What lead to conservation of commons by the community ?

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Abstract

To translate the ambitious watershed development programs to cover large drought prone areas into participatory action, it is important to first analyse the pre conditions required at the community level which allow adoption of watershed program by the people themselves. When and how a community adopts and starts a water conservation programme on its own depends upon a variety of factors.
The case of community 1 and 2 of a village proves that leaders were the responsible individuals who took the lead, influenced the remaining people , brought everyone together, used the contact exterior to their social system and influenced the adoption of watershed. They brought out a willingness among the people to contribute labour work and money which became a stepping stone towards the conservation of the commons. Apart from efficient leadership and presence of NGO and various other aspects together ensures community's involvement in the adoption process.

This study provides rich insights to academicians and practitioners who are keen in understanding the conditions under which the process of conservation of commons starts from within and gets scaled up. The knowledge from this study can help in better planning , and implementation for scaling up of watershed programmes and more so ever in a sustainable manner.

Key words: watershed, adoption, community, leaders, NGO,

INTRODUCTION

Watershed development is an important component of rural development and natural resource management in many countries(Kerr, 2007). Community based watershed development programmes are increasingly being talked about for drought proofing in both government and development sector. Since it is the community participation which has brought about a wave of success in the watershed programmes. According to Sangameswaran (2008) "the community has come to be posited as an alternative for many of the functions that the state and the market either used to perform (but no longer do) or have failed to perform satisfactorily". But when and how a community adopts and starts a water conservation programme depends upon a variety of factors. With the success of one program in an area, it is often assumed that the program will get scaled up automatically in some time irrespective of the micro and macro factors in that area.

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An important fact is that watershed is not a new idea. It has been a method of conserving rain water in India and particularly in Rajasthan from very long. In spite of this fact, watershed development programmes have remained limited to certain pockets only. This raises the basic question that why in a drought prone area preventive measures like undertaking rain water conservation are not started by the community on its own. In order to give boost to rural development, poverty alleviation and livelihood strengthening scaling up of watershed programme is a must.

Instead of focusing and exploring the factors which can speed up the scaling process, more keenness even among the funders has been on evaluating the impact of watershed projects. Ironically the evaluation studies have been carried out in areas where the watershed project has just began or sufficient time has not even passed which would allow the positive results to become visible. Recent way of giving quantitative description of the positive effects of watershed has become popular through the use of remote sensing and Geographic Information System (GIS). The study of *Change Detection study in Andhra Pradesh , Madhya Pradesh and Rajasthan project areas of FES* validates the increase in reserve forest area by comparing satellite imageries of 1996 and 2002 retrieved through remote sensing and analysed using GIS software. Through Joint Forest Management and watershed in three states, significant ecological restoration has taken place. (FES, 2003).

Few studies have thrown light on how, why, when what and where do people demonstrate the ability and willingness to work collectively to solve common problems. Kerr (2007) says that most evaluations still cover the small success stories and it remains unclear whether watershed management can succeed beyond a few small exceptions. The bigger question is, when the watershed management would succeed widely? In this regard community participation has been studied by a number of scholars providing ideological, theoretical or empirical insights into community participation (Sen, Shah, Kumar, 2007), (Sangameshwaran,2006,2008), (Kerr, Pangare, Pangare,2002), (Kerr, Kolavalli,2002) (Kerr,2007).

This paper focuses on those factors which are important in adoption of watershed program by a community. More specifically the paper deals with particular case of two communities of a village – one which adopted watershed by looking at its neighbouring village Dhamangatti and another where the first attempt failed and the second attempt is yet to succeed. These are community 1 and 2 which are part of Barundani village, located in Mandalgarh Block of Bhilwara district, Rajasthan (a western State of India).

The discussion in this paper is based on data collected by the author during the course of her Masters dissertation in the Jamsetji Tata Centre for Disaster Management at Tata Institute of Social Sciences(TISS), Mumbai, INDIA. Primary data was collected from Barundani village during a three week stay in the village in July, 2008. The tools used for data collection were a combination of semi structured individual interview, semi structured group interview, participation in village level group activities, for e.g. *Bawari* cleaning campaign (a historical structure made to

store water by a wealthy man),open ended discussions with the villagers as well as with the BDO- Block Development Officer, SDM- Sub Divisional Magistrate, NGO personnel involved in the community level implementation of the watershed and observation were   used. The semi structured nature of interview schedule gave flexibility in the data collection process since the different leads given by the responders were explored further. A pre test was done in community 1 to validate the interview schedule.

INTRODUCTION TO BARUNDANI VILLAGE

About Community 1

In Barundani village, community 1 comprises of around 200 households (1000 people) which are located right at the beginning of the village. At a distance of 1 and half km is community 2 which comprises of less than 100 households (500 people) located at the end of the village.

Community 1 comprises of middle and lower caste. There were families of Muslim religion as well. The primary occupation of people is agriculture and cattle rearing. Historically the members of this community have been involved in various collective activities.

Labour contribution : The community has a tradition of contributing labour in various public and religious work. Kanji ji, the opinion leader of the community stated,
> *"In the 80's -90's the old school building was made with the support and labour contributed by the people only. At that time there wasn't much money with the people. They only had their labour. Offering free labour was much more at that time. Here people do not think of their self interest that if they have a school going child then only they will contribute labour. One person from each family contributed free labour".*

 In the 90's a temple was constructed on the hill. The goddess statue was lying outside the temple. The Meena caste members wanted to place the deity inside the temple by renovating the temple, but they were not sufficient in number to do it on their own. The Meenas(ST) are anti Gujjar (OBC) yet they approached the Gujjars . These two groups do not mingle much but somehow the Gujjars agreed and both the groups contributed money and labour together. The Gujjar caste members accepted the Goddess as their own Goddess and started worshiping it. With the joint work, finally a big temple came up which is visited by men, women, young boys and girls for puja on every Monday.

Festival Celebration: A middle aged Muslim women Salma ji told*,*
> *" Holi, Diwali, Rakhi, here everything people do together. On Diwali, everyone cuts the grass".*

Every year on Diwali, there is a historical stone which is attached to an ox and taken all around the community. Everyone including the lower caste people take part in it. It is a big celebration and people from other villages also come to see this big celebration. Before Diwali, during nine days in Navratra all the community members sit together and big puja is performed in the temple.

Conflict resolution: There is a traditional system of conflict resolution called *"Patelai"* , which every member of the community mentioned. If there is any conflict then all the people get together on the *chabootra* (a cemented pavement) in the middle of Barundani village, adjoining the temple and police station and both the parties sit face to face and talk. The five *Pancha* (senior elected members of the village) hear both the sides, the witnesses and then decide. Their decision (fine or punishment or both) is imposed strictly and is adhered by all. This is a local justice mechanism which the people consider as a symbol of their strength and unity. None of the community member mentioned about approaching the police for resolving disputes.

Funeral: In certain cases if someone does not have the capacity of doing the final rituals then all the community members do it collectively. The family is not left alone. There have been 2 to 4 instances when the community members have done the funeral of others. If anyone is poor then others contribute as per their capacity. For the purpose of funeral lunch, some may give chilly or some may give wheat, corn or whatever they have grown in their field. If need arises, in future, the person who received support may help others.

Water conservation practice: Traditionally water is saved in *Bawaris* in Rajasthan and in this community as well. *Bawaris* are historical structures made of stone for rain water storage. There were four *bawaris* in four corners of Barundani village. However now two have been patched up and only two are in existence. As inscribed on a stone in the *bawari* conveys that these are 650-700 years old structures made by *Seth* (rich man). The bawari water is used for taking bath, however there is strict rule of not using soap in bawari water. No one is allowed to take bath in bawari water after playing holi with colours to maintain the cleanliness of the water. Similarly after attending funeral (which is considered an inauspicious occasion) one is not allowed to take bath over there. These are well known rules and are adhered by all. During good rain the bawari gets filled up with water up to the top. However during the study the water was found very dirty and it was lying in ignorance due to lack of maintenance. During the stay of the researcher in the community, a local popular Hindi newspaper -Rajasthan Patrika journalist had organized a Bawari cleaning campaign under the *"Amritam Jalam"* scheme (water is nectar) of the newspaper. Since few years, in every summer season, this newspaper has been organizing water conservation campaign in every area of the state. In this campaign, all the senior members of the community, young children, BDO(Block development Officer) and SDM (Sub Divisional Magistrate) contributed labour towards the cleaning of the Bawari.

There is a pond in the community which serves as drinking water source for the animals. There is a mud canal which allows water to come into this pond. To repair the canal, every year before the monsoon all the community members come together and do the work. The community has been doing this work ever since the pond is in existence.

In another pond called the Phathe Sagar pond, the water is being used for cattle and irrigation purpose. Some years before it was observed that the water level was getting low. If the water would have been continuously used for irrigation, the pond would have become empty very quickly. All the community people sat together and

collectively decided that the water will not be used for irrigation purpose but only for cattle. As a result of the ban the water remained available for cattle for a longer duration.

DROUGHT 2002

In the year 2002 the area was hit by a severe drought. There was acute scarcity of water for drinking, irrigation and for livestock. After sowing it did not rain and due to acute water shortage in wells and elsewhere the crop got ruined. At that time the Baniya's (trading caste) got drinking water from tankers. Others also took water from it. Food for work programme was started by the panchayat in which wages were given in the form of half salary and half wheat. Some people migrated to other areas in search of work. The people somehow passed this tough time however their condition largely remained poor. A widow told that she had to sell her only goat in order to survive. People had nothing than to die of hunger. So the thought of doing something to manage the crisis emerged.

It is at this same time that community 1 members observed that their pasture land was suddenly getting eroded due to overgrazing and influx of cattle from Dhamangatti village which is at a distance of 2 km. The animals had uprooted everything. Some of the leaders – Bhavar ji, Kanji ji and others of community 1 went to that village. They found that Dhamangatti villagers had done half fencing with stones and thorny bushes on the hill because of which all the cattle were coming on their hill for grazing. It was done to allow regeneration of grass and trees on the pasture land over hill. In addition to this various watershed structures were build by the villagers. All these efforts had brought out significant economic and environmental changes in the village. Firstly the opinion leaders were apprehensive that how can an external agency be doing work without any profit motive. The NGO was getting neem trees planted and this increased the fear in the mind of the leaders because at that time the news of America getting the patent of neem was coming in the newspaper. The leaders thought the NGO to be some foreign company because they were surprised by the fact that why would anyone pay to the villagers for working on the village land, where the grass would be of people and all the other benefits would also go of the people of the village. Till now no one like this NGO had come in this area. However, on seeing the anicuts and upon talking with the fellow villagers they got to know that the NGO is doing genuinely good work and the villagers are reaping huge benefit out of it.

The leaders got inspiration from there and approached the NGO personnel for starting similar work in Barundani village. But the NGO refused on the ground that Barundani village is big in size and so it is difficult to convince, organize the people, and conduct meetings. When the leaders showed extreme keenness, the NGO suggested them to firstly start some work on their own and showcase their strength in order to get NGO support. The leaders took it as a challenge. They had realized that conserving the pasture land is the only way to protect it from getting eroded or else their own animals will suffer. As per the suggestion of the NGO they gathered people, formed a watershed *samiti* (group) and made a committee by including women as well. The group was made by demarcating an area (as suggested by the NGO) in Barundani village which comprises of 200 households of herders and farmers of low economic background, living together in the beginning of the village.

These people were entirely dependent on the forest resources like firewood, fodder, grazing land for cattle, grass for making broom and rope for constructing thatched huts. The group did not include baniya mahajan (the trading caste- high caste and class) since they have business, money and do not contribute in labour. If they come they have to do so much of work and loose Rs. 400-500 of daily business. Only the people with the huts, the kastkar (farmer) and cattle rearers were included. NGO also asked to revive the old custom like volunteering free labour. Bhavarji, an opinion leader of the community said,

> *"When the NGO had said no for doing work ,we only had to do something. We thought that let's make a wall on the hill , whether the NGO work or not. They said that it's a big village. How to conduct a meeting? But we conducted several meetings. I called people. Since someone is required to maintain the accounts, to do all the work, people made me the President of the group. No one stood in opposition. In the 11 member committee we included women, government bureaucrats like BDO, SDM and Forest Officer ".*

For his good work , he was awarded by the SDM on Independence day.

Firstly the opinion leaders formed the group by collecting Rs. 100 from every household. One member from every household contributed labour and collectively the people did fencing on the hill. It was divided into two parts , one for grazing and the other was marked as restricted area to allow regeneration of grass and trees. The group made strict rules regarding the use of the forest, for e.g. the cattle were not allowed to enter inside the protected area, if some cattle is found, then the cattle owner will be fined. There was strict ban on cutting the trees, only the leaves and bushes could be cut. All the villagers keep an eye on the hill. There was ban on usage of hill by non members. Over a period of an year, by looking the efforts of the opinion leaders and the collective work done by the people , the NGO agreed to work with the community. A farmer told,

> *" Shantanu ji of the NGO came several times. He made us aware. He showed several photographs of pre and post watershed work, posters with story written on it, 3-4 times documentaries were screened in the school in evening. He took all of us in five buses to the neighbouring village (Kalikhol) and to the neighbouring district (Udaipur) and showed us how people had dug trenches there. We saw that with financial and technical support of NGO the watershed program was going on. The people in Dhamangatti village told us to grow fodder and to make structures like stone dam in our village. They were making profit from the grass which was grown and sold. When we went there we understood and that is why we started work here. Basically I'll tell you, people see and do. Whatever I will grown in my field, my neighbour will keep watching that what I am doing and then he will do the same."*

When community 1 people saw that their neighbouring villagers were reaping benefits from watershed program , it aroused interest in them to do similar work.
Slama ji, a member of the watershed committee told

> *"We collected all the people, we made the forest. **Earlier it should have come in the minds of the people. But people did not use their mind for this**. **They do not understand on their own. If the teacher is not there then how do the students study. Can we teach in the home only. They will have to go to the teacher.** No one thought of using half and protecting the other half of the forest. Then Shantanu ji from the NGO taught everyone.*

> *He came , told and then we used our mind. Then people understood that it is a good work. The way today you have come and you are talking to us about something. He said that you make your samiti and conserve your forest. By doing that your samiti will have all these benefits. The benefit will be that there will be money, after 5-6 years there will be wood that could be used for burning, when there is fodder, then all the samiti members can cut the fodder. Means slowly and slowly we learnt everything. Shantanu ji from the Ngo united the people. People are of different caste. They don't listen to each other. But when he came, all sat together. He gave intelligence to all. Shantanu ji used to come and say that do meeting, women only can get together and do meetings."*

When the NGO started working in the community, the work went on in full swing. The people were involved in planning, designing and decision making with the NGO at every stage. From forest conservation people moved on to constructing structures like check dams, gabion dam, trenches, anicut and others for rain water conservation. An opinion leader Kanji ji said,

> *"Water cannot be made, apart from saving rainwater, there is no other treatment. This we also know that if you make a wall, as much rain water you conserve, make it stand, it will go within the earth and will recharge or where else will it go. This is a common thing which everyone knows. But the support of the ngo was very important. Without it we would not have been able to do such watershed program on a large scale. The people only had labour and not money. The money was spent by the NGO".*

One of the opinion leader went to the Panchayat and Forest Department several times for obtaining NOC – no objection certificate. After a lot of efforts, the land was finally given on lease for 25 years in the name of the watershed group. After some time the lease can be increased for another 25 years. With his smartness the opinion leader has obtained the NOC in such a way that it will work for lifetime.

About Community 2

The community 2 comprises of around 80-100 households huddled together on a road side. In front of these houses is the main road, 15-20 houses of kalbelia caste (untouchables involved in begging and construction work) and behind the houses is the hill. In this community the formal leader - the ward panch is an illiterate old lady who is hard of hearing and remains ill. The tendency of dependency was prevalent among them. They were dependent on the police for resolving their minor issues. None of the community members mentioned about using the traditional local justice system. On the contrary for conflict resolution everyone in the community said that they approach the police or the formal court system in case of any conflict. During the group interview an 8 year old child told, "if there is a fight between community members, then people do not do anything. They just see and then latter on the case is filed. A farmer said,

> *"In the court, whatever the judge ask, if you give that, then the judgement will be in your favour".*

There has not been any event in the community where all the members have come together for doing collective work of any kind. There is existence of no norm in the community. People complained that there is no dam to collect and save water in their

area. They said that for saving rain water pond has to be dug deep. A farmer told that in case anyone needs credit for marriage, then the people give and take credit within the community. For festival celebration a woman said,

" Here every one do it on their own. People celebrate festivals within themselves".

NREGA work went on in this community for a very short duration. Now it is not going on and the community has done nothing in this regard. The community assumed that I am from some government department and so they were asking work from her. Community 2 was also hit by drought of 2002. People did labour work elsewhere and in the drought relief work started by the panchayat.

There is drinking water problem in the community. There is a handpump which is often in non working condition. At the main handpump which is in the centre of the community, there is always a lot of stagnant water, which is breeding ground of mosquitoes. Other than the hand pump the women go to the well twice a day to fetch water. They were expecting the Panchayat to do everything regarding their water problem, than taking steps on their own.

The people are aware that watershed work has been done by the neighbouring community but for their own community they say that the Panchayat does not listen to their community. The people expressed that leadership is absent in their community. No one come forward as a leader to take up any work. It was observed that a common opinion had not been formed among them and people did not want to spend money from their pocket. A community member said,

"Here people do not do much, "Phot chal rahi" (there is some conflict/ internal differences going on). In other villages the samiti is going on and it will continue. But our village is like this only. Yes if someone come from outside they understand. ….if some insider say , so they say that how he is giving us knowledge. There are not only 2 groups but so many groups, so it is a result of it that there is no leader over here to whom everyone listen".

1st Initiative

People had the knowledge that in the neighbouring community and in the neighbouring villages people had made their forest heaven and were reaping immense benefit. Three- four years after the watershed work had happened in community 1, two youth of community 2 thought of doing similar work in their own hamlet. From all the households Rs. 50 was collected as contribution. But after collection of the money no meeting was called and no work was done. The money was collected but was not utilized. When other farmers asked the youth about the money, one youth said that it is with the other, the other said that it is with the third person and it went on like this only. To someone else they said that they are still collecting, everyone in the community has not yet contributed. Another farmer said that the youth did not go to Mandalgarh block to get more information and money. The youth were doing their own work and the community people were doing their own work. According to the youth the money was not sufficient, people did not help and did not plant trees.

2nd Initiative

Three – four years after the first initiative had failed, another initiative was taken by a senior farmer. By this time many watershed groups had been formed in the nearby villages. As a result more hills and pasture land were under conservation. The community 2 started witnessing encroachment from the cattle of other areas and the women of other areas were coming to collect fuel wood. Kalashji a farmer of around 50 years old residing in between community 1 and community 2 took the lead this time. He said,

> *" Earlier Kanji ji and others in community 1 were doing forest and water conservation work. So we were just looking at them that what they are doing. Then we saw that how their forest has changed and it has become so green. They have got income from the forest. So slowly we also thought that we should also do something. Our objective was to do conservation, to save rain water, so that like others our forest will also become very green. There will be trees and grass. There will be fodder for the cattle and fuel wood as well. We got to know all this from community 1 only".*

At the first time when the youth took the initiative this senior leader was busy in a court case. Since that step did not materialize, he thought of taking up the charge. He called a meeting at the temple above the hill which is near community 1. There is big open space where everyone came, sat and talked. With his efforts he got NOC from the Panchayat . The Range Forest Officer wants to work with the community directly. However this leader wants to work with the same NGO which worked in community 1. Firstly it is because they have seen the NGO's work and secondly that the NGO will then deal with the government at the official level. He said that they are willing to do voluntary work as well. Kanji ji has given the watershed program proposal to the NGO and are waiting for the response.

DISCUSSION

Important factors leading to adoption

In the entire Mandalgarh block which comprises of 173 villages, watershed groups have been made in around 44 villages, i.e. 25.43 % villages have adopted watershed program. Watershed as an administrative program dates back to the 70s . But in order to reach to this small village community it took three decades, and from one community to another it took around 6-8 years. Even in copying the same work, community 2 took 3-4 years but it remained as a failed attempt. Then again after 3-4 years a second initiative was taken to start watershed programme. Finally the successful management of common property resources (CPR) done by local community in this research study reverses the theory of *Tragedy of the Commons by* Hardin (1968) according to which everyone wants to get the maximum benefit without contributing towards its conservation. By comparing two communities of a single village here we will see what are those factors which bring the communities together.

*1. **Leadership**:* For initiating any program the presence of an opinion leader is a must who can lead an issue and take it forward. Opinion leaders are members of the

social system in which they exert their influence. These opinion leaders are influential in approving or disapproving new ideas. In community 1 we find that it is the presence of effective opinion leaders who encouraged community participation, lead to formation of groups, got NGO support and implementation of watershed program in their area. In community 1 the opinion leaders like Kanji ji, Bhavar ji, and others developed direct contact with the NGO personnel and asked them to work in their area. Even when the NGO denied to work, they did not lose hope. These opinion leaders along with other women and men of the community, organized the community, formed a group and started fencing work. They had realized the urgency of resource conservation. The efficient leaders crossed all the odds, dealt with forest department, obtained NOC for lifetime and went ahead with work. The efficiency of a leader was also acknowledged by the government and he was awarded with a prize. In the committee they have tactfully included government officials instead of blaming them for not doing anything like community 2. This again reflects the efficiency of opinion leaders.

 On the other hand the very absence of formal and informal opinion leaders in community 2 is the reason of difference in firstly late adoption, and then an initiative which failed. There was no strong leadership which could bring about consensus between all. The community people were found to be looking towards external help for organizing the community. The second initiative also emerged only when a leader took the command. The youth did not organize any meeting. Whereas the senior leader called a meeting on the temple over the hill, where things were discussed and a group was formed with contribution of Rs. 100 from each household. In a study by Sharma (2006) in Ralegaon Siddhi village in Maharashtra where under the leadership of Anna Hazare the village was organized and turned into a model village, religion and religious symbols were used as potent resources for legitimization of a particular regime and authority. Religion became a symbol for transformation and imposition. Decisions taken in a temple are believed to have the sanction of God and people are more likely to follow them. One sees that in both Ralegoan and in community 2, the belief in God or a temple was "supreme" and any decision taken in front of them must be obeyed, worked well.

The study clearly reflects that it was the effective and pro active leadership which acted as a catalytic force in bringing community 1 together and eventually community 2 as well. The starting point to begin any program require community contribution either by way of cash or voluntary labour or both. Here it is the leadership which encouraged both. The opinion leaders in community 1 became a link between the NGO and the community people and created a way for the entrance of the new idea. Due to the capital resource and human resource limitation, the NGO do not approach every village. They take interest in those areas who demonstrate keenness. It was the community 1 opinion leaders who showed interest and upon demonstration of the community strength they were successful in getting full support from the NGO. Therefore active leadership is a must and without it adoption process cannot be expected.

2. Problem: The occurrence of severe drought increased the trouble of people. It was one of the important factor which pushed them towards taking some remedial method. Had such severe drought not occurred and people had not faced any problem, they might have continued to live their normal routine life. When the issue regarding the existence of their pasture land became grave, then only the need and thought of its conservation emerged which brought the people together for starting watershed program to ensure drought mitigation.

3. Poverty & Profitability : The works of social scientists like Mancur Olson (1965) and Elinor Ostrom (1990) gives the *Logic of collective action* and its *evolution*. According to the **Collective Action Theory by Olson (1971) The Logic of Collective Action** says that it is often taken for granted, at least that where economic objectives are involved, that group of individuals with common interest usually attempt to further those common interests as much as a single individual would do for his personal interest. In community 1 the group was formed of people who were of economically low background and they were dependent on the natural resources for fuel wood, fodder, grass for making brooms, ropes for the houses and other. In the year 2002 when due to drought households faced severe financial problem, watershed program was found to be a good option to earn and rise out of the poverty. Community 1 members agreed for collective action and came together as a group. When people knew that the NGO would provide money for the whole programme and would pay them for their labour work as well, full fledged program started.

For the formation of the group the existing social stratification along the economic lines were used. The group was formed by including people who were from middle and low caste (though not untouchables) and class. This had an important implication as it automatically lead to the creation of the felling of community among all. **The relative advantage (profitability) is one of the dimension which affects the rate of adoption.** When community 1 members who had very limited source of income saw the wage work as a profitable source of income and in addition to this increased water, fodder availability and other incentives drew them closer to watershed adoption. It is the monetary benefit which attracted community 2 as well. They lately realized the economic benefits which others were reaping and they could also reap.

Kerr (2007) enumerates that of the various group characteristics poverty is one such characteristics which can lead to acceptance of watershed programme since it is seen as a direct source of income. Inclusion of the rich families may not certainly lead to the success of a watershed program since firstly the wealth family is not entirely dependent on the natural resources for their survival. They have alternative sources. Above all, rich families do not contribute in the form of labour work in the initial stages and later stages of maintenance of watershed program.

4. Social cohesion : For development action to take place in any setting, a strong community cohesion is important. It is the social cohesion which binds the people. In community 1 social cohesion was far more than in community 2. It was implied when a Muslim women said that they celebrate, holi, diwali, rakhi, all together. On the other hand community 2 woman said that they celebrate within themselves. During common celebration time also they do not come together. Community 1 members selflessly contribute in case of someone's inability to perform funeral. Where as the give and take of credit reflects that in community 2 members share a relation which is governed by monetary basis and not on need basis. In the social system of community 1 there was more trust and cohesion among the people. Their collective problem solving behaviour lead to collective adoption of watershed far early than other villages in the area. This cooperation was observed very less among the members of community 2. Rather they cited the issue of non cooperation from each other as a major problem of their community. A senior community 2 member told, *" Ye gao karta nahi he"* (This village which does not do anything) *" Ekta koni"* (there is no unity in the village). More of a blame game concept was seen in community 2 where people were putting blame on the ward panch, panchayat and each other for not doing anything with regard to water, road, making anicut, trenches, etc. , instead of doing something on their own. Community 2 was so weak that they had not raised their voice for demanding work under NREGA for themselves.

As Pretty(2003) claims in the study on "social capital and collective management of resources" the relation of trust lubricates the cooperation between people . But trust takes time to build and is easily broken. When a community is pervaded by distrust or conflict, cooperative arrangements are unlikely to emerge, as was the case of community 2. It was the strong social cohesion in community 1 which facilitated the collective decision making for doing fencing. In community 2 the difference of opinion among people did not allow the development of a common approach. The unity element was absolutely missing. From an 8 year old child to a young and old farmer, all mentioned about approaching police instead of the hatai system. This reflects lack of trust in their existing traditional system. Their reason for approaching the police and judiciary was not because of belief in modern judiciary system , but the red tapism through which they can get decision in their favour by paying bribe.

5. Norms: The norms of a social system are expected to affect the behaviour of the members of the social system. A particular system of values, attitudes, customs and norms influence the members in welcoming or resisting an innovation. In this study we see that norms like local justice system (*Hatai*), cooperation for funeral work , maintaining norms regarding usage of Bawari water, collective labour contribution for school building, temple building, maintenance of cannal, using pond water for only cattle had existed and these are still adhered by all. These had developed the feeling of unity and solidarity which lead to early adoption of watershed by community 1. Earlier since they had imposed a ban on using pond water for irrigation so similarly under watershed program imposing a ban on usage of axe for saving trees was easily adopted by the community members. As there was a norm of contributing *shram daan* (group labour) for collective good, people easily came together for fencing work over the hill and they themselves became the watchman of their hill. An absence of these norms explained the late participation by community 2 for

adopting watershed program. They had never come together for doing a collective work. Therefore coming together for watershed program took a long time.

6. *Compatibility*: Compatibility is the degree to which an idea is consistent with the existing values and past experiences of the people. An innovation could be compatible not only with cultural values but also with previously adopted idea. The rate of adoption is affected by the old idea that it supersedes. The community 1 values and past experiences of coming together for doing common work like shramdaan (voluntary labour), imposing ban on using pond water not for irrigation but only for cattle, were in adherence with requirements for initiating watershed programme and for getting NGO support. One finds that the community 1 had a rich history of strong organizational skill and the level of problem solving initiative was also high. Due to all this the adoption in community 1 happened much earlier.

An idea that is not compatible with the social system will not be adopted so rapidly as an idea that is compatible. In case of community 2, there was no history and culture of coming together for doing collective activity. They had no adjoining Bawari where they had adhered rules for maintaining water cleanliness. Hence the non compatibility retarded the rate of adoption of watershed and lead to a delayed adoption in community 2 as compared to an early adoption in community 1. People had the notion that only dams - the modern engineering irrigation structures can solve their water vows. They had no faith in their indigenous knowledge and traditional structures like pond, bawari, trenches and others as permanent, eco friendly, local and sustainable solution.

7. *Observation & communication* : According to diffusion of innovation theory, (Rogers.1962), the information received by the people shapes up the perception which can in turn leads to adoption or rejection of any new idea. Through whom does the information comes is critical in acceptance of that information, for e.g. the information received from the people of the same social system is well received. Adoption is a mental process through which an individual and group passes from first hearing about an idea to final adoption. Community 1 heard, observed, understood and then adopted.

The researcher observed that the interpersonal means of communication was very strong among the people. Firstly, the information by word of mouth had spread from Dhamangatti to community 1 that some good work is going on in the village. Personal communication by the opinion leaders of community 1 with the NGO members increased their awareness. The field visit organized by the NGO for all the community members facilitated the process of observation and communication between the ones who had already adopted watershed programme and the ones who were thinking about adoption. It proved instrumental in convincing people of the fact that if they undertake the watershed development activities, then water will come in their well, there will be fodder for their animals, there will be wood which they can use, and when trees are there the rain will be good. The study by Sangameswaran (2006) in Western Maharashtra proves that observation influence adoption. The idea of undertaking watershed programme in a village in Western Maharashtra was derived from Ralegan Siddhi where Anna Hazare started

community based watershed work. It can be said with certainty that when community 1 members observed watershed programme in the neighbouring village and personally interacted with those villagers, who in turn asked them to do similar watershed work, it pushed them towards adoption with confidence. In addition to verbal communication, different means of mass communication used by the NGO like showing documentaries, pre and post watershed photographs, and posters with stories on it had a very stimulating effect on people.

None of the above communication, neither personal nor through mass media happened of community 2 with NGO or with Dhamangatti villagers. Lately from the year 2000 to 2008 it was the *interaction effect* and late observation which increased due to the formation of more watershed groups in near by villages. The *interaction effect* as first described by Ryan and Gross in 1943 is the process through which individuals in a social system who have adopted an innovation influence those who have not yet adopted. As more individuals adopt, it is expected that there will be greater interaction effect. There is certainly greater likelihood that members of social system will discuss an innovation when more people have adopted it than only when few have adopted it. The same condition was found here. As more watershed groups were formed in the villages of Mandalgarh block area, with interaction effect the message reached up to community 2. When the number of adopters in a social system increases, the group pressure for adoption thus becomes more intense. In the study by Rahudkar (1958) it was found that neighbour to neighbour communication was of greater importance in the diffusion of farm innovations than any other communication channel in his study of Indian villagers. In an interacting population group like this the behaviour of one group was bound to influence the behaviour of others.

8. Change Agent : When an idea is new, it is obvious that the new idea must enter the social system from some source. The source may be an external source. The change agent is an "outsider", a professional person, who attempts to influence adoption decision or to secure adoption of the new ideas. Here in this study, the NGO was the change agent whose presence and influence was a very important force in leading adoption of watershed by community 1 to a very large extent and then influenced community 2 as well. Shantanu ji from the NGO was the change agent who was accepted by one and all in the community. The NGO devoted substantial time, resources and effort to facilitate collective action and social organization. Instead of spoon feeding or creating a dependency it asked the people to start fencing on its own in order to test their ability.

The rate of adoption of new idea depends on the extent of promotional efforts made by change agent. Here the change agent had made extensive efforts like paying several visits, conducting meetings, encouraging women to participate, using mass media like documentary films, photographs, posters and field visit to clarify the conceptual doubts of the people regarding watershed. **Apart from all these efforts, the technical and monetary support from the NGO lead to a rapid rate of adoption**. Kerr (2007) also states that one of the biggest challenge to watershed

programme is its cost, which got overcome here with the presence of the NGO. The presence of a third party facilitator plays an important role in smooth negotiation process and protecting the interest of the weak. Here the NGO stressed the inclusion of women in the watershed management committee and there upon women were included.

The Watershed programme was both a new and old idea to the community 1 and community 2. It was old because some of the watershed structures though in a ruined condition had already existed in community 1 and 2. A community 2 farmer also talked about trenches which were dug 20 years ago. On the other hand the idea of watershed was new because the idea of using half hill for grazing and restricting the other half for allowing regeneration did not strike to the mind of the villagers. It was the NGO who provided this simple yet very useful idea to the people. All the community members knew about the recharging principal but it developed as a common understanding about harnessing rain water only when the NGO came and discussed with all in a meeting. The presence of NGO made a significant difference in bringing a common opinion among the people. It encouraged participatory work right from planning, programming and up to implementation stage.   Though leadership can kick off work as it happened in community 1 but then it was the financial and technical support of the NGO   which helped the community to move from forest conservation to full fledged watershed program.

CONCLUSION

The discussion in this paper strengthens the argument made by Rogers (1962**)** in his theory of *Diffusion of Innovations* that diffusion is a slow process and spread of any innovation takes time. It is obvious that all the individuals do not adopt an innovation at the same time. Based on the degree of innovativeness, i.e. as and when the individuals and group adopt community 1 can be classified as an "adopter" since they adopted the watershed programme quite early. On the other hand community 2 was a " laggard", who possessed almost no leadership. In community 2 no leadership emerged for a long time and whatever emerged did not sustain. In the second attempt too, the leadership actually came from a person who resided outside community 2. Even though watershed programme had become widely known in the social system, community 2 can be said laggard for its unwillingness to accept new idea.

The study seeks answer to understand why people do not take preventive measures of rain water conservation, knowing the frequent but un predictive occurrence of drought which may ruin not only their livelihood (agriculture and dairying) but also worsen the home management with decreased availability of water. According to Garrett Hardin (1968) the answer to problems like these require "a fundamental extension in morality. But becoming a responsible citizen does not fetch anything to the person, rather he loss the gain coming out of exploiting commons". The big question is who would act against his own interest. But people of community 1 disproved Hardin's theory and ignored their instant gain over long term collective gain. The people collectively took the decision of stopping the exploitation of commons. The tragedy of commons would be inevitable where the above stated

factors are absent. But with the presence of these factors, the commons can be well managed. No single factor work in seclusion. Each factor affects the other and in turn gets affected by the other. It is the absence of these factor which delays the process of adoption. On the other hand the combination of these factors influences adoption positively.

Acknowledgements

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