

214



ENVIRONMENTAL
ACTION FOR
SUSTAINABLE
TRANSFORMATION

A STUDY ON KATKARI A PRIMITIVE
TRIBAL GROUP IN MULSHI TALUKA



By
EAST
Environmental Action for
Sustainable Transformation



Funded by
Tribal Research and
Training Institute, Pune

Index

Table of Contents

1.0	Introduction.....	5
1.1	Brief information about Kathakri Tribes	6
1.2	Katkaris in Mulshi.....	7
1.3	Perception of risk due to climate change.....	9
2.0	Methodology.....	11
2.1	Study area	11
2.2	Designing of Questionnaire.....	12
2.3	Data collection	12
2.4	Data analysis	13
3	Results.....	14
3.1	General Information	14
3.1.1	Owning rights of the hut	15
3.1.2	Energy resources.....	15
3.1.3	Water resources.....	16
3.1.4	Consumption proxies	16
3.1.5	Financial Aspects.....	17
3.2	Population dynamics of interviewed Katkari tribes in study area	17
3.2.1	Infant mortality rate	19
3.3	Literacy Status of Katkari tribes.....	19
3.4	Socioeconomics' of Katkari tribes	20
3.4.1	Daily wage activities of Katkari tribes	21
3.4.2	Income generation through forest activities.....	24
3.4.3	Income generation through fishing activity	25
3.4.4	Total household income	27
3.4.5	Priority Analysis	27
3.5	Climate Change	28
3.5.1	Climate Change Vs Water sufficiency need	29
3.5.2	Climate changes Vs Rainfall perception of Katkari tribes	30
3.5.3	Climate change Vs Water resource.....	31
3.5.4	Climate change impact on natural resource collection	32

3.6	Land Issues	33
3.7	Migration Issues.....	35
3.8	Health issues of Katkari tribes.....	37
3.9	Risk Perception analysis of Katkari tribes in Mulshi Taluka.....	39
4.0	Discussion	
5.0	Conclusion.....	62
6.0	Recommendations.....	63
7.0	Annexure	64

List of Figure

Figure 1 Brief sketch of adopted methodology	11
Figure 2: Do you own your own hut?	18
Figure 3: Water resource distribution in Katkari tribes within the study area	19
Figure 4: Access to financial aspects.....	15
Figure 5: Pie Chart representing the population dynamics of katkari tribes in percentage	16
Figure 6: Income Generations for Katkari's	21
Figure 7: Daily wages activities of Katkari families	21
Figure 8: Percentage of families utilizing the forest resources	21
Figure 9: Number of families earning income through season wise fishing.....	26
Figure 10: Percent wise priority analysis of Katkari's	28
Figure 11: Water availability due to Climate change according to Katkari'	29
Figure 12: Changes in Rainfall and Temperature due to Climate change according to katkari's.....	30
Figure 13: Changes in water Resources due to Climate change according to Katkari's	32
Figure 14: Changes in Forest Resources due to Climate change according to Katkari's	32
Figure 15: Reasons for Non-availability of Agricultural land to Katkari's	33
Figure 16: % of Families Showing Migration.....	34
Figure 17: Reasons for Migration of Katkari's.....	35
Figure 18: Areas Preferred for Migration by Katkari's	36
Figure 19: Common Diseases Reported in Katkari Community	36
Figure 20: Access to Health Facilities.....	39
Figure 21: Immediate demands of Katkari's in the study area	40

List of tables

Table 1: General Information of the katkari families in the study area.....	18
Table 2: Age groups within a family	19
Table 3: Infant mortality in the study area.....	14
Table 4: Primary Educational status of the katkari tribes in the study area	19
Table 5: Percent Analysis of Working Katkari's & Children below 18.....	23
Table 6: Daily-wage Details.....	25
Table 7: Household Members involved in Forest related activities	26
Table 8: Income gained from fish and crab collection annually.....	26
Table 9: Income gained from fish and crab collection annually	27
Table 10: Preliminary Health Status In Katkari's	37

1.0 Introduction

With 635 indigenous tribes, India has second largest tribal population in the world (Balqir, 2006, Kapil *et al.*, 2003). Tribal population constitutes 8.2% of India's populations (Aparna, 2008). In India, tribes are primarily groups of interlinked families or communities sharing a common culture and dialect (Ishtiaq *et al.*, 1990). The tribal culture in India is responsible for conservation of biodiversity rich areas in India (Rai *et al.*, 2003).

Tribes in India are referred as "Adivasis" which is an umbrella term for a heterogeneous set of ethnic and tribal groups considered as aboriginal population of India. Adivasi carry a specific meaning of being the original and autochthonous inhabitants of a given region.

Many tribes have been kept away from the 'development race' due to lack of information regarding their culture and importance of these tribes in that particular environment (Yoko, 2006). Lack of development has resulted in poverty, illiteracy and health issues. The literacy rates of the tribal populations vary throughout Indian states. However all the states results show poverty as main reason for lower literacy rates especially in women (Aparna *et al.*, 2008).

Tribal communities in India have faced conflicting issues of resettlement and reallocations from Protected Area (PA's) and developmental activities such as Dam construction, road development and others. Studies show negative impact on the livelihood strategies due to resettlement and relocation programs (Kabra, 2003). Resettlement and relocation programs are one of the major factors for poverty and lack in development (Kabra, 2003). On the other hand few tribes have shown willingness for resettlement but political interests have prolonged the programs.

Tribal communities are distributed widely in different states of India with majority in Orissa, northeastern states, Chattisgarh, Bihar followed by Maharashtra. Limited research exists for tribal studies to understand their needs, socio-economic requirements and policy implementation. Some of the well known tribes in India which

have been studied by researches from India and by some foreign agencies are located in Assam (Dimasa and Garalo tribes), the Cachar and North Cachar District, Rajasthan, Kerala and Gond in Madhya Pradesh. Other Indian states do have tribal populations but studies on them are restricted or ignored reducing the importance of such tribal communities.

Maharashtra is one such state where study of tribal communities is restricted to Governmental agencies. Maharashtra States constitutes of 47 tribes in 15 districts constituting 9.27% of the total population (TDD, 2001). Of the 47 tribes in Maharashtra four tribal groups are classified as primitive tribe's viz.: Kolam, Madia, Gond and Katkari (TDD, 2001). The Katkari's of Maharashtra is one of such tribes of India, which have received very little attention.

1.1 Brief information about Katkari Tribes

Katkari's are the most primitive forest tribes of Maharashtra. But now they are forced to limited forest settlement with degraded habitats (Buckles *et al.*, 2006). They rank among the very lowest tribes in the country's social system, their touch being thought to defile (TDD, 2001). Hence, they were included in the list of Schedule Tribes¹. The Katkari community, a primitive forest tribe based chiefly in Mulshi, Raigad and Thane Districts of Maharashtra, lives in abject poverty.

The Katkaris prefer to live on the borders of villages by forming small hamlets known as "Wadi" or "Pada". Their huts are of mud-daubed *karvi* sticks with a peaked roof thatched with palm leaves or grass.

Traditionally, the Katkaris are hunters-gatherers. They also have nomadic tendency due to their poor economic conditions (TDD, 2001). Until recent legal developments they were forced to work as bonded labor for their "*sheth*" (master). Some of the families are engaged in various trades and are known to migrate seasonally to distant

¹ The term "Scheduled Tribes" refers to specific indigenous peoples whose status is acknowledged to some formal degree by appropriate national and state legislation. A collective term in use locally to describe most of these peoples is "Adivasi".

regions for employment (and survival). They also work as hired agricultural laborers on rice fields.

Living on the edges of urban centers in the State, the Katkari people are not treated with respect in the society. It is difficult for them to find work and this could be one reason for increased involvement in incidences of robberies and thefts. Abject poverty drives them to this end.

Though by their names they are makers of catechu, their occupation has almost been abandoned due to rapid changes in their surroundings. Conversion of forest and agricultural land has forced them to work on daily wages affecting their livelihood strategies. Katkari people also consume high amounts of liquor made from local products. They mainly prepare liquor from Mahua flowers, Jungle plum, (Tadi and Madi) and easte jaggory. Both women and men have the habit of consuming alcohol on large scale.

Some studies have indicated that the life expectancy of Katkaris has reduced in recent years and the Katkaris, as a tribe, may be on their way out, unless urgent efforts are made to reverse the trend. While animals, plants, insects and even microbes attract a lot of attention (and resources) for conservation and rehabilitation, nobody seems to be bothered about the unique and unusual Katkaris.

1.2 Katkaris in Mulshi

Katkaris in and around Mulshi taluka have been studied by few people and Tribal Development Department. Also TATA power had implemented some mitigation measures for improvement of their livelihood along its catchment area under resettlement and relocation program. Similarly some other efforts have been made to improve their livelihood structures. However all of these have not succeeded and failure of the schemes is observed in most of the katkari hamlets. The major reason for this failure could be due to concept of modernization or attempt to make katkari tribes acquainted with modern equipment without proper approach to market. The katkari development will only take place if the livelihood development programs are

implemented considering their inputs and thoughts. Hence it is necessary to assess the requirements of katkari tribes for livelihood improvements.

Katkaris mainly work in pre and post agricultural activities, brick making activities, banjo units and marginal collection of fishes, crabs, medicinal plant and vegetables. However, fast developmental activities have reduced traditional occupational patterns of rural people as well as tribal communities. Tribal population depends on forest resources for their daily livelihoods however forest resources have drastically reduced due to ongoing developmental and constructional activities.

Katkaris in Mulshi and taluka have somehow maintained distance from surrounding rural populations. Hence they are not able to cope up with rapid ongoing changes taking place in their surroundings. Most of the tribal communities are dependent on labour leading low economic generation. This may have impact on their health which could be one to the main reasons to maintain distance from other rural populations.

Major constraint in tribal development is related to their socio – economy, health, migration, habits and livelihood strategies. This particular area should be studied thoroughly to find local issues. It also important to study the lifestyle changes in tribal communities due to rapid developmental activities.

To implement any project for katkari beneficiary it is important to consider its effectiveness for long term. Though tribal studies and implementation programs are being implemented in various parts none of them have concentrated on studying changes in livelihood strategies due to climate change. During a preliminary survey in Mulshi we have found changes in agricultural patter, plantation timings which have impact on economy of tribal communities.

The impact of climate change will be more severe in coming decades (IPCC, 2007). Hence it is necessary to understand the adaptive strategies of the Katkari populations in Mulshi and Taluka, to assess the changes in their livelihood in recent past due to unpredictable and prolonged rainfall. Similarly the changes in diseases pattern from last 10 years is important. Climate change specifically gives rise to malaria and related disease having direct effect on the economic generation. Hence it becomes necessary

to study the perception of climate change risk of by Katkari tribes and to study the impact on their natural resources.

This project strives to address basic survival issues facing the community. It will help to understand their requirements, provide alternate livelihood opportunities, socio-economic status, education, climate change issues and its impact on tribal communities. The process will hopefully emancipate Katkari's from slavery and bring about improvements in their socio-economic status.

Activities and schemes have been implemented by Governmental agencies, TATA power and various Non Governmental Agencies. However development of the tribal communities is lacking. Development of tribal communities doesn't mean commercialization of tribal activities nor does it mean to convert tribal communities into urbanized forms. It is necessary to upgrade their livelihood pattern through sustainable techniques without opting to urbanization.

1.3 Perception of risk due to climate change

Climate change is a global environmental threat and is even witnessed in India by changes in weather conditions and increasing temperature. The International Panel For Climate Change (IPCC) has strongly convinced that climate change is real and will become worse in coming decade affecting the water resources, increases and periodical occurrence of storms, floods and droughts (IPCC, 2007). Though climate change is largely ignored in India, time has now come to be alert about its impact for developing appropriate mitigation measures.

Primarily, every society is adaptive to the changes in climate and this is proved as in past societies have adapted to changes in the climate and related risks. However few groups of society become more sensitive and vulnerable to changes in climate related risks than others (Adger et al., 2003). Tribal communities fall in this group thus becoming sensitive and vulnerable to climate change (FAO, 2008). Climate change has major impact on natural resources such as food supply, local water, firewood and

others. As tribal communities have low adaptive capacity and they have high dependence on the natural resources they become highly sensitive and vulnerable to climate change. Poverty adds more pressure as climate change has impact on agricultural produce leading to starvation and water scarcity.

Present study suggest that warming effect will be prominent in tropical and sub-tropical regions as marginal water balance will be affected by additional warming thus having adverse impact on agricultural sector. Hence population dependent on the agricultural sector informs of daily wages would be largely affected. Similarly there are enough evidences that climate change has increased incidences of human as well as animal diseases. Most severe consequences of climate change are observed due to ever increasing malaria incidences throughout the globe due to warmer climate and prolonged rainy season.

The tribal population in Mulshi Taluka works extensively on rice farms for sowing, cutting and daily wages. The agricultural sector itself has now being affected due to disturbed schedule of rainfall. Thus affecting the labor based on farming practices. Incidences of diseases especially malaria are commonly observed in these Taluka. These all changes further pose to have a risk for the native Katkari populations.

Hence it is necessary to understand the perception of risk by Katkari tribes towards climate change and to study the adaptive measures or changes in the livelihoods of these tribes. This is important as to develop any new plan or mitigation strategy we will have to consider the risk perception and conditions in future. Hence it is necessary to study the adaptive strategies of the Katkari populations for developing mitigation strategies for future generation (Considering next 20 to 25 years). Such climate change risk perception study on tribal populations is widely studied in Southern and Northern Africa, China, Mongolia and Bangladesh. However none of the agencies have concentrated to study the risk perception for Indian tribal populations and will be first attempt to study it.

2.0 Methodology

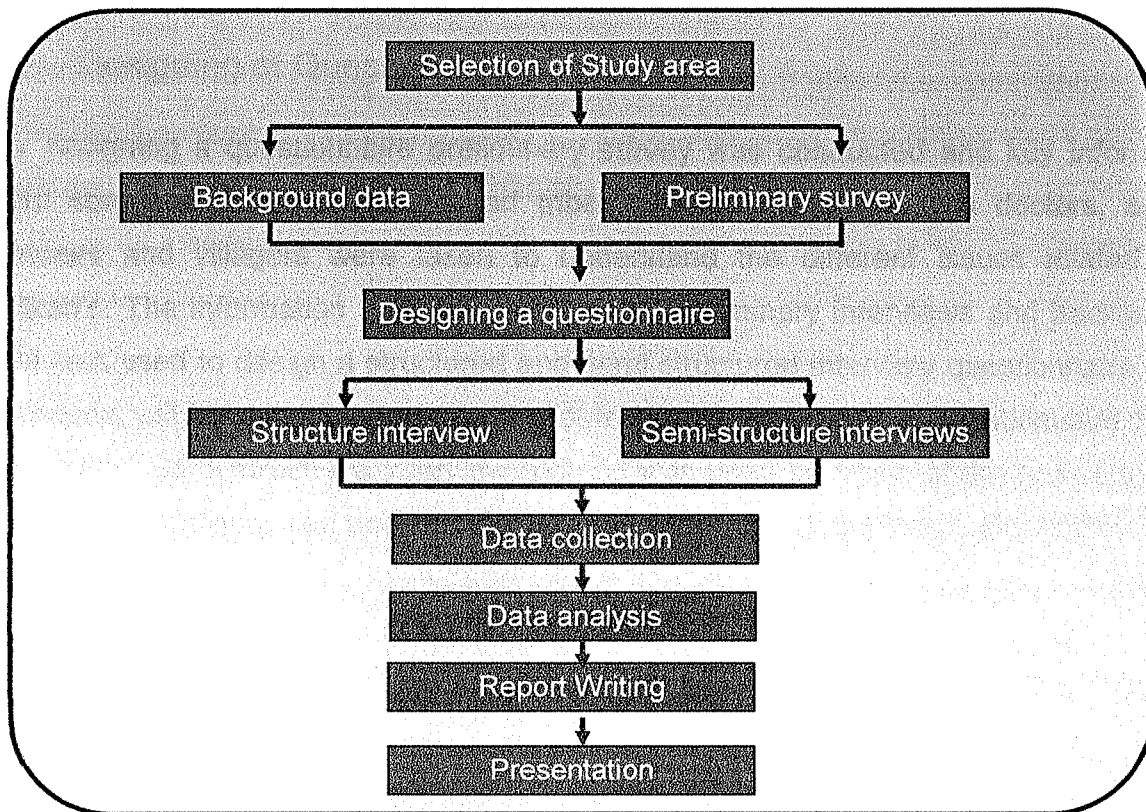


Figure 1 Brief sketch of adopted methodology

2.1 Study area

The study area for present project constituted areas in and around Mulshi and Tamhini village in Pune district, Maharashtra. Thirteen Katkari villages were studied constituting 68 Katkari families in these areas. Katkari villages covered were Gonwadi, Pomgaon, Peth Shahapur, Tamhini –I and Tamhini –II, Mazgoan, Mulapur, Tailbail, Kumbheri, Male, Malegoan, Hiwali Vasti and Ambavane. All of these villages constituted katkari families ranging between 2 to 8. Most of the Katkari tribes have now moved away and isolated into very small hamlets of maximum 8 families.

2.2 Designing of Questionnaire

For designing a questionnaire preliminary survey was conducted and key informants were searched amongst the Katkari tribes. Formal interviews with doctors, school teachers and villagers were taken to understand the different issues related with Katkari's. The information from key informants, preliminary interviews and background data was used to design a structured and semi structured interview questionnaire. Trial interviews will be conducted to find the defects and weakness in questionnaire for its finalization. Semi structures interview method was used as some of the answers were obtained from discussion and rapport building with tribal populations. Depending upon number of house hold in each Katkari village interviews will be conducted. For present research we have surveyed 13 Katkari villages.

The questionnaire designed was subdivided into five subsections constituting following key issues:

1. Socio – economic
2. Agriculture
3. Forestry
4. Health aspects
5. Livelihood and climate change
6. Risk perception

The finalization of these subsections was outcome of information gained through key-informants, preliminary survey and background data.

2.3 Data collection

Data collection for the present research constituted structured and unstructured interview with the Katkari tribes, doctors, village people and individual observations. Data collection included gathering the background information of the study area through literature, secondary data and preliminary survey. Visit to villages and Grampnachayat for designing work plan.

For present research data collection regarding different issues was gathered from 68 Katkari families situated from 13 Katkari villages. Data was mainly gathered from family head. In absence of family head adult member of the house was consulted. Women were also interviewed wherever possible. Though not all women responded well due to shyness.

2.4 Data analysis

Data analysis is done for the structured and semi structured interviews using appropriate statistical tests such as mean, standard deviation and others. Focus was more to study correlation analysis to have understanding of the different relationships studied through the structured and semi-structured interviews. Graphs, pie charts and other statistical figure will be included depending upon the data collection.

Risk perception analysis was done using ranking method gained from the interviews to understand the most important risk perceived for problem analysis within Katkari families.

3 Results

The data collection of Katakari tribes from Mulshi taluka gave a deep insight into livelihood strategies, adaptation, forest resources, common diseases, educational status and other information. Following represent the katakari status and issues in Mulshi Taluka:

3.1 General Information

General information collected from katakari tribes included house hold information, water, energy, financial issues and consumption proxies.

General Information of Katakari tribes in study area		
1	Hut	Katakari response in %
a	Own hut	47%
b	Don't own their huts	53%
2	Energy Preferences	Energy Utilization by Katakari's in %
a	Biogas	0%
b	Electricity	0%
c	Charcoal	6%
d	Kerosene	20%
e	Fire Wood	74%
3	Water	Water accessibility by Katakari Tribes in %
a	Tap	18%
b	Protected Well/Borewell	3%
c	Unprotected Well	33%
d	River / Stream	25%
e	Spring	23%
f	Others	16%
4	Consumption Proxies	Meals intake in day
a	Average	2
b	Standard Deviation	-0.39
5	Financial Aspects	Financial accessibility by Katakari Tribes in %
a	Access to market	40%
b	Access to insurance	0%
c	Access to loan	0%

Table 1: General Information of the katakari families in the study area

Note: 53% of families who do not have their own huts either share the huts with relatives or live in the open during dry season. During rainy season they again share huts with friends or relatives till the rainy season ends. Here the meaning of 'friend' means a distant relative. In Katkaris marriages happen within close relatives, co-sanguinous marriages are common.

3.1.1 Owning rights of the hut

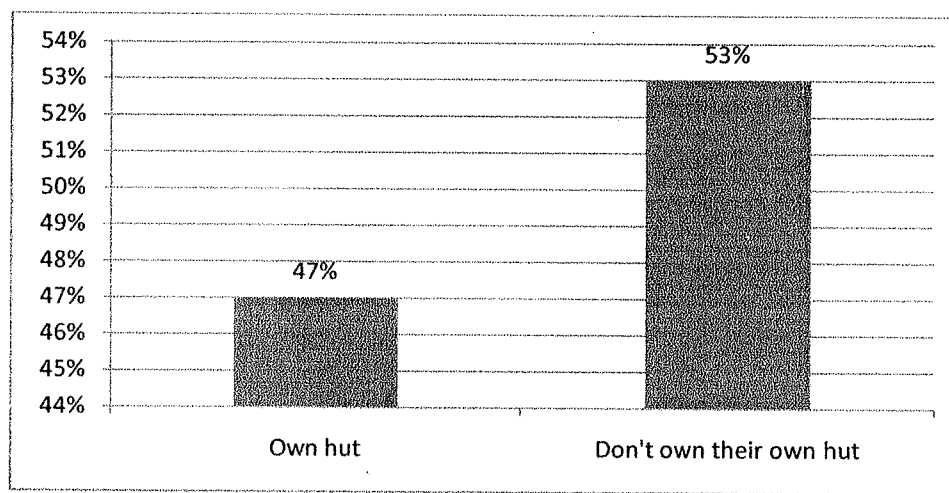


Figure 2: Do they own their own hut?

From the interviewed katkari's only 47% of katkari's own their hut while others are having their habitation within the TATA company land, government land and revenue land (See table No. 1).

3.1.2 Energy resources

Most important energy source for the Katkari tribes in study area is fuel wood used by nearly 74% followed by kerosene 20% (See table no. 1). Fuel wood is preferred energy source by most of the Katkari tribes as it proves to free source of energy. Kerosene on the other is most preferred source of energy during monsoon and winter season. Charcoal is another preferred energy source and used by 6% of the Katkari tribes (See table no. 1). No use of biogas and electricity was noted in the study area.

3.1.3 Water resources

In the study area water availability is through unprotected well 33%, followed by 25% from river and streams, 23% spring and 18% tap water. While 3% of the population only had access to protected well or bore well. However they complained about faster drying up of resources and highly relied on other sources of the water availability.

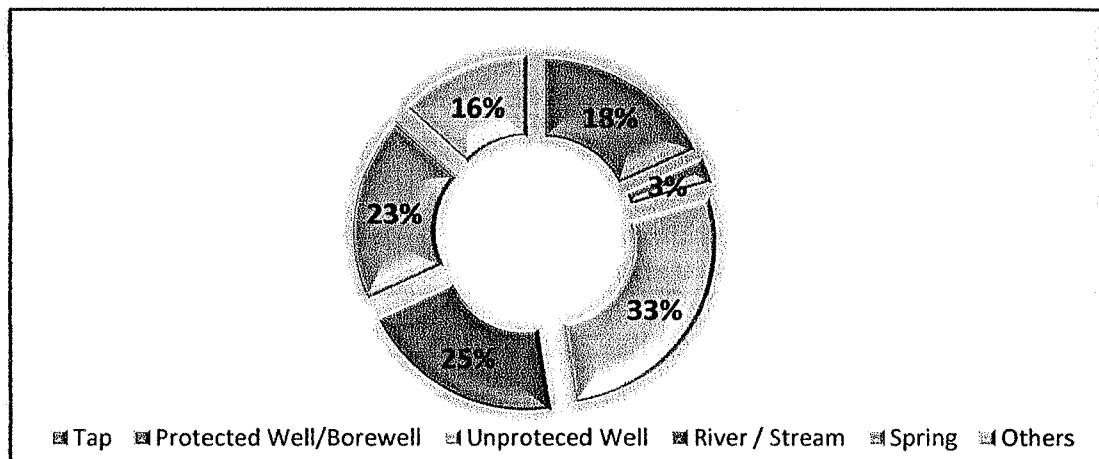


Figure 3: Water resource distribution in Katkari tribes within the study area

Note: Even though many Karkari establishments have bore wells, they prefer to use water from natural sources like the brooks, streams and springs or the lakes. This is because of their traditional beliefs.

3.1.4 Consumption proxies

The average consumption proxies in the study area were found to be 2 with standard deviation of 0.39. The consumption proxies of Katkari's have improved after development of road providing easy access to migration and construction activities like Lavasa, and Ambi valley.

3.1.5 Financial Aspects

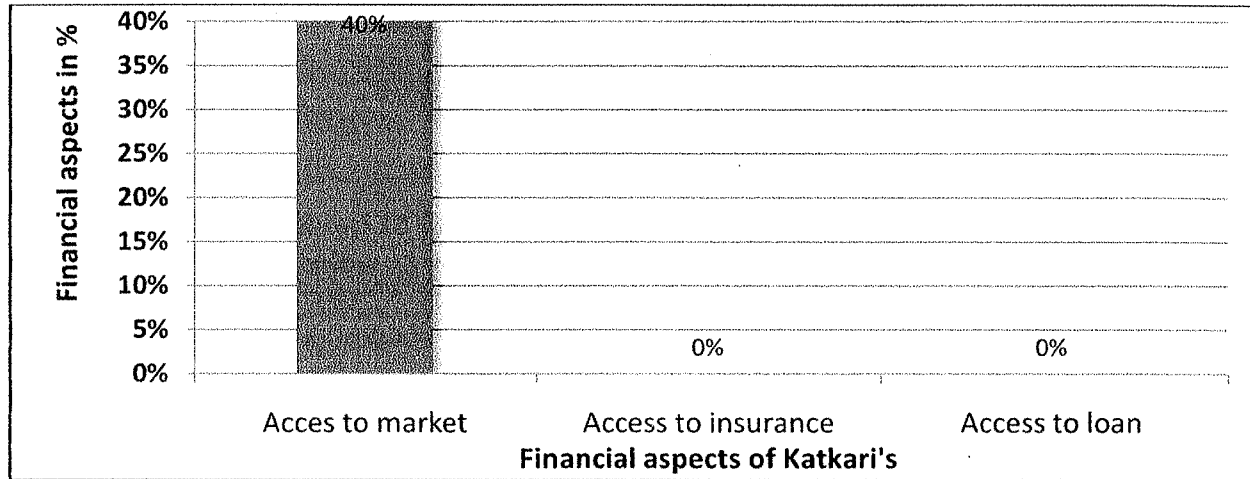


Figure 4: Access to financial aspects

Note: They do not have any idea regarding saving of money or making provisions for the future. Many families do not have any food provision for to-morrow. Money earned is spend withing a short time without saving a portion of it for future. This aspect was found to be important for their uplift.

Within the study area only 40% of the Katkari have regular access to market for selling their products. However none of the Katkari tribes have access to insurance and loan facilities. Most of the Katkari tribes were unaware about the insurance but many of them have commuted that they require access to loans for their further development. They wanted to have loans through some Government scheme.

3.2 Population dynamics of interviewed Katkari tribes in study area

The population dynamics of interviewed katkari tribes included male and female below 18 years of age and above 18 years of age. Following figure 1.1 (Pie Chart) represent the population dynamics of the katkari tribes.

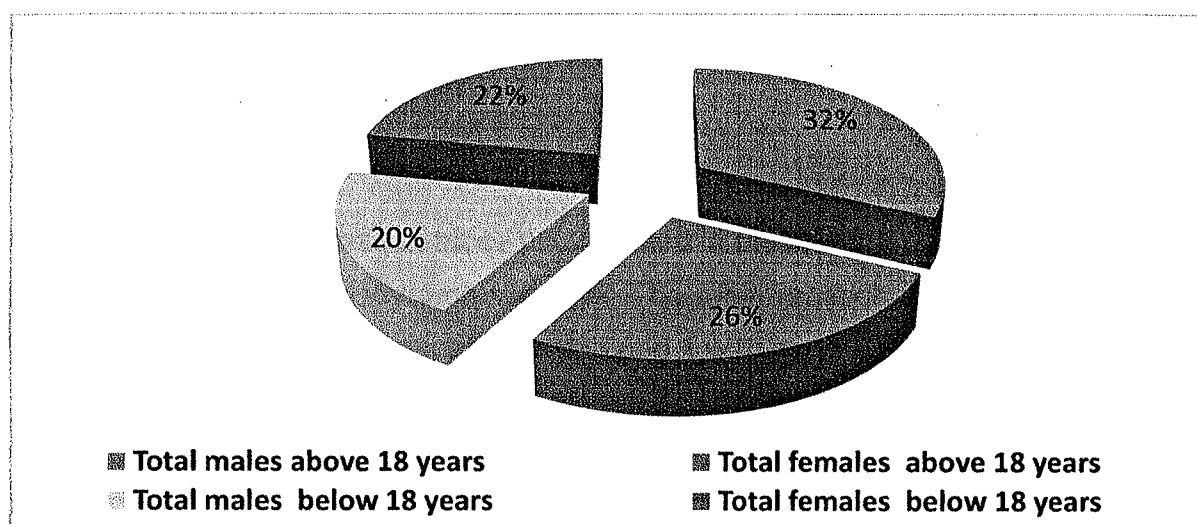


Figure 5: Pie Chart representing the population dynamics of katkari tribes in study area

The results show that 42% of the population in the study is represented by the age group below 18 years of age with 20% of boys and 22% of girls. While 58% of the population is represented by the adult group of which 26% is contributed by female above 18 years of age and 32% of the populations is represented by males in the study area. This also means that katkari population has near good balance between adult and young populations.

Further study on the population distribution was carried by breaking the data in the age groups. In the study area 0 – 18 age group showed average of 2 children in each katkari house with standard deviation of + or – 1 (See table no. 2). Similarly each family showed average of 2 adults between age group of 0 – 50 with standard deviation of + or – 1. However age group of 50 and above represented only 10% of the total population.

Age Group	Average	Standard Deviation
0 - 18	2	+ -1
18 - 50	2	+ -1
50 and Above	In study area only 10% of the total population represented age group of 50.	

Table 2: Age groups within a family

It was observed that few katkari families lived separately after marriage by building new hut in the same or nearby vicinity.

3.2.1 Infant mortality rate

Infant mortality ratio of katkari tribes was studied in the study area. It was observed that infant mortality rate in study area was 7%. The main reasons for the death were from Malaria and fever. While 1 case of abortion and 1 with accident was observed.

Death Ratio in Children				
	Total Born	Total Alive	Dead	Reason for Death
Total	128	119	9	4 from Malaria 1 from Abortion 3 from Fever 1 from Accident
In Percentage	100	93%	7%	
Mean			0.16	
Standard Deviation			+0.44	

Table 3: Infant mortality in the study area

Note: Infant mortality amongst Katkaris is high. Main reasons being the communicable diseases. Negligence regarding safety, Tuberculosis and unknown fevers.

The information showed that accessibility to hospitals and availability of medicines in some parts of study area along with katkari awareness show low infant mortality rate.

3.3 Literacy Status of Katkari tribes

The educational status of the katkari tribes has still not come under focus stream and is still represented as secondary issues in the katkari families. Results obtained from the data collection shows the same.

	Literate	Illiterate
Male	25%	27%
Female	16%	30%
Total	41%	57%

Table 4: Primary Educational status of the katkari tribes in the study area

In case of males literate population of all age group is 25% while female represented 16% literacy in the community. However considering the overall picture katkari tribes still today seems too out-focused from the main stream of education. Uneducated population of male and female is nearly, 27% and 30% respectively. Overall 41% community members are literate at least with primary education. In the younger generation its seems due to awareness and opening of schools near villages in Mulshi taluka educational status seems to increase.

During data collection and formal discussion with katkari tribes it was observed that they are becoming aware about the education and are now admitting their children in the schools for education. However it was also observed when discussed with school teachers revealed that they leave education from middle and hardly few students attempt till 10th standards.

3.4 Socioeconomics' of Katkari tribes

Socioeconomic activities of tribes are limited due to low or no education. The trend of the economic activities is now changing towards daily wages mainly on construction activities and then to agricultural farms. The daily wage income contributed nearly 70% of the Katkari tribes. Katkari tribes are equally dependent on the forest activities contributing to 68% followed by fish collection and sell contributing to 56%. Migration for daily wages also forms other important source contributing to 32% of the tribal population in the study area. Business involved 7% of the tribal population which worked on rice fields for cultivation and sowing of rice fields.

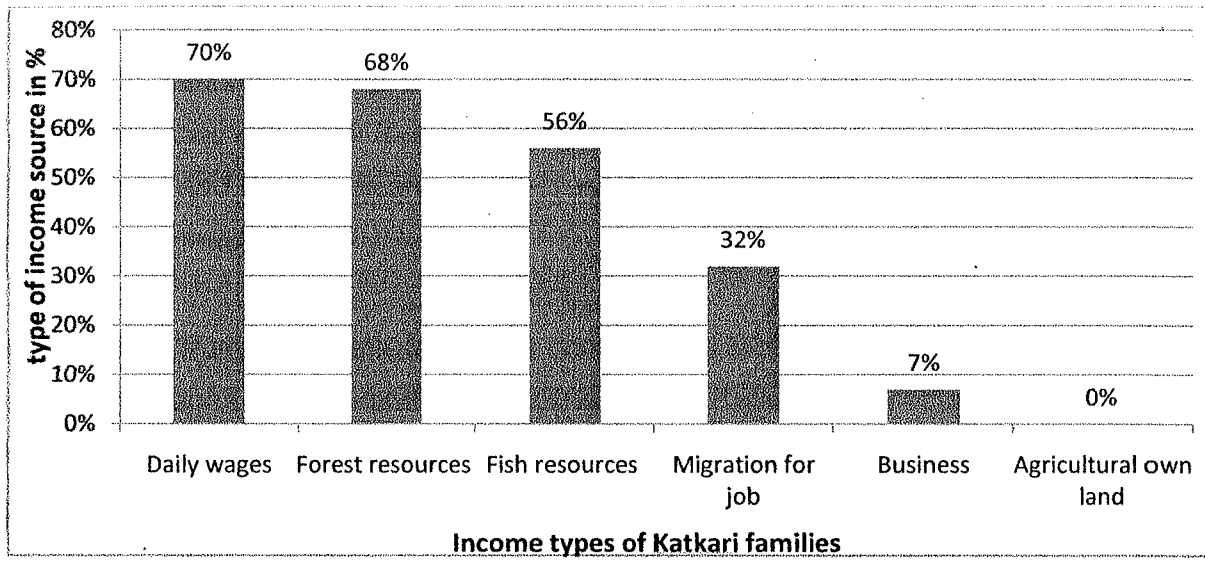


Figure 6: Income Generations for Katkari's

Note: For their financial income they heavily depend upon daily wages. Luckily they are 'booked' in advance by the local farmers for field work and according to Katkaris they do not have difficulty in procuring the daily work. They say that the nearby farmers will come to their door steps to offer the field job.

3.4.1 Daily wage activities of Katkari tribes

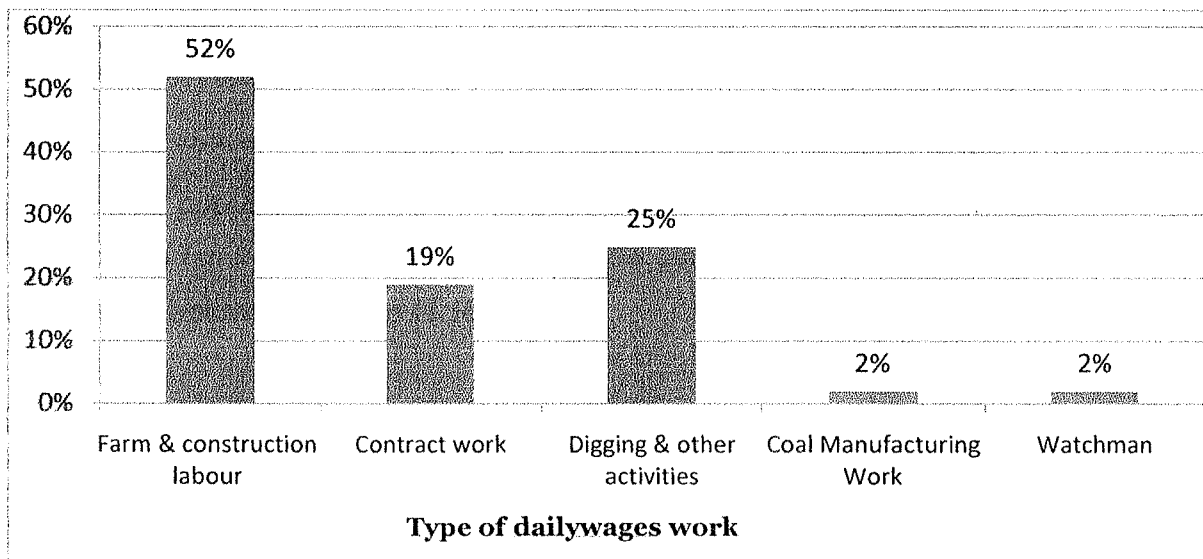


Figure 7: Daily wages activities of Katkari families

Note: By nature Katkaris do not like 'permanent' jobs or jobs on monthly basis. They tend not to lose their liberty. By nature they work if they like and on their sweet will. Traditionally they are trend to survive on whatever is available and procurable from the surroundings and the jungle around their establishment. In the past they use to eat field rats from the paddy fields.

As it is clear from the graph farm and construction labor forms a major activity of the tribal daily wages income and nearly 52% of the Katkari population depends on this activities. Contract work involves 19% of the population, they receive contract from farms houses for maintenance of garden, cleaning and others. Also they take contract for sowing and cultivating rice fields. Digging along roads and for TATA power plantation program involved 10% of the Katkari tribes. Surprisingly 2% of the Katkari's migrate to Karnataka state for daily wage activity in the coal mine for extracting the coal. While 2% of Katkari population is now working as watchman for cattle, farms and farm houses.

Working population dynamics of katkari considering total population		
Male	Female	Children (<18 years)
51%	38%	11%

Table 5: Percent Analysis of Working Katkari's & Children below 18

Of the total population 51% of men and 38% of female contributed towards economic gains in the family. While 11% of the income generation occurs through children (male and female below age group of 18 years).

The daily wage jobs form the major source of income for Katkari tribes in Mulshi Taluka. The average income for men is 100 RS. / Day while for female it's 80 Rs. / day (See table 6). While for work group below 18 years is around 40 Rs. / day. The average income gained per year by male through daily wages is in the range of Rs. 8000 to 9000/-(@Rs.25/day) while by female is Rs. 7000 to 8000/-(@Rs.22/day).

Some of katkari's work as a drivers, working in bands and have long term daily wage contracts with construction (ambi valley and lavasa) project. The daily wage activity is available for the Katkari tribes are in the range of 60 - 135 days for men and 45 - 107 days for women. The average income of Katkari family in the Mulshi area is in the range of Rs. 15,000 to 25,000/- per year.

The above mentioned income is deduced from the families interviewed and is for that year. In reality it was observed that the income is far below the figure mentioned above.

Dailywages income of Katkari tribes in Rs. (per day(10hrs)with food)		
	Minimum	Maximum
Male	Rs. 40	Rs. 250
Female	Rs. 35	Rs. 200
Annual income of Katkari tribes in Rs.		
	Average	
Male	Rs. 8000 to 9000/-(@Rs.25/day)	
Female	Rs. 7000 to 8000/-(@Rs.22/day)	
Average household income of Katkari tribes in Rs.		
	Average	
Total Family Income through daily wages p.a.	Rs. 15,000 to 25,000/- per year	
Days of Work in a year		
	Range	
Male	60 - 135	
Female	45 - 107	

Table 6: Daily-wage Details

Note: Even the collected information is shown above, in reality all the jobs and earnings are most uncertain. It is only because of their carefree nature they do not grumble about unemployment.

3.4.2 Income generation through forest activities

As nearly 68% of the Katkari tribes relies on income from forest resources (See figure 6) they extract various products from forest. On the top priority is for firewood extracted by 56% of the tribal group followed by honey which they use for themselves as well as sell it in nearby villages and also forms an important income generating activity. The demand for local medicinal plants is also high and nearly 18% of Katkari families rely on this activity for income generation. Honey is collected by 28% of Katkari's and most of it is directly sold either to agents or direct customers on road and others. Leaves and flower collection for God also forms an income generation activity involving 16% and 16% populations respectively. While hunting animals like hare, pigs and other birds also generate income in family and 20% of the population is involved in this activity. While timber poles, fodder and charcoal also generate income but to a limited extent.

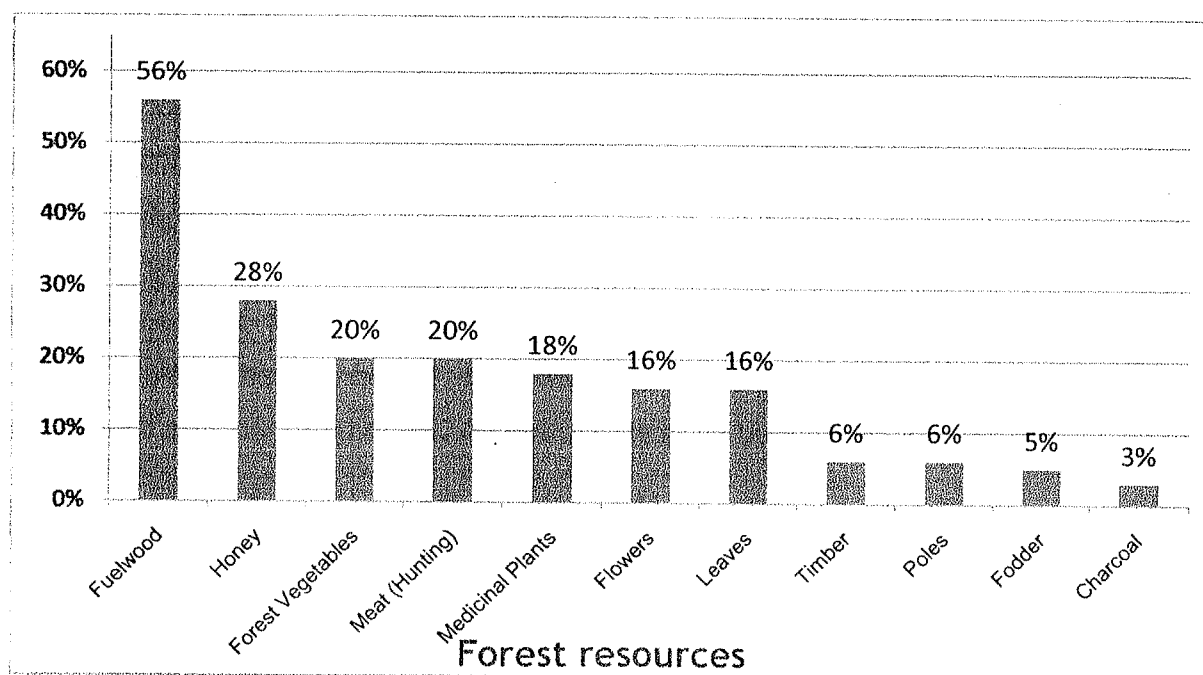


Figure 8: Percentage of families utilizing the forest resources

Note: As shown above the important source is collection of fire wood from the forest. Part of it sold to the local people for a 'throw away prices'. Sometimes it is bartered for some commodities like rice, salt, oil, or grain. Whatever is gathered from the forests is consumed within the family but to our rough estimate at least 50% is sold or bartered.

	Fire wood	Charcoal	Timber	Poles	Honey	Fodder	Meat	Forest Vegetable	Flowers	Leaves	Medicinal Plants
Men	9%	3%	3%	6%	34%	2%	17%	5%	2%	6%	16%
Women	13%							8%	9%	10%	8%
Men + Women	26%				8%	3%	2%	12%	4%	5%	22%
Children	4%			5%	2%	1%	3%	6%	8%	8%	
Collection months involved for natural resources in months											
Average	4	4	8	9	4	4	6	10	5	9	10
Money earned from forest resources											
Average	Rs. 2000	Rs. 500	Rs. 500	Rs. 500	Rs. 800	Rs. 1500	Rs. 3000	Rs.1900	Rs. 600	Rs. 600	Rs. 2000

Table 7: Household Members involved in Forest related activities

Note: It was observed during the study that children above five support the family by working according to their capacities. Five to ten year old children will catch fish, collect edible vegetables, help in cleaning the surroundings or inside of the hut, look after the younger children of the age of 2 to 3 years. Young girls help the mother in fetching water from nearby source.

The income generation forest varies according to the type of resources extracted by the Katkari's. Also the number of days involved in collection of these natural resources varies with season and months. All the details have been given in table 6.

3.4.3 Income generation through fishing activity

Fish collection forms the third most important activity for Katkari tribes in Mulshi Taluka. Fish collection is mainly done by men (47%) while female role is very little and mainly in

rainy season (5%). Fish collection and sell is mainly practiced in monsoon by 68% of the Katkari families.

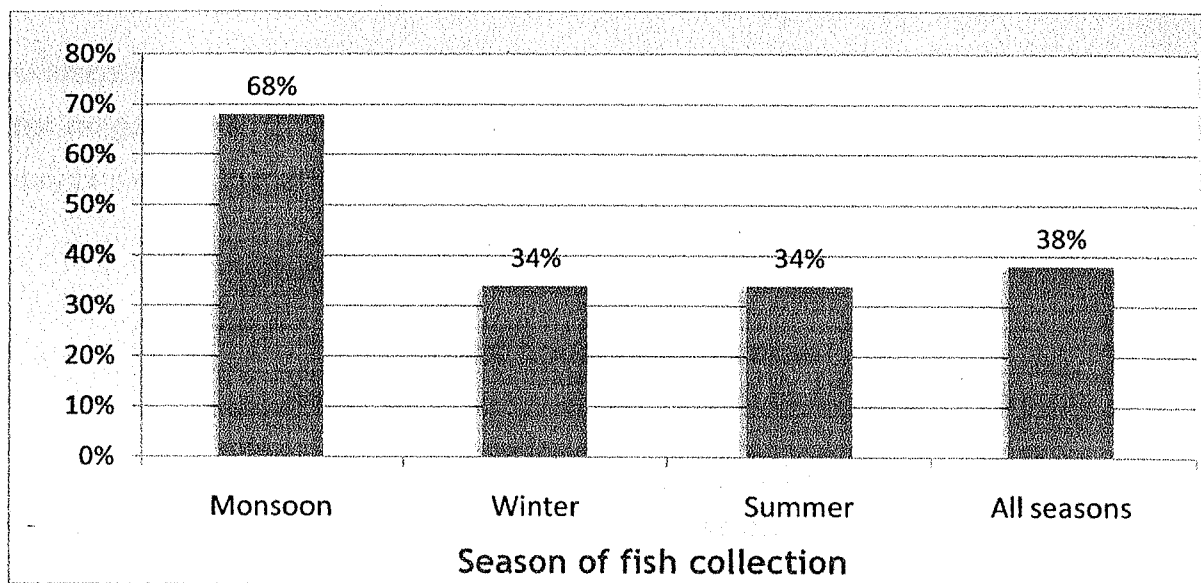


Figure 9: Number of families earning income through season wise fishing

Note: Along with fishes Katkaris also hunt for crabs. Crabs are collected in Crab traps, manually by hand or with a unique contraption called 'Girwan' which has a bait to catch crabs. Crabs are usually collected at night with help of 'Kakda' or 'Mashal'. Crabs are called by them as 'Jamburee'. Most of the catch is eaten by the family and rest is sold in the local market form a nominal price.

During winter and summer nearly the same number of Katkari families goes for fishing. While nearly 38% of Katkari's opt for fishing in all the seasons. The fishing is carried in Mulshi dam, ponds, lakes, well, streams, river and rice farms. Crab collection activity is also involved in this and is generally done throughout the year but it is at the larger extent in monsoon.

	Income Range Rs.
Income from fish and crab collection	Rs. 1000 - 1500/-

Table 8: Income gained from fish and crab collection annually

Note: The above figures are from the study families. The income is uncertain and has wide fluctuations. A 'lucky' family may earn double the above figures. This money is used immediately, on the same day, in drinking country liquor and marry making.

Average income gained by Katkari families involved in fishing and crab collection is in the range of Rs. 2000 - 3000 year. This includes selling of nearly 10 different fish varieties either to market, nearby villages, hotel or direct sell on the road sides.

3.4.4 Total household income

Total household income	
Average	Rs. 15,000 to 17,000/-per anum

Table 9: Income gained from fish and crab collection annually

Considering the different income source used by Katkari tribes which include daily wage activities, fish, forest resources, migration and others. An attempt is made to estimate the total income generated by each Katkari family in Mulshi Taluka. It was observed that average income for Katkari family is in the range of Rs. 15,000 to 17,000/-per anum 41659 Rs. /Year. However the variation in the income is large due to different in population size for each household and number of people working in a house. This analysis includes all the age groups of working force in each Katkari family.

3.4.5 Priority Analysis

The priority analysis of the socioeconomic activities from Katkari tribes was performed to understand the most important income generation sources of the tribe. If we need to develop new policies in this region for Katkari development then this analysis will play very important role. The priority analysis shows relative grade for high, medium and low priority for income generation sources. As we can see from the above figure 85% of Katkari think daily wage is the most important priority for their livelihood, followed by forest produce. The forest resources are getting reduced every year and katkari's are forced to work as laborers.

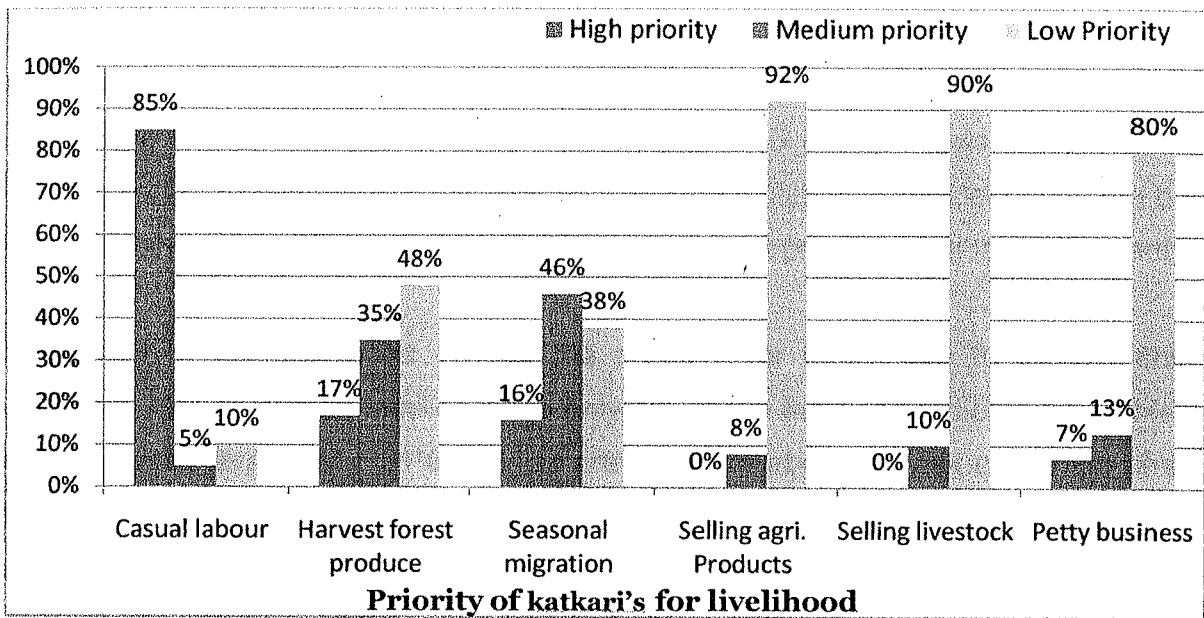


Figure 10: Percent wise priority analysis of Katkari's

Note: These figures can change from region to region and from one Katkari establishment to other. The above information is a result of pooled data collected from the study area.

Also the migration for income is ranked as third for their important economic source which followed by selling some agricultural produce gained during sowing and harvesting season of rice. Selling or livestock and petty business are at least priority. Food relief and reduced meal are also at lowest priority which a good indication is stating that tribes are able to feed themselves through their other economic activities. However they require extensive support for their growth which needs to be promoted after giving them tribal land and support for knowledge of livestock its use and sell.

3.5 Climate Change

Climate change risk perception studies were conducted in Mulshi Taluka to understand if there are any changes in the livelihoods strategies of Katkari tribes. Changes were found in some of the livelihood strategies as Katkari depend more on the natural resources which are affecting at large by climate change activities.

3.5.1 Climate Change Vs Water need

The above bar diagram describes the reaction of interviewed katkari's regarding water availability. On an average a family of a katkari of 5 persons gets hardly 10 lits of drinking water. In summer it is still less. As Katkari population is situated along the banks of the Mulshi dam, water availability is not a problem at present at all the settlement.

Availability of drinking water will be the problem for future due to climate change predicted 75% of Katkari families while only 4% of the families predicted no problem of drinking water availability. 21% families are unaware about the risk of climate change. Even for domestic purpose 65% of the families expressed concern for sufficient water while only 9% of the families have no problem with water availability for domestic purpose like washing, bathing, cleaning and others. 26% families are unaware about the risk of climate change for the availability of water for domestic purpose.

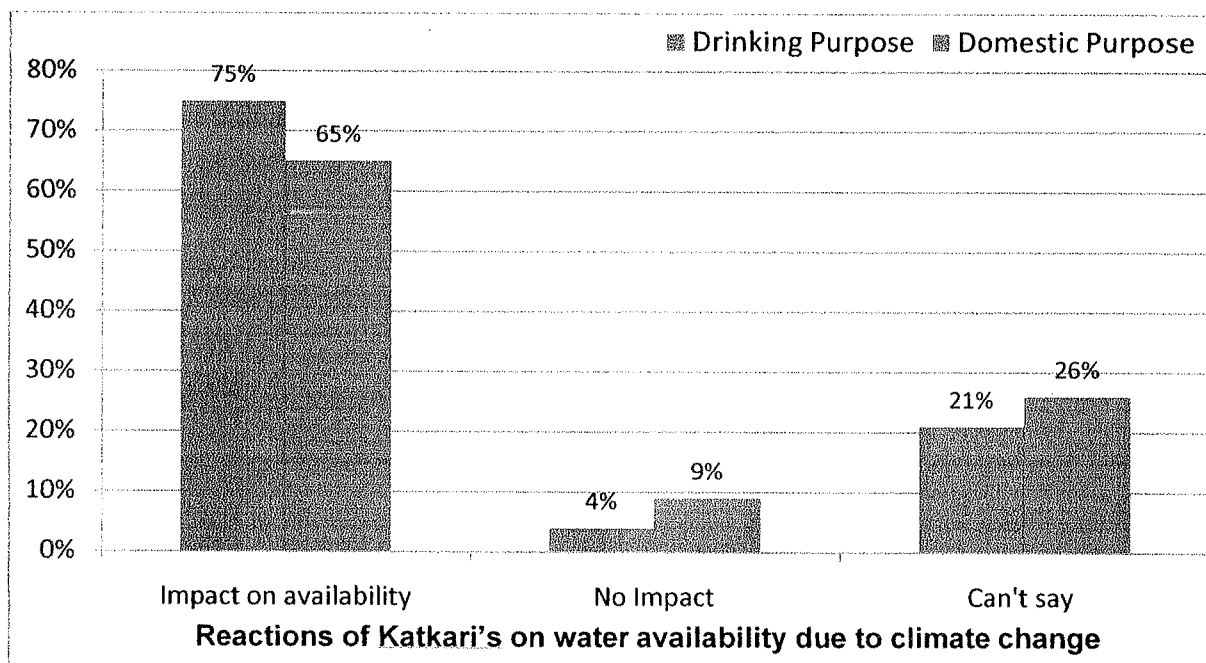


Figure 11: Water availability due to Climate change according to Katkari's

Note: For a Katkari family water is useful for two main purposes like cooking and drinking. Their need for bathing, washing, and gardening is very little. With the result at least 30% of them do not feel the impact of water scarcity.

3.5.2 Climate changes Vs Rainfall perception of Katkari tribes

Changes in rainfall and temperature patterns are the most important impact of climate change. The risk perception study with Katkari tribes also showed the same. Nearly 64% and 54% of Katkari tribes had observed changes in rainfall and temperature patterns respectively. While near 32% and 45% of Katkari tribes had noted changes but were not confident enough. Hence they were made into class of "can't say" for rainfall and temperature respectively. This clearly shows that climate risk is perceived for rainfall and temperature by Katkari tribes.

For temperature nearly 48% of Katkari's noted increase in the average temperature in past 10 years. Also 51% of Katkari's felt change by increase in temperature but were not confident of these changes. Similarly for rainfall nearly 63% of Katkari tribes observed decrease in rainfall pattern with unexpected rainfall. This much higher than that of temperature and also only 16% people were not confident of these changes. This shows that changes in rainfall pattern have become more prominent and also shows decline the rainfall amount in past 10 years.

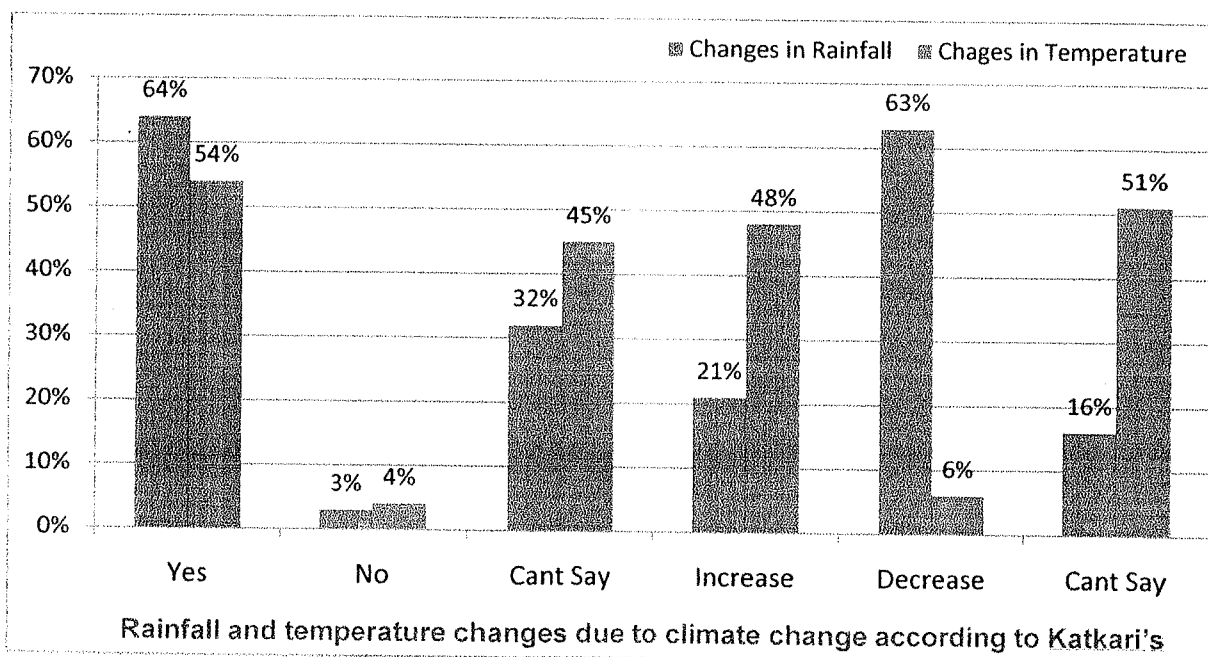


Figure 12: Changes in Rainfall and Temperature due to Climate change according to katkari's

Note: A Katkari only 'grossly' expresses regarding the rain and the ambient temperature. They are able to tell about the rain fall much better than the rise or fall in ambient temperature. The temperature changes are not perceptible to them. But most of them expressed that they will survive ('happy') if there is good rains. They do not mind excess rains. All their happiness depends upon the rain fall and they are least bothered about the temperature change.

3.5.3 Climate change Vs Depletion of water resources

Nearly 35% of the Katkari population has observed faster drying up of water resources such as streams, ponds and waterfalls after the monsoon season. This is followed by unconfident Katkari tribal population which observed these changes but was not sure for the reasons and contributed nearly 35% of the tribal population. While 30% of the tribal communities have denied for drying up of resources as most of these tribes are situated close to dam and hence have easy access to water for drinking and domestic purpose. The population, who observed faster drying up of resources perceived reasons as uncertain climate, reduced rainfall and increase in temperature. Surprisingly nearly 22% of the tribal families perceived reduced water table and drying up resource due extensive developments of farms houses utilizing water for construction, gardens and hotels.

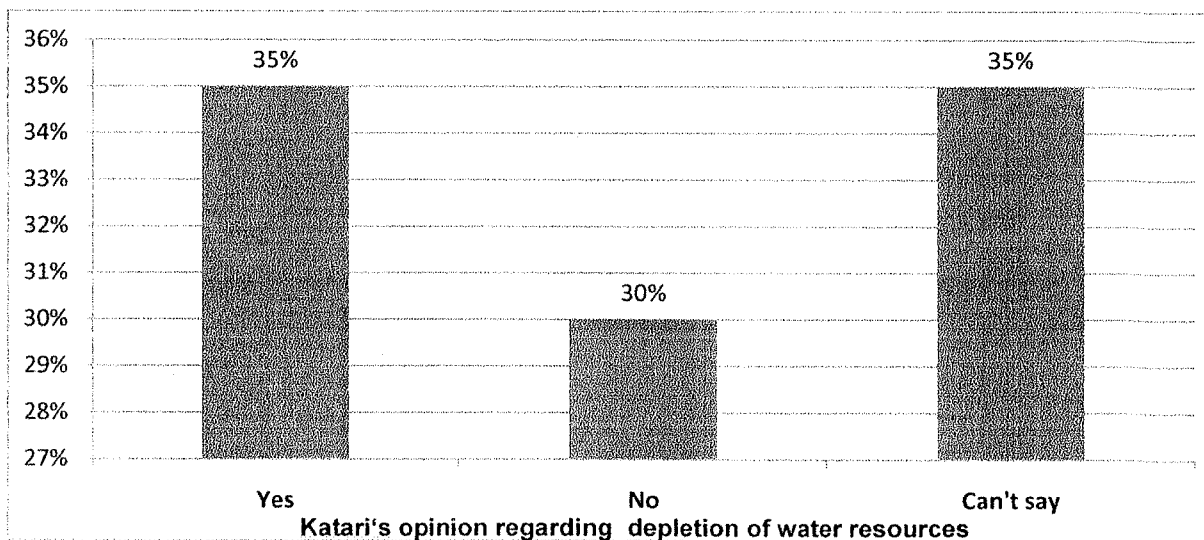


Figure 13: Changes in water Resources due to Climate change according to Katkari's

Note: As is seen from the above bar diagram constructed out of the study area data collection only 35% of the Katkaris are concerned about the changes in the water resource. They hardly know if it is due to climate change. They have no idea that the water sources change because of excess temperature or rain fall. 'No' opinion and 'Can't say' together constitute 65% of Katkaris which is noteworthy.

3.5.4 Climate change impact on natural resource collection

Katkaris adjust quickly to changes and are unable to explain such changes. They only explain the changes in a vague way. Their opinions are divided over a wide range and do not give a correct idea. But they do agree that a climate change has affected the forest resources to some extent.

The climate change seems to have negative impact on the natural resources used by Katkari tribes. The negative impacts of the climate change are more prominent on fruit and fish collection. Most of the tribal families visited have noticed drop in the fish catch and also now available in limited areas due to drying up of resources. Similarly some of the Katkari families observed reduced fish size. For fruit collection nearly 43% of Katkari families observed reduced collection mainly due to uneven rainfall and temperature changes especially for mango, jamun and karvand.

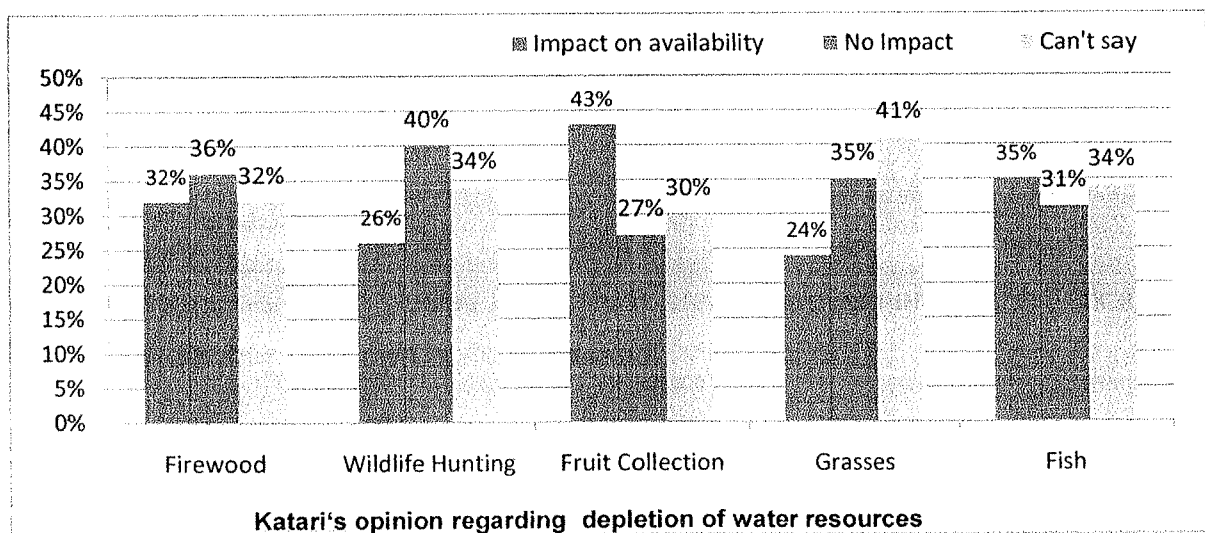


Figure 14: Changes in Forest Resources due to Climate change according to Katkari's

Note: Katkaris are definitely feeling the scarcity of the forest resources as shown above. Only a few are experiencing the difficulty in procuring the forest sources. Majority of them feel that there is no change in forest resources due to changes in rain fall or temperature. This could be because of the less density of Katkaris at a given forest patch vis a vis their less needs and good adoptability to changing temperature and rain fall pattern.

This was then followed by firewood collection; however firewood itself has increased pressure due to collection from hotels, villagers and tribes together. Also forest fire has impact on fire wood collection. For fish nearly 35% of the Katkari tribes observed reduced collection similarly for crabs. Interestingly few tribes noted high increase of road kill in crabs relating them to fall in their numbers. Also few of them commented the reason of uneven rainfall affecting the crab population. Though wildlife hunting is not directly related to climate, however tribal believe that increasing temperature forced the birds and animal to wander in too deep forest thus reducing the chances of hunt.

The grass collection has also been affected in the Mulshi taluka due to forest fire in summer season and also due reduced rainfall, the green grass density has reduced rapidly according to the Katkari tribes as this was one of the activities for income generation by selling the green grass for livestock. Nearly 24% of the Katkari population perceived climate change to be one of the reasons for grass density decline while 41% of Katkari population observed decline in the grass density but were unsure of the decline reason.

3.6 Land Issues

The land issues were also studied in the study area. However none of the Katkari's in the study areas has their own agricultural land.

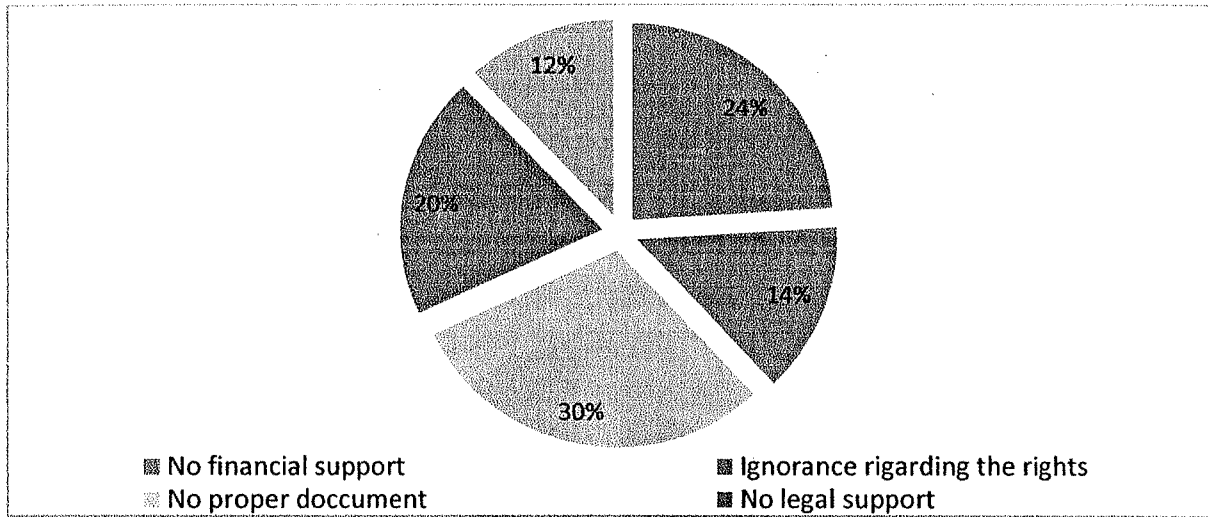


Figure 15: Reasons for Non-availability of Agricultural land to Katkari's

Note: The most single important factor regarding owning an agricultural land is that they not aware of their rights and they do not bother about it. They have made almost no efforts in that direction.

The awareness about land allotment to tribal groups by Government is known to most of the Katkari tribal groups. However 30% of them had a say of not having proper documents to claim the land records. This was followed by 24% with say of no funds or financial support. While 20% of Katkari reported that they are not having any legal support. While 14% of them having ignorance regarding their rights of land allotment scheme.

Few of the Katkari tribes showed least interest in the land as they demanded for more permanent jobs. While few family members had no information about agriculture and hence had little interest in land, also old age one of the other factor and hence those Katkari families showed any interest in the land. They are not interested in farming. They want land for living not for agriculture. Very few of the katkari's desire to own agricultural land.

3.7 Migration Issues

Migration for economic gains is practiced by nearly 32% of the Katkari tribes (See figure 6). The migration is mainly for economic gains than any other.

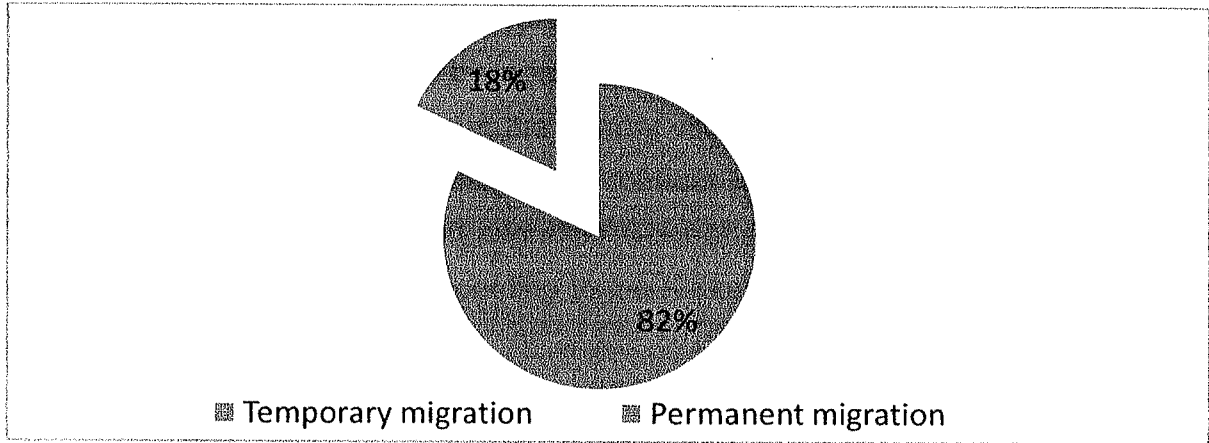


Figure 16: % of Families Showing Migration

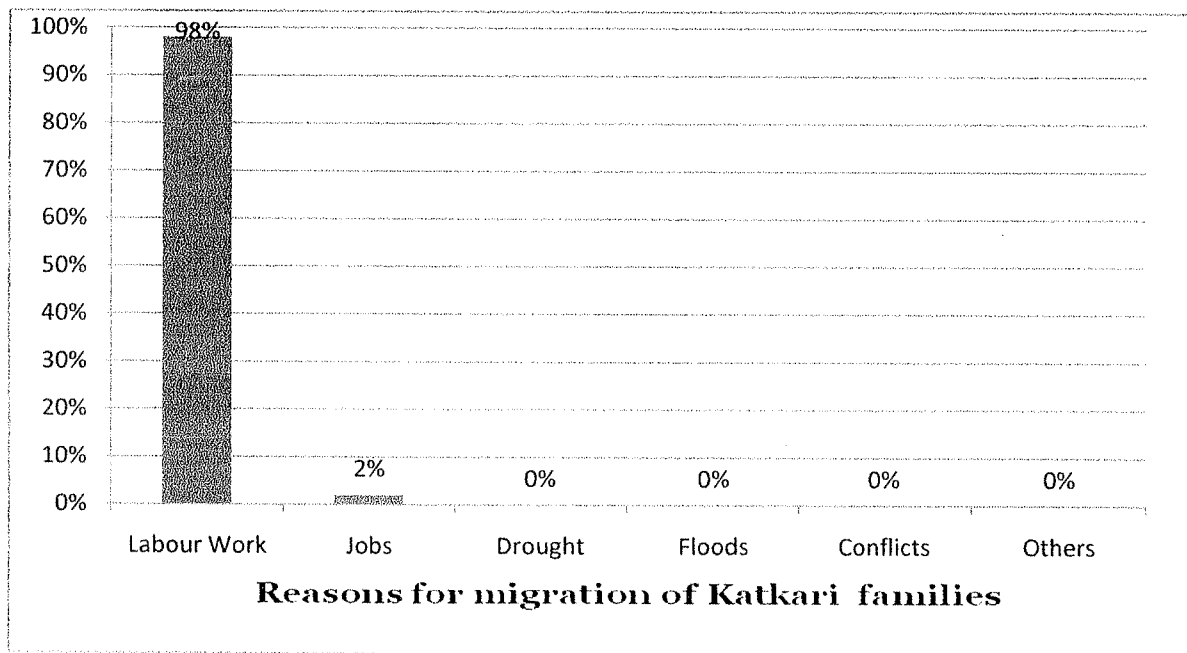


Figure 17: Reasons for Migration of Katkari's

Note: Because Katkaris do not make provision for future and the lean periods, they have to seek jobs elsewhere. They are not concerned regarding draughts or floods. Basically they are home loving people and unwilling to go away from their dwellings.

Out of the 32% of the Katkari who migrate for economic gains show temporary migration accounting for 82% while permanent migration account only for 18%. The temporary migration is preferred by most of the Katkari tribes. This migration only when there is lack of daily wages jobs in the nearby vicinity. Permanent migration occurred only when they had option for long term contract job or better job opportunity. The Katkari's who showed permanent migration were observed to be educated. The most important reason for migration according to the Katkari's is daily wage followed by jobs. (See figure 17).

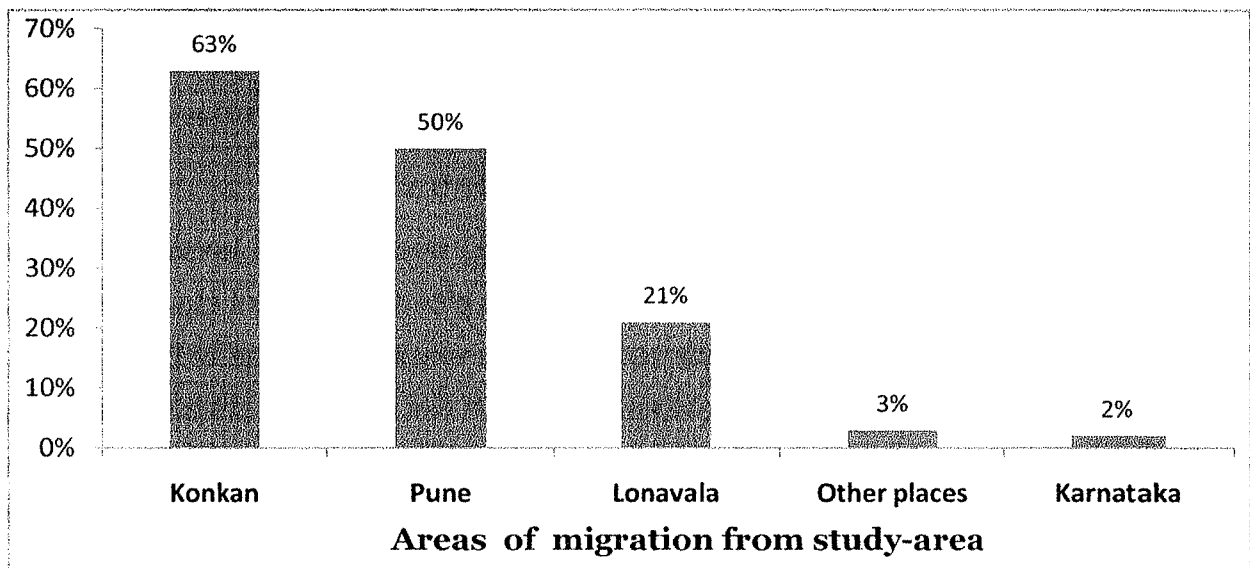


Figure 18: Areas Preferred for Migration by Katkari's

Note: As is shown here they do not tend to go far away from their home land.

The Katkari population from Mulshi Taluka has four main destinations for migration. Most of the population 63% migrates to nearby places in Konkan followed by 50% near

areas of Pune. Nearly 2% of the populations now migrate to Karnataka for working in coal mines. This is followed by 21% around Lonavala for construction and road works. While 3% work in other places as agricultural labor in some areas close to Mumbai. All the migration is for daily wages and jobs. Most preferred place for permanent migration is Konkan, Pune and Lonavala for jobs and daily wage on long term contracts.

3.8 Health issues of Katkari tribes

The health issues of Katkari tribes were studied for recent diseases, common diseases and treatments. New information regarding health issues were observed in the tribal community. Recent illness in the study area was fever and chills during monsoon and post monsoon season. Nearly 28% of the tribes suffered from this.

Recent ill family members	28%
Average Days of illness in the year	20
Medicines taken by Katkari's	
Traditional Medicines	36%
Doctor prescribed	64%

Table 10: Preliminary Health Status In Katkari's

Note: In general Katkaris have good immunity and satisfactory health condition. They are susceptible to communicable diseases, malaria, and water born diseases. They are less inclined to attend the dispensaries or hospitals. Almost all the deliveries are home deliveries and the mother in law helps the daughter in law for the child birth. In the study area we have noted that the children are playful, happy and generally healthy. They have white teeth and black hair, signs of good health.

The average days of illness other fever chills were also studied and it was estimated that average illness in Katkari families lasts for 20 days with minimum of 5 days and maximum of 110 days depending upon the illness and its severity. The illness days also affect the daily wage activities for the adult working person in the family.

The medicinal intake is also changing in the Mulshi Taluka. Presently 64% of the Katkari population is consuming doctor prescribed medicines which shows health facility approach for illness.

Health briefs of Katkari tribe

Most commonly diarrhea and scabies was reported by 28% of the Katkari tribes with rise in cases of diarrhea during monsoon season due improper water intake. This was followed by round worms 25% and malaria 23% which also raised during monsoon and post monsoon season. Water related diseases were found to be on rise since past few years with dysentery reported by 21% and Jaundice by 15%.

Fever and chills was reported as common by 10% of people in all the seasons but increase during change of season. While diseases like TB, chronic cough, and urinary troubles was reported by approximately 6% of tribal population. Typhoid, asthma and blindness was noted below 3% in the Katkari tribal community. While snake bites were reported by 4% of the Katkari community, with proper treatment given through doctor and not only with traditional medicines. No case of mental retarded child, physical disorder or polio was noted in the study area.

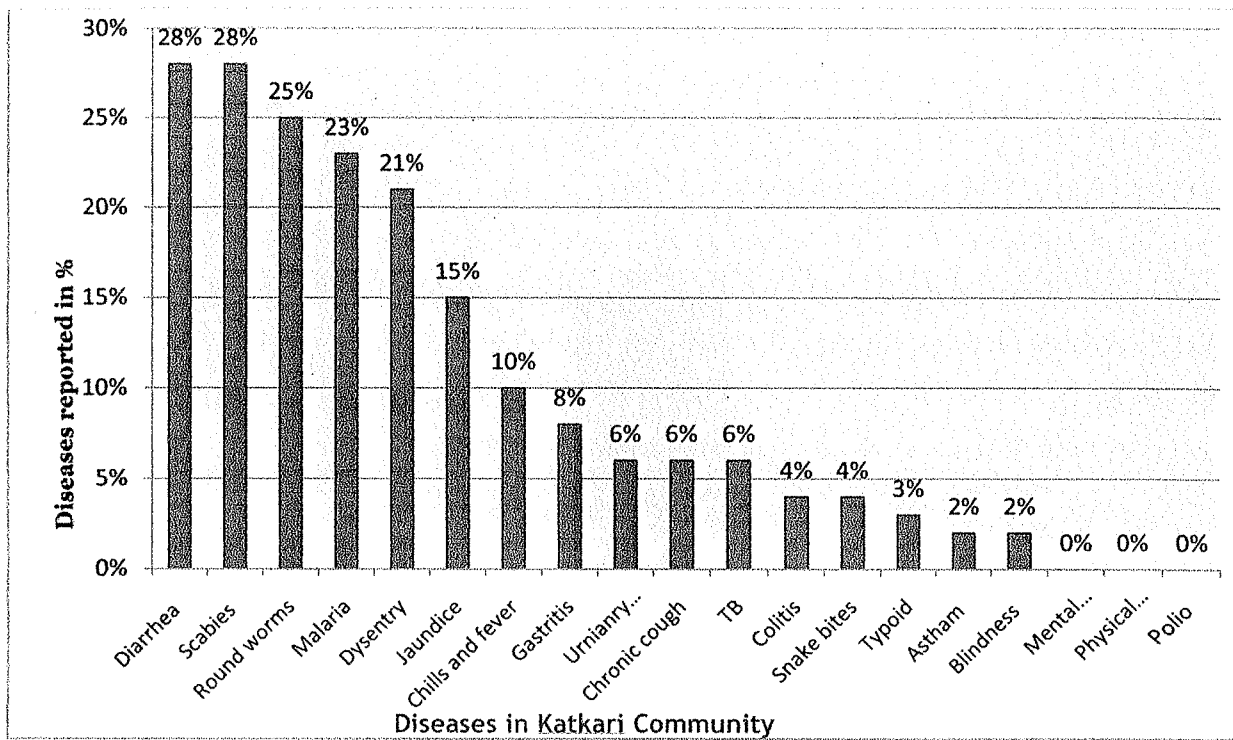


Figure 19: Common Diseases Reported in Katkari Community

Note: This bar digram is based on the information collected from the study area. It is self explanatory.

As mentioned even earlier the trend in Katkari tribes is changing and most them prefer to access medical services. It was observed nearly 59% of the Katkari population visits Primary Health Center (PHC) followed by 37% to Government Hospital, and relatively less number is visiting private doctor (4%). Any medical facility which is nearest to their village is accessed by the tribal population. During interviews it was observed that private doctors were opted as last option in case of emergency and less distance.

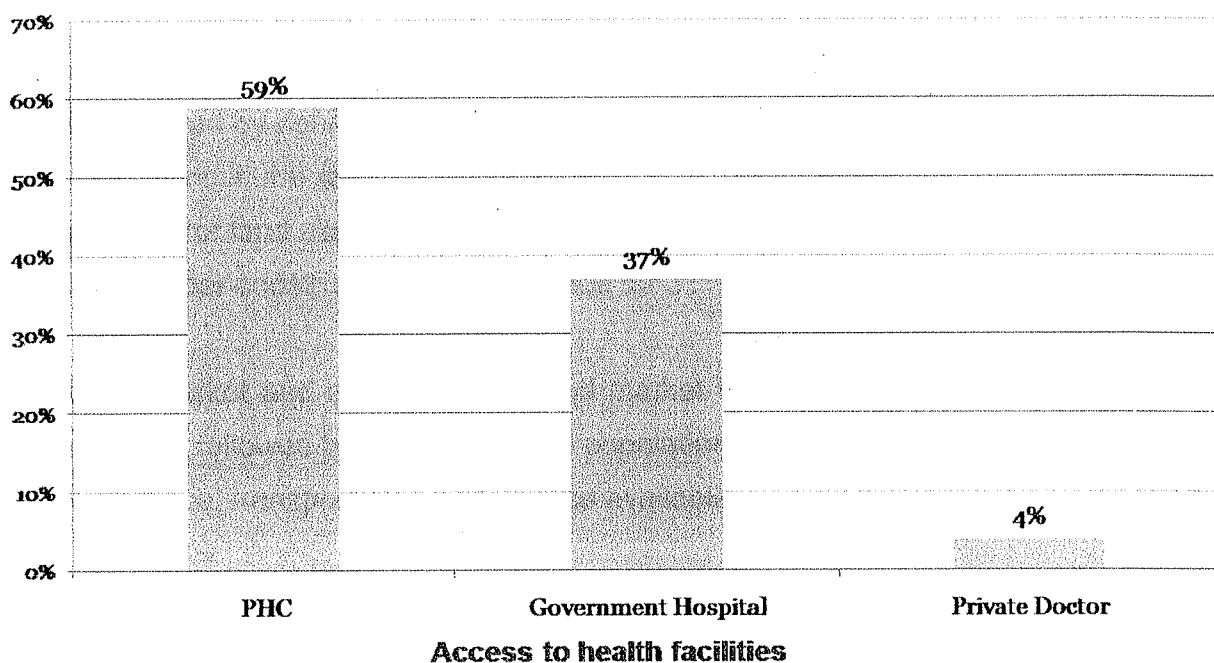


Figure 20: Access to Health Facilities

3.9 Risk Perception analysis of Katkari tribes in Mulshi Taluka

Risk perception analysis study was conducted in Mulshi Taluka for Katkari tribes. The risk perception study is key to understand what a community expects and what we deliver. It helps to understand the gap between expected and present situation. It is a way for need assessment study.

The results of risk perception studies showed that 53% of Katkari population thinks electricity shortage or availability of electricity itself is a risk for them. This was followed by forest fires which were perceived as risk by nearly half of the population 50% as it affects their natural resource collection like, grass, fruits, wildlife hunts, forest vegetables and others. Transport, finance and diseases received equal weights by 34% as third most important risk for them. Though some of the Katkari settlements are still not having good access to roads. They highly rely on bus for their transportation and thus have limitation for travel. Hence the transport itself has a risk for the Katkari tribes.

The Katkari's have become aware about education and have enrolled their children in the local schools, however they feel the proper education of their children to be risk and this is perceived by nearly 33% of the tribes. Similarly katkari's have also become aware about the agricultural land they will receive from Government however 32% of them perceive risk for land allotment, documentation and others. The interior roads also prove risk for improper construction and existence for 31% of the Katkari tribes.

Access to market and availability of good market is also a risk for 27% of the Katkari tribes. This is followed by 27% of Katkari population which feel access to hospital is risk due to distance, transportation and service available.

Forest resources, water uncertainties and livestock disease form a risk group of more than 20% of the Katkari tribes mostly due to changes in climate which are having negative impact on these activities. Also forest and water resources are risk because of increased pressure and reduced forest sizes followed by over extraction of ground water resources.

Surprisingly 20% of the Katkari tribes perceive the risk of witchcrafts practiced in different villages. While access to shops, age, hunger and clothing is perceived risk by nearly 11 to 13% of the tribes in the Mulshi Taluka. Access to water for its different use is perceived as risk by nearly 8% of the tribes, followed by 2% of the population perceiving risk for theft and irrigation supplies.

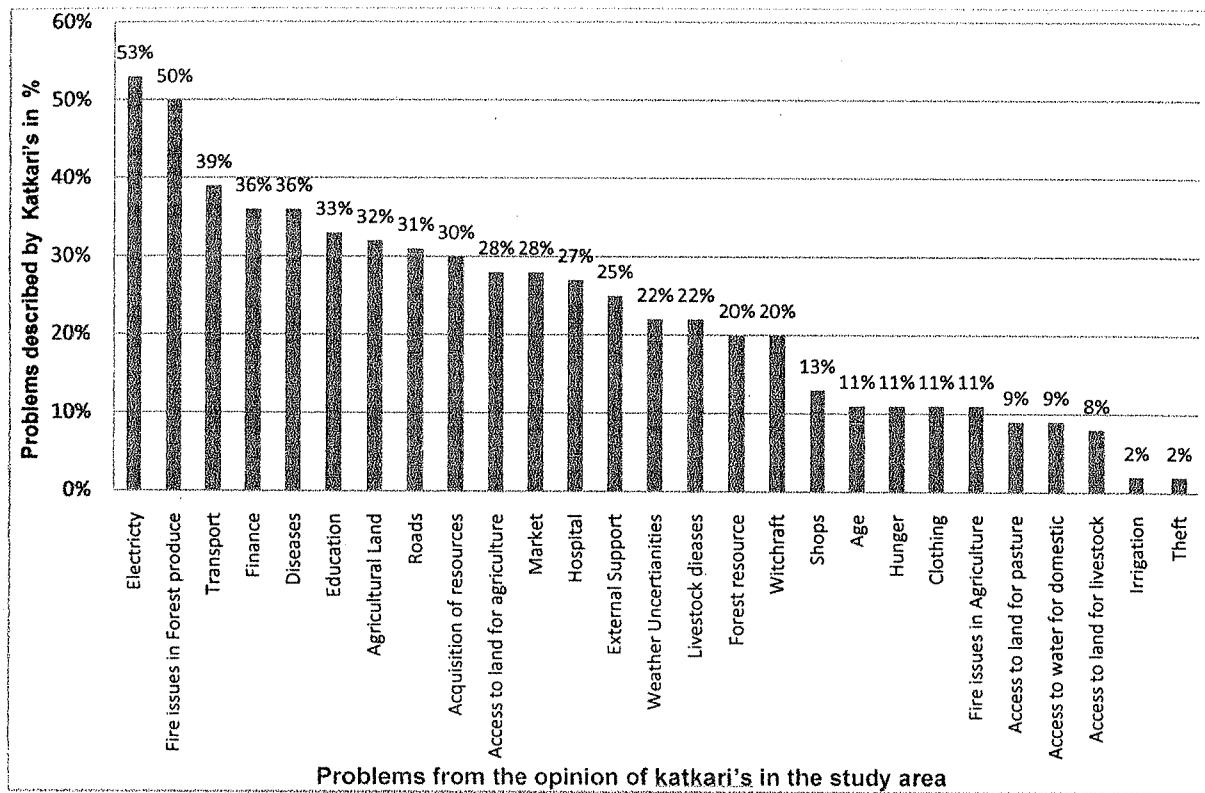


Figure 21: Immediate demands of Katkari's in the study area

Note: It is seen that they have largest demand for electricity for illuminating their surroundings. Very few have electric lighting inside the huts. They have no demand for house construction. But they want vehicular public transport. They also show less tendency for the domestic animals, or poultry farming.

4.0 Discussion

Katkari are neglected tribe by the social order but not by the Government. They have different way of thinking regarding their life and are liberally moving communities in their area. Life slogan of the katkari is independence from substantial resources which is not a concern of their livelihood. Thinking for tomorrow by planning and storing the resources is not the part of their daily activity.

Musli area selected for the study to understand the ongoing livelihood practices of Katkari tribes. The particular area is partly dam project affected area. The resettlement of the entire community has not worked efficiently in the area. In this process least benefited community is Kartari tribe which don't have fixed and permanent household except few Karkari settlements.

The Katkari settlements on the official record of the concerned Department has now scattered into various small hutments. The need of education and awareness has still not able to percolate convincingly in the Katkari's. This has resulted into early age marriage and migration from parents.

The particular study has awarded to Environment Action for Sustainable Transformation (E.A.S.T.) Pune and funded by Tribal Research and Training Institute, Pune.

The child death due to malaria has reduced to the considerable extent. This also shows that there is remarkable improvement in health scenario and health services. Health department are frequently visiting Katkari localities for children vaccination program and general health review of the community members. 20% new born babies at present are taking advantage of vaccination programme.

The deliveries are being carried out in the in-house by mother and mother in law with homemade equipments and techniques. The pregnant women never goes to doctor (Gynecologist) for pre-pregnancy test and medical advice. The tetanus vaccination and

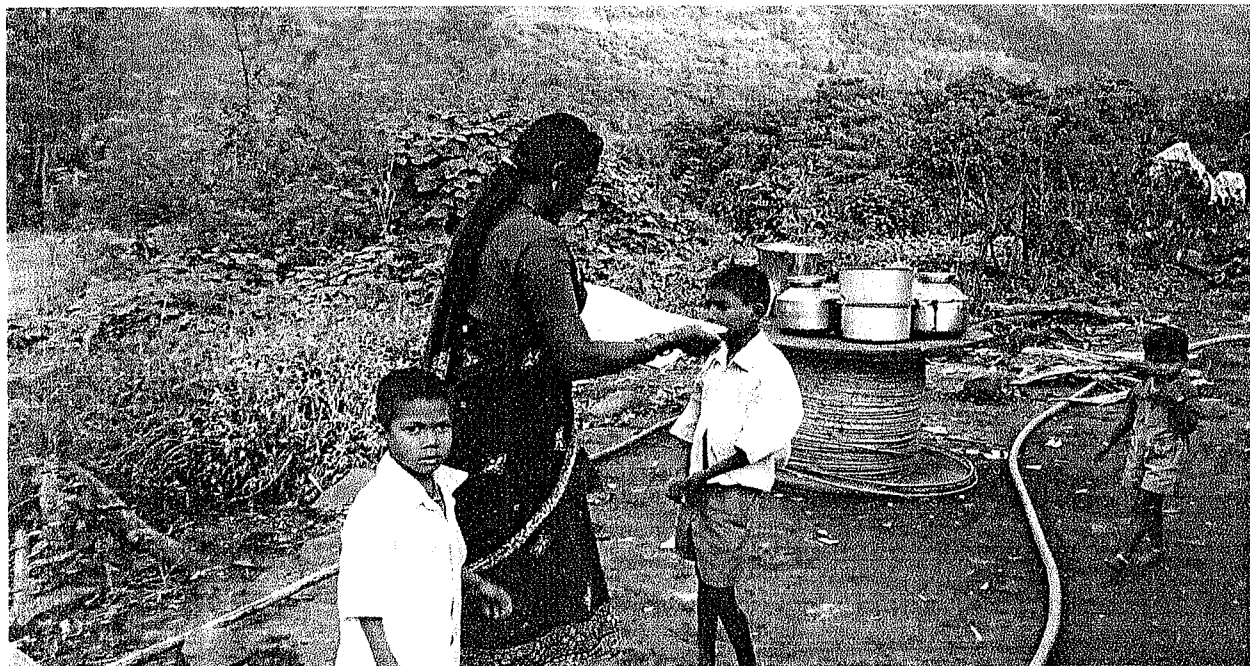
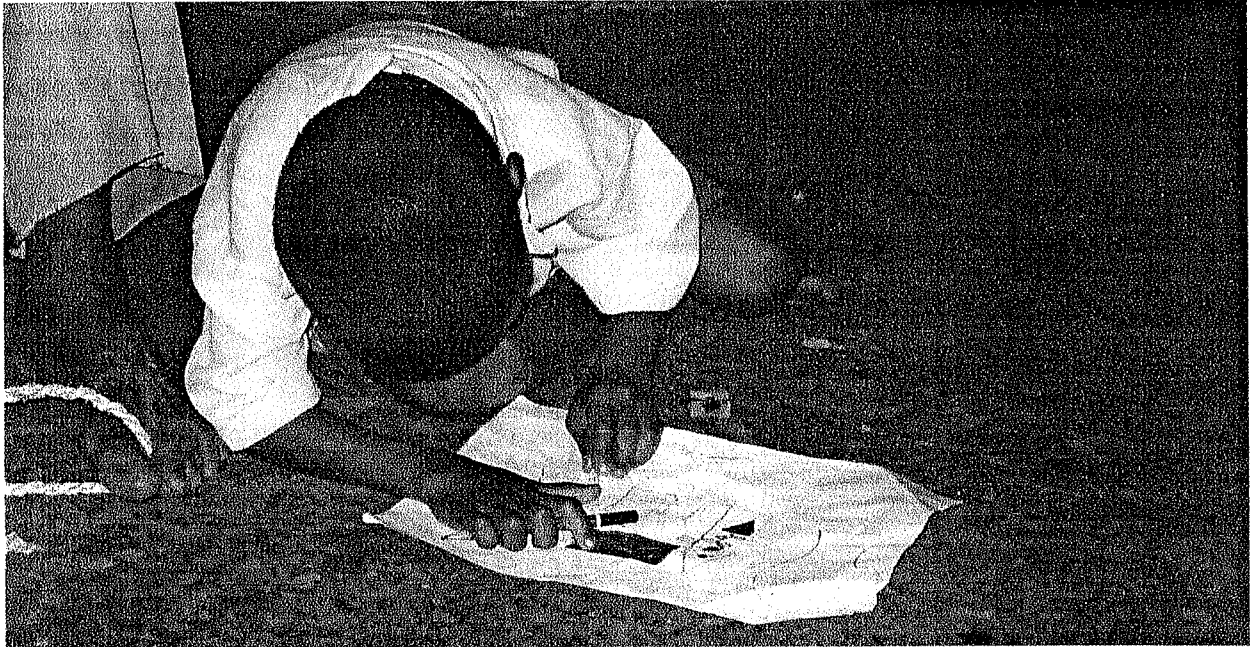
hygienic practices are not being followed. The less death ration may indicate strong immunity and resistance power.



The healthy status of katkari Children. Note teeth and black colour of hair.

This primitive adivasi tribe is more close to wilds to fulfill their minimum needs and Wilderness is their fascination. Their livelihood is least affected by **Education**. The literacy ration is found more in male of an age group below eighteen years. This shows increasing educational trends in Katkari's. The children of Katkari are now taking

advantage of school in their village. The adult education is comparatively balanced in male and female. The Government has announced and being implemented various educational schemes for adivasi to increase the educational level. In the present situation the higher education (more than S.S.C.) is still a milestone for katkari's.



Katkari children discussing school activities with their parents

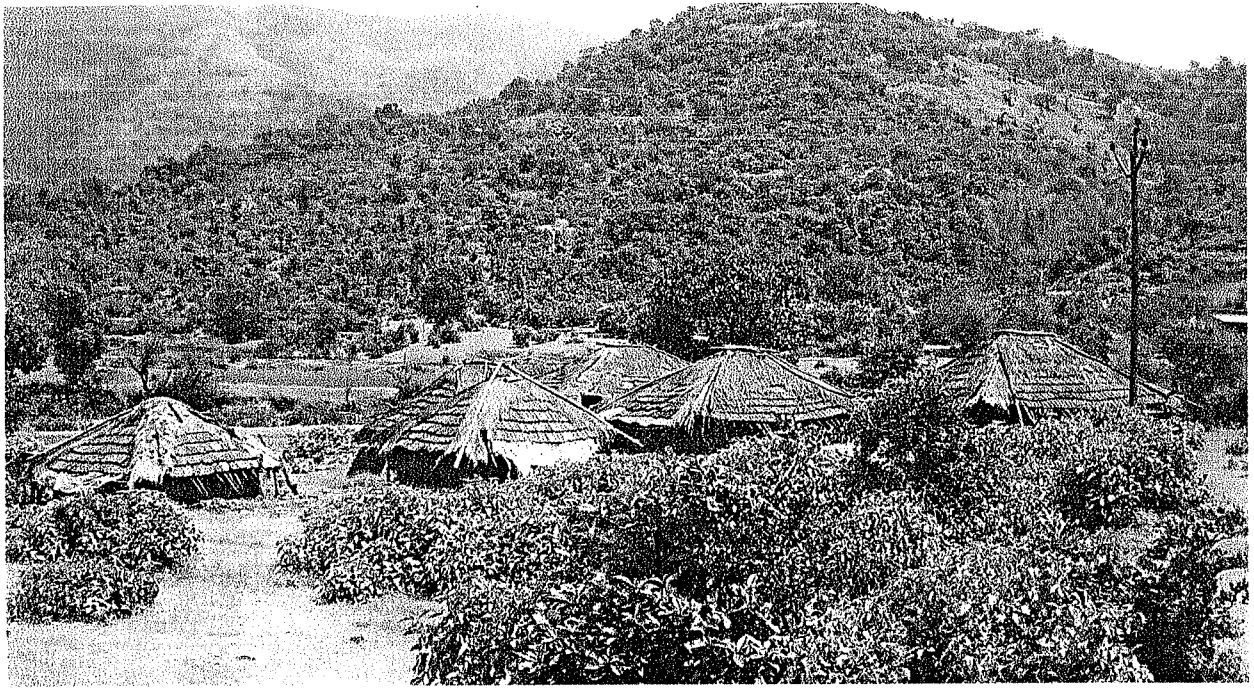
Katkari settlements (Pada) are a group of 5-15 hutments of 5-10 families. 47% of Katkari families from study area have their own house (constructed by Govt. or allowed by village) and 53% have constructed their house (kacha or Pakka hut) on land of Tata Power Company (T.P.C.). Katkari were allowed to settle on the banks of backwater of Mulshi dam by T.P.C. After discussion it was known from the katkari's that housing scheme for them is ready and they are waiting for its execution.



A typical Katkari house

Present typical Katkari houses are made up of poles and covered by Manglori tiles on the roof. Walls are made up by bamboo structure plastered by a mixture of cow dung and clay soil and the plastering of walls being done every year. The house or hutment with no partition and firm locking system being used by the entire family. Sometimes used paddy (Pendha) and now days throw away flex banners used for roofing. The fish catching nets, different tools required for hunting and fishing, forest fiber ropes are

being kept on the roof. The shed for ships and cattle (if present) put up separately but next to their house.



Katkari Pada at Tahmini



Katkari working in paddy fields and their children play around the fields

Agri land The Katkari's are land less and they don't have own agricultural land which made them working as labor in agricultural fields of surrounding villagers. The economy of Katkari is based on working as a farm labor (52%) especially for paddy and nagala(Nachani) which goes to minimum 100 days for male and 50 days for women. sometimes they grow local vegetable in their backyard which they sell into nearby villages.

The Katkari's are landless due to lack of funds (24%) which they put in purchasing land. The generations of funds for land at present an impossible task for the Katkari's. Apart from this they are victims of the system in which they completely unaware that they have allotted land by the Government and they have kept aside purposely. Many of them don't know about the land belonging to their parents. Very few families have ration card but many of them having Election Identity Cards for voting and missing things are land record documents.

The land records are not with Katkari families and they don't know exactly what happened with the records and source of availability. During the field work some of the family members expressed concern about the legal support (20%) and document (30%) which will help them in establishing their basic right of land. Somewhere down the line the work has to be done to give them their basic right.

The records and documentations of their own land are not with them as per the discussions with Katkari's. The buying and increasing of agricultural land is not possible because of land records, lack of funds and access to public systems. The official tribal settlements are very few in the area. The tribal settlements are away and not the part of a village.

In the study area earning livelihood for Katkari is by working as a labour in the fields. The labor charges are excluding 2 meals which are being given to Katkari's. It can be said that both husband and wife working in field on a particular day then there is no cooking in the house. The cooking practices are simple with less variety of food. The utensils used for the cooking are aluminum pots both for serving and cooking purposely due to use of fuel wood.

The distribution of L.P.G. is not observed in Katkari communities. Charcoal and kerosene (45%) being used as an option to fuel wood. Charcoal being extracted by some Katkari families partly used in the house for cooking and rest they sell into market. Kerosene is the next option after fuel wood for cooking and which is also used for lighting during night (Batti - traditional lamp made up by using old used bottle).

The fuel wood being used by 63% families in the area. After discussion with Katkari's some facts came forward which are more significant as per ecological degradation of the area. There are various reasons for this fact which are new roads, selling of lands, development activities etc. Use of biogas has not been observed in the Katkari Pada's as use

of livestock is very less which will add the biomass for the activity. The use of electricity is not observed either for cooking or lighting household in the study area.



Storage of fuel wood at one corner of the house

Katkari's are ardent in use of local and natural resources available to them. It is very interesting to see towards study area and how katkari Pada's been settled and scattered. All Padas have been settled near to water sources to avoid the water scarcity for various uses. The availability of water for domestic uses is the least concern for the Katkari as all their settlements are close to water body (back water of Mulshi Dam). The major source of water for katkari is unprotected wells (33%) followed by natural springs which are many in the area.

Water from river and natural streams are being used seasonally. These natural water sources dries up in summer then they use tap water (water supply scheme of village) or many times bore well can also be used. The quality of the water and hygienic condition

is never attention of the Katkari's. They are never dependent on the water supplied by the tanker because water shortage is never experienced by them.



Katkari women using nearby Nala or streams for domestic purposes

Katkari community never waits for the readymade supply of food without work. There is contribution of the entire family in overall income. 57% male of different age group from the study area earns maximum per day income Rs. 250. The 43% females of all age group can earn Rs. 200 average per day income as a contribution to the family. The lowest average income of katkari family is Rs. 12,000 due to old age, migration of working hands, climate change.

The annual income for the family can reach to 1lakh mark if there is ample collection of forest produce. Katkari's work throughout the year(male/ female- 360/300days/year respectively) This also shows a tendency of negligence towards tomorrow. Education has reached to the community by one way or another way and shows significant no of kids entering in school. Apart from the increasing trend of education 10% katkari children helping their parents in work.

The farm house, hotels, educational complexes, Sahara and Lavasa city projects are new revenue sources along with the traditional manual farm labor activity. The overall per day income of Katkari is Rs. 50 (with 2 meals) as a labour. The katkari's never work as a road side labors or bonded labors for a merchant and Government schemes. The mega construction projects like Sahara and Lavasa are paying Rs.100-130/day to labors. The 50% of Katkari are working at these projects. They have shifted at different locations within the area. Tata Power Company has permitted few tribal families to locate on the banks of Mulshi dam.



A view of Sahara project in the study area which is affecting the Katkari lives.

The ratio of katakri working as agricultural labors by tradition 52% were observed in the area compared to any other income generation activity. The land-use changes and increased transportation from the area abridged agriculture activity as a main source of income. Development projects brought contract work first of its kind in the area involved 19% katkari population into it.

The contract type of work includes driver, transport for stone crushers, helpers in hotels, farm houses, construction sites(Lavasa, Sahara). The removal of charcoal activity now reduced to 3% and which is taking place in outside areas (Karnataka states). The

youths of 4 families have annual contract of charcoal in Karnataka for the period of eight months.

The pressure of climate change, change in land-use has resulted into decrease in forest produce and its collection and sell into market. The collection of forest produce is one of the main activities for the income along with farm labor.

There is real concern for the old members of Katkari families in many tribal settlements due to lack employment opportunities. Old age unable them to work resourcefully and earn their livelihood as no investment and strategy for the life is prearranged. It has been noticed that these old families many time does not have anything to eat then they consume liquar prepared in-house.

Socio-economic forest resource

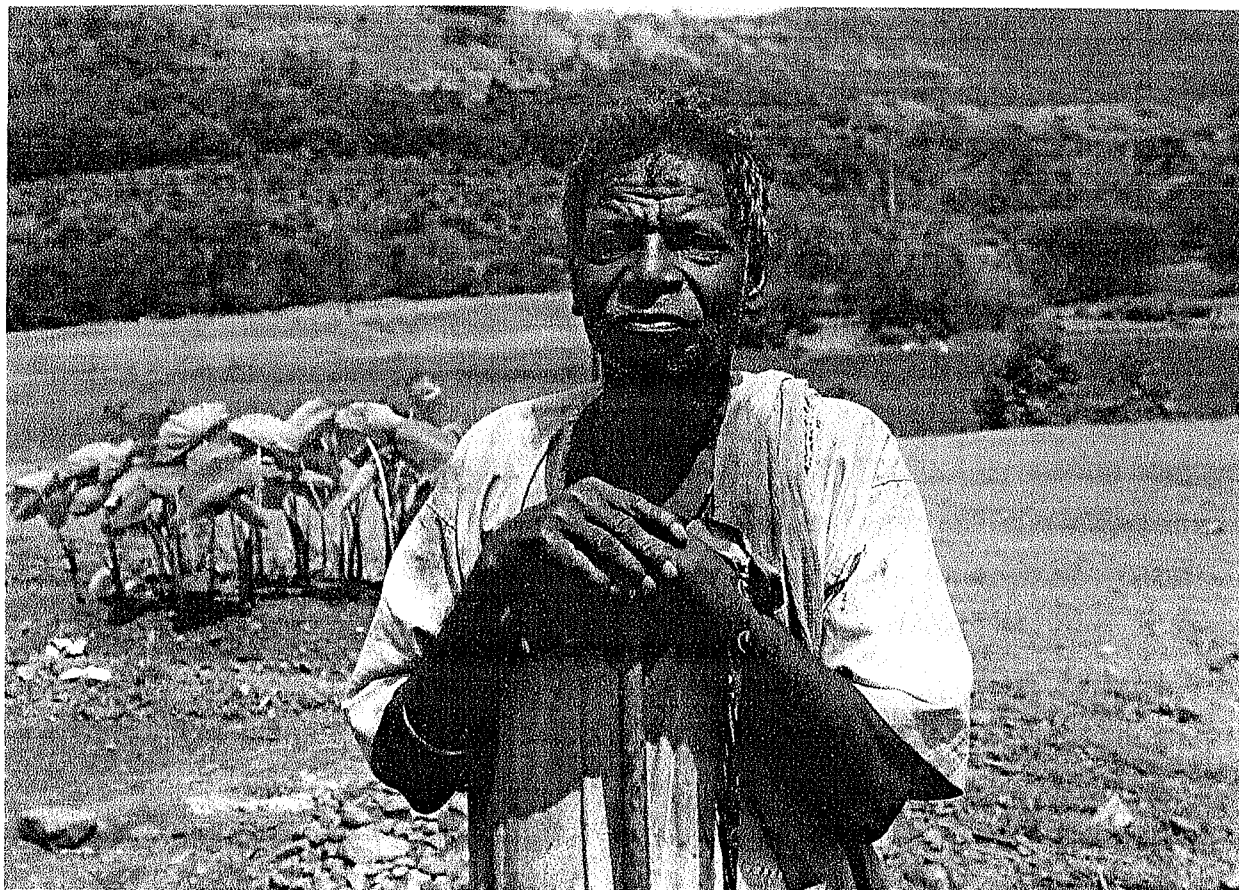
Katkari's are primitive dweller of this area and well-known to availability of seasonal forest produce. Collection of Forest vegetables is the activity of 59% katkari throughout the year. Part of these collected vegetables will be consumed by themselves and rest will be sold in the village or nearby market areas. On an average more males are involved in collection of forest vegetables and fuel wood as compared to female. Selling of fuel wood for livelihood is very common in this community. The local merchant many times suggest food ingredients, cooking oil in substitute of head lodes of fuel wood. Every year these adivasi's are covering 1km extra distance to collect fuel wood which they collect after winter and storing in their houses.

Another seasonal source of income is collection of medicinal parts of various plants available in the area. 55% of katkari's in the area are involved in medicinal plant collection and cell to vendors of Pune on the spot. After discussion with Katkari families it was known that the vendors are not giving good returns of medicinal parts which they buy from them. The frequencies of vendors are also not enough.

As per the Adivasi Bill passed in the Parliament Katkari's did't know that are only entitled to collect medicinal plants from the forest area. They also not aware with storage and preservation of techniques of collected medicinal plants which is another reason for not getting plentiful money of the produce. According to Katkari's urgent need is making available on-spot weekly bazaar in which they can sell their forest produce. Males are involved more (all most double) as compare with women in collection of medicinal plants in the area.

Honey collection is one of the supportive source of income in the area and about 47% Katkari's involved in this activity. This is merely male leading activity and rarely women are taking part in honey collection. The collected honey is being sold into local market or in nearby villages for Rs.100-130/ 1lit bottle. On an average 5-7 bottles are collected by a family. Which can goes upto 20 bottles per season. Occasionally the honey is kept in house for own use but rest is sold into market.

The honey is being collected from nearby areas from their settlement (pada). There is a proper time and technique for collecting honey from the trees, inaccessible hillock, rock overhang etc. These katkari (Adivasi) are real conservator of forest ecology and using these resources sustainably. They are still needy user and not greedy consumer. They are not completely taking out honey from honey comb but keeping half the honey as it is support new batch. In commercial honey production these are deliberately left out facts.



Old members of katkari community are more concerned about their food



Natural honey is being extracted from these honey-combs by Katkari's. This is becoming scarce now a day.

Katkari's are never worried about their food which is apparent from their discussion and visits to their settlements. Starvation was not found out in this 15 settlements studied so far for the current study. Katkari will change their food naturally but not overuse the forest resource. Many times daily wages will provide them with the food for both the times.

They will slaughter the forest animals and use them for themselves. They are eating meat of wildbore, rabbit, porcupine, jungle fowl which they collect by setting various types of traps in nearby forest areas. 20% katkari of the area still continuing these practices for the livelihood which have negligible contribution from the women. Children are being leaning this procedure very closely by following their elders.

The selection of animals for hunting is also one of the crucial issue of katkari. These are taking place at least once in the month by only males of the family and women are helping them in distribution of the meat in whole pada. Occasionally they sale the meat in nearby villages for the sake of money which is required to buy some essential ingredients. Sometimes they provide the meat to some families in nearby village and in exchange they will collect essential ingredients like food grain, cooking oil and kerosene.

Fishing in lakes, ponds, rivers, check dams, larger dams, and agricultural fields is one of the unavoidable activities of Katkari communities as they are directly consuming it for themselves. As they are not planning their resources for tomorrow in case of no food for a day they are only surviving on fish they collect from nearby water bodies. There are several interesting ways of fishing by Katkari's in the area.

They use various sizes and shapes of bamboo structure and place into various segments of water bodies in the day and collected fishes of various sizes. Many times they apply dead frog, crabs, particular grass on the tip of bamboo and hold it in the water body to catch the fish. Women in monsoon especially in paddy fields they catch

fish in a different manner by holding half sari which they put on into water body. Whatever be the fish catch they will keep it for themselves and rest will be sold into the nearby market or by taking it to door to door in nearby villages.



A traditional way of catching fish (temporary bunds constructed with boulders and Mud, impregnated with fish poisons)

Fishing is the ongoing activity in all the seasons but comparatively higher in monsoon as there are plenty of water bodies and paddy fields which support them in fishing. They are saying that day by day fish resource is reducing because anybody from other communities (especially koli or bhoi) are establishing certain areas reserved for fishing and not allowing Katkari's for fishing.

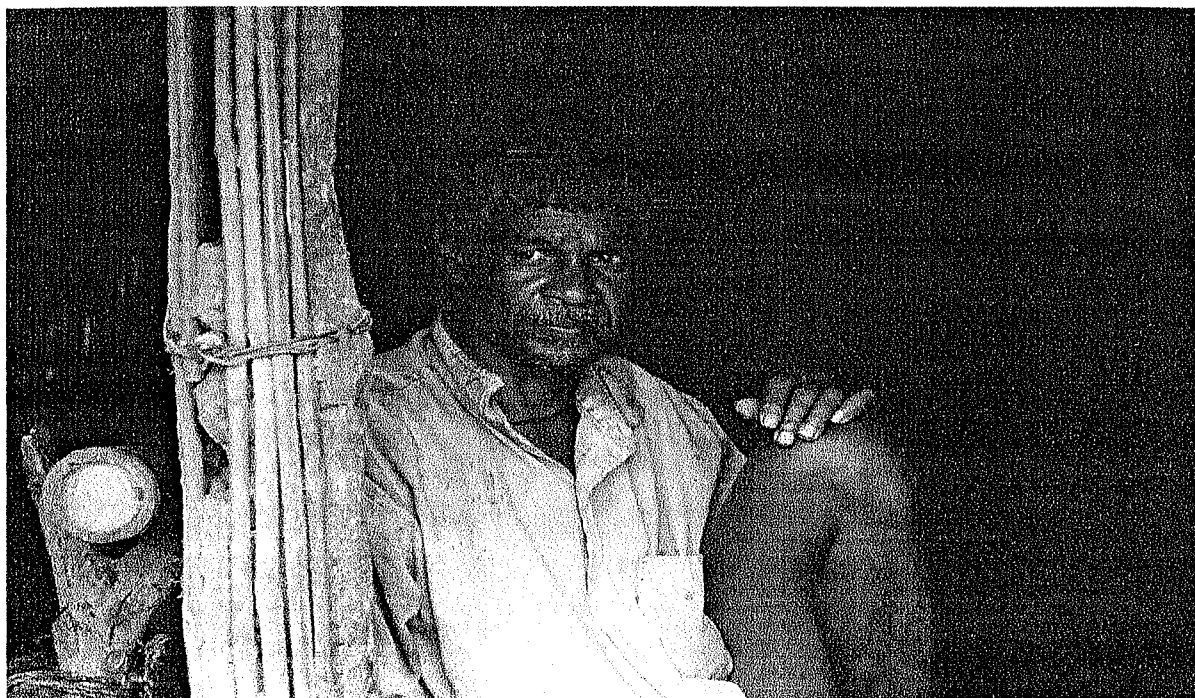
Mulshi dam is not allowed for fishing officially. However they have allowed their settlements on the banks of backwater and supporting their various causes. 56% Katakri involved in fishing. Male are again more involved in fishing in all the seasons. Fish catch in winter and summer are marginally same. 12% katkari families (male and female) in the area are involved in the fishing in all the seasons and collect 38% fish catch. Katkari's are never catching fish in unscientific way which involves unscientific

season, fishing techniques, fishing nets and supporting aquatic natural balance. Thus they are making sure of availability of fish throughout the year.

If we compare the various alternative sources of income of this primitive tribe in Mulshi Taluka, the money earned from forest resources can play big role in their overall economy. The more income generates from collection of poles and sells them in market or on spot followed by selling meat in the area as per the requirement. Medicinal plants, fisheries, forest vegetables and fuel wood are equally supporting their economy throughout the year . Katkari community now days involved themselves in collection of fodder and adding to their income. Forest leaves and flowers are generating less income in all the alternatives in the area.

Significant reduction in timber and charcoal shows unavailability of resource full natural forest except area covered by Tata Power Company. The instability in resource generation is now being experiencing in all over the areas. The families are scattering in search of food and income. After the son's marriage they are separating out from main families. This is another season of more and more small Katkari settlements all over the area.

The Katkari pada's are now with elderly people who are not in a position of significant work and can't enter in a forest for collection of resources. Many times they only consume local liquor prepared by them. The overall income of Katkari family goes upto Rs. 42,000/- annually and reaches upto Rs. 1lakh in exceptional incidences. The lowest income of the family is about Rs. 18,000/-



Older katkari spends his time inside the hut guarding for almost whole day

These katkari's are very stress-free in choosing the source of income which will support to their family. Many katkari families though they have selected working as a labour in paddy farms or in nearby villages it not binding to them. Katkari's in this area are not carrying any livestock except few ships and goats on hire. They are not involved in selling agricultural products and livestock.

Katkari's never finding the middle ground in terms of food either they will eat however they want or they will sleep without any food. Keeping and storing food for tomorrow is not the priority of Katkari's. Katkari's are happy to work as labor 85% as it provides them with constant source of food. These activities also provide them with readymade food which enables them to not cooking in their houses.



Katkari's do not possess domestic animals, sometimes a few goats are seen

Some of the family members are involved in harvesting of forest produce 16% which comparatively less to labors. This seasonal practice caters good revenue to Katkari in a short time and in fewer efforts. In between they are also involved in doing some petty business of selling honey, selling medicinal plants, leaves and flowers and generate revenue. These community members are migrating themselves in a particular time of the year in which they get continuous employment outside their own area and travel very far.

Their temporary settlement is in Konkan areas especially where there are two seasons of paddy mainly Roha, Mangaon, Tala areas which are 70-80km from their sides. The project like Sahara and Lavasa are new attraction of work for these communities over last 5 years. Thus they are very selective in choosing the work. It has been noticed that few youngsters are travelling upto Karnataka to work in coal mines for the period of 7 months and generate money for their family.

The katkari Pada's are located at different locations in Study area. There is one similarity that all the locations are near to water bodies either on the bank of back water

of Mulshi dam or near to river or village. This helps them in fulfilling their one of the basic need. They are land less and dependent on labor activity thus own land for agriculture is not the concern. Livestock is another factor which is again not a concern for them. Thus water needs come to drinking and domestic use which they fulfill from nearby water body. More than 75% of Katkari are getting enough water for drinking, domestic purpose and for available livestock. Some katakri's are least aware about all this because they migrating seasonally and because old age becomes difficult to understand the changes.

As compare to all the water uses drinking water available in plenty in all the Katkari Settlements. The livelihoods of these katakri are dependent upon the climate changes but they are least disturbed of these facts. According to them whatever is the case we are getting employment to work as labors even though there is more or less rainfall and hot and cold conditions. More than 55% of Katkari population is aware about the changes of rainfall and temperatures.

The changes in rainfall can be easily understand by themselves because of a change in work time and pattern in paddy fields and celebrating the festivals with appropriate resources. The change in temperature is somehow hard to predict for katakri's as it was evident in field work.

The negligible population from the study area is saying that there is no change in temperature and rainfall pattern. 32% of the katakri population from the study area is not sure about change in rainfall and temperature or they can't predict. 21% and 48% of Katkari's population have confidently expressed their opinion about increase in rainfall and temperature respectively. 63% of katakri have denied the rise in rainfall over last 5 years due to uneven and inappropriate rainfall. Overall after knowing all these facts they relate their daily life with the various incidences. They are not overburdening themselves and finding new opportunities for working as a labor.

As per the discussion with Katkari fuel wood, wildlife hunting, fruit collection, collection of the grasses and fish are some of the parameters to assess whether the climate

change impacts are noticed or appreciated by them last few years. According to them fuel wood collection and wildlife hunting have least affected due to climate change.

About 30% of katakari population are not confirm whether to increase or decrease in the resource. Fruit collection and fish catch has been significantly reduced in the area over last few years because of uneven weather pattern. The traditional fruits and fish were less into local markets. Among this fruit collection is heavily impacted. They can't predict the situation of availability of grass in the area.

The shrinking and drying of the resources is a gradual process in the study area and very hard to predict by the adivasi's like katakari who are continuously in search of new labor opportunity. The development trends in the area giving them these probabilities of short-term income which enables them to think about shrinking of the resources. 35% katakari are agreed to fact that resources are being depleted due to uncertain climatic conditions.

Katakari from study area are the primitive tribe but least concerned by the system. They are real self-sufficient communities satisfying their needs in their own way. The risk is not suitable term for katakari community but incidentally will have to think about their down trend which is probably not considered by themselves.

The katakari pada's (settlement) are scattering up into one or two hutments which is not a good sign for the community. The elder people of the community finding difficult to survive as the forest resources are shrinking in development race and old age enables them to cover larger distance for food. The younger generation is either migrating or separating out from main family.

The attempt has been made to understand various risk perception in tribal communities of study area. These katakari's dwelling themselves in catchment of Tata Power Company and State Electricity Board has reached almost every village in the area leaving katakari pada with no electricity. There are various reasons for not reaching

electricity to katkari pada's. This is followed by forest fires which reduces the forest produce in a significant manner. After labor activity forest produce is the convenient alternative to the katkari's. In study area forest fire incidences are very common and out of miss understandings and misconceptions.

Transport, finance, diseases, education, agricultural lands, roads, availability of nearby market, hospital and external support are the probable risk factors for the community as it is expressed by katkari's during field work. The awareness of all these factors are very less as this community is not thinking and worrying about future. They expect that somehow these can be set on which allow them to come in main stream.

Spread of education is slow process in the community but gearing up with the time. Weather uncertainties, livestock diseases, witchcraft, shops, age, hunger, clothing, fire issues in agriculture, land for pasture and livestock are the secondary risk for the communities which they are not worried much due to their ability of self-sufficiency about the alternative resources and its sustainable use. Irrigation and theft are the insignificant risk to the communities as they don't have their land for agriculture. There houses are often without locking system as there is nothing to be taken away. The scale of the risk is still modifiable if some action is taken in quick succession of time.

5.0 Conclusions

According to our observations and field visits conclusions are

- Presently because of efforts by Government and Non-government katkari's are involved in school education.
- Mainly involved in the daily-wages activities for their livelihood
- Migration is mostly temporary and single, focused towards income generation and jobs
- Early marriages are still present and family planning seems to be natural
- No Joint family system present
- Medical facilities are occasional, Government authorities reached to the doorstep as per as communicable diseases, Aids, malaria etc.
- Snake bite and accident are occasionally referred to hospitals
- Surprisingly malnutrition not observed
- There is no saving of money, money is being earned and spent for resources and liquor on their own
- Market availability is poor and restricted only to village level
- Local migration for money in within 60kms and mode of transportation is S.T. Bus or private vehicles or by walking
- There is no comprehensive strategy in rehabilitation and resettlement of katkari community
- There is almost no land for agriculture for katkar's they work as labor on the fields
- Agricultural activities are almost impractical without katkari's
- There is need of imparting more and more income generating handiness
- Climate change perceptions are evident but least affected to this community
- Katkari's do not like to serve on salaries, they preserved their freedom
- The development program should aim at slow and sustained development without urbanization and preserving their own life style

6.0 Recommendations

Provision for Hut construction materials at subsidized rates

Provision for potable water

Provide Food Grains and other commodities

Encourage education

Best Katkari Pada prize and/or Trophy

- Establishing Bazar peth among 5-6 katkari padas to sell and exchange their commodities in 10km periphery
- Encourage Shindi-mad (Palms) plantations to have their own natural liquor
- Promoting the traditional culture through games and others. Encourage annual 'Jatras' and/or 'Melas'. Annual traditional Katkari sports
- Livestock awareness, techniques and methods awareness. Encourage rabbit farming.
- Pension source for old katkari tribes is required urgently
- The unsustainable attempt to make katkari tribes acquainted with modern equipment without proper approach to market is not feasible.
- EAST is ready to discuss and implement these activities if invited for the same

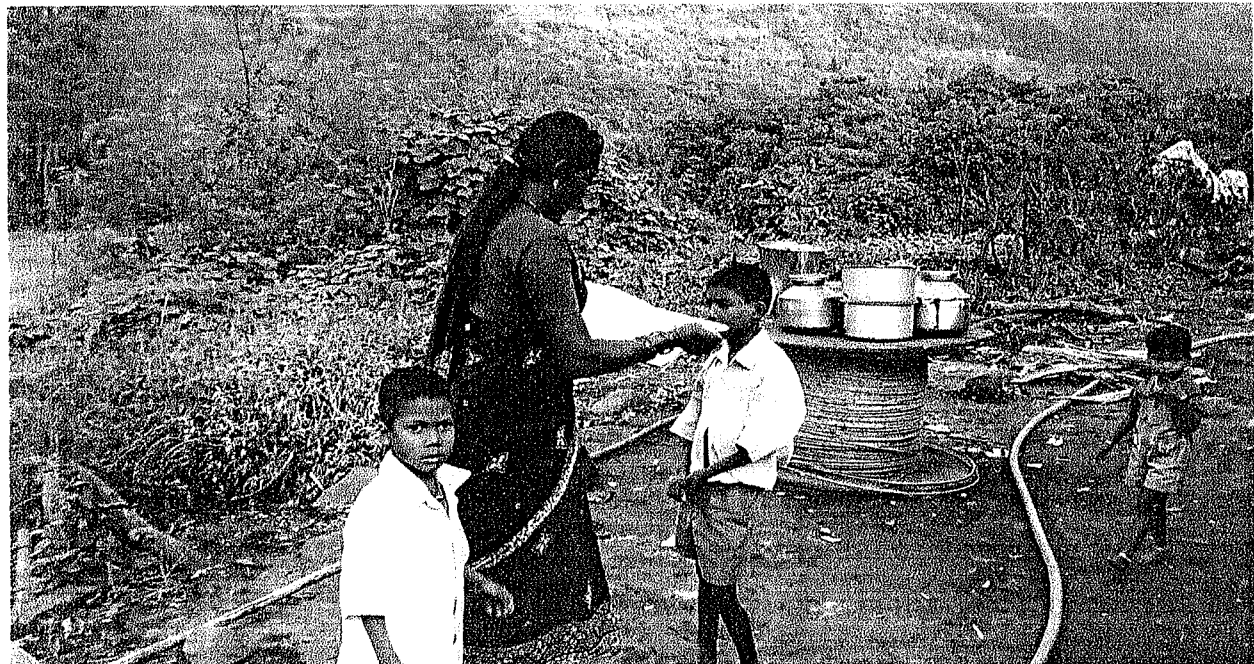
hygienic practices are not being followed. The less death ration may indicate strong immunity and resistance power.



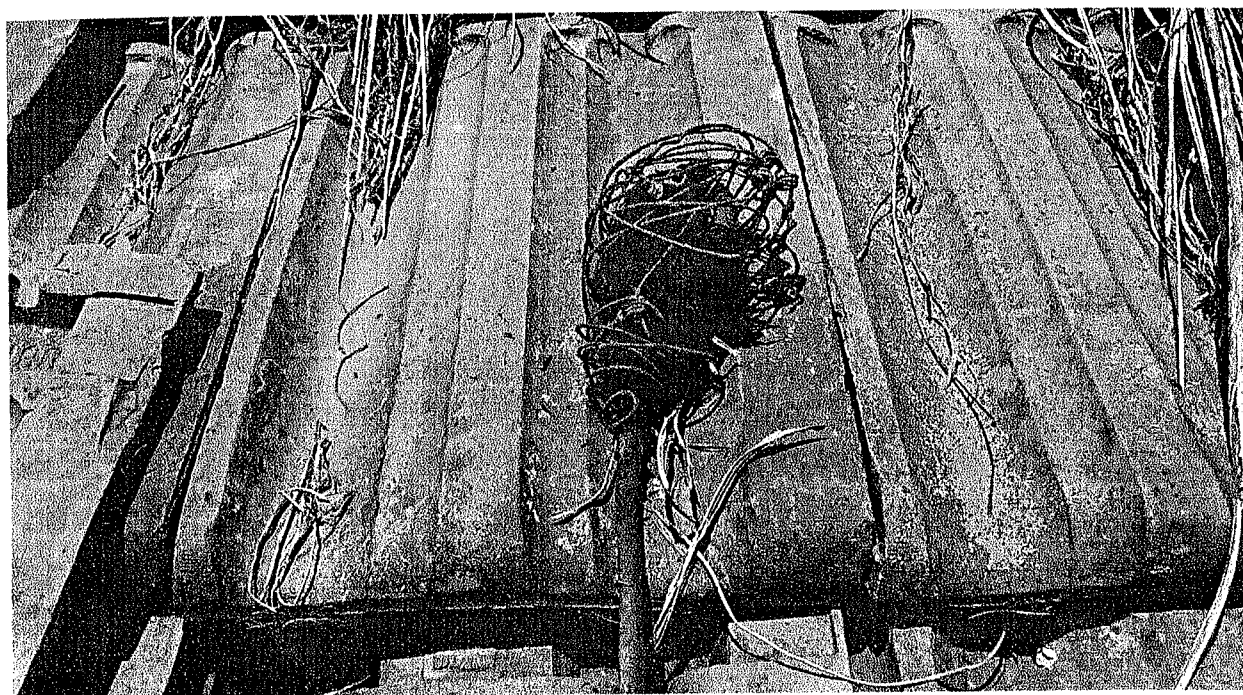
The healthy status of katkari Children. Note teeth and black colour of hair.

This primitive adivasi tribe is more close to wilds to fulfill their minimum needs and Wilderness is their fascination. Their livelihood is least affected by **Education**. The literacy ration is found more in male of an age group below eighteen years. This shows increasing educational trends in Katkari's. The children of Katkari are now taking

advantage of school in their village. The adult education is comparatively balanced in male and female. The Government has announced and being implemented various educational schemes for adivasi to increase the educational level. In the present situation the higher education (more than S.S.C.) is still a milestone for katkari's.



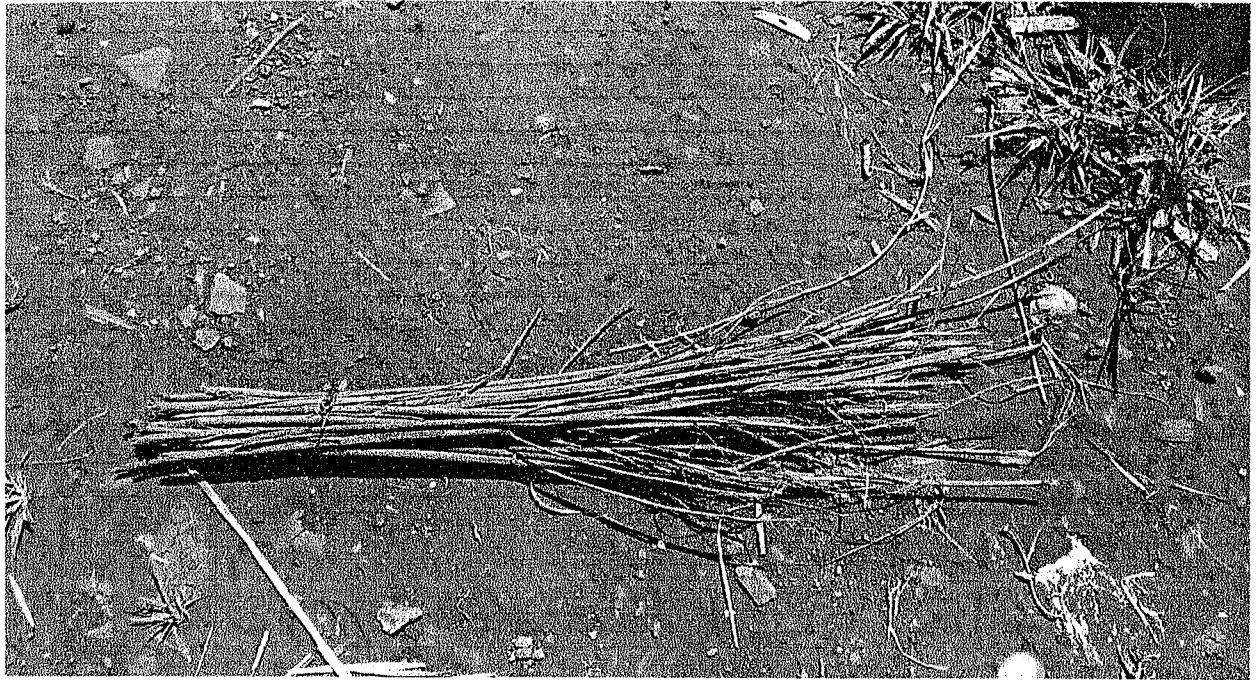
7. Annexure



Katkari's use this lantern [Kakda or Mashal] for Crab hunting.



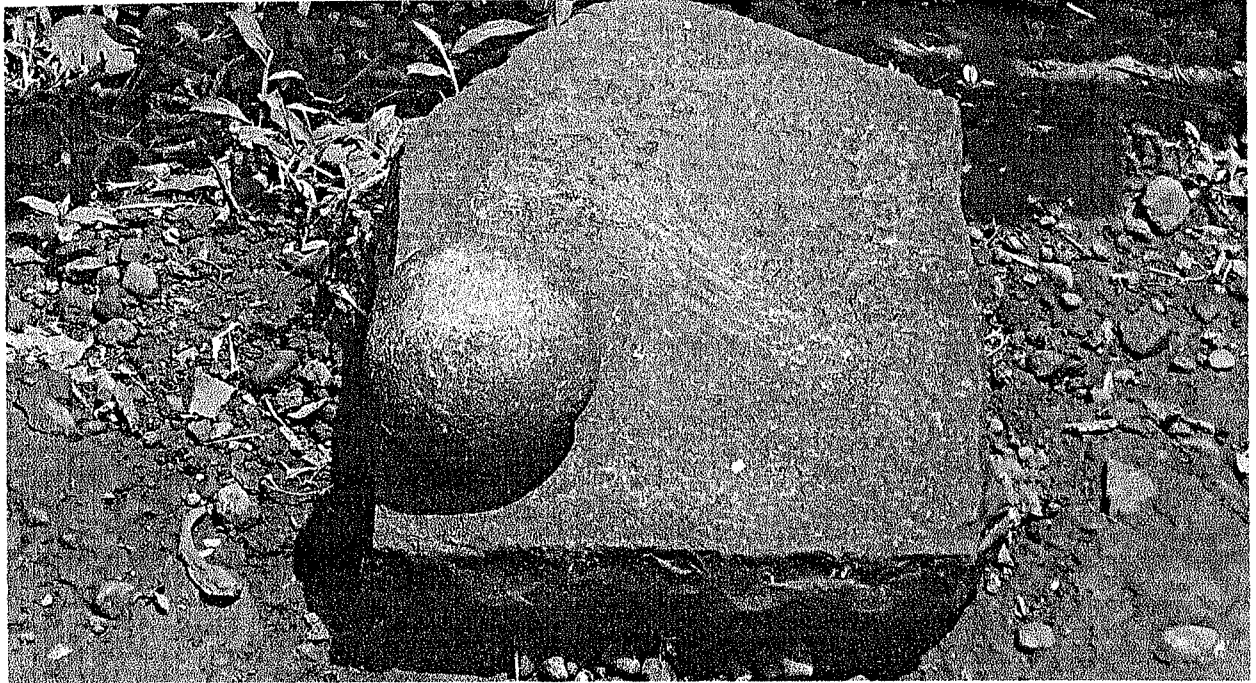
Assembly for distillation of local liquor inside the house of Katkari



Katkari's prepare this broom from dry branches



Katkari's were issued with Election Commission Identity Card



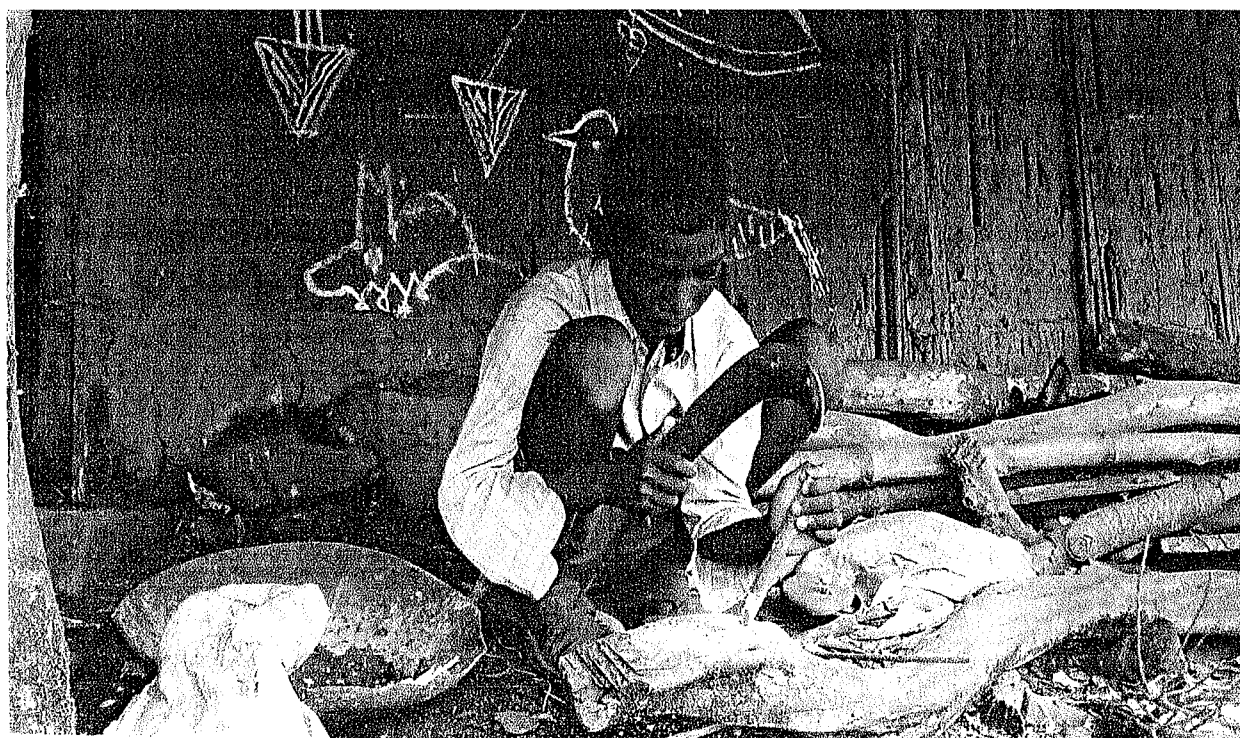
Traditional mixer (Pata & varvanta) of Katkari community



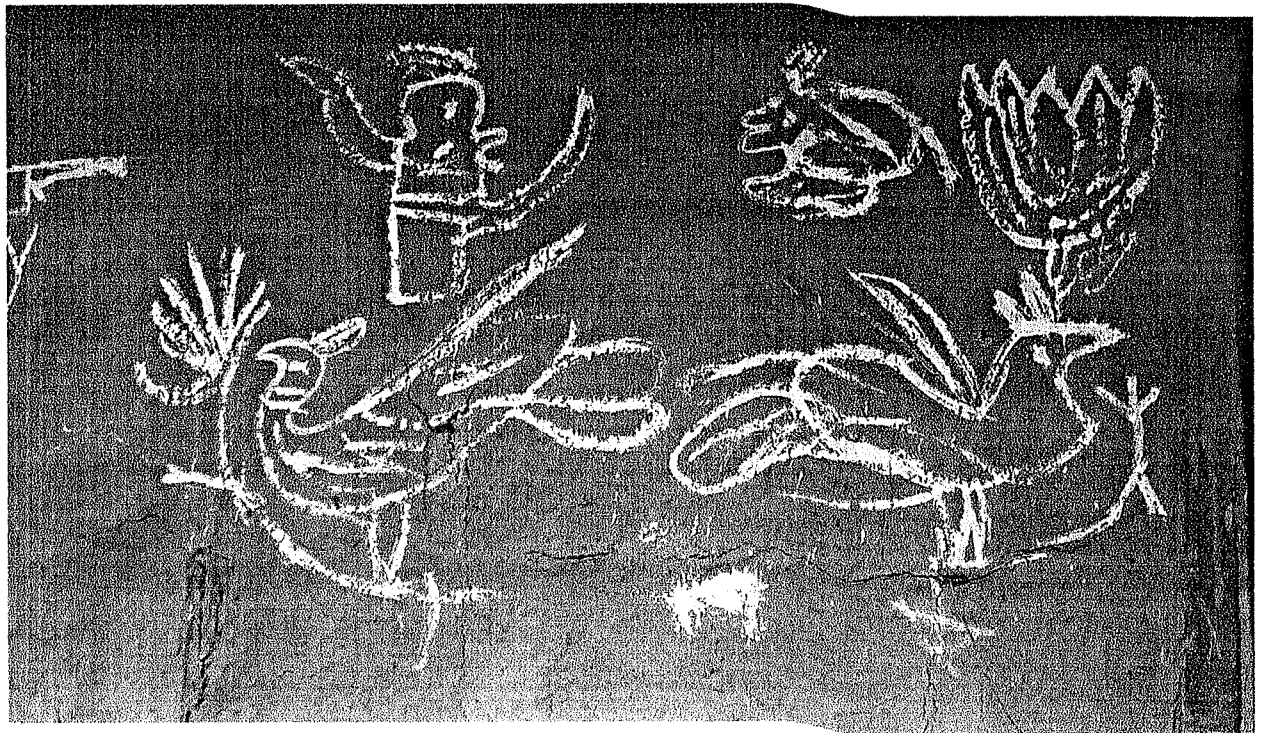
Old Katkari women grinding rice for Aata on stone grinder(Jate)



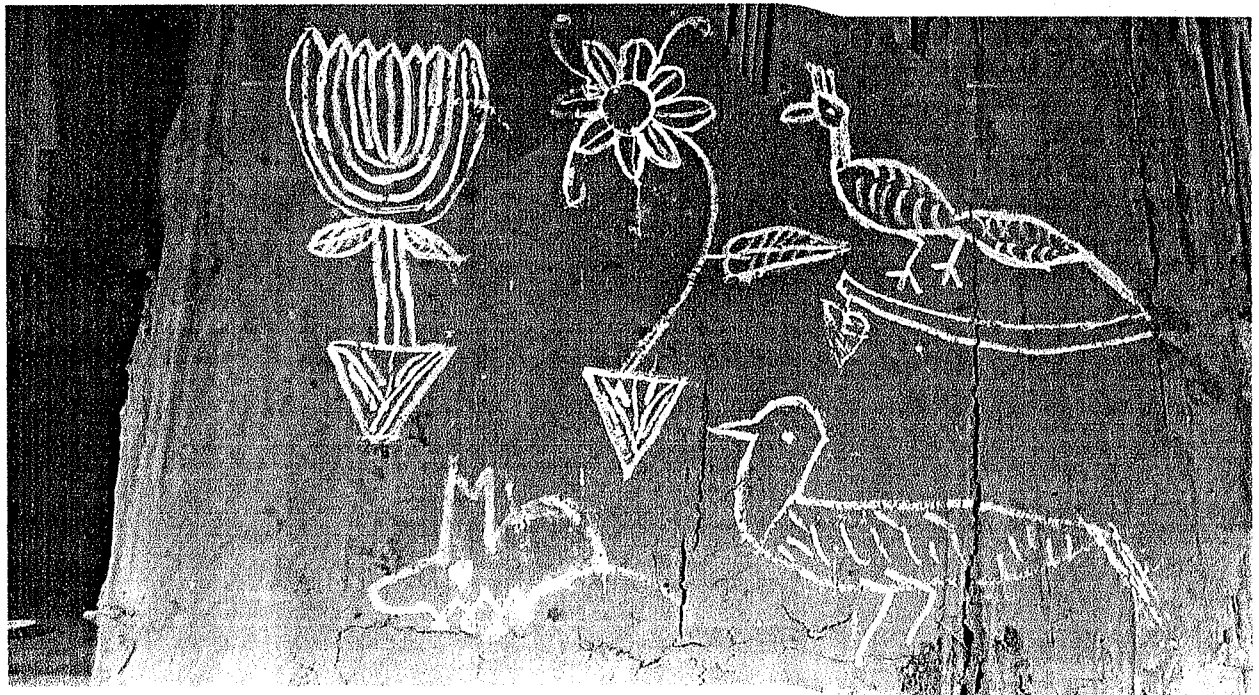
Inside view of katkari house or hut

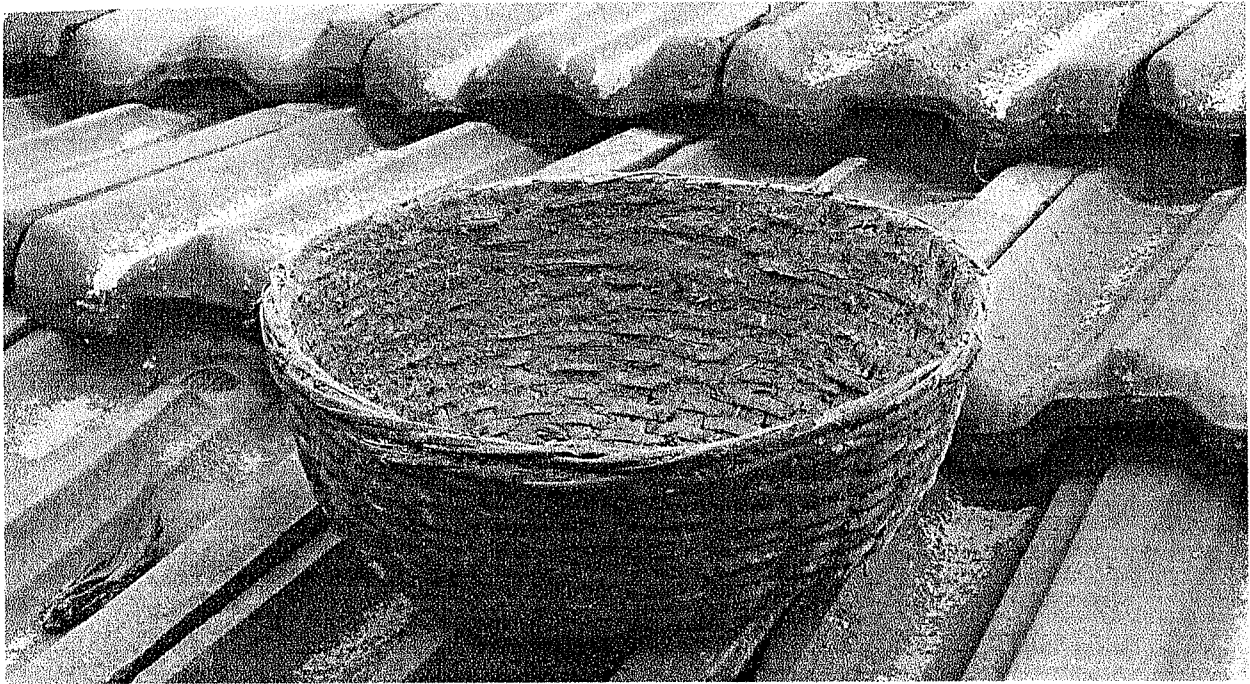


Katkari youngster preparing his own toy



Katkari art on the walls of the hut





Bamboo basket made by Katkar's plastered with cow dung



Traditional weapon (koyta)