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## **Agricultural landuse pattern of Temghar irrigation project affected village**

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### **Abstract:**

Various dams constructed in worldwide and due to constructions of dams agricultural as well as natural resources have been lost. The socio-economic and geo-bio-physical factors are responsible for the change in the agricultural landuse also. With such approach, the study in this paper addresses land-use change and its effects on the rehabilitation areas. It has assumed much greater importance in India now with acceptance of multi level regional planning. In India various issues regarding depletion and deterioration of forest, water and soil resources are being discussed by various scholars, social thinkers and development planners.

### **Introduction;**

For the cultivation land is a very important resource. In India the size of agricultural changes with physical and socio-cultural diversities. India has different types of landuses pattern. Agriculture is the backbone of the Indian economy and nearly three-fifths of its working population engaged in this sector. Though the share of agricultural sector in gross domestic product has considerably declined to about one-fourth yet the importance of agriculture as employment provider to workforce especially in the countryside is very high. Obviously, agriculture forms the hub of Indian economy as a large number of industries are also heavily dependent on agriculture for supply of raw materials. Agriculture involves not only crops raising but also animal ranching and fishing. In this paper the of agricultural pattern changes due to the dams' construction has been viewed.

### **Study Area:**

The area selected for the present study is a catchments area of the Temghar Lake Catchments from western Maharashtra. The main purpose of the Temghar irrigation project is to supply water for Pune city as well as for irrigation in Haveli, Daund, Indapur and Baramati tahsils in Pune district. The dam is located near village Temghar across river Mutha, which located between at 18° 38' 00"N to 18° 47' 00" N. latitude and 73° 27'00" to 73° 32' 00" E longitude, and is about 50 Km. to the west of Pune city. The project was undertaken in May 1989 and completed in February 1993. The full reservoir levels have been fixed at 706.5m and an area of 499 ha. is thus under submergence. Temghar, Lavarde,

Vegre and Vede are the affected villages due to this irrigation project. The geology of the entire study area is covered by basaltic lava flow known as "Deccan Trap". The climate is tropical monsoon type; the annual average temperature is 24.6 C and annual average rainfall is 1395.14 mm. physiographical the area exhibits extremely rough terrain and high variation in slopes. The area is well drained with perennial streams. There is a considerable variation in soil properties. The Temghar lake catchments have mixed deciduous type of vegetation.

#### Objectives:

1. To find out the agricultural land use pattern in project affected villages.
2. To suggest planning and policy for the sustainable development of agriculture

#### Agriculture:-

It has been noticed that more or less people are dependent on agriculture in the study area. Details of which are marked as land use pattern, availability of agricultural land, its utilization, cropping patterns yields, prices and marketing etc.

#### Land use:-

The area wise details of land use pattern for the villages under study are given in the table no.1.1

From the above table, it can be seen that a good forest cover is available only for Temghar village. Most of it is retained even the construction of dam. The census information indicates that there is no irrigated land in the project area. However, actual field visits indicates that the farmers do provide irrigation for part of the rabbi crops. Overall, the villages under study have higher percentage of agricultural land and less percentage of non-cultivable land as compared to the Tahasil total.

**Table No. 1.1 Agricultural Land use Pattern**

Sr. No.	Name of the village	Land use (as % of total geographical area)				
		Forest	Irrigated	Un- Cultivable		Not available for cultivation
				Irrigated	waste	
1	Temghar	25.4	00	63.9	0.0	10.7
2	Vegre	0.0	00	88.2	6.3	0.1
3	Lavarde	10.2	00	74.7	0.5	14.6
4	Vede	0.0	00	80.7	15.8	3.5
% of total area		7.2	00	80.0	4.8	8.0

#### Availability of agricultural land

Taking into consideration the total area cultivated (excluding cultivable waste) and number of households as per 1991 census, the average area cultivated per household is tabulated.

Considering the livelihood of some landless households, the average cultivable land available per household is less. This availability of adequate land, even though un-irrigated, is the main reason that there are very few households below poverty line.

#### **Utilisation of agricultural land**

It is observed that around 50% of the total agricultural land is available. This land is favorable for cultivation of paddy and wheat. The rest of the land is used for cultivation of small millets and seems to be mere important for potential horticulture.

**Cropping pattern:** In the study area, due to the morphological fluctuation, the size of the land is comparatively very low. Hence, there are limitations on the systematic practices in the cultivation of various crops.

As indicated earlier, paddy is the main crop grown in the area. The varieties of paddy grown are Karjat-84 and Ambemohar-57 which are fine-grained varieties with fragrance and having good price. It is grown only during Kharif season.

After harvesting of paddy, if the soils have retained moisture wheat is sown. Generally, wheat covers around 25% of the paddy land. Around 50% of the wheat also receives irrigation using river water. Thus about 12.5% of the total agricultural land is double-cropped and 6.25% is irrigated. Small millets (Nachani) are also an important crop which is grown in kharif season by transplanting the saplings on the slopes of the hills.

Horticulture is practiced on the bunds of the agricultural plots as well as on the hill slopes Mango; jackfruit and Karwand (jungle berry) are the main fruit bearing trees. Earlier the area was known for its local mangoes. However using the grafting techniques during the last 15 years the trend of growing of Alphonso and payari varieties has increased substantially. The other trees like jackfruit, jamun do not receive special attention but can grow naturally. The bush type plant of karwand is found in abundance on the hill-slopes. Other trees are ani, hirda and jam (toran).

Table No.1.2

Average cultivated land per house hold

Sr. No.	Name of the village	Average land per household (Ha.)
1	Temghar	8.4
2	Vegre	12.7
3	Lavarde	6.6

4	Vede	6.5
<b>Total</b>		9.7

**Yields :-**

The average yield of paddy is around 2.5 tons/ per hectare. The yield can reach up to 3.5 tones, if moisture and climatic conditions are good. Rice processing mills are locally available, mostly of them are hullers. The yield is about 65-70% of the paddy. Thus, a farmer gets around 1.65 to 1.70 tones of rice per hectare. Comparatively the yield of wheat crops and small millets is low. From one hectare of wheat crop hardly 1.5 tone of wheat is received.

Among fruits, considering average age of tree as 10 years, the yields are as follows:

- 1) Mango
  - a) Alphonso - 300 nos.
  - b) Payari - 1500 nos.
  - c) Raywal - 2500 nos.
- 2) Jackfruit - Around 70 –100 out of which 50% are cut raw for marketing as vegetable.  
This also helps in proper growth of the rest of the fruits.
- 3) Jamun - Around 40 -75 Kg per tree
- 4) Karwand - Around 3-4 Kg per bush

**Prices and marketing**

Among the cereals mainly rice is marketed while wheat and millets are for home consumption. The fruits are mainly marketed. The prices received in the market are as follows:

- 1) Rice Rs. 1400 to 1600 per quintal.
- 2) Wheat Rs. 700 to 800 per quintal.
- 3) Small millets Rs. 500 to 600 per quintal.
- 4) Mango
  - a) Alphonso Rs. 500 to 600 per100 fruits
  - b) Payari Rs. 250 to 300 per 100 fruits.
  - c) Raywal Rs. 50 to 60 for 10 kg (around 50-60 fruits)
- 5) Jackfruit-
  - Rs. 5 per Kg. when raw.
  - Rs. 15 per piece when mature.
- 6) Jamun Rs. 10 per Kg.
- 7) Karwand Rs. 5 per Kg.

The trade of both cereals and fruits is handled by the private traders. As has been indicated earlier, from each family some youths have migrated to Pune –Mumbai. These youngsters try to market the home produce to their friends and acquaintances fetching better price for the produce. Horticulture is very important to the farmers because it

generates good income during the otherwise lean season for agriculture. Further once the plants are grown up, they require very little maintenance.

### **Livestock**

Village-wise population of selected livestock is given in table no 5.11 it can be seen from the table that all the villages have sizeable number of cows and buffaloes. However, the percentage of improved varieties is very less. The situation is similar in case of poultry. The approximate number of each variety of livestock per household is presented in Table No. 6.12.

As the cows and buffaloes are mainly of local variety and are mainly fed on the rice straws and grass, they yield very little quantity of milk. Although each of the villages under consideration has milk collection centers, the average collection per centre varies between 300-400 liters during peak season and between 150-200 liters during summer. Goat milk is consumed locally and they are mainly kept for sale. Each goat fetches minimum price of Rs. 400=00. The yield of eggs from poultry is also very poor-15-20 eggs per hen per month. However, the local variety is more resistant to diseases and requires little care. Vendors regularly visit the villages for collection of eggs and the eggs when sold fetch Rs one per egg.

### **Loss of agricultural land due to the project**

The details of village-wise total land and land to be acquired for the project are presented.

It can be seen that, hardly 14% of the total agricultural land is lost in the project. This will leave large part of the land for cultivation. About 451 ha of land in Temghar and 1925 ha of land in Vegre will be available for cultivation in the future. However, most of the rich paddy land may be lost, leaving only land suitable for millets and horticulture. Further, along with the gaothans of these villages, the approach roads also submerged due to the project. Thus even if a cultivator wants to cultivate these land or maintain the fruit trees, it will be not be possible until new roads are developed.

### **Amenities in the villages**

#### **Education:-**

Anganwadi is available only in two villages, i.e. Vegre and Lavarde, while primary school exists in all villages. However, in villages Temghar and Vede the schools are runned only by one teacher each. Education up to 7<sup>th</sup> standard is available only in village Vegre. The nearest High school up to 10<sup>th</sup> standard is at Ambewadi which is about 9 Km. from village Vegre. For Jr. / Sr. college education, Pune city which is about 45 Km. from Lavarde is the nearest centre. Because of one teacher schools, the literacy levels in the area are low.

#### **Drinking water:-**

All the villages have functioning drinking water supply schemes based on wells in the river basin. The raw water is distributed in each village with the help of a number of standspots. There are however no household connections has not provided, nor do the people feel the need for the same. The supply sources are perennial wells and river is also the sources used by the individuals for domestic and animal consumption.

**Sanitary system:-**

There are no private or public latrines in any of the villages under study, because the villages are small and surrounded by shrubs and trees on the slope, the need for latrines are not felt.

**Electricity:-**

All the villages are provided with electricity and more than 80% of the houses have domestic connections. Every village has a number of street lights which are maintained by the respective Gram Panchayat.

**Post and telegraph facility:-**

None of the villages under study have any of the post and telegraph facility. The nearest post office is located at Kolavade which is 7 Km. from the village Vegre while telegraph office is at Pirangut which is 25 Km. away. Public telephone is available at village Kharavade located at about 9 Km. from village Vegre.

**Approach roads:-**

All the villages under the study have both types of road cuccha and pucca. Lavarde to Vegre and Vegre wadi have cuccha road while village Lavarde, Temghar and vede are connected with pucca roads but are not being maintained properly. Lavasa project initiated in 1998 since then far roads has been being constructed.

**Stores and commercial establishment:-**

The village Vegre has two grocery shops, one flour mill and one rice mill. Similarly Lavarde has four grocery shops, one flour mill and one rice mill. Villages Temghar and Vedhe do not have any commercial establishment.

**Health status:-**

There is no Primary Health Centre (PHC) or sub-centre in any of the villages under study. Nearest government facility is available at the place Mutha, which is about 14 km. from village Vegre. The malaria workers from PHC visit the villages every 15 days to identify and help the needy. There is a private medical practitioner available at village Lavarde. The hospitalization facility is available only at Pune which is 45 Km. from the village Vegre. Veterinary dispensary is available for animal at village Kolavade, about 7 Km. from village Vegre.

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