

## WETLAND MANAGEMNET PLAN

Wetland Management Plan for 5 villages of Bhandara and Gondia districts of Maharashtra having catchment area of Wainganga River



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By: Wainganga Water Partnership

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## INTRODUCTION

The Wainganga basin is known for the traditional water management system. The traditional tanks are called Malgajari tanks in all the government records. The tank plays a vital role in supporting the rice crop of the region and also provides support to the marginal farmers or landless people through fishery and the other resources of tanks. After acquisition of these tanks from Malgajars, by the state Irrigation Department of Maharashtra, other departments also came into the picture in the catchment and command area of the tanks. Holistic approach of water management was fragmented in the programmes and policies of these different departments, which further resulted in deteriorating condition of these tanks and the dependent communities. Mere revival of the traditional structure is not enough as state government is trying to do this since last five decades, and still the tanks are not in very good condition and the benefits from it are also remained limited for some of the traditional users only.

So documenting the conditions of tank and the associated resources and further sharing of the information with community for planning is the most needed activity. These traditional tanks remained functioning for hundreds of years, as they were managed in past by the local, dependent communities. Alienation of people from this system, after the centralization of resource is also a major reason for the depleting condition of tanks. In this regard, preparation of wetland management plans by Wainganga Area Water Partnership (WWP) had assumed prime importance for benefit of the communities. Further follow up of the plans by WAWP at Gramsabha and district level has guaranteed that the plans will be executed and people will benefit from these works in their respective villages. Some of the work, such as extraction of *Ipomoea fistulosa* and plantation of aquatic plants, which are not included in the Maharashtra Rural Employment Guarantee Scheme (MREGS) and these works have also been proposed by community through Gramsabhas, as they were crucial from the point of view of the communities. The district administration has also responded positively to include these works as the special case, on the basis of the data collected in 2016. Jointly the WWP is preparing the proposal for inclusion of these works in the MREGS, so it can be implemented in Maharashtra state by the people, who want to undertake these works in their respective villages.

The regulations for the selected water bodies, defined for certain set of conditions, in the particular village, are also contributing to the management of these traditional water resources in Wainganga basin. So these plans are not only for management of the five wetlands in related villages, but they will also contribute in the overall management and development of the traditional tanks in 5 districts of Vidarbha region of Maharashtra.

### **Process Description:**

The activities of 2017 by Wainganga Water Partnership were focused to prepare wetland management plans for five water bodies of villages, Nimgaon, Channa, Khamkhura, Sawartola in Gondia district and Bampewada in Bhandara district, in Wainganga basin area with the help of Global Water Partnership and India Water Partnership and in collaboration with Bhandara Nisarga Va Sanskruti Abhyas Mandal.

For facilitating the community organizations, especially the women organizations, to prepare the plans, five workshops were organized in the Gram Panchayat offices of these villages. Power point presentations of every selected wetland of these villages were prepared by WWP and discussed with the communities in presence of their leaders. The study of catchment area, land use pattern of catchment, diversity and distribution of aquatic flora, relation with fishes and birds, species of

importance from the point of view of dependent communities on the ponds and their relationships with the above resources, wetland use patterns and its good and ill effects on the overall wetland diversity were discussed in detail with the participants. Mainly, the members of Gram Panchayat, Biodiversity Management Committees, Fishing Cooperative Societies and Women's Organizations of village level (SHGs and Gram Sabha) were the participants of these meetings. These community organizations have the rights of management and development of all natural resources at village level. The issues of importance were highlighted before the community leaders to provoke them to regulate and plan the management and development of wetlands in their area.



Workshop at Nimgaon Gram Panchayat



Workshop at Sawartola Gram Panchayat



Workshop at Channa Bakti Gram Panchayat



Workshop at Bampewada Gram Panchayat

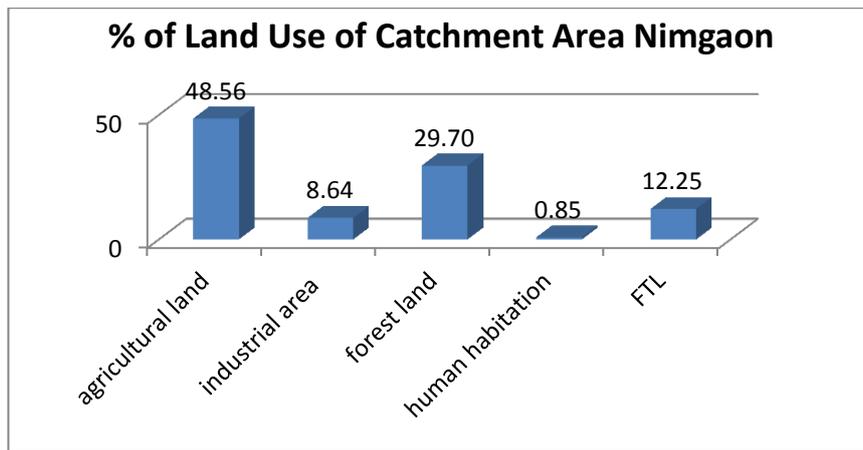
During the process, WWP observed that male dominance is everywhere; even the community organisations like, Gram Panchayat bodies, fishing cooperative societies. These office bearers, compromises the interest of the society at large for political or economical gains. Firstly WWP started organising the women from fisherman community under self help groups. Then participation of them in women gramsabhas was the next strategic step for influencing the decision

making process at village level. Due to this, some pressure was created and decisions were influenced in favour of the marginalised. After this, women from all communities and existing Self-Help Groups (SHGs) came together and organized at village level. WWP also shared outcome of this study with these Women SHGs. Further these Women SHGs have participated in the workshops for preparation of wetland management plan also. Together with fishing cooperative society and biodiversity management committees, these women groups have participated in the Ipomoea extraction activity also by "Shramdan". The separate document has been prepared on this activity, to assess the effects of Ipomoea extraction on the local aquatic plants and has been shared with the district administration to strengthen the proposal of Ipomoea extraction. **Women are associated in each and every activity, which is associated with tanks but they were nowhere in the decision making process (the Government of Maharashtra should consider association of women in all human activities in decision making processes).** But due to the women centric approach, they actively participated in the women gramsabha and village gramsabha and proposed the tank related works to take up in Maharashtra Rural Employment Guarantee Scheme (MREGS). Some works, which were not there in the MREGS, have also been proposed through gramsabhas. The work of Ipomoea extraction and plantation of aquatic plants (for developing the habitats of fishes for increasing the production of local fish species) has been proposed. The district administration is also positive to prepare the proposal for sending it to state government to include the new works in MREGS, as they will be helpful to restore the tank diversity to increase the benefits to all users. Advocacy for decreasing the use of pesticides and weedicides in catchment area was taken at different levels. Through these wetland management plans, the focus is to regulate the harmful activities and to promote sustainable use of a water body for maximising the benefits at village level and for the conservation of freshwater biodiversity also for economic benefit of the community.

The details of 5 Wetland Management Plans prepared by WWP with support of India Water Partnership (IWP) are given below:

**(I) Wetland Management Plan of Bandhya Talao Nimgaon:**

The area of Bandhya Tank of Nimgaon is 11 ha. It provides protective irrigation to 43.7 ha agricultural land for rice crop. This tank has the catchment area of 89.8 ha. Total Population of the village is 2409 (556 Households).





Catchment area map of Bandhya Tank, Nimgaon, prepared by using GPS

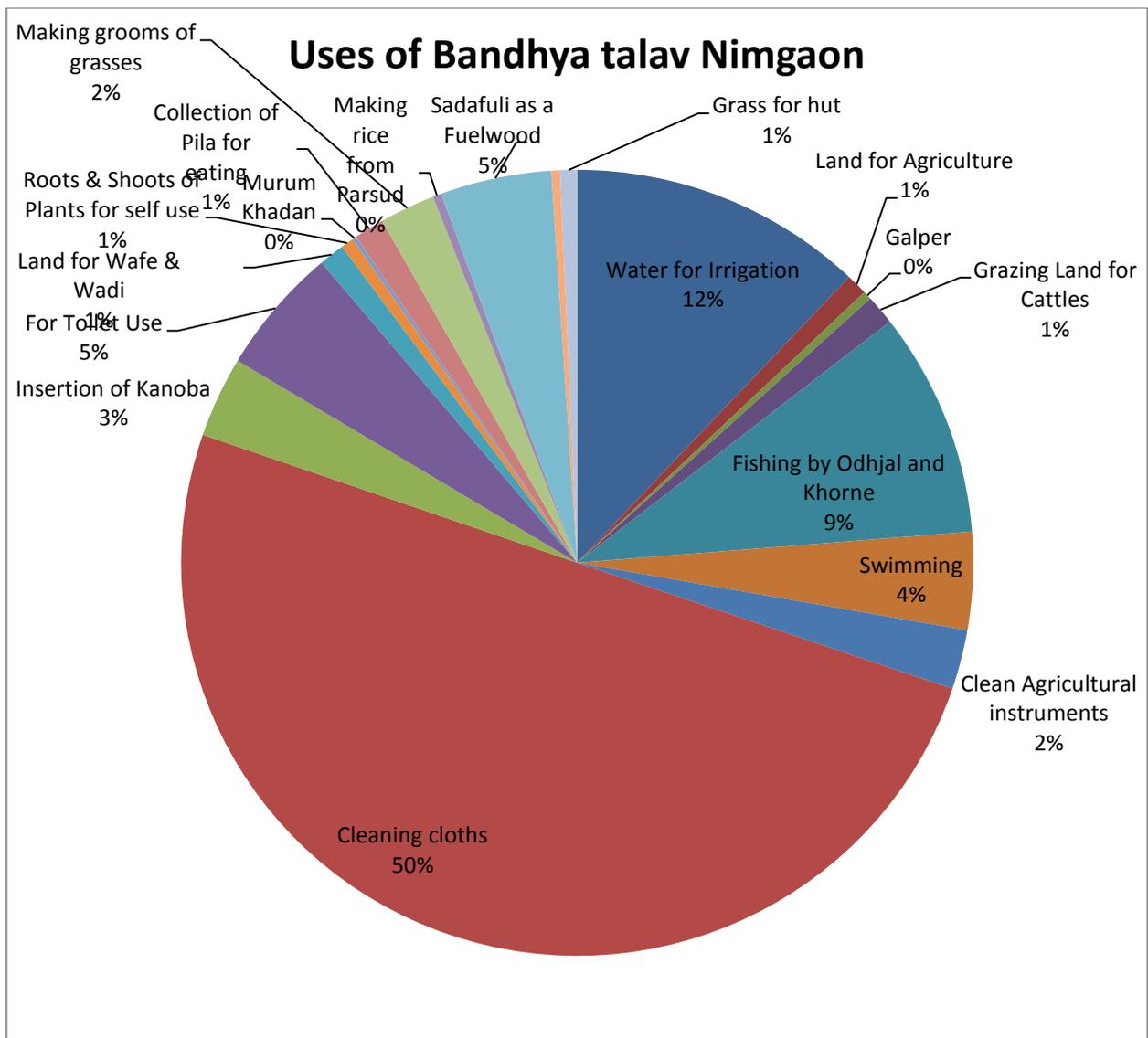
**Important Fish species from community's point of view**



Clarius Magur



Heteropneustis fossilis



#### Rules and Regulations:

From the discussions based on the documentation, following rules have been framed for Bandhya Talav (Tank).

There is a newly started practice of catching reverse migration of fishes in July and August every year. In this season, the fish climb upwards and goes out of the tank, through the inlets. All the villagers, including women and children, go to catch the fishes, in the water channels. This practice not only reduces the brood stock, but it also stops the process of auto stocking of the fish seed in the tank. It results in less production and loss of fish diversity also. Therefore, it is resolved that **no villager will be allowed to catch fishes during the season of reverse migration of fishes**. The Fishing Cooperative Society and Biodiversity Management Committee of Nimgaon has jointly taken this decision.

The agricultural area in the catchment of Bandhya Tank is 57.20%. All the farmers are using pesticides and weedicides, the doses are also very high, due to lack of knowledge by them. **The pesticides and**

**weedicides are available in form of 0.5 or 1 litre, so irrespective of the area and requirement, if these pesticides and weedicides are once purchased from market are used in the farm lands also. These chemicals should be banned.** But the transformation from chemical to organic is not easy. Therefore, there is need to access different schemes of agriculture department as buffer to minimize losses. For marketing of organic produces, support will be needed from the district network of organic farmers. **The loss of fish diversity is very high due to the use of these chemicals in farms,** as the agricultural land is adjacent to water storage, and the fishes goes to the agricultural area during reverse migration and high mortality is observed due to the use of chemicals. **Though, the villagers, including farmers and the fishermen, know that these chemicals are resulting in loss of indigenous fish diversity and the production, they are not able to move away from the practices in agriculture.** The Gramsabha, especially the women organizations, are planning to tackle the issue through organic farming. For this purpose, **it has been decided that the scheme of agriculture department for promotion of organic farming will be accessed.**

Forest area is 29.69% in the catchment. The traditional tank management committee comprises of the farmers, who are getting irrigation from the tank, will repair and maintain the water channels, coming from forest, in the tank. The possibility of including members from fisherman community in this committee has also been discussed but the decision is pending.

8.64% area of agricultural land is converted to industrial area. The MIDC (Maharashtra Industrial Development Corporation) is established in Arjuni Morgraon, District Gondia (Maharashtra). The process of selling plots to different small and medium units is going on. Effluents or sewage from this area will be the future problem. **There is the need that general rules for treating the waste should be laid down through gramsabha resolution and need to be sent to the district administration and to the MIDC offices of district and region.**

The seed of Tilapia should not be released in the tank. Cyprinus (Common carp) and Grass carp should also be used for management of aquatic vegetation only, and not for production. **According to vegetation cover observed in the period of September to December, the decision of releasing 5 to 10 number of fishes per hectare should be taken by the fishing cooperative society.** The fishing cooperative society is willing to introduce this regulation as the fish production of this tank is reducing due to habitat loss.

The aquatic plants diversity will be conserved in this tank to provide habitat for the small indigenous fish species. *Mystus cavasius*, *Chanda nama*, *Ompok bimaculatus*, *Wallago attu*, *Clarius magur* and *Heteropneustis fossilis* are the rare and threatened species. They are economically important for whole community and specially for fishing society. Though species wise habitat studies of these local species is not available, the observations and experiential knowledge of the community plays important role in the conservation.

**Though cutting and taking away Sedges will not be allowed for burning as fuel or for stall feeding to animals. However, grazing of livestock in tank itself will be allowed.**

**Cow dung cakes collection from the Bandhya tanks and selling will not be allowed by anybody. The fishing society will collect the cow dung and throw it in shallow waters.**

Open defecation in the area of water body is banned. If found, the defaulter will be fined for Rs.500/-that will be collected by the gramsabha.

**Desiltation activity will be carried out, only through the MREGS, (by labourers) use of machines will not be allowed.** According to MREGS rules, the desiltation by labourers is carried out, once in five years. And if the machines are used, then another desiltation by machines is carried out after ten years. But, it is proposed that, the tank which is big in size, should be desilted in stages. Desiltation of one area of tank in first year, and then another area in next year and so on. The proposal for this activity, clubbed with plantation of aquatic plants through MREGS will be sent to the district administration.

Ipomoea extraction activity needs to be taken up regularly for at least three years to eradicate it completely. This activity should be proposed through MREGS. Plantation of aquatic plants for habitat development should be done through MREGS.

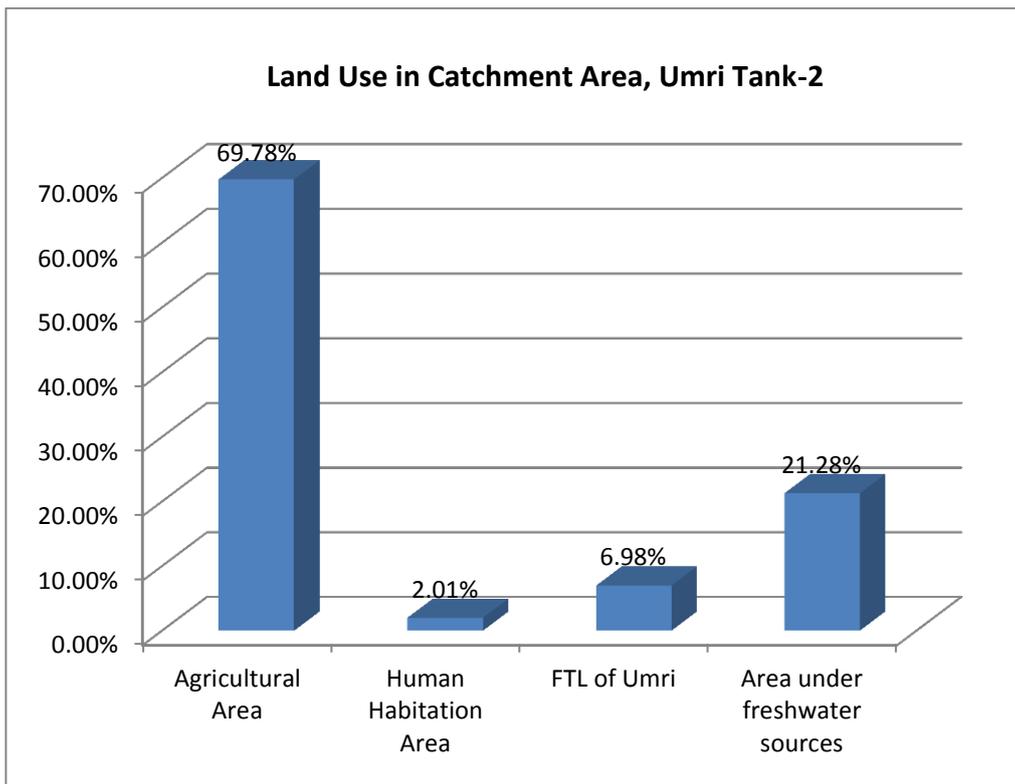
Construction of bore wells, in the downstream of the tank is not allowed, as the tank goes dry and only limited persons, with bore wells gets the benefit of it. Water for fishes and for livestock in the summer season is also important.

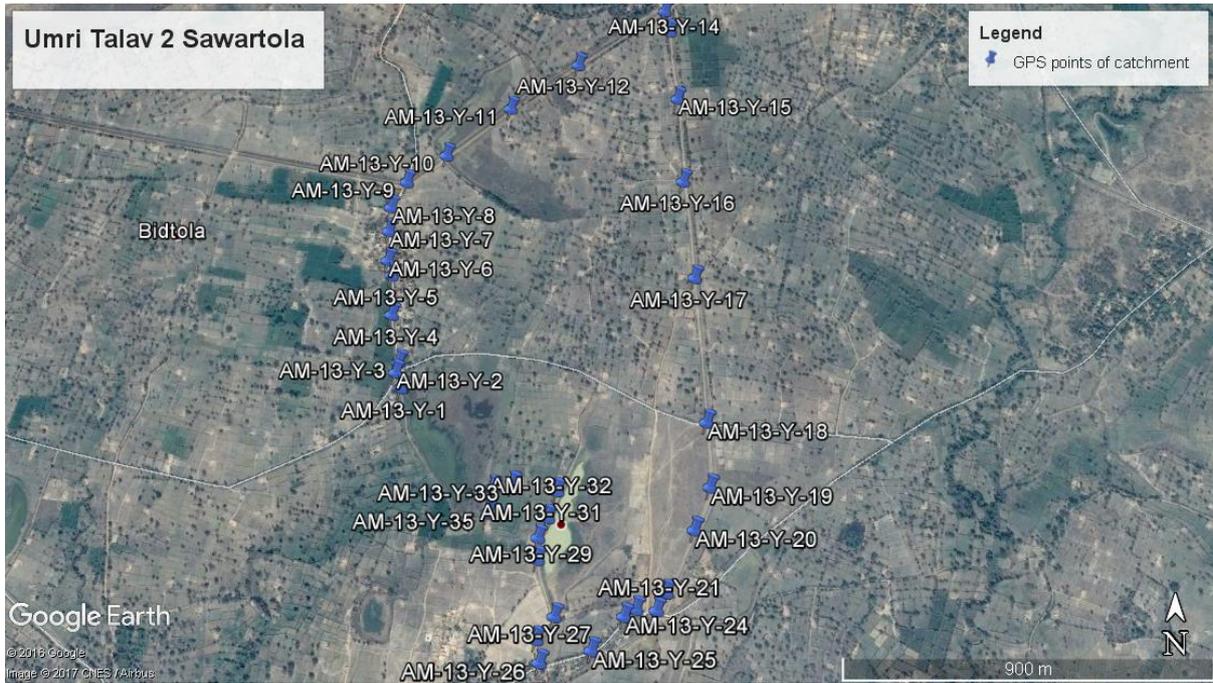
The cloth washing activity is carried out by half of the users of tank. This needs to be regulated as chemical detergents are released and pH value goes high. For this purpose, the women groups have been asked for more time to decide upon, for alternate solutions.

Mining of red laterite from this tank has been done in past, therefore that area, which amounts to about 10% area of the tank has no and unnecessarily deep, at the left corner of the tank. No mining of minerals will be allowed from the tank as it affects vegetation near the Talao.

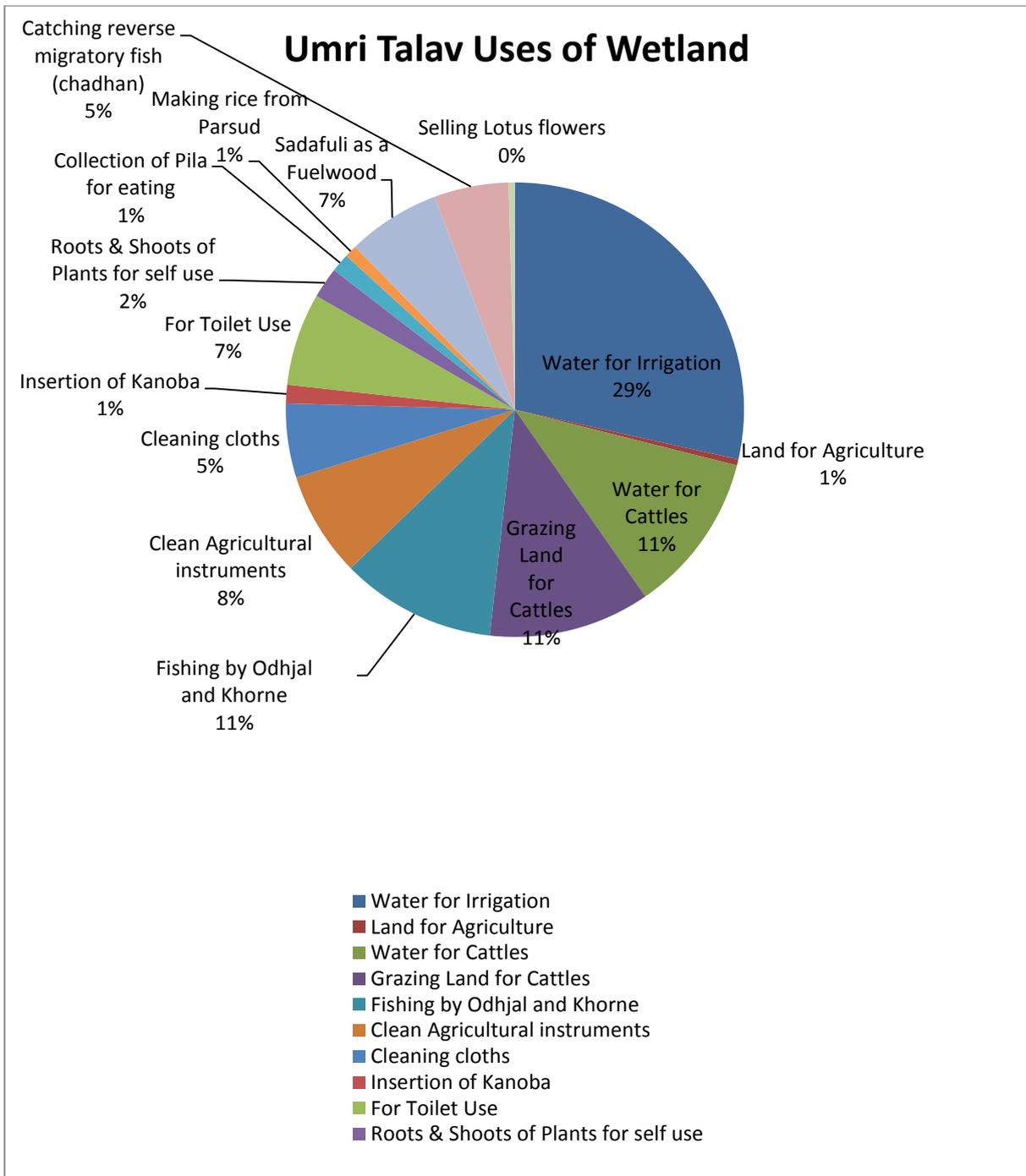
#### **(ii) Wetland Management Plan of Umri Talao (Tank) No.2 Sawartola:**

The area of Umri Tank No.2 of Sawartola (Bid Tola) is 4.64 ha. It provides protective irrigation to 80 ha agricultural lands for rice crop. This tank has the catchment area of 8.11 ha. Total Population of the village is 243(51 Households). There is 1 big tank and two small tanks in the catchment area of Umri tank. So even if the tank area is small, excess water from upstream tanks are stored here, therefore the irrigated area is larger.





Catchment area map of Umri Tank No.2, Sawartola, prepared by using GPS



**Rules and Regulations:**

From the discussions based on the documentation following rules have been framed for Umri Tank No.2.

The agricultural area in the catchment of Umri Tank is almost 70%. All the farmers are using pesticides and weedicides. Out of 71 farmers in the catchment only 4 farmer practices organic farming and rest for self-consumption. But they are also big farmers and small and marginal farmers are not able to shift from chemical to organic, due to losses and extra labour work in organic farming methods. **Thus, there**

**is the need for awareness and also accessing schemes for organic farming and market linkages with these farmers.**

The use of Cyprinus (Common carp) and Grass carp is needed for management of aquatic vegetation as the vegetation growth is excessive. 20 number of fishes per hectare needs to be released here, according to the fisherman, but they agreed to take overview of the decision every year for deciding the number of fishes to be released.

The aquatic plants diversity will be conserved in this tank to provide habitat for the small indigenous fish species. *Clarius magur* and *Heteropneustis fossilis* are the rare and threatened species. *Puntius chola*, *Salmophasia bacaila*, *Mystus bleekeri*, *Channa gachua*, *Channa punctatus*, *Channa striatus* are the fish species, which have high demand in local market but the production is going down. For this reason also, there is the need to minimize the use of chemicals in the agricultural land in the catchment. Cow dung cakes collection will not be allowed by anybody. The fishing society will collect the cow dung and throw it in shallow waters.

Open defecation in the area of water body is banned. If found guilty, a fine of Rs. 500/- from the defaulter will be collected by the gramsabha.

Desiltation activity will be carried out, only through the MREGS, (by labourers) use of machines will not be allowed.

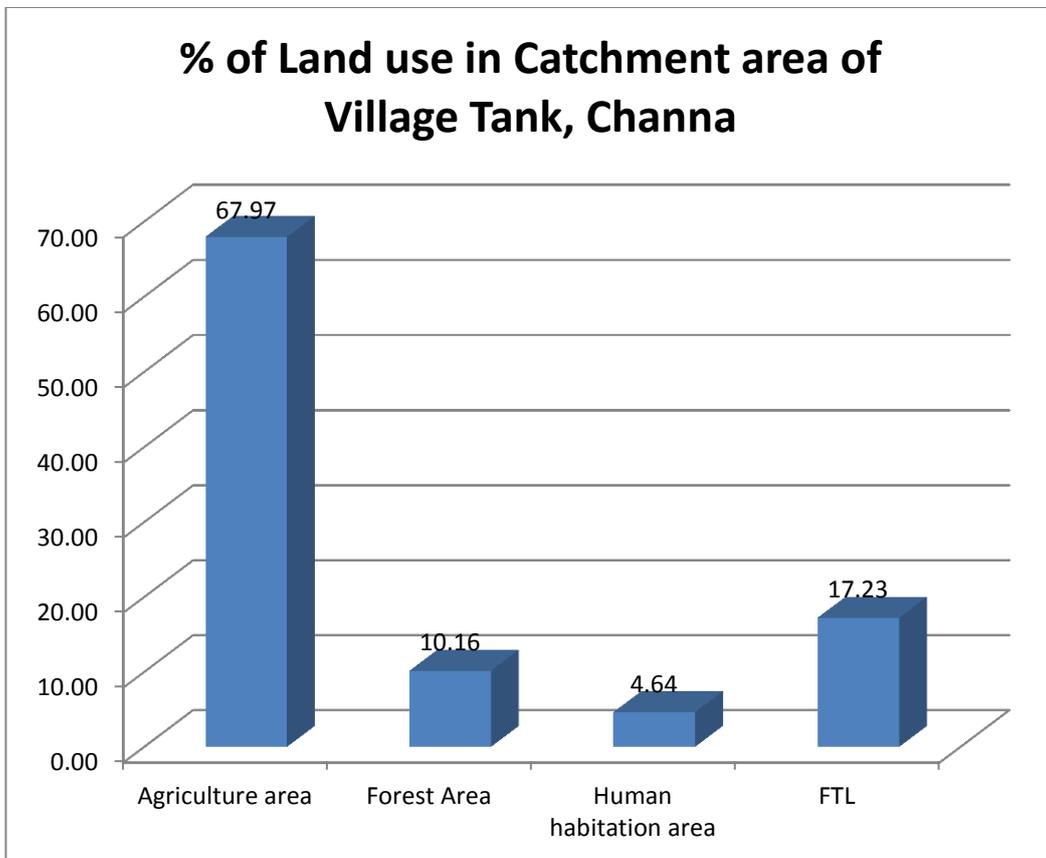
Ipomoea extraction activity needs to be taken up regularly for atleast five years to eradicate it completely. This activity will be proposed through MREGS. The bund area and the left side of the tank, adjacent to village is totally covered by Ipomoea. The Bio-diversity Management Committee (BMC) has also supported the demand for further follow up.

Plantation of aquatic plants for habitat development should be done through MREGS, after the desiltation activity and Ipomoea extraction.

The control over bore wells in command area needs to be adopted as it is emerging as major problem. But people also think that a strong act or order from Government can control this as the economically and politically strong people construct the bore wells, not the common people, and they are not able to stop them.

### **(iii) Wetland Management Plan of Gaon Talao Channa:**

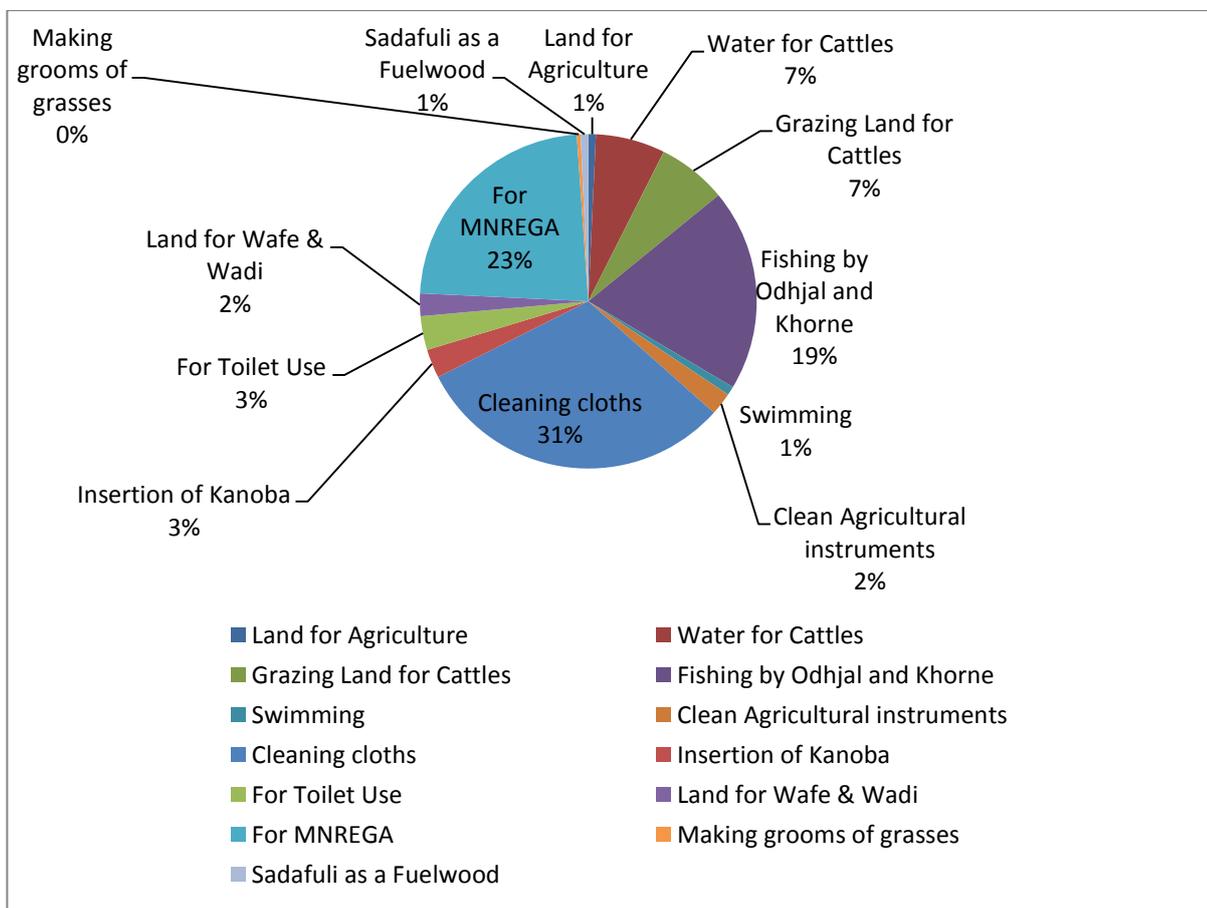
The area of Village Tank of Channa is 32.6 ha. It irrigates to 178.7 ha. agricultural land for rice crop. This tank has the catchment area of 253 ha. Total Population of the village is 2156 (516 Households).





Catchment area map of Village Tank, Channa, prepared by using GPS

### Use of Wetland Channa Village Tank



## **Rules and Regulations:**

From the discussions based on the documentation following rules have been framed for Channa Village Tank.

The agricultural area in the catchment of Channa Tank amounts to 68%. Almost all the farmers are practicing the use of fertilizers and pesticides. The people think that this is a long term issue. Awareness generation and motivation for organic farming is needed. As many of the farmers in catchment belong to other village, therefore convincing them is not easy.

Forest area is 10.16% in the catchment. Afforestation activity needs to be undertaken here as the tree cover is vanishing due to illicit felling. **The forest protection and plantation of local species needs to be undertaken here. For this purpose, the help of Forest Department and Village Forest Committee will be taken.**

The seed of Tilapia has been released in the tank by the fishing cooperative executive members of last regime. They have released those as no other fish was giving the production. **There is the need to undertake the plantation of aquatic plants activity in this tank to develop the habitat for rise in the production. This plantation work should be proposed through MREGS.**

Desiltation has been carried out in 2017 in this tank through MREGS. But this work also needs to be carried out in other areas of tank.

Ompok bimaculatus, Ompok pabda, Wallago attu, Clarius magur are the rare and threatened species. **Habitat development activity for these species needs to be adopted in this tank through MREGS.**

Desiltation activity will be carried out, only through the MREGS, (by labourers) use of machines will not be allowed.

**Ipomoea extraction activity needs to be taken up regularly for three years to eradicate it completely. This activity should be proposed through MREGS**

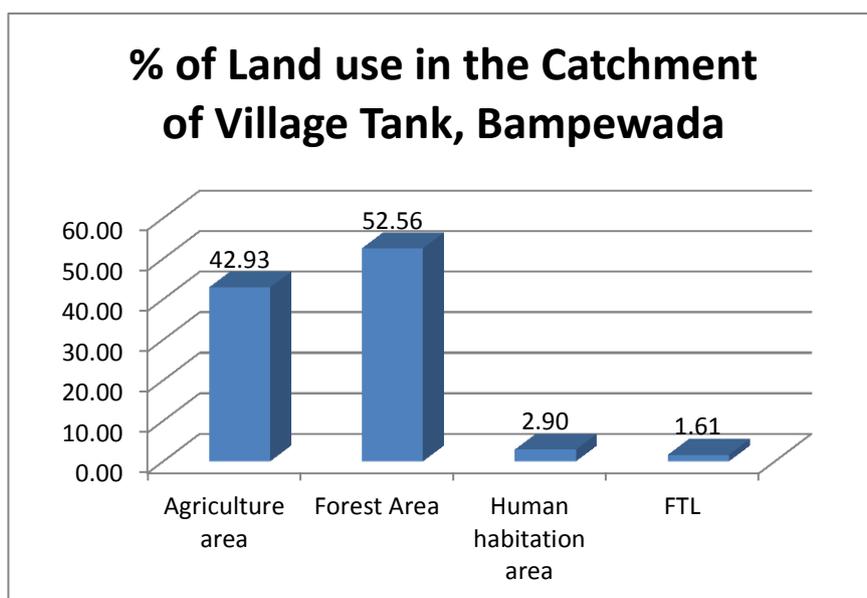
There are already 36 bore wells, and 33 dug wells constructed in the command area. The use of water through them for summer crop needs to be regularized. **But here also people think that there should be strong regulation from the Government to implement it at village level.**

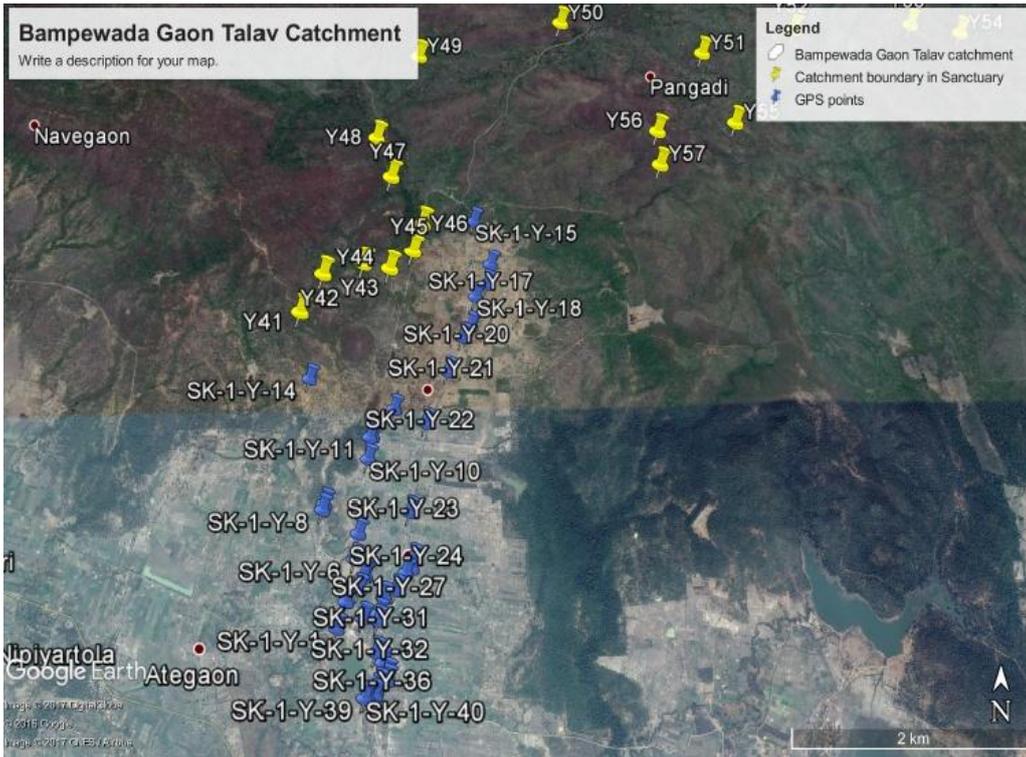
**The cloth washing activity is carried out by 31% of the users of tank. This needs to be regulated as chemical detergents are released and pH value goes high.** The means for reducing this or the alternatives are not yet explored as no one has put such data before us. It needs to be addressed through the Gram Panchayat for providing alternatives.

**The construction of fish rearing tank is needed in this village for improving the production. It should be proposed through MREGS.**

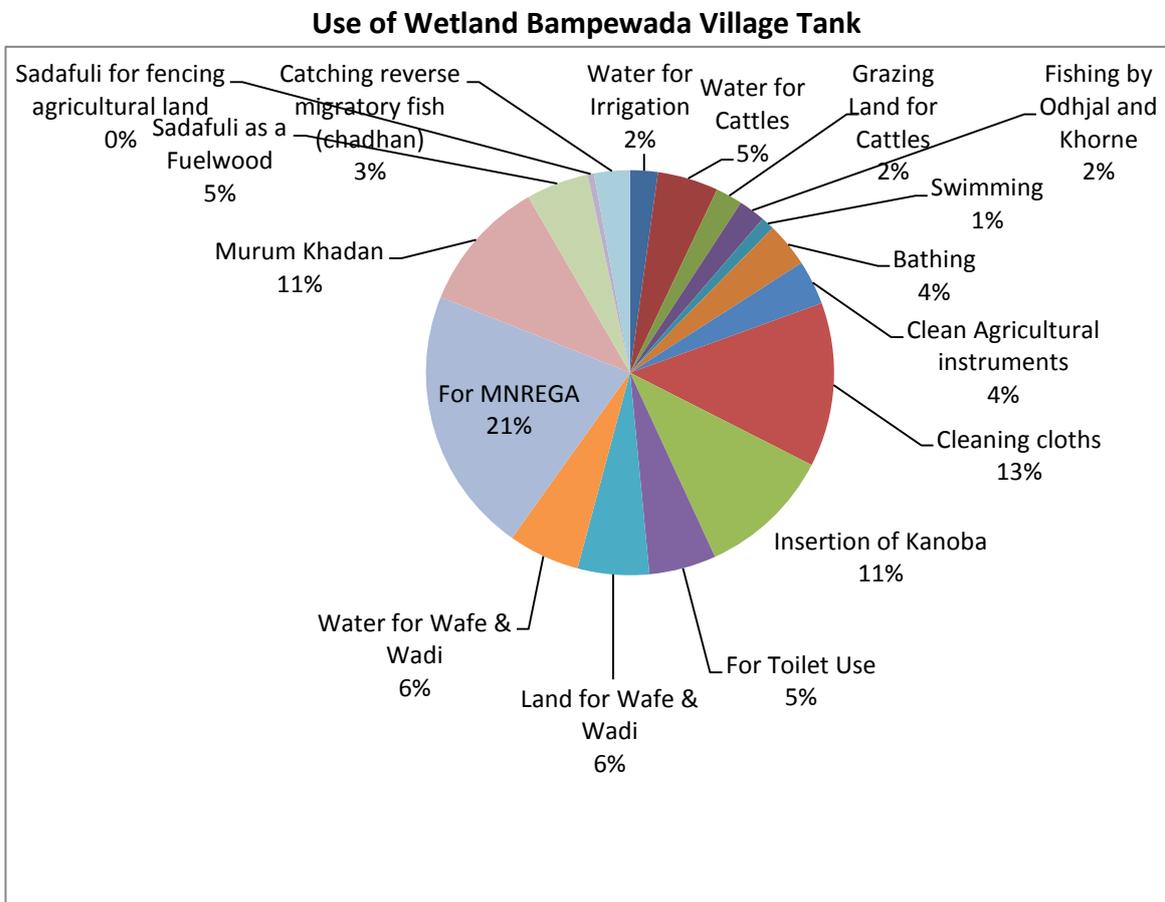
**(iv) Wetland Management Plan of Gaon Talao Bampewada:**

The area of Village Tank of Bampewada is 6.96 ha. It provides irrigation to 176 ha. agricultural land for rice crop. This tank has the catchment area of 586 ha. Total Population of the village is 2315 (650 Households).





**Catchment area map of Village Tank, Bampewada, prepared by using GPS**



## **Rules and Regulations:**

From the discussions based on the documentation following rules have been framed for Bampewada Tank.

The water distribution of tank for irrigation will be done in accordance with the rules laid down by the water distribution committee of farmers. Use of engine or electrical pump will not be allowed in the tank. Water distribution will be done through the gates only. Dead stock will remain in the tank for fishery purpose.

**If anybody wants to use galper land they have to inform it to the fishing society and pesticides will not be allowed to use in the tank FTL area.**

Livestock grazing and drinking water is allowed, but the buffalo owners should follow the restrictions of the Fishing Cooperative Society, as plantation of aquatic plants has been carried out for last years in this tank by the Fishing Cooperative Society.

**No villager will be allowed to catch fishes during the season of reverse migration of fishes, as it reduces the fish diversity and also affects the fish production of local species.** The Fishing Cooperative Society and Biodiversity Management Committee of Bampewada has jointly taken this decision.

The agricultural area in the catchment of Bampewada Tank is 43%. Though the forest area is 52.56% in the catchment, the water is not coming directly to this tank. It has been stored in an annicut and from there it is diverted towards the tank. Therefore the humus is not coming to tank, along with the water, which reduces the growth of natural fish food. And a trader has the contract of this tank in past, he has introduced Tilapia here, and it is the problem of society to eradicate it. The society has decided to net all the Tilapia and then use lime powder in the summer, as there was very low rainfall this year, so the water spread will be minimal. And after that, the plantation activity will be carried again through MREGS.

The aquatic plants diversity will be conserved in this tank to provide habitat for the small indigenous fish species. *Mystus cavasius* and *Clarius magur* are the rare and threatened species in this tank. They are economically important also for the fishing society.

**Desiltation activity will be carried out, only through the MREGS, (by labourers) use of machines will not be allowed.**

**Ipomoea extraction activity needs to be taken up regularly for atleast three years to eradicate it completely. This activity should be proposed through MREGS**

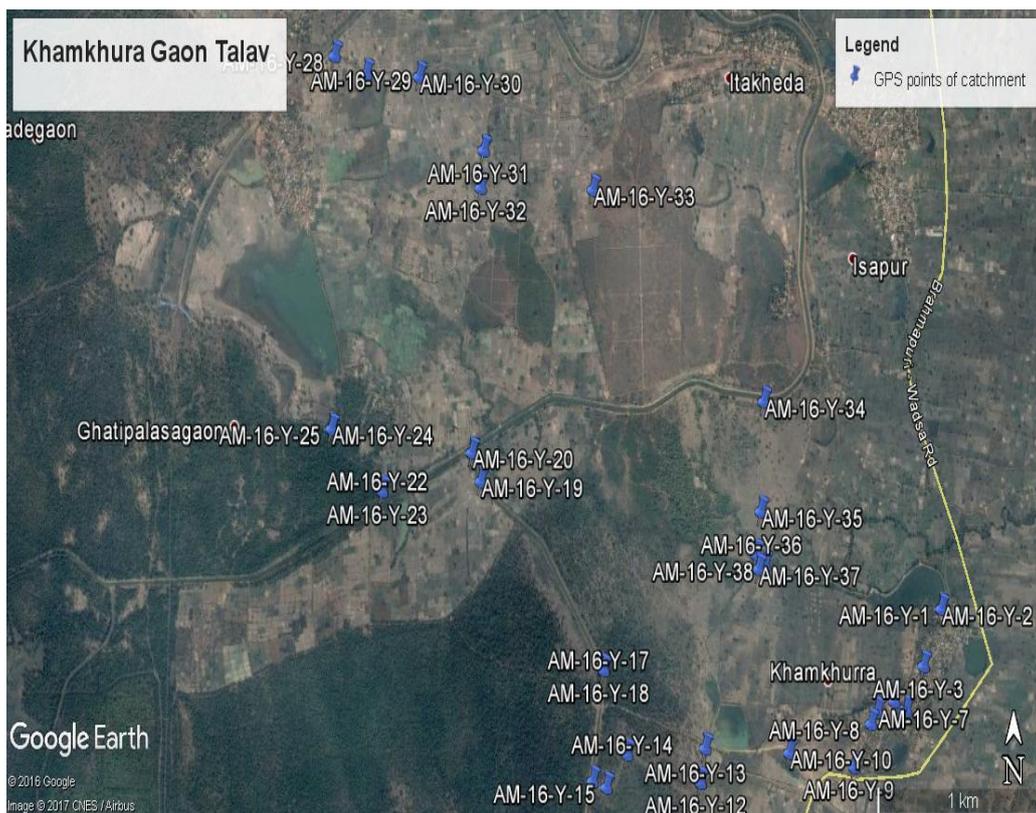
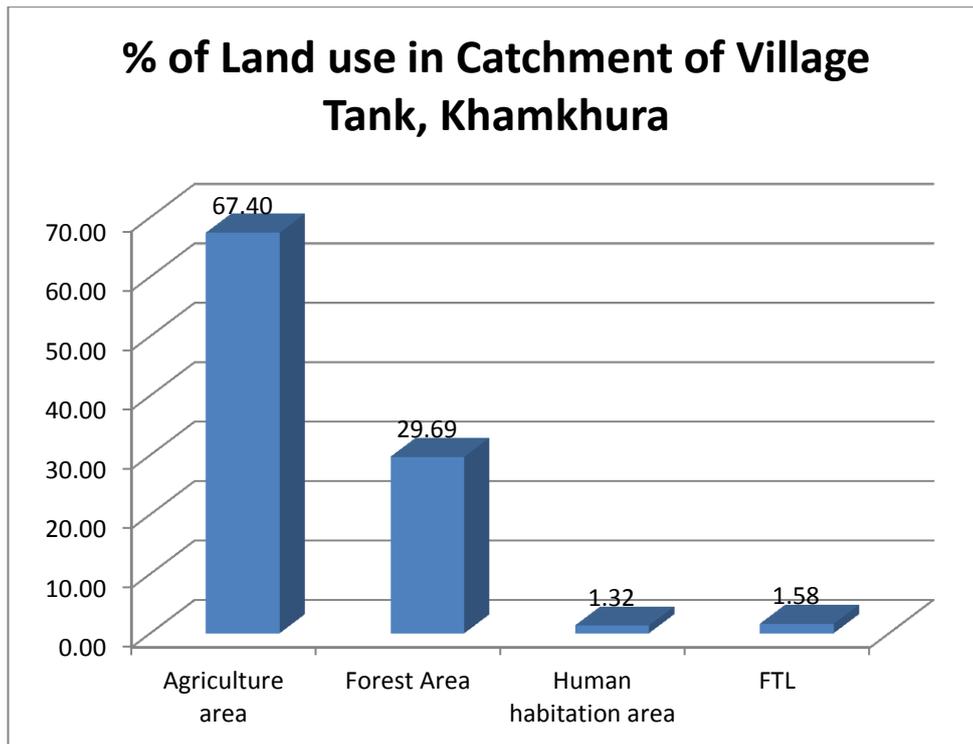
Mining of minerals will not be allowed from the tank. The red laterite soil was taken away from the tank before two years, but it has to be stopped now, as in the absence of top fertile soil, plants growth is affected.

The use and throw material of plastic, after the household programmes in village is banned, as the plastic waste depletes the condition of tank and reduces vegetation growth on ground. The BMC will look over the issue and will display the board of notice on the tank.

**(v) Wetland Management Plan of Gaon Talao Khamkhura:**

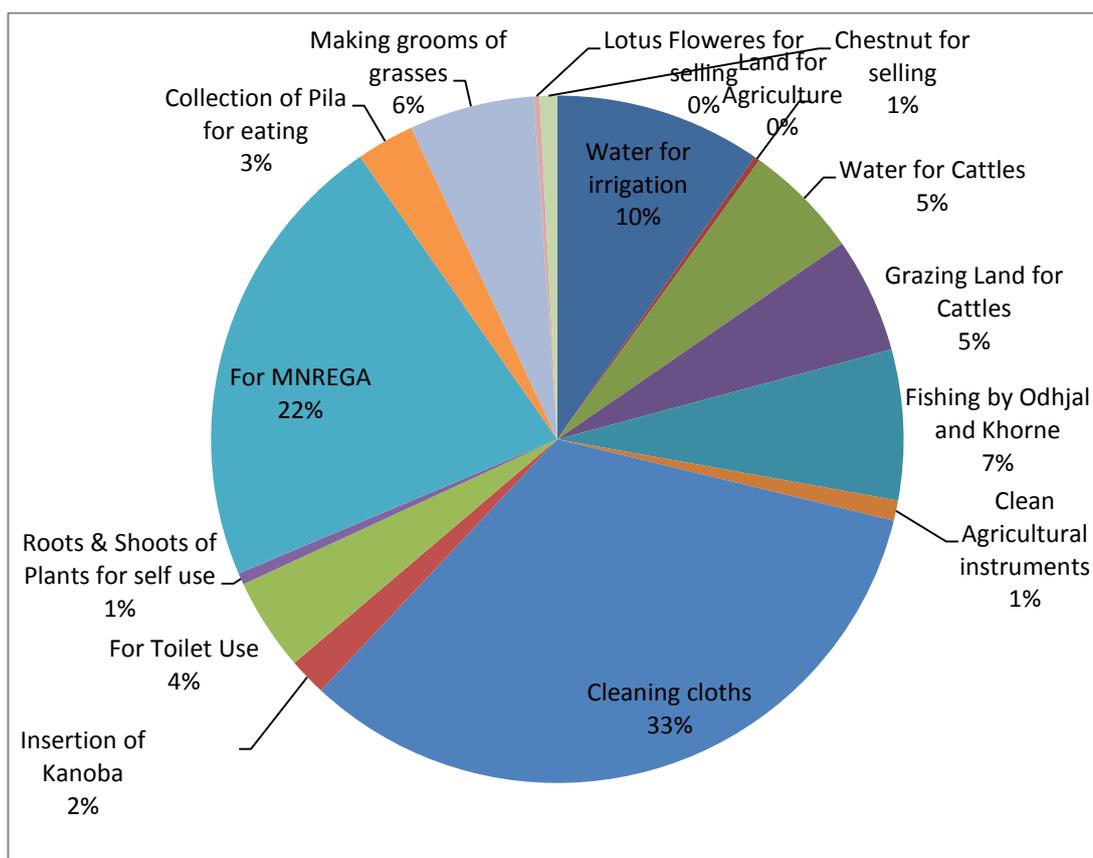
The area of Village Tank of Khamkhura is 6.73 ha. It provides protective irrigation to 320 ha. agricultural land for rice crop. This tank has the catchment area of 521 ha. Total Population of the village is 1680 (387 Households).





Catchment area map of Village Tank, Khamkhura, prepared by using GPS

### Use of Wetland Khamkhura Village Tank



### Rules and Regulations:

From the discussions based on the documentation following rules have been framed for Khamkhura Village Tank.

Catching of fishes during the season of reverse migration of fishes is banned by the Fishing Cooperative Society and the BMC of this village. A fine of Rs. 500/- will be imposed, if anyone catches the reverse migration of fishes.

The agricultural area in the catchment of Village Tank is 67.40 %. All the farmers are using pesticides and weedicides, but here also people think that this issue needs to be addressed strategically, as returns from organic farming are not high enough, in comparison with current trend of farming.

Forest area is 29.69% in the catchment. Regular plantation activity needs to be carried out near the catchment area to protect bio-diversity. But it falls in the jurisdiction of another village panchayat namely Wadegaon. Coordination with Wadegaon is needed for this purpose.

The aquatic plants diversity will be conserved in this tank to provide habitat for the small indigenous fish species. 37 indigenous fish species have been recorded in this tank. Out of it Parambasis lala is the most threatened species and it is the first report of this species occurrence in Maharashtra. The Fishing

Cooperative Society has therefore banned the use of very small mesh size in the tank, as this full grown fish is about 5 cm.

encroachment in the tank area may be reported by anybody to the BMC or the Fishing Cooperative Society and they will remove it to maintain the area under water body, as it is.

Open defecation in the area of water body is banned. If found guilty, a fine of Rs. 500/- will be collected from the defaulter by the gramsabha.

**Desiltation activity will be carried out, only through the MREGS, (by labourers) use of machines will not be allowed.**

Ipomoea extraction activity needs to be taken up regularly for atleast three years to eradicate it completely. This activity should be proposed through MREGS

The cloth washing activity is carried out by 35% of the users of tank. This needs to be regulated as chemical detergents are released and pH value goes high. But no proper solution was known, but the issue needs to be addressed.

### **Conclusions and Recommendations:**

Apart from the site specific measures, the WAWP has observed that there are certain areas, which are common for all the ex-malgujari tanks in the five eastern most districts of Vidarbha region of Maharashtra, while preparing the development and management plans and defining investment priorities for the same.

### **Recommendations:**

The planning and development activities for ex-malgujari tanks (and all the other water bodies also) needs to adopt the holistic approach. **The catchment area land use patterns, actual tank area and the command area should be addressed as one single unit.**

The Water Distribution Committee at village level, where only the beneficiary farmers are members, should be reformed as **Water Management Committee**. The Integrated Water Resources Management and Development planning process of the State Water Plan also emphasizes on this.

All the village level stakeholders from the catchment area, actual area of water body and the command area should be the members of this Water Management Committee. This committee should be separate for all the tanks in the village, but should be answerable to the Gram sabha. The Biodiversity Management Committees (BMC) are already formed in all the villages, according to the Biodiversity Act, 2002 of the Central Government. These BMCs have the mandate also for the management and regulation of all the natural resources in the jurisdiction of the village. These BMCs can function as the apex body of all the Water Management Committees of the village. 50% women representation in each water management committee and the BMC should be mandatory.

As on village level, the convergence of all the concerned government departments should be done on block and district level, for providing technical and other assistance to the village level Water Management Committees.

Organic farming related all the schemes of State Government should be implemented in the agricultural area of the catchment of the water bodies, on priority.

Afforestation activity of the local species should be carried out in the forest of catchment area.

The desiltation activity should be done by human labour, through MREGS, on priority. When the use of human labour is not possible after certain depth and distance, then machines should be used. But before using the machinery for desiltation, experiment pits should be excavated in all areas of tanks to measure the depth of silt. By leaving the layer of six inches of silt as it is, remaining silt should be excavated. This excavation should be carried out in three steps. The tank area should be divided in three parts, excavation from one part should be carried out in year one, then excavation from second part in year two and excavation from third part in year three.

The activity of plantation of local aquatic plants, which were there in the tank before excavation, should be followed even after excavation, through MREGS. This will again develop the habitat of local fishes and birds and other aquatic animals. This habitat development activity will maximize the benefits of the water body among all social groups of the village. This will increase the utilitarian value of the tank in village.

Construction of bore wells in the command area should not be allowed, as only big farmers are able to do this, and the small farmers are deprived from the water in tank, as the tank goes dry early, than in normal condition. It also reduces fish production and the value of tank for other non consumptive uses.

Water should be distributed through canals and field channels, not from farm to farm. The canal system should be repaired and maintained. If possible, water supply through pipes should be promoted.

Culture of Tilapia and African Magur is banned in open waters by Government of Maharashtra; this regulation should be strictly implemented. *Pangasius* should not be promoted in the tanks for culture, as this cat fish is omnivores and will destroy the fish diversity, as *Tilapia*. The use of Grass Carp should be for management of excessive growth of aquatic vegetation only. It should not release, more than five fingerlings per hectare in the tanks, where vegetation is in excess. Common Carp or *Syprinus* fish should be banned, as this fish forages for the food and destroys the vegetation in tank.