculture Led Industrialization taking agriculture as the stepping stone to industrialization (Anteneh, 2010:12).

Therefore, this study basically aims to see the practice of the people to overcome deforestation, soil erosion and land degradation in the study area. People in the study area practice different NRM and conservation measures such as- terracing, crop rotation, soil (stone) bund, reforestation and other related things. These practice help to maintain the volumes of resources and make them last longer (FWAOAR, 2006).

Thus, the locus of this study is to study NRM and conservation practice in general and community-based watershed management in particular in line with the growing impact of climate change and environmental degradation.

1.1 Statement of the Problem

Now days, a number of people believes that the earth's resources are being over used and sometimes misused. If this situation continues uncontrolled many of the resources will be lost or will deteriorate; unless something is done quickly we will face disasters (Harishankar et al, 2003:168).

When people use natural resource like soil and water to make a living they affect the environment. The unwise use of natural resource is a threat to the environment. Many human activities can cause pollution, potting toxic or poisonous substances in the land, water and air (Ibid: 184).

Therefore, unwise use of natural resources, including deforestation, over grazing and over cropping, expansion of farm lands, settlement and the resultant environment deforestation is the major causes of drought in Africa (Gathaw et al, 2003: 140).

These days, the above mentioned problems have become very serious in our country. Therefore, Ethiopia has launched a policy of environmental protection related to soil, agriculture and water resource in need of protecting the environment (Harishankar et al, 2003:185).

To see the multidimensional impact that the environment have had some researchers has worked on natural resource management and conservation practice across the country; particularity on water and soil conservation. These researches focused on major factor influencing continued use of the structure of the soil and water conservation measures and main causes of land degradation (Adugnaw and Desalew, 2013: 2). However, these researchers didn't focus on what kind of social organizing principles have the community employed and the modalities of social organization during these social gatherings.

Thus, this study aims to deal with how the people in the study area practice community-based watershed management in line with the changing environment. Moreover, the study focuses on the indigenous watershed management practice, opportunities and predicament to the conservation practice in the study area. For it, there exists a dearth of data in recording the indigenous watershed practices by anthropological approach /insight/. Therefore, the study focuses on the general community-based watershed conservation in Farta Woreda.

1.2. Objective of the Study

1.2.1 General Objective

The main objective of this research is to assess the natural resource management and conservation practice in the study area.

1.2.2 Specific Objective

The specific objectives of this research are the following:-

- To identify the indigenous NRM and conservation practice
- To assess the awareness creation program about NRM and conservation practice in NRM and conservation practice
- To identify and scale up the success practice in NRM and conservation to other areas

1.3. Basic research question

The basic research questions this study focus:-

- What are the indigenous NRM and conservation practice?
- Does the awareness' creation program effective?
- What have been done so far to scale up the success practice?

1.4. Significance of the study

The research has the following significance:-

First the result of this study may provide significance for anthropology undergraduate student. Second, it provides for other researchers as an input through available reference to further study on the same topic. Finally, the research may give a good insight to identify the opportunities and challenges in line with the issue of NRM and conservation practice in the study area.

2 .Research methods

To give a full description of the issue in line to the above stated objectives, this study mainly used a qualitative data collection strategy. In line to the above objectives, both primary and secondary sources of data collection techniques have been used to conduct this study.

2.1 Primary data collection methods

The primary data of this research is collected by the following primary data collection techniques.

2.2 Observation

Using observation as a participant method the researcher have tried to see the community-based watershed conservation practice, how the people work collectively /in group/ and conserve and protect the area using various methods of conservation.

2.3 Structured interview

This helps, the researcher to raise a wide range of question regarding the communities participation. Especially, issues related with willingness to participate in the program without the enforcement of Kebele coordinators, communities participation knowing the benefits of the program and the predicament they have experienced are some of the issues the researcher have taped using this method. Moreover, using this

method had helped the researcher to raise the most important questions by taking lessons from other researches.

2.4 Unstructured Interview

Unstructured interview has been used in order to get some information related to the issue informally-when informants immersed in their day to day farm duties. And this method has helped to select a knowledgeable informant for in depth interview. Because the method helps the researcher to make some informal interview with community members as well as farmers to strengthen the data gained by observation and structured interview. Moreover, this method helps the researcher to gather data without any fear to explain the NRM practice. For it the informants have been interviewed informally without any intervention from Kebele leaders and the concerned political officials about the program.

2.5 Key-informant Interview

In order to get full and deep information about the nature of the issue, the study have used key-informant interview. Using this method, the researcher have made five-key-informant interview regarding the issue under study on different topics. Two of them are from agriculture office, one from kebele administration and two from the committees and farmers working on the program.

2.6 Focus Group Discussion (FGD)

To strengthen the data gathered through the above mentioned techniques and also in order to check the validity of the study the researcher have used FGD method. And conducted three (3) FGD arranged by the status of work and educational back ground. The first FGD is done with agricultural office workers, the second FGD was with the local farmer and finally with the local community members participating in the community watershed management program. Each of them has 6-8 participants.

2.7 Secondary Data Collection Techniques

To collect relevant, sufficient and strong data the researcher have used both unpublished and published secondary sources of data. The unpolished sources of data are the data that is collected from kebele,

woreda, zonal and regional reports or recorded materials related to the issue. Published sources of data are like journals and books etc.

2.8 Method of Data Analysis

The data is collected using both primary and secondary sources of data. In order to explain, describe and analyze the data, qualitative method of analysis has been applied to analyze the results of this study.

The qualitative data that gives the analyses of this study were obtained through focus group discussion (FGD), key-informant interview, informal/unstructured interview, structured interview and secondary sources of data. Moreover, the qualitative data has been thematically analyzed to raise a full description and explanation about the issue.

2.9 Descriptions of the Study Area

2.9.1. Location

Farta woreda is one of the twelve woredas in south of Gondar, Amhara national regional state (ANRS). It is a location in the northwest part of Ethiopia and about 667 km away from Addis Ababa. The area situated at the altitude which ranges from 2000 to 2500 meters above sea level (Akilew, et al, 2014: 3). The total area is 118,789.16 hector, out of these 66,638 hector arable land 43,100.26 non-arable land and 9050.9 hector covered by forests. The Woreda is bordered on the south by Misraq Este, on the west by Fogera, on the north by Ebenat and on the east by Lay Gayint. There are 43 kebeles with two towns called Gasay and kimir Dingay. The town of Debre tabor is surrounded by fartat wareda (FWASOAR, 2006).

2.9.2. Population

According to (FWHSOR, 2006) the number of population in the woreda is 281,280. Out of these 143,440 are males (51%) while 137,840 are females (49%).

2.9.3. Climate

The area consists of four major agro-ecological zones. Those are 25% low land 45% medium high land 24% high land 6% gorge. The annual T⁰ or temperature ranges between 9 and 25 degree Celsius and rain fall varies from around 1250mm in the low lands to 1500 mm in the high land area during the rainy season (Akilew et al, 2014: 3).

2.9.4. Economic Activities

Agriculture and animal husbandry (mixed) are the main economic activities in the woreda. Oxen are essential for plowing and cattle sales are the main source of cash income. (Akilew et al, 2014: 3). The dominant crops in the woreda are barley, wheat, teff, sorghum, maize, field beans, peas, chick peas, oil crops and root and tuber crops like potato etc (Belayneh et al, 2012: 2). According to the woreda report (2006), local agriculture wage labor along with sesame weeding and harvesting opportunities in Wolega, Humera and Metema are important income source for the very poor and poor farmers in the study area.

2.9.5. Culture

The largest ethnic group in the woreda is Amhara (99.57%) Amharic is the first language by 99.96% and 99.57 of population practiced Ethiopian orthodox Christianity (FWSO, 2005).

3. Data Analyses and Presentation

Alekit Community Based Watershed Program: an Overview

Alekit river community based watershed is found in one of 43 Kebeles in Farta woreda, called Awzet Kebele. In is one of the 215 community-based watersheds (CBWS) in the woreda and also four CBWS in the kebele. Its total area is 532.44 hectares and estimated about 25 km a way from Debre Tabor Town (TBIWSDPR, 2003:2)

The data presented in this part of the study was collected through key-informant, structured, and unstructured interviews, FGD and observation methods. The data was gathered from January 12 up to February 13, 2007 E.C. The total members of Alekit river community –based watershed are 1303, from these 27 informants from the local community were participated in this study to tap the necessary data for the study. From these, eleven (11) of were participated in one way or the other in the structured, unstructured and key informant interview session; sixteen (16) informants were participated in the FGD. The researcher has attempted to arrange three FGD with agricultural workers, local farmers and CBWS committees to strengthen the data collected using the other methods. Moreover, nine (9) informants from FWASO were part of the study. Totally 36 informant were participated on data gathering for the study.

Data gathering using interview with informants refers that, Alekit community-based watershed was established by TBIWSDP with local community jointly in 2001 E.C. But, the project doesn't start its exact work because of the unwise activities on the starting point and outlet areas. After 2003 E.C, it was well established and also started to work different gabion and stone bund practices on degraded areas with gully treatment. It also consist both community grazing and private arable lands. The main goal of this CBWS is to expand the integrated development activities on soil and water conservation through sustainably use of water resource and protect the land from the degradation. In addition to this, it also increased the agro-forestry development and also other related thing through the continuous practice of protecting the environment.

According to the information gathered from the informants, there are different activities on the CBWS that are avoiding cattle's communal grazing land for the purpose of conserving the land from degradation and collecting water resource to one direction from different small water bodies to conserve and protect the environment. Moreover, planting various types of trees and grasses for the purpose of protecting the soil resource from erosion and creating communal grazing land for the cattle economy the community had been practicing for a long time. This practice also aim to strengthen CBW flow to Ribb River and finally to drain to Lake Tana.

Putting some of the establishment, goals, and activities stated above. In the next sub section of this chapter the study aims to discuss the indigenous management and conservation practice, awareness creation program and the success practice about community-based watershed and conservation practice in the study area.

3.1. Indigenous Community-Based Watershed Management and Conservation Practice

According to the informants and my observation in the study area, there are different types of indigenous methods or techniques of community-based watershed management and conservation practice on non-arable and arable lands. Among these, the following are some of the mostly

used conservation practice in the study area. These are: terracing, soil (stone) bund, manure and crop rotation.

3.1.1. Terracing (*Erken*)

Informants disclose, most of the time, terracing is constructed from stone by the local communities jointly. Usually, on the arable area it is practiced after harvesting the crops, beginning from half of January up to the end of April in the study area. This shows how the community, in the study area, practices their conserving strategy in line to the seasonal variation. Because it is the most important indigenous technique, informants claim, for managing and conserving the soil and water resources from degradation. Terracing construction on communal grazing lands for the purpose of gully treatment at different level and to control the land from degradation is also one method of conserving mechanism. Because it is the constricting stair like structures along the hill side for the purpose of reducing the speeds of the water flows down the slopes there by reducing soil erosion.

Results from the focus group discussion with agricultural professional's shows that, this indigenous technique, as in many cases, promote the best management practice for effective soil and water resource conservation. However, as limitation informants disclose, the practice of terracing doesn't control the soil erosion through winds in the area. Moreover, the constructed terracing was toppling down through animals and also by human activities easily at different time. Especially, at the time of farming activities and other related things. It is one challenge to the conservation practice in the area.

Similarly, informants reveal, the toppling down of the terracing show the lack of concern by the communities and other stake holders to fully protect this indigenous conservation practice. According to the reports of FWAO, to overcome this problem and also to strengthen the terracing technique they are gabion works. They are doing the gabion work particularly around the gully areas, which have high flows of rainfall water and protecting the area from animal and human contact is also another method of conserving the land from degradation.

Opposing the above claim, some informants attested the mechanisms of protecting the area using terracing is not enough in line to the role the

technique will play in protecting the environment. Therefore, community in the study area and the various stakeholders should work strongly and jointly on the issue for the purpose of managing and conserving water and soil resources. For example, working on awareness creation and the significance of planting different types of vegetation before the construction of terracing will have its own mechanisms of conserving the environment in the study area. Likewise, the concerned bodies should design their terracing activities in line to the specific topography that they deemed terracing is needed. Because, it help, in one way or the other, to minimize the factors affecting developmental activities, like the sources of hydro electric power in the country through controlling high amount of silt that goes to different water bodies and also improve soil fertility to increased agricultural product and productivity.

Considering, the benefits that they ensue using this conserving technique and looking some of the drawbacks to critical investigation, informants disclose, the significance of terracing as one means of conserving the environment.

3.1.2. Soil (Stone) Bund (*Kitre*)

It is an embankment built across a slope along the contour construction by the local communities using soil, stone and sometimes with dry sticks to strengthen. The result of key-informant interview with watershed communities and agricultural professionals indicated that, soil (stone) bund is one of the indigenous community based watershed management and conservation practice in the study area. It is also one part of the terracing technique. The main purpose of this practice is to slow down and filter the runoff water from the rainfall and also it can also reduce the land degradation in different level to the area. Because of this, water and soil resource are protected from various unwise use and erosion problem.

Furthermore, as the water flow is decelerated, higher amounts can infiltrate in to the soil so, the soil moisture is increased. Among other things, this practice is playing an important role to minimize the high amounts of silt in to lakes and also to dams. So, it also helps to overcome the problems of soil erosion and to protect dams of the country from the high amount of sedimentation. Therefore, the soil

(strong) bund needs to be implemented for the community with development project though supporting the technical, material and also other aspects. In addition to conserving water and soil resources, participants in the focus group discussion state, soil (stone) bund has different advantages for the community after building it grow various type of grasses to their cattle. Because of this, some informants unveil; milk productivity has increased in the area.

3.1.3. Manure (*fig*)

This method of conservation is the most recurring conservation practice used by many farmers in the study area. In order to improve the facility of soil amid to increase the scope productivity, it plays an important role. Most of the time, this method of conservation is practiced on arable land. Sometimes they used on non-arable land under the roots of plants or trees. For it this conservation practice consisting of animal dung and urine is the best form of organic fertilizer. The farmer used manure mainly near the homestead.

During the focus group discussion with local farmers and community-based watershed participants (CBWS), they suggested that, this technique has been used by most of the poor farmers in the study area. This is because of the increasing price for organic fertilizer which the poorest segment of the population couldn't afford.

However, informants disclose, the concerned stakeholders who are working on conservation practice in the study area should give in how this method can be mitigated. Because of the availability of the manure, the role it has to the poor (i.e. in minimizing the increasing price for organic fertilizer) and the organic significance this technique has to soil conservation.

3.1.4. Crop rotation (*bezurmezrat*)

It is another important and the most used method in the study area. According to my informants, this indigenous practice or technique is planting different crops in same field or arable land alternatively indifferent years. That means planting wheat crop at one year, then in the next year changing by other crops like barley or bean. According to the farmer's opinion, this indigenous technique is important related to

crop productivity. Because various crop leaves and residual parts in different time can create a good top soil. Therefore, crop rotation is more advantageous to help manage and conserve the soil fertility and also to avoid or reduce the problems with soil born diseases.

Similarly, crop rotation plays an important role in soil fertility. By and large, these soil fertility improve soil quality, control the amount of weed in farming land and also increase the level of productivity on its quality and quantity.

3.1.5 Awareness Creation Programs about CBW Management & Conservation Practice

Data gathered using different methods demonstrate, the important role that the awareness creation programs has played about community-based watershed management and conservation practice in the study area. It is needless to mention the role of awareness creation programs play on sustainable management of resources and conservation practice. In order to improve the skill, capacity and also attitude change of the community on their ways of using the natural resources awareness creation programs are necessary. The benefits, methods/ techniques of how to conserve and wise use of water resource should be dealt out in a manner it change the existing attitude about natural resource usage and management.

Community watershed conservation and management issues needs awareness creation program for the community for the following reasons: *first* it improve the understanding of sustainable water and soil resource management; *second* it reduce the impact of unwise use of natural resources by which the communities are most affected as results of natural resource degradation. *Finally*, it helps to empower the community and strength their interests and commitment to sustain the resource with their sustainable management in natural resource conservation.

3.1.6 Mechanisms of Awareness Creation

The researcher informed from the FWAO workers, they have attempted to create awareness at various levels for the local community on watershed management and conservation practice and also the purpose of increasing the participation of the communities on various issues.

Looking the necessity to embark attitudinal change concerned stakeholders has taken meetings, training and practical activities as methods of intervention for awareness creation.

3.1.7 Meetings

Participants in the focus group discussion and the interview disclose, the concerned stakeholders has been working thoroughly to bring an attitudinal change on wise of resource and conserving the environment using various social gatherings and meetings as an awareness creation strategy in the study area. For example, when they gathered around the church and the village for the purpose of religious practice, to have a discussion about communal grazing lands and other social activities, different professionals and other concerned bodies or stake holders try to create awareness about how to protect, conserve and wise uses of the land resources. On top of this, the woreda agricultural office prepared official meetings to create awareness on the issue.

However, some informants avers, some community members who have a stake to do so on the environmental conservation practices do not fully involve on the meeting program because of different reasons. One among this is, some community members assume, that associating any kind of meeting with different political agenda. Therefore, concerned bodies who have a stake to involve on conservation should avoid this miss understanding. Similarly, for any meeting to be successful it needs the support of the community involved and it must have the intention of achieving some goals.

3.1.8 Trainings

The result of focus group discussion with local farmers shows that, the other way of creating awareness in the study area is giving different trainings for the community. The trainings are given with generous support and coordination by TBIWSDP, FWASO and Awzet Kebele secretariat in different time to enhance the local communities' awareness on various methods of environmental conservation. Participants in the training demonstrate, for most of their time, the trainings focus on community-based watershed conservation through avoiding over grazing, planting different types of grasses on communal pasture land and working on rehabilitation program to cover the environmentally degraded lands in the study area.

Moreover, the training focuses on the significance of herding livestock at home by feeding them grasses in the form of fodder. These ways of keeping animals, informants disclose, have contributed in increasing milk productivity in the study area. However, the training should be given continuously in line to social accountability and responsibility of the people. This is because there are individuals in the community who are not yet keeping their livestock at home. While gathering the necessary data for the study, the researcher has observed, some keeping their livestock on protected areas and creating different kinds of conflicts with the guards and the local police man. Thus, so far the concerned officials should think a wider mechanism of awareness creation to bring attitudinal change in the study area. Unless continuous educational campaign has not been done by the concerned officials it is a big challenge for the management and for the good conservation practice started in the study area.

3.1.9 Practical Activities

One of the key-informant demonstrates that, the agricultural office has selected some areas for the purpose of practical work to create awareness to change the community's attitude. These centers have a practical significance for terracing activities and help to get local farmers to benefit from different professionals. Related to this, like how to work animal husbandry, planting cereal crops for the purpose of wise use of water and soil resources, because of strong relationship between these things has been one of the focus in these training. For example, the communities try to control the live stocks on their home for the purpose of managing and conserving the land from degradation through avoiding overgrazing. Because of this, the community should get awareness about how to feed their livestock's at the home and getting successful. Therefore, awareness creation about these and other related things or issues need too much attention. Because every things can be going without getting the supporting of the local communities participating on different developmental activities related to managing and conserving the water and soil resources.

3.1.10 Process of Awareness Creation

According to the information gathered from informants, awareness creation has its own process from zone up to local community. Selecting

some people among the members or community- based watershed committees as a representative of the whole, involve at the training from woreda up to zone and regional level, for the purpose of getting awareness by different concerned bodies. After getting awareness, they back to their place and shared the knowledge getting through trainings to the local communities bon this process the community has not benefited, because they do not accept as trainer those who representatives.

According to the researcher's observation and as know something before this time; the problem is happened through different factors. For example, the trainers have got some financial support at training time. So, the community thinks that, these individuals will try to work on awareness creation program for their own benefit but not the whole. Because they get the money from that training. Another factor is also before the present, the community was participated on conservation practices of land resources, like water and soil with various material supports from different stake holders. That are the aid of wheat and food oil etc. but there is not the current time has not the aid of that thing. Because of this and other factor the communities have not accepted and give immediate response to the awareness for changing in to practice. To overcome this and other related problems, wants to be more working on the attitude change of the community at local communities should be knowing deeply and widely about the major causes of soil erosion and degradation in the area, including "traditional" farming activities, overgrazing, deforestation and other factors though awareness creation by the concerned bodies at different time. Not only this, but also the methods of conserving and wise use of land resources with taking their responsibility to minimizing and avoiding the above mentioned factors, by participating on the activities of rehabilitation works and also remove their casual assumption on local trainers and other concerned bodies.

3.1.11 The Success Practice on Community-Based Watershed Management and Conservation

According to the information collect in the study area from informants, local leaders with local communities work together through one- five groups, to the success of community-based watershed management and conservation practice. In order to improve the quality and quantity of

soil and water resources, the success practices have their own contribution in helping to increase the livelihood of the community.

Constructing various conservation practices around gully areas, rivers; and the systems of planting different crops when the researcher try to see on the above or success practices. For example, soil (stone) bund, terracing with gabion works and planting of two or more types of crops on the same farm lands by using the patterns of stripes through alternating crops. In addition to this, wise use of water resources through irrigation activity and harvesting program by digging at individual level are very successful activities. For instance, the results of focus group discussion with agricultural professionals shows that, the system of planting different types of crops on the same farm lands, can be reduces the soil erosion .Because various types of plants are used different ways of bindings soil particles to themselves. The other plays an important role on minimizing of soil erosion and land degradation. Furthermore, in the study area, fallow land, reforestation and also other practices, like avoiding overgrazing are the most success practices. Each has its own contribution in order to overcome the problems of unwise use of water and soil resource and also the land degradation.

3.1.12 Fallow Land (*Eirshan Maqom*)

It is indigenous practice of leaving the farm for one or more years until the soil regains its fertility also for the purpose of minimizing soil loss. According to the informants, this method was more advantageous and successful for long period of time. But recently this indigenous method application is becoming lesser and lesser in highest number of population. Because of increased population, the Farmers needs to the land to grow crops through every year. This shows that, the highest number of population is the major factor or challenge to wise use of natural resource and its conservation practice in the study area.

Therefore, in order to overcome this and other related challenges, the local and regional government should be creating other livelihood for the community. Because fallow land is the major successful conservation practices to relive loss of soil and increased crop productivity through improving the soil quality. But it is not widely work because of the above mentioned problems.

3.1.13 Reforestation (*Metekat or Metkel*)

Among the major problems, deforestation is one in the study area. Specially, on some trees like “Baharizaf” cutting by the local community for the purpose of fire wood, building their house and for market. In order to overcome this deforestation problem, the local community practice reforestation in the study area. It is planting the tree seedlings to replace cut trees. According to the information get from agricultural professionals, reforestation is a successful practice through combating climate change and also increase in water resource and soil fertility by the reduction of loss in agriculture- related flooding.

In addition to reforestation, Gabion works are successful practice. It used as effective solution to prevent erosion and to stabilized and strengthen different embankments for long period of time.

Moreover, avoiding overgrazing through minimizing the numbers of livestock and controlling or herding at home to improve their quality and minimizing the land degradation also other successful practice. Through avoiding over grazing, children have more advantageous to their education. Because they can be learning by freedom and not miss their education by herd the cattle’s. It is very important for social and economic activities and more successful practices in the study area. But, because of various factors, the community does not practice at the whole.

4. Conclusion

When we observe our surroundings, we may see different natural resources which are the main source of our existence throughout the life. They have various uses like the source of food, regulate climate conditions and maintain the balance of nature etc. But, the human beings are destroying to use them.

The study based on the information obtained from the informants and the researcher’s observation, point out different indigenous management and conservation practices of community-based watershed. Among these, terracing, soil (stone) bund, manure and also crop rotation are the major practices in the study area. These indigenous practices are playing an important role in to soil and water resources management and conservation activities.

In order to improve the skill, capacity and also attitude change of the community, awareness creation program about community-based watershed management and conservation practice is very important issue. The mechanisms of awareness creation program to the local communities are through meetings, trainings and practical activities by various stake holders, other concerned bodies and local trainee- trainers in the study area.

Wise use of water resource through irrigation activity and harvesting program with reforestation and other gabion works to protect the soil resource are the major successful practice in to community-based watershed management and conservation activities.

5. Recommendation

The information get from informants suggested that, various conservation techniques are toppled down by animals and human activities. The communities as the whole are not practice avoiding over grazing by taking responsibility. Therefore, the concerned bodies integrated with other stake holders try to work on the issue for learning the communities. The communities should also take responsibility and knowing about the issue.

Mechanisms of awareness creation program to the communities are through meetings, trainings and practical activities. It is not enough. So, it should be have experience sharing will other community- based watershed at different time .In addition to this, communities will have get awareness about how to work animal husbandry at the home with various related activities to protect the land from degradation.

Methods or techniques of community- based watershed management and conservation practice is working based on the geographical conditions of the places and also the seasons. This is because; the problems are a lot in using techniques or methods of conserving and managing of the issue.

Therefore, before protecting or conserving the issue wants to know and understand about the geographical conditions and the prevailed seasons.

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