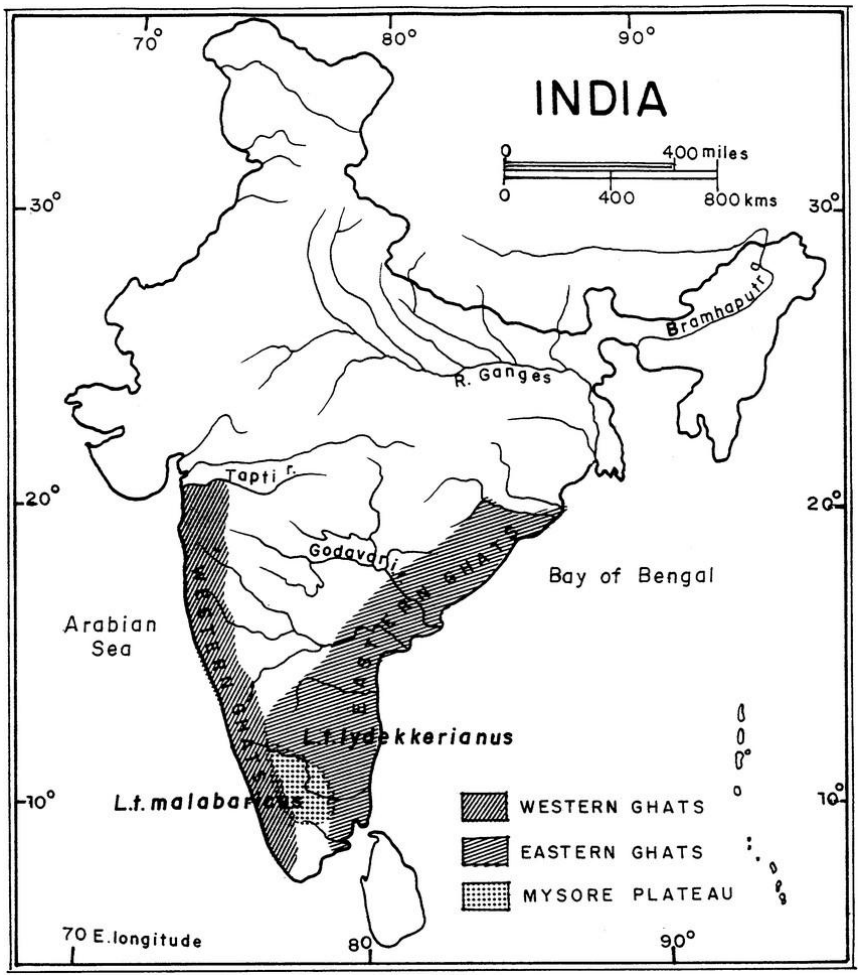
An Experiment at linking Theory with Practise

Think Globally Act Locally, Act Locally Spread Globally

Preparing to engage meaningfully with the SDGs through application of Geo Spatial Tools to address issues related to Sociological and Environmental Stewardship



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Preparing to engage meaningfully with the SDGs through application of Geo Spatial Tools to address issues related to Sociological and Environmental Stewardship

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[1] We are not giving designations here because we believe that in research such as this, the role that each person plays is both unique and dynamic. Apart from this there are many people contributing to this research in ways that we cannot immediately fathom. As an example the contribution of Habitat Ecological Trust has been inserted to demonstrate a continous learning process guided by engagement both internally and externally.

Background:

This paper, a collaborative process between Ashankur and Institute for Ecology and Livelihood Action marks the start of a new beginning as both prepare themselves to respond to the new challenges facing the world in general and women and children in particular. IELA has vast exposure to the issues of ecology, sustainability and livelihood facing the world. Ashankur has deep exposure to working with women and children in four blocks of Srirampur Taluka namely Srirampur, Rahata, Rahuri and Nevasa. In preliminary discussions with Ashankur we explained the relevance of the Sustainable Development Goals (Agenda 2030) as a concrete way of giving shape to the expression, ***think globally act locally, act locally spread globally***. Within the SDGs, the focus was squarely placed on SDGs 2 & 3 (Nutrition, health and overall well being) being issues close to hearts of women and given this providing the impetus for an entirely different conception to the SDGs, one that begins with the home and radiates outwards. This process came up sharply after an evaluation of what was emerging from the baseline survey of Mandve village and the lessons it was teaching Ashankur. These lessons have been shared elsewhere in this paper so will not be repeated here, however it encouraged Ashankur to engage differently with their own field area spread across the region between Mandve on the Godavarai river and Mulla Dam a tributory of the Godavari. In this process Ashankur also engaged with the fisher communities for the first time and got to understand a number of issues associated with wetland water bodies in the region.

During the course of the study, Ashankur has come face to face with the extensive damage being done by invasive species be it Tilapia in the wetland bodies, the giant African Snail or the massive intrusion of Parthenium, American mint and other species invading the land a clear connection can be found between the destruction of the habitat favouring the local species, increasing pollution and disintegration of soil health. It became clear that without a clear analytical perspective to the biodiversity (rooted in an ecosystem analysis), it would not be possible to get a handle of the nature and type of ecological niche specific interventions needed. As livelihood issues impinge on the decision making processes, it also became clear that an alternative path to the development process would be needed if we are to objectively evaluate the significance of the changes that now grip us.

The destruction of the habitat has another significant spin off, the increasing presence of the leopard in areas around habitations in general and sugarcane fields in particular. Ashankur itself has had to contend with the fact, that five of its watch dogs have been lifted by leopards over the last two and a half years. Spiked collars have been put on many dogs to prevent the leopard being able to catch them by the neck as they normally do. This area is traditionally part of the grassland ecosystem and reflected in the dominance of nomadic tribes which were found in the Mandve village survey. The destruction of the grasslands and the introduction of irrigation have transformed this region into a cash dominated cropping system with dependance on irrigated fodder. Cross breeding with the Holstein Freisan and large scale introduction of tractors have transformed the local breeds into a milk producing economy with the dung being converted into compost for agriculture. This has led to a vicious cycle with the promotion on non fodder trees to ensure their survival from grazing. Yet we still find pockets of pastoralists coming from the dry regions of Ahmednagar and elsewhere to take advantage of the vegetation that has been enhanced by irrigation. Migrant labour for sugarcane cutting is another such development. This decisive transformation with profound ecological consequences requires an entirely new outlook

to the relationship between the traditional and modern if we are to be in a position to seriously address the questions emerging.

Part I

Can an understanding of the traditional grassland ecology of the Deccan and its relation to Ahmednagar help us change the discourse ?

The map points to the significance of the vegetation of Ahmednagar to a large part of Maharashtra. While there are a number of differences in the vegetation with other parts of the region, the similarities point to a different type of need for this region than the current development process has been able to put in place.

Most studies indicate a bias towards agricultural cropping systems and forestry which has not been the historically dominant feature of the region over the centuries. The focus on sedenterisation by the British have also undermined the relevance of the traditional pastoral ecology as a potential scientific approach to sustainable management of the biodiversity of the region and its role in the life support systems of the region. A number of onion peels will have to be uncovered before we are in a position to get a handle on the best way to integrate current conditions with the lessons that can be learnt from the historical socio cultural traditions that are still in place (devoid of many of the economic and geographic specificity that have helped to shape and define it). The omnipresent Mavlaya (the god looking after agricultural crops) and Mhasoba (the god looking after cattle) point to different kind of traditional relationship between agriculture and animal husbandry than can be viewed at present.

If we superimpose on this, the local histories from other traditional pastoral tracts of the country, we have a different kind of cultural affinity that emerges across landscapes and points to a qualitatively new way of managing such natural resources in modern times. Terminolgy such as barren and unculturable, culturable wastelands and other such terminology will have to be significantly reviewed as also the potential they offer for a characteristically different type of life support system which can not only address human livelihood concerns but also concerns related to the traditional wildlife of the region in general and leopards, the grey Indian wolf in particular.

One of the the major reasons for change is the potential that renewable energy offers for decentralised and dynamic governance processes that can take into account the scope that the local biodiversity offers for an alternative development path for livelihoods minus displacement and exploitation given the advancements in Geo Spatial, internet and mobile technology. Advancements in technology have also provide a new way of looking at the traditional boundaries drawn in terms of the division of labour in society and their caste and class underpinnings. Concepts like food web are replacing earlier ideas related to the food chain which were pyramidical (heirarchical) in structure. Given this, it will be counterproductive to consider certain aspects of the current economical and governance structures as given, rather more relevant would be examine new equations and structures emerging out a sattelite glimpse of the world.

We make this distinction, different from the one currently in vogue where biofuel has been made a part of the market place. A recent discussion on the land use of The United States of America has shown how the diversion of large amounts of land to ethanol production has resulted in dependance on imports for food production. This for a country which once had 100 m tons surplus food grain and who were donating food grain as aid to developing countries. Right now we are not making any case for a change in this global process but merely trying to get a handle on what kind of ecological and livelihood issues such transformations are making. The people of Niagra in Canada for instance are trying to promote the growth and use of local food for the tourists flocking the region as a way to improve the potential of tourism for livelihood enhancement. While it does not make sense that food transported over large distances are in fact cheaper than such local produce on small farms, the economic logic of cheaper labour in developing countries and consequently cheaper food imports despite the higher cost of transportation on one hand and the transfer of ecological costs of machine dominated food production (including fertilizer and pesticide) to countries lesser endowed (to keep the price of food production down) are major issues dominating issues facing a large section of farmers across the globe and reflecting in a number of protests related to the unviablilty of farming.

Part II

Transforming the nutrition and health agenda in Ashankur

Healthy Recipe Making Training Module:

Harnessing Local & Indigenous Biodiversity Ingredients

Dr Leena Gupta

HABITAT ECOLOGICAL TRUST

Module Overview:

This in-depth training program equips participants with the knowledge and skills to develop innovative and healthy recipes. We'll explore the vibrant world of local & indigenous ingredients, including:

- Medicinal plants
- Versatile millets
- Wild edibles

We'll integrate these ingredients into recipes, considering Ayurvedic principles for holistic well-being.

Module Structure:

Day 1: Harnessing Local & Indigenous Biodiversity

- **Environmental & Nutritional Benefits:**
  Understand the importance of using local ingredients for sustainability, nutrition, and cultural preservation.
- **Biodiversity Inventory:**
  Learn about the diverse range of local ingredients available, including underutilized fruits, vegetables, and indigenous grains.

Day 2: The Power of Millets

- **Millet Mastery:**
  Gain in-depth knowledge of various millets, their health benefits, and superior nutritional profiles.
- **Culinary Diversity:**

Explore recipes using indigenous grains, legumes, spices, and vegetables.

- **Millet Integration:**
  Learn to incorporate millets seamlessly into various dishes, expanding your culinary repertoire and dietary diversity.

Day 3: Medicinal Plants in the Kitchen

- **Safe & Responsible Use:**
  Identify common medicinal plants native to the region, emphasizing safe and responsible harvesting practices.
- **Culinary Integration:**
  Explore innovative techniques for incorporating medicinal plants into recipes for enhanced health benefits (e.g., ginger for digestion, turmeric for inflammation).

Day 4: Exploring Wild Edibles

- **Foraging Fundamentals:**
  Learn how to identify nutritious wild edibles.
- **Sustainable Foraging:**
  Emphasize responsible foraging practices to ensure the continued availability of these valuable resources.
- **Wild Edibles in Recipes:**
  Delve into incorporating wild edibles into creative and delicious dishes.

Day 5: Ayurvedic Principles for Healthy Eating

- **The Science of Doshas:**
  Introduce the Ayurvedic concept of doshas (Vata, Pitta, Kapha) and how they influence individual dietary needs.
- **Dosha Balancing:**
  Learn to create meals that promote balance and well-being based on your unique doshic constitution.
- **Spices & Herbs as Medicine:**
  Explore the medicinal properties of spices and herbs commonly used in Ayurvedic cooking.

Day 6 & 7: Recipe Development for Specific Needs

- **Focus on Specific Needs:** Develop recipes tailored to various dietary requirements:
  - Newborn Baby (easily digestible and nutrient-rich foods like mashed kichadi)
  - Lactating Mother (recipes promoting milk production and recovery)
  - Diabetes (low-glycemic index recipes with vegetables, lentils, and fiber)
  - Blood Pressure (recipes using ingredients that naturally lower blood pressure)
  - Malnutrition (nutrient-dense and easy-to-digest recipes for restoring health)

Day 8: Recipe Development for Business

- **Market Analysis:**
  Gain insights into current market trends and consumer demands within the healthy food sector.

- **Potential Recipes/Products:**
  Brainstorm ideas for developing healthy and marketable food products (e.g., millet biscuits, cookies, snacks).

Day 9 & 10: Practical Sessions & Assessment

- **Culinary Experimentation:**
  Throughout the module, practice hands-on recipe development using local and indigenous ingredients.

- **Group Discussions:**
  Engage in lively discussions on recipe development, business strategies, and best practices for healthy and marketable food products.

- **Assessment:**
  Your learning will be assessed through practical cooking demonstrations, recipe development tasks, written assignments, and group presentations.

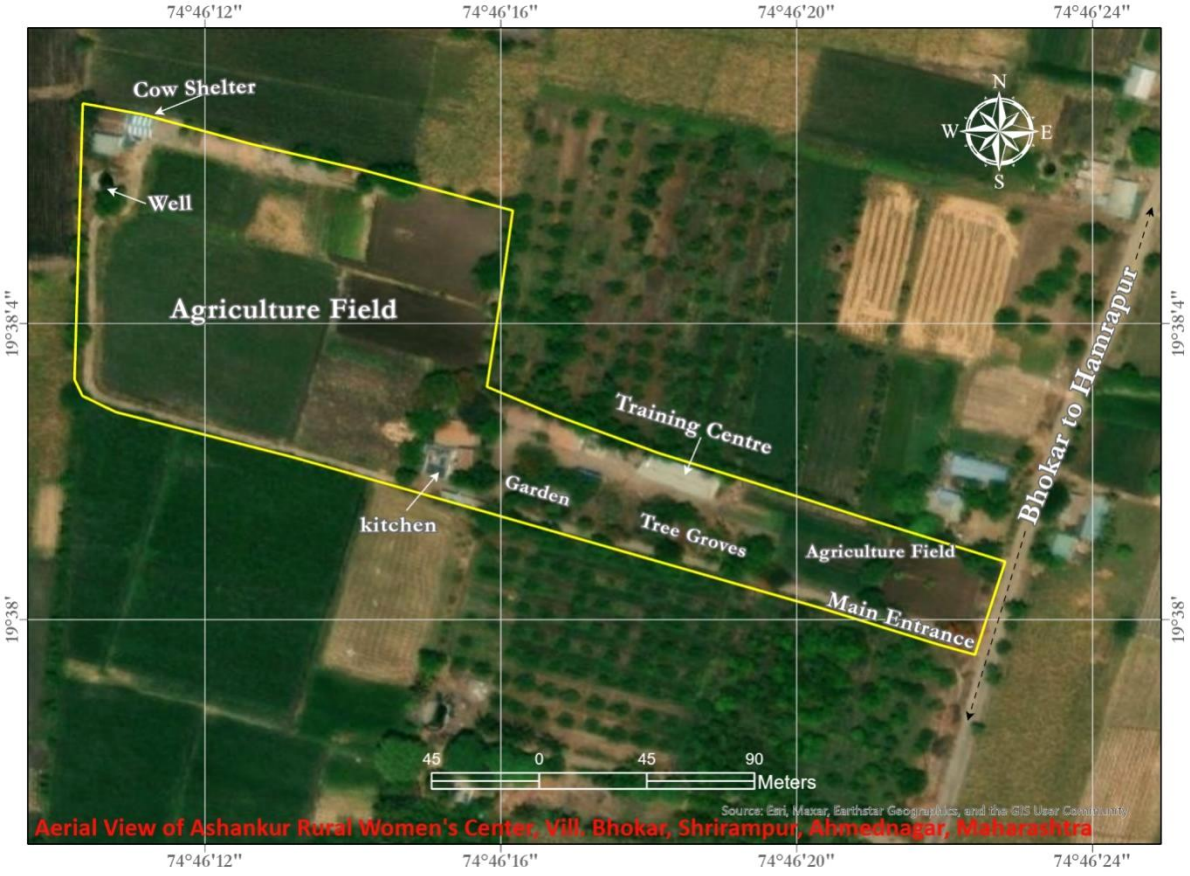
Expected Outcomes:

By the end of this comprehensive training, you will be empowered to:

- Become a culinary innovator, utilizing local and indigenous ingredients.
- Create healthy and delicious dishes for yourself, your family, even a thriving food business.
- Develop recipes that cater to specific dietary needs.
- Understand and integrate Ayurvedic principles into your cooking.

Part III

Linking Geo Spatial studies to an Action research Agenda

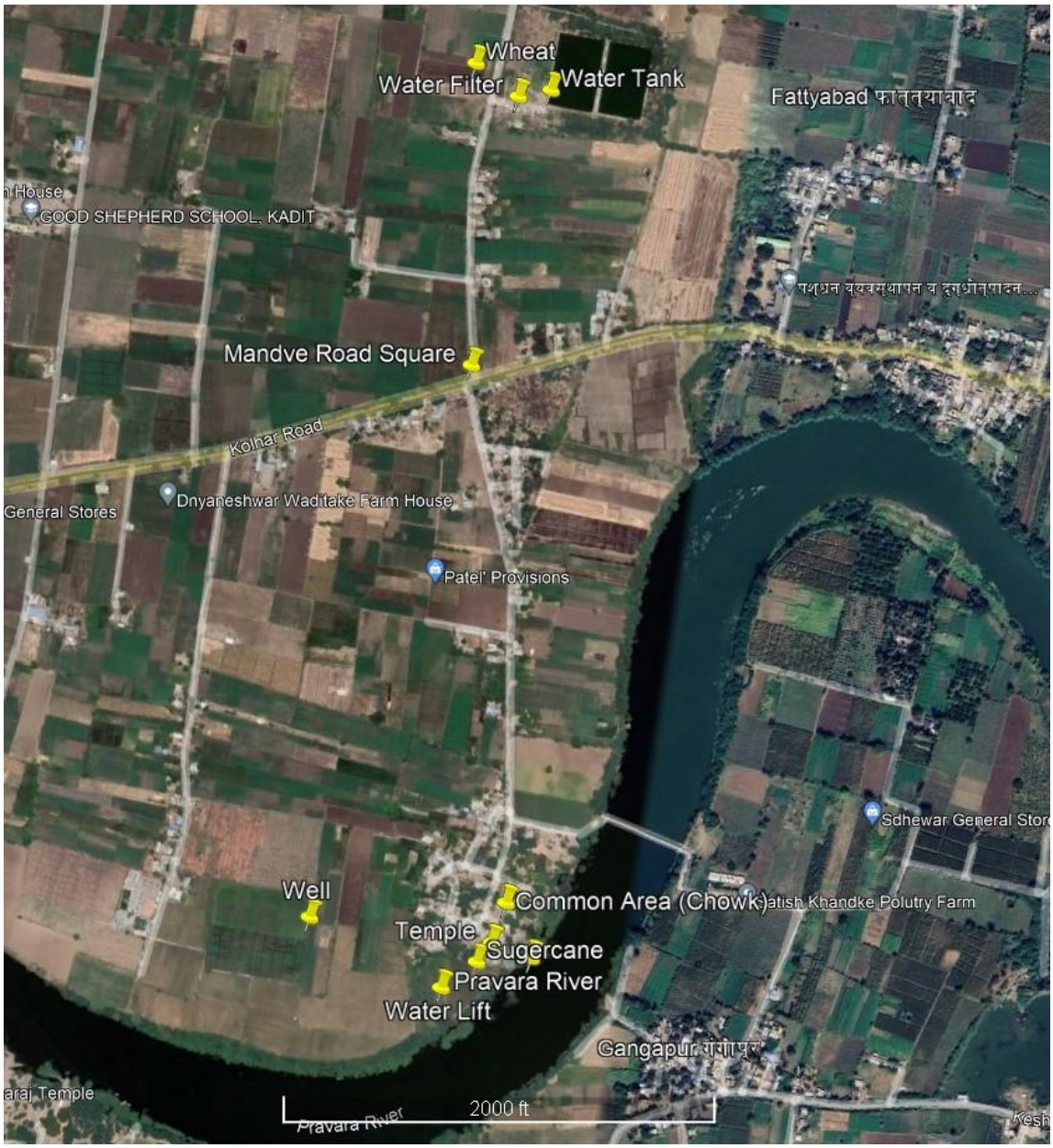


Aerial View of Ashankur Rural Women's Center, Vill. Bhokar, Shrirampur, Ahmednagar, Maharashtra

PRELIMINARY TESTING:

Following the exercise undertaken in Ashankur in November 2022, IELA and Ashankur proceeded to test this preliminary hypotheses -

a. The GPS readings taken during the second training programme were superimposed on Google MapEarth. This helped to confirm the preliminary understanding gathered by Ashankur staff and reflected in the two (hand drawn indicative) maps produced (one on Ashankur campus - see cover page - and the other on Mandve).



Mandve Village map with GPS readings taken during training's

It was clear that the map is only a tool to understand what could already be gathered by field observations. At the next training held from 22nd to 24th February 2023, it was pointed out how digital mapping tools are helpful in indicating the locations of ecological features, plants, animals, important species, landmarks, places of particular reference etc on GoogleEarth and how mapping tools like Geographical Information System (GIS) and Satellite Imagery / Remote Sensing Imagery could help sharpen and speed up the process of research so that live questions could be examined in real time.

b. Issue related to the impact of sugarcane cultivation have been further explored. Of importance now are the following

- Mapping of sugarcane production and segregation of sugarcane production from water logged areas to understand where alternative crops can be suggested.
- Impact of irrigation on the soil (Over-irrigation, salinization / salt crust deposition, aridity, degradation of soil texture and soil quality etc)
- Economics of sugarcane cultivation in relation to the ecosystem impacts being observed.

c. Impact of invasive species on the ecosystem.

- Occurrence, extent and distribution of non-native / invasive species in the region and their invasive pathways (i.e. introduction by human beings / migration and establishment / invasion from other areas through natural/human means)
- The impact of land use changes and intrusion of invasive species that has resulted into negative impacts on production of palatable species, availability of local fodder species, and consequently negative health impacts on livestock and human beings.
- Impact of highly invasive alien fish 'Tilapia' on local water bodies, their fish diversity and other aquatic biodiversity, production of water bodies; associated impacts on livelihoods of local fishermen. The impact has also to be seen on the food plate of fish eating people who are left with no choice of buying any local fish of their delicacy.

d. Issues related to drinking water, study of water supplied from Bhandardara Dam and differential impact on water uses in Ashankur and Mandve.

PART IV

Engaging with Fisher Communities
Ahmednagar

In collaboration with IELA, Ashankur has been working with the fish workers in Rahuri, Nevasa, Pathardi and Shrirampur taluka where fisher community is dependent on tanks and reservoirs as well as rivers for fishing based livelihood. In order to develop a proper perspective with the Fishing community of the region World Wetland Day events were organised at Mula Dam in Baragaon Nandur and Taklibhan village near Godavari River on the occasion of the world wetlands day 2024.

At a recent meeting of the National Platform of Small Scale Fish Workers at Kolkatta in November 2024, Ashankur raised the following issues.

a. Serious attention is required in almost all communities present to the leasing of Dams that heralded contractor system and restrictions on fishing activities by local communities who are mostly adivasi. This needs to be addressed.

b. Telapia invasion and all the resultant consequences. How to overcome this is a challenge to be taken up by the communities.

c. Absence of any organisation amongst fishing communities in the locality. However there are efforts towards organising in one of the villages and needs appropriate attention.

d. Fourth issue is the level of education of people and needs further urgent attention.

There is some headway in this direction and few e-shram cards has distributed at the meeting following guidance by National Council Member Sunil Dubey.

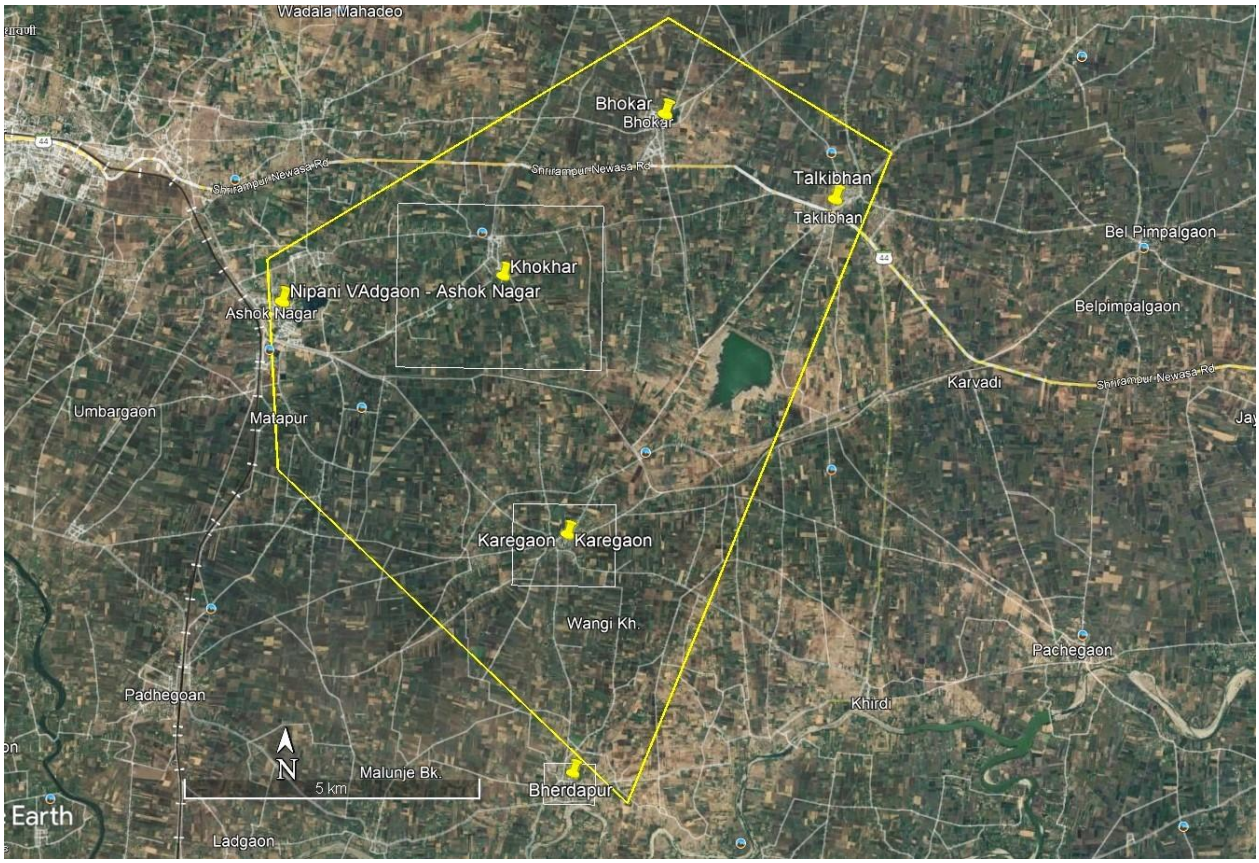
Ashankur playing catalystic role derives their motivation through inputs from Sunil Dubey and NPSSFW deeply appreciates this contribution.

Ashankur team has enormous potential to further catalyze the process to strengthen small-scale fishing communities in days to come. Support from NPSSFW to work with small scale fish workers and further to make union.

PART V

Biodiversity Study of Six villages

A step towards module development



The Mandve Base line Survey revisited

Village map of Mandve two perspectives

The Socio Economic Survey (Survey format household survey for 256 families was done. Forty four families could not be interviewed as the hamlet was suffering from chickengunia. given in Annexure 1 indicated that there were 300 families in the village. The 44 families are located in the bottom right hand corner on the left side of the road running through the centre of the village. The details provided by the participants indicated that this region had a problem with the water quality.

Some details of the village

Population Demographics

Males: 751 Females: 661

Those who have studied beyond class 4	1,175
Uneducated	237
Those who studied beyond class 10	437
Salaried Employment :	75

Castes

NT	135
Open	57
ST	38
SC	11
OBC	16

Occupations

Dairying	161
Labour	58
Other occupations:	37

Total agricultural land of 256 families	578 acres
Average land per household	2.23acres
Irrigated area	99%
Source of water: Well, Borewell, River, canal	
Main crops	
Sugarcane (families):	81
Cotton	41
Fodder	160
Cattle	
Cow	920
Goat	306
Chickens	4704
Health Care	
Private Hospitals (PMT Loni, Kolhar)	99%
Government Hospitals	1%
Drinking Water	
Supply every 8 days	
Housing	
Kaccha	40
Gas connection	99%
Disabled	17
Widows	47

The Nomadic tribes (NT) are relatively better off living on the bottom right side of the road. The katcha houses are mostly located in the top right side of the road[2].

As a result of the presentation of the socioeconomic data, the Ashankur team were divided into two groups and asked to present the information on a map. The two maps shown above highlighlight different characteristics. While the first has resorted to colour coding to highlight details related to caste and the crops grown, the second tried to highlight the 'soft' information elecited during the study, namely where the greenery was located, the pacca and kaccha houses, health issues and its relation to water sources. The first relates more to the current development

[2] From the survey it can be seen that hitherto Nomadic tribes are now practising settled agriculture with their animals dependant on irrigated crops instead of grazing as earlier

paradigmn (schemes available) and ownership patterns which has a patriarchail tint. The second related more to status of communties and the health issues.

Details of a kaccha house of the NT (upper caste) where the children were educated were observed and trapped by them indicated more the internal inquiry based on the house to house survey from a women's perspective. The two put together provided a very good ecological and livelihood perspective on which to develop issues further learning from each other. Of note was the issue related to lack of quality water supply. The better off could afford RO treated drinking water but for the rest, the poor quality of the water was an issue. The water treatment plant in the village supplies eight villages and hence each village gets water once in eight days. The impact of water salinity on the soil and crops is also an area of investigation as also the eating habits considering that very little is grown locally.

From this flashback to the present :

The collaboration between Ashankur and IELA initiated in August 2022, entered a new phase during the latest Participatory action research training programme conducted between 30th November 2024 and 4th december 2024. Based on the feedback on the work done so far it was decided to complete the remaining work related to Biodiversity and Land use mapping in the six villages of Bhokar, Khokar, Berdapur, Nipani Vadgaon/Ashoknagar, Karegaon and Talki Bhan. This would provide the comprehensive approach to base line mapping which had been initiated in Mandve village to start with and extended to capture the approach of Ashankur to ecology and livelihood and its relevance to the women groups they were working with. While the land use mapping covered the main crops grown in the region namely Sugar Cane, Jowar, Bajra, Cotton, Onion, Ginger, Haldi, Ginni grass and vegetables like Brinjal, the biodiversity mapping tried to understand the distribution, spread and ecosystem specifics of medicinal and nutritional plants on the field boundaries along with the threat from invasive species. This time special focus was given to the grass biodiversity of the region and how this was being affected by invasive plants. In addition the need to observe the development and destruction of multi storied ecosystems was also highlighted. During the field work in the six villages, reports of leopards hiding in the sugar cane fields and attacking the dogs indicated their widespread presence in the region. Following the field work, Ashankur began putting down the details of the biodiversity and land use mapped with the help of Note Cam in an excel sheet for easy reference and transfer onto the google map for further anaysis. Ashankur staff were also exposed to how to use the Census data to get secondary information on the village which will be useful to develop programmes related to Health, Nutrition, Education and livelihoods when combined with the baseline data on land use and biodiversity. The relevance of this programme for the drylands of the Deccan and how this could be developed into an ecosystem approach by placing it with the river system and wetlands in the region. Ashankur has also been actively working with the fisher communities and celebrated World Wetland Day with the these communities earlier during the year.

Measuring the girth of the climber Cryptostegia grandiflora an invasive species which destroys the host plant