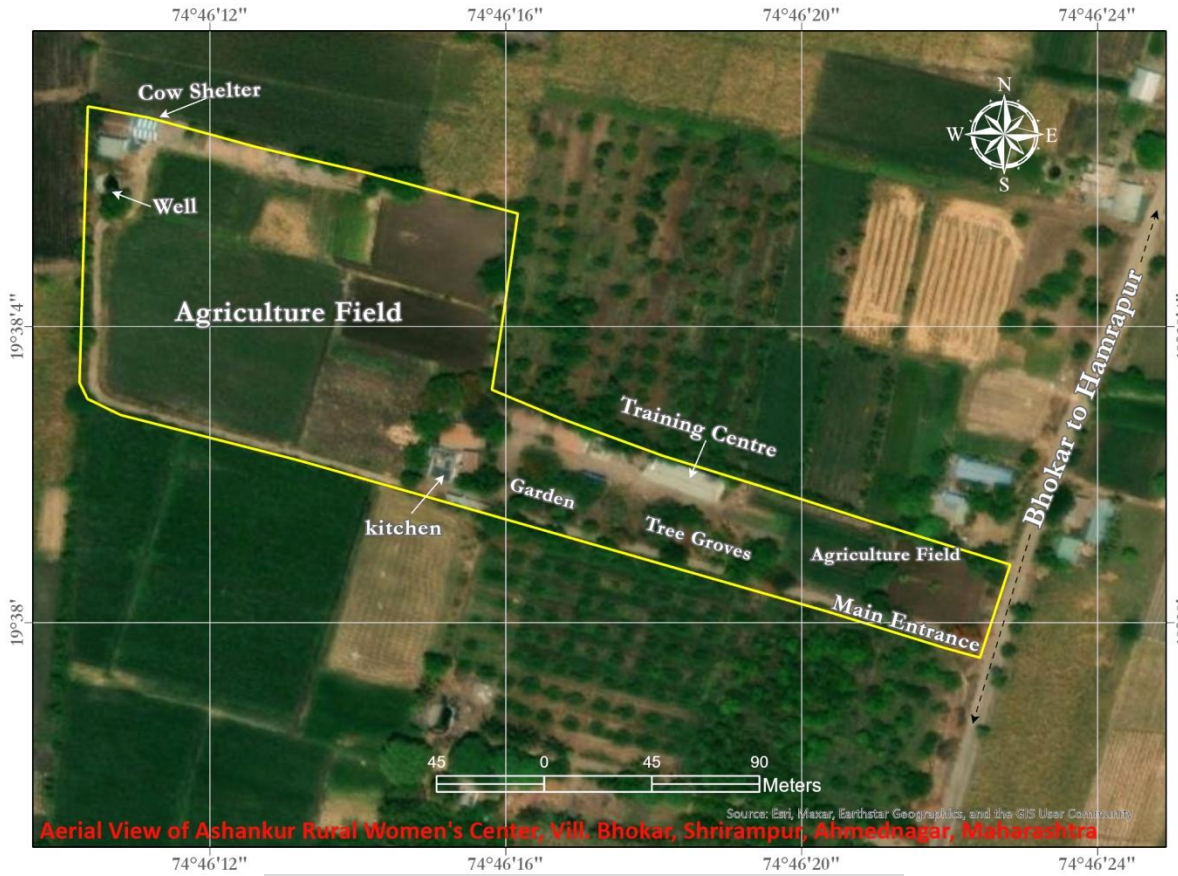
A Participatory Approach for Integrating Community Knowledge in Ecosystem Assessment

Relevance of Geo-spatial tools to enhance Community Participation: Case Study of Ashankur



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BACKGROUND:

The advancement of technology brings with it many possibilities, the wide education gap between technologists and the common people however, makes decision making on the basis of technology a highly centralised process. The experience of IELA indicates that a participatory approach helps to evolve the correct hybrid between uncovering the issues faced by local communities and participatory evolution of use of technology to first highlight and then evolve participatory approaches for their resolution. Keeping agenda 2030 in mind, IELA has entered into collaboration with Ashankur based at Bhokar, in Srirampur Taluka of Ahmednagar to evolve next generation approach to problem identification, analysis and solving.

HYPOTHESIS:

As pointed out in an earlier paper brought out by IELA: ***The Relevance of the Ecosystems Approach for Sustainable Livelihoods: A Plea for Community Ecosystem Evaluation methods: Casestudies from Rajasthan, Gujarat, Maharashtra and elsewhere (Viren Lobo, Sunil Dubey and Leena Gupta)*** destruction of the traditional value placed by communities on the ecosystem and its services, results in destruction of the Habitat and consequent loss of biodiversity and ecosystem services from the Habitat. This has been verified in Ashankur area as follows

a. Shift in cropping pattern and land use from the traditional focus on pastoralism, millet, rainfed farming, dry-land fodder and preservation of local medicinal plants to water demanding cash crops like sugarcane, cotton and irrigated fodder along with loss of traditional knowledge of medicinal plants.

b. Loss of native biodiversity and increase in non-native invasive species both in terrestrial as well as aquatic environment.

Sunil Dubey explaining issue related to invasive species to Rekha from Ashankur

c. Use of pesticide, fertilizer and other growth promoters / weed and pest inhibitors which more than acting on the plants and pests go to the ground and consequently mix in the ground water and cause pollution to distant/larger underground areas through base flows impacting surface water bodies as well. Combined with industrial chemical effluents, this has resulted in widespread water pollution and resultant increase of undesirable species and health issues as well.

d. As a result of such changes, a large portion of the value generation flows out of the region, increased cost of health care and greater dependence on the cash economy/ wage labour for meeting livelihood, health, education, cultural and other needs of the community. The alienation and fragmentation of the community further prevents development of community options to address ecological issues and dependence on government schemes and services to address community needs which could be better addressed but a more participatory approach to ecosystem assessment, identification of issues and community needs and local resolution of issues.

Considering the potential of the Sustainable Development Goals an exercise at enhancing community capacity, Ashankur and IELA decided to work together to first understand its practical significance in the existing work being done by Ashankur and to apply it to the proposed programme at Mandve. The reports of the two action research training programmes conducted so far are given below

http://ielaind.org/wp-content/uploads/2017/05/Action-Research-Training-and-Orientation-Workshop-at-Ashankur-_-22nd-24th-August-2022.pdf

http://ielaind.org/wp-content/uploads/2017/05/Action-Research-Training-and-Orientation-Workshop-at-Ashankur-_-23rd-25th-Novembert-2022.pdf

In summary the following has emerged -

a. Relevance of Health, Nutrition, Education, Livelihood, Clean drinking water and Overall Well being and Centrality of Women in this regard (SDGs 1 to 6) are central to any community based programme.

b. Community mapping tools help provide adequate baseline information on key parameters necessary to assess ecosystem health, sustainability and livelihood questions.

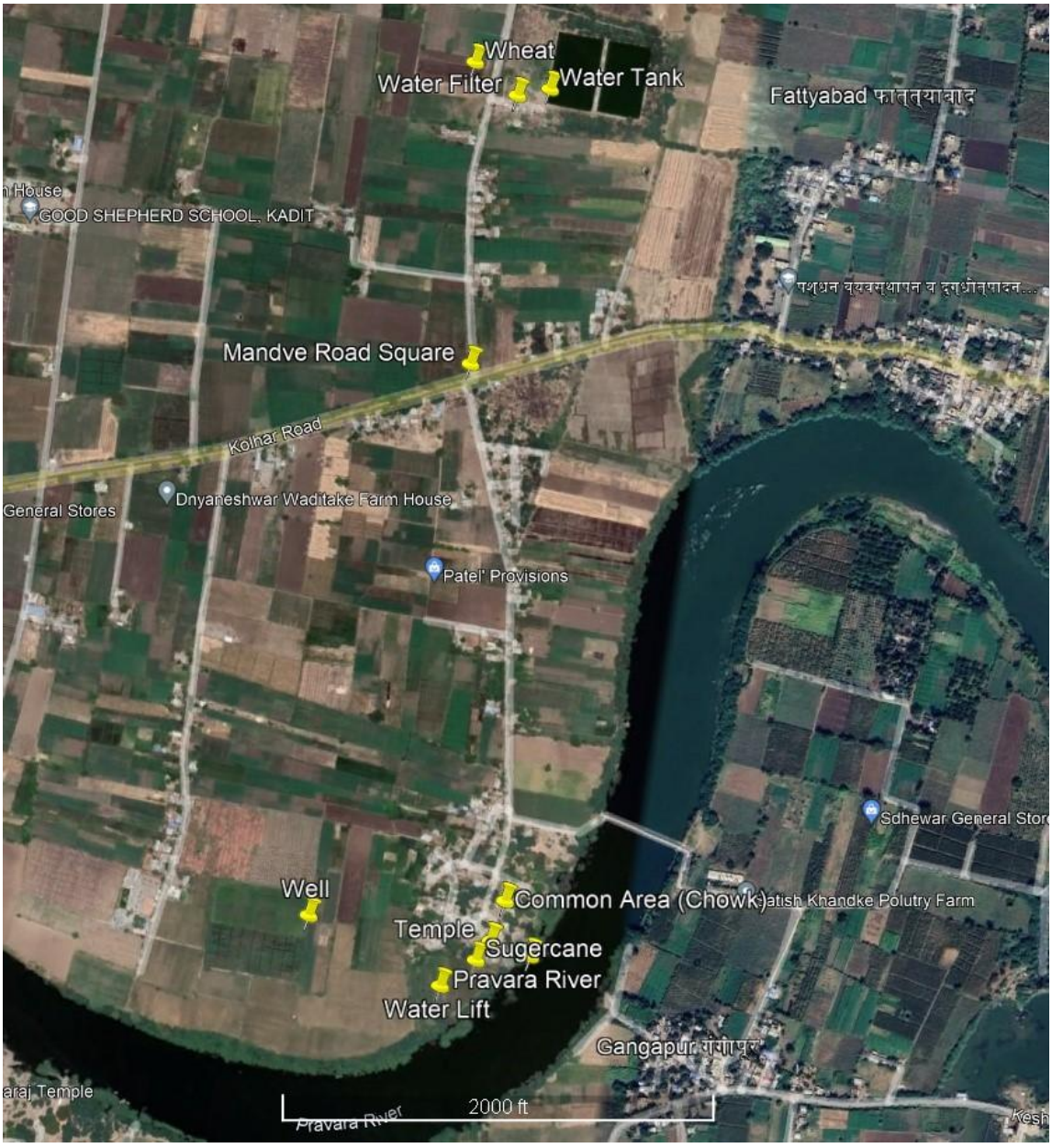
The above have been sharply brought out in the IELA paper on the valuation of Ecosystems

http://ielaind.org/wp-content/uploads/2017/05/Valuation-of-Ecosystems_-IELA_Habitat_Case-studies-from-different-States.pdf

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.

ACTION PLAN:

A twofold action plan has been proposed to give shape to the concrete action research agenda emerging above. The first being to consolidate the preliminary understanding gathered to make it understandable to local communities in general and women in particular. As a start it will be reflected in the format for Commemoration of Women's day, planned for 14th March 2023. The second, will be to evolve play tools for children where these preliminary findings can be easily grasped by them and their observations elicited. Responsibility centres for collection and tabulation of the information are in the process of being identified. How this process that unfolds over the next three months will be the basis for organising the next action research training in June, where two separate training programmes for women and children will be organised.
