



RAJIV GANDHI  
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# Policy WATCH

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## Environment, Natural Resources and Sustainability

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# Editorial

The Rajiv Gandhi Institute for Contemporary Studies (RGICS) works on five themes:

1. Constitutional Values and Democratic Institutions
2. Governance and Development
3. Growth with Employment
4. Environment, Natural Resources and Sustainability
5. India's Place in the World

This issue of Policy Watch deals with the theme Environment, Natural Resources and Sustainability. This issue of the policy watch has brought five different articles addressing three different issues related to environment and development-sustainable development solutions, deliberations on future course of sustainable pathways and people's voice in sustainability.

First two articles in this issue explore sustainable solutions for two different agro-climatic regions of India. Article by Mr. Vijay Mahajan, Director, RGICS and SS Tabrez Nasar on Amphibious Living Opportunities provides solutions and policy framework for climate resilient livelihoods for people of Indian Sundarbans. Most of the Sundarbans is facing existence crises due to high erratic weather, drought, water crisis and failure of agriculture. The article argues that Amphibious living is a means through which communities need to adapt to extreme conditions of climate change. The second article by Dr. Sanjiv Phansalkar is the summary of an assessment of tank restoration work carried out by PRADAN in semi-arid regions of Tamil Nadu. The assessment concludes that the restoration of old tanks has restored both livelihoods of people and the village ecosystem.

The third article on the importance of Green Bank to turn India carbon neutral is taken from the Economic Times and the fourth article on new momentum for mountains is the latest declaration of Mountain Partnership released during its sixth global meeting in September 2022. These two articles deliberate on a future course of action to attain sustainability. The article on green bank is the compilation of financial solutions suggested by leading businesspersons and banking experts of India to achieve India's commitment of attaining net zero by 2070. The declaration of the Mountain Partnership is the expression of commitment of its members to promote sustainable projects, effective advocacy, partnership, research and field level action for sustainable mountain development.

The fifth article in this issue is the documentation of a recent people's movement in Uttarakhand that addresses the third issue of incorporation of people's voices in the development. A small patch of forest is the bone of contention here. Villagers have been accessing fuel and fodder from this forest sustainably for generations but now a renewable energy company wants this forest to dump its muck. This is a beautiful example to understand contradicting ideas of sustainability at micro level.

We hope you enjoy reading these articles. We look forward to your feedback.

**Vijay Mahajan**  
**Director, Rajiv Gandhi Institute for Contemporary Studies**

Images Courtesy:  
Google Images (free to use images)  
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# Amphibious Living Opportunities: ALO for the Sundarbans

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Vijay Mahajan and SS Tabrez Nasar<sup>1</sup>

## I Introduction to the Sundarbans

Sundarbans is the delta formed by the confluence of the Padma, Brahmaputra and Meghna Rivers in the Bay of Bengal. It is the single largest mangrove forest in the world between India and Bangladesh with India owning 40% of it. The name “Sundarbans” is thought to be derived from Sundari (*Heritiera fomes*), the name of the large mangrove trees that are plentiful in the area. The forestland transitions into a low-lying mangrove swamp approaching the coast, which itself consists of sand dunes and mud flats and barren land and is intersected by multiple tidal streams and channels. Four protected areas in the Sundarbans are enlisted as UNESCO World Heritage Sites, viz. Sundarbans West (Bangladesh), Sundarbans South (Bangladesh), Sundarbans East (Bangladesh) and Sundarbans National Park (India) – See Fig 1.

Despite several protection acts, the Indian Sundarbans were considered endangered in a 2020 assessment under the IUCN Red List of Ecosystems framework. This makes both the ecosystem as well as the communities extremely vulnerable and susceptible to the calamities of nature. There is serious flooding and water logging in monsoon (which brings the salinity to its lowest) and extreme shortage of water during summers that shoots up the salinity to extreme highs (see [vlog](#)). The wide range, therefore, of the salinity, poses a serious threat to both the flora and fauna and makes livelihoods very difficult to manage both at household as well as ecosystem levels.

There have been several studies and documentation on the threats faced by the 102 islands of the Indian Sundarbans, 54 of which are inhabited. For example, Mousuni is one of the 102 islands on the Indian side of Sundarbans facing an existential threat. With homes swept away time and again by raging water and cyclonic effects and agriculture devastated by saline water, several people have been forced to migrate from here and many permanently. As people, mostly youth, migrate seasonally or permanently towards seemingly better opportunities, there are lesser hands left in the household to contribute towards livelihoods.

This, coupled with loss of livestock and land, temporarily or permanently, creates a vicious cycle of poverty that leaves the elder population, women and children vulnerable. For most of these households and communities, fisheries (capture of aquatic organisms including fish) and / or aquaculture is/was the mainstay. With the visible negative impacts of climate change that includes too much (rains, floods) or too little (dry season) water availability at different times of the year, the very high range of salinity fluctuations leaves very little room for both aquaculture as well as agriculture. The livestock do not remain secure as loss of livestock drains out the little resources left with these households.

Having talked about the generic scenario above, the paper highlights examples from the Indian Sundarbans by way of observations from several visits and in-depth interactions with Government and Non-government agencies as well as community members in these islands. A lot is being said and only some being done in terms of long-term strategies as opposed to a lot being done on crisis management that turns out to be a band aid approach. What seems to be missing is the proactive approach and strategies. It is evident that while the crisis management strategy is clearly reactive in nature, little is being done as proactive and long-term approach. Even if some is done, organizations, collectives and even individuals tend to act in silos and largely miss out on the benefits of synergies between and amongst them.

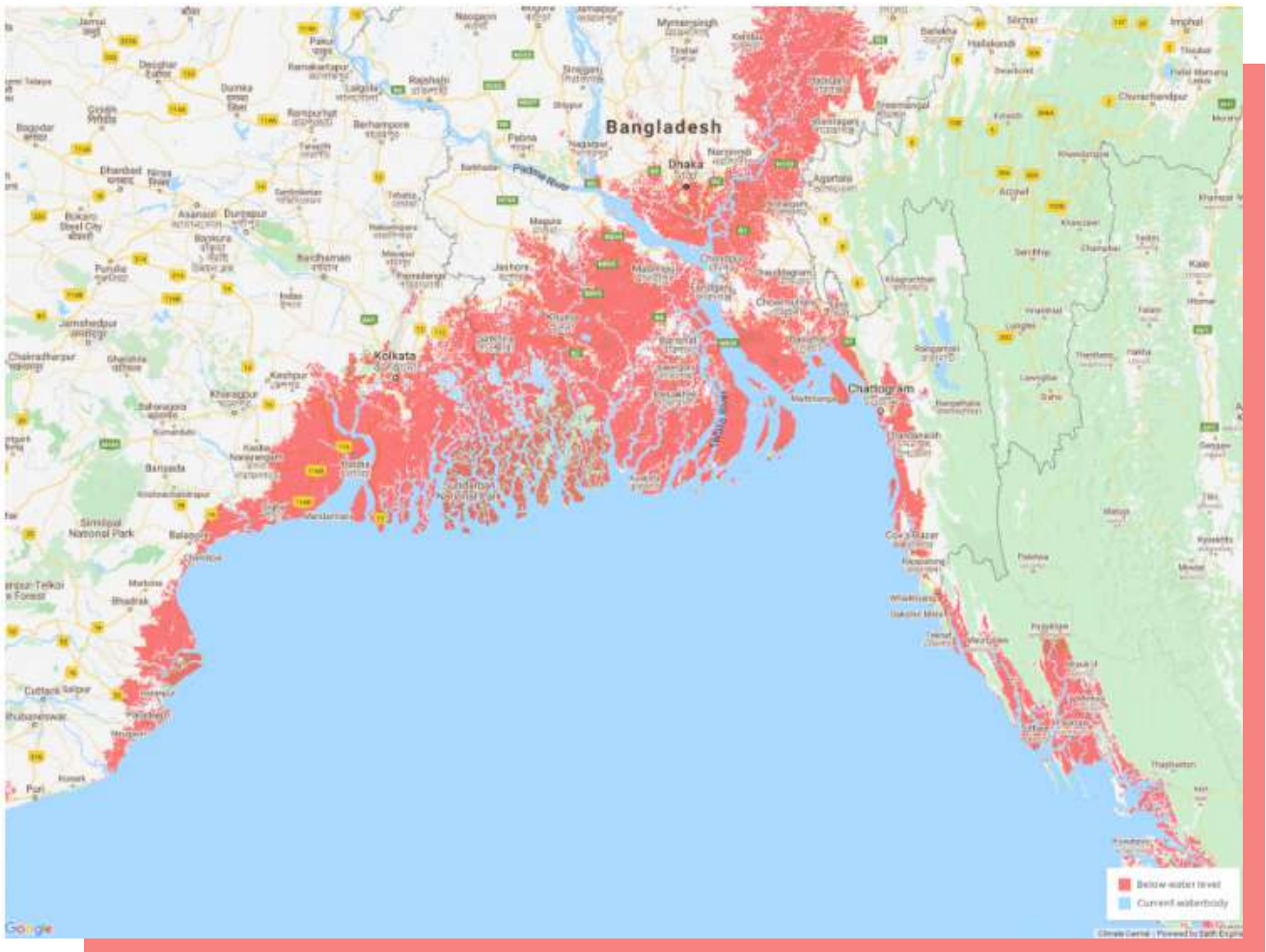
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<sup>1</sup> Vijay Mahajan is the Director, Rajiv Gandhi Institute for Contemporary Studies, New Delhi; SS Tabrez Nasar, PhD, is former Dean, Institute for Livelihoods Research and Training (ILRT).

*The authors would like to thank the team at the NGO Rajarhat PRASARI (<http://www.prasari.org/>), led by Saikat Pal, for many of ideas in this paper, garnered during several field visits by the authors.*



**Figure 1: The Sundarbans between India and Bangladesh**



There is strong evidence of the seasonal and some permanent migration mostly that of youth, as a result of which, agriculture and other livelihood opportunities is left in a precarious situation. Lack of hands to help out may not be the only reason for failing agriculture that is coupled with declining soil fertility, declining water tables and a very high range of salinity over a period of time. One major and very important observation, both from the visits, discussions and historical perspective is that the flooding in the Sundarbans is becoming more and more unpredictable – too much of water in too little time and sometimes long spells of (usable) water shortage.

One of the approaches that have been tried by the communities is to adapt to changing conditions and rely a bit more on off-water activities such as livestock. However, lack of capital and very little high grounds and unavailability of sufficient land at the household level has discouraged this approach as well.

During a visit immediately after one of the cyclones, it was observed that there were hundreds of families that had to move to higher grounds – the only higher grounds available being the primary and secondary roads. As a result of this, almost for three months, movements were completely stalled and availability of day to day needs including food and medical support was a huge challenge. Some families reported having lived in such conditions for three long months. All agriculture plots were submerged and farmers faced huge losses that included livelihoods, health and well-being in particular.

Seasonal migration from the region is disturbingly high at 74% (Mistri, 2013). We came across stories of both parents migrating to earn a living, sometimes for extended periods of time, leaving behind very young children to the mercy of neighbours. So while the social capital is important and pays back, it certainly can never make up for parents' absence. That is one of the major reasons many organizations working in the region would want to arrest or minimise seasonal migration by providing sufficiently good livelihood options and opportunities. While some agencies and researchers term it as “environmental migration”, the reasons could be well beyond environment alone though it plays an important part.

NASA Landsat satellite [imagery](#)<sup>2</sup> shows that the sea level has risen in the Sundarbans by an average of 3 centimetres (1.2 inches) a year over the past two decades, and the area has lost almost 12 percent of its shoreline in the last four decades. Along with the Sundarbans, Much of coastal Bangladesh is very close to the sea level. Thus, sea level rise is expected to cause widespread flooding as the climate continues to change. This low-lying area, vulnerable to flooding, is home to 18 million people.<sup>3</sup>

The crisis is coming, and we have to start working on what can be done in terms of mitigation and adaptation. One adaptation strategy could be Amphibious Living – essentially living on water rather than on land. While some work has been done on amphibious housing in Vietnam and Bangladesh (see link below) not much has been done on Amphibious Living as a whole.<sup>4</sup>

## 2 Amphibious Living Opportunities – The ALO for Sundarbans

What has been stated above is just the tip of the iceberg. After several visits and consultations with local community members, including women and children as well as some NGOs and government agencies, it is evident that these communities will need to quickly adapt to “Amphibious Living”. The title “Amphibious Living Opportunities” abbreviated as ALO (আলো) in the local language, Bengali, means “illumination” or “light” and also signifies “dawn”.

Amphibious living is a means through which communities need to adapt to extreme conditions of climate change. Promoting disaster and climate change resilient livelihoods in alignment with amphibious living will not only help the local communities to shape their livelihoods in accordance with climate change, but also reduce their vulnerability to climate risks and improve their living conditions. Disaster and climate change resilient livelihoods would involve promoting livelihoods in fisheries, agriculture and agri-allied activities.

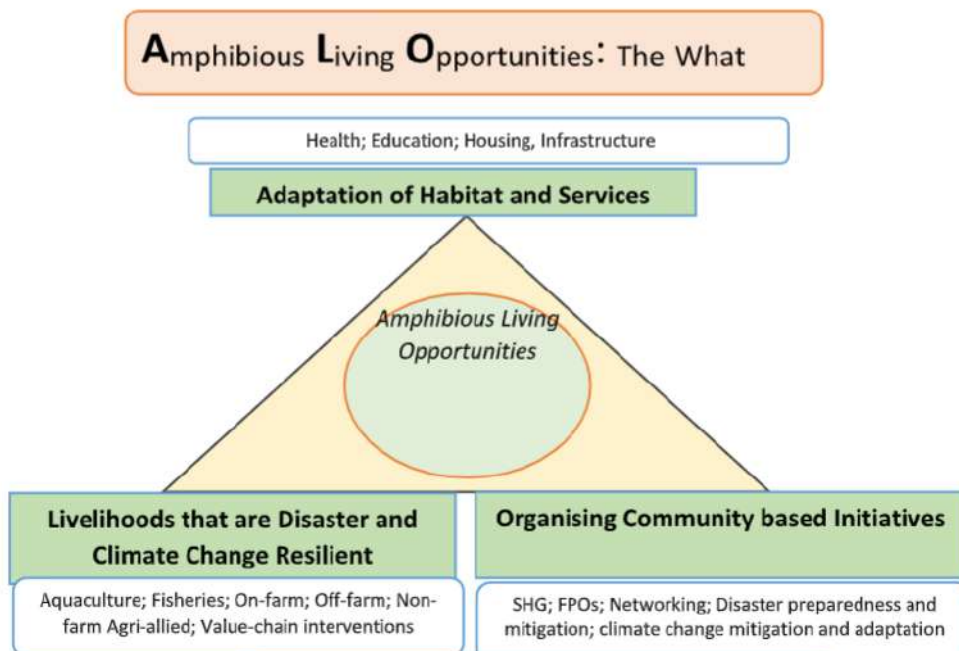
Strengthening amphibious communities would involve strengthening communities to undertake initiatives for (a) ecological conservation; (b) disaster and climate change preparedness; (c) seeking improvements in infrastructure and services and (d) securing livelihood for all.



<sup>2</sup> <https://thediplomat.com/2020/05/in-the-indian-sundarbans-the-sea-is-coming/>

<sup>3</sup> <https://scied.ucar.edu/image/sea-level-change-bangladesh>

<sup>4</sup> <https://floodresilience.net/resources/item/beat-the-flood-flood-resilient-homes-in-bangladesh/>



**Figure 2: The three pillars or “Triad” of ALO**

Amphibious living would involve redesigning of the use of physical assets – such as structures to prevent flooding, housing, building and also natural assets such as land and forest etc., which support amphibious living. It is being suggested that this would involve a three pronged strategy: (A) Focus on basics of living – food, health, education and housing; (B) promoting amphibious livelihoods – through land and water based interventions that would include integrated farming approaches on one hand and involvement of women on the other; and (C) prioritize community based initiatives – building communities to adopt to amphibious living with a focus on SHGs, FPOs, networking, disaster preparedness and mitigation.

While this is easier said than done, pathways to enable this approach shall have to be put in place (see Figure 3). The three strong pillars of this triad will consist of (A) Capital – economic resources, land/water bodies and access to markets; (B) Specialized knowledge and technology – state-of-the-art technologies adapted to local conditions and contexts, use of technology to improve production and market access; and (C) Policy and institutions – policy adaptations to amphibious living, active policy implementations, policy dialogues among and between stakeholders and institutional partnerships. Based on detailed discussions, some of the most appropriate interventions that can be thought of are being suggested below. The criteria used for suggesting these ideas is based on the following:

- Befitting local context – technically, socially, environmentally;
- Preferably ideas that the relevant organizations and / or the communities are familiar (and comfortable) with or are easy to adapt;
- Preference to high-value low-input crops;
- Appropriate interventions in the value chain;
- Consider natural calamities as limitations (not threats) and meticulously plan ‘around’ it, and
- Encourages partnerships with like-minded agencies;

Over the years, it has been observed that too much of dependence on ponds and farm-lands that are often inundated by floodwaters, takes away the scarce resources that the households have. On the other hand, a large percentage of households are engaged with some or the other off-farm or non-farm activities. By now we have not just a global but also a national and local realization that the climatic adversities are not here just to stay but also become more forceful and unpredictable as we go forward. The planning for the future has to be more efficient, smart and compatible. The idea of amphibious living has become a truth in some parts of the world where coastal lands are being lost to rising sea levels. This idea, however, requires a separate thought process that shall be taken up as appropriate.



## 2.1 Adaptation of habitat and services

In light of disaster proneness of the area and the onset of climate change based sea level changes, it is necessary for the habitat – housing, infrastructure – and services – health, education to adapt.

### 2.1.1 Housing – with cyclone protection

In states like West Bengal which is also low lying, a very common safety measure that has been practiced for hundreds of years is to build their house on elevated land. In most cases, individuals dig out soil from their part of the land to attain this elevation. This serves two purposes – one, the plinth of the house is elevated to a desirable extent and two, a backyard pond is dug out by default. It could be possible that fish became an almost staple food due to these backyard ponds that sprung up by default. However, elevation of the house only caters to normal floods to some degree but the ill-designed houses, mostly huts made of local materials, succumb to cyclones. While most of the efforts to overcome this situation is focused on building stronger (concrete) dikes in the short-run and planting mangroves in the long run, it certainly does not address the need of cyclone proof housing.

West Bengal is among the top four states hit by cyclones frequently. The South 24 Parganas district in West Bengal – home of the Sundarbans, suffered more cyclones than any other district in India. It makes it all the more difficult for people with very little resources to their disposal. While Multi-Purpose Cyclone Shelters (MPCS) along the coastline for tropical cyclone risk mitigation is important and are meant to provide refuge to vulnerable populations at the time of a cyclonic storm and otherwise to be used as a school, community centres etc., it does not cater to improved individual housing.

Sugata Hazra, head of the Department of Oceanography in Kolkata's Jadavpur University, said: "We need to know why 63 out of around 1,000 villages in the Sundarbans are getting affected repeatedly. We need to find a solution for their safety." He recommended putting up offshore wind breakers in some parts of western Sundarbans where the impact of cyclones is most pronounced. "Along with strengthening the existing embankment, at least one room in a house needs to be built on a higher plinth to counter flooding and needs to have a concrete roof so that during a disaster the entire family can take shelter there," suggested Anurag Danda, a Sundarbans expert (Source: [www.preventionweb.net](http://www.preventionweb.net)).

Mousuni panchayat has listed the damage caused by cyclone Amphan, as it did after cyclone Bulbul. The list shows 93% of the 6,500-odd families in the island and 80% of houses were affected twice. Subhas Acharya, an expert on the Sundarbans, pointed out that the houses built under government-supported schemes were also affected, as the funds were not sufficient to build concrete roofs. After Amphan, residents say there is no point repeating the same housing schemes. They want enough financial support to be able to build concrete roofs that will not blow away in the next cyclone. Only brick houses with concrete roofs survived (Source: [www.thethirdpole.net](http://www.thethirdpole.net)).

### 2.1.2 Infrastructure – water, power, telecom, roads, jetties

The marked backwardness of the Sundarbans regions and the main hurdle being separate islands could be attributed to the lack of road connectivity and transportation among other infrastructure shortcomings. The prime reasons of creation of Sundarbans Development Board was to increase road and bridge connectivity and other infrastructure of civil nature. Engineering wings were created with the introduction of IFAD Project in 1981-82 and since then civil work programmes have been executed as one of the major programme elements. Department of Sundarbans Affairs has since been implementing its work programme through the Sundarbans Development Board.

It seems ironical that (fresh) water remains a major problem in the Sundarbans, a land that is often inundated by floods. Sundarbans is basically formed out of land surrounded by rivers and creeks. Yet both availability of potable water as well as freshwater for various purposes is seriously short of needs. To add to this, the rivers are saline to extremely saline in nature as is the groundwater in shallow aquifers. Salinity of water limits its use in domestic as well as for agricultural practices including aquaculture.



The deeper aquifers do have safe (fresh) groundwater but are few and far between, sometimes at depths of 300 meters below ground level. While the average rainfall in the region is impressively high at 1600 mm/annum, it lacks proper infrastructure and planning to maximize and hold this water or, for that matter, use it to recharge aquifers. Lack of upland freshwater discharge into these rivers allows the saline sea water to move deep inland. Salinity intrusion in the agricultural field makes agriculture extremely difficult (Source: [www.documents.worldbank.org](http://www.documents.worldbank.org)).

Electricity or the lack of it has been a major concern. Less than a decade ago, the solar micro-grid, funded by West Bengal Renewable Energy Development Authority (WBREDA) and implemented by Tata Power was setup. Between 1996 and 2006, the WBREDA had installed 17 such solar power microgrids in the Sundarbans. Initially, the microgrid in Indrapur would supply power for five hours a day, with three to five power outlet points in every household, for a monthly subscription of Rs. 80 and Rs. 120, respectively. However, eventually the power station was defunct. Since 2018, however, several solar grids have come up with a nominal charge per household.

The region is recognized as a backward region in terms of transport and communication with only 42 km of railway, 250 km of metalled road, and about 170 km of unpaved narrow roads much of which has become defunct due to frequent floods. The existing modes of the transport of the region are not able to boost up its development in various sectors. The number of ferry services, number of terminating bus routes and distances of the nearest railway station from the block headquarters are inadequate and quite low barring some exceptions.

As boats are both a means of transport of goods and passengers, as also necessary for fishing, the existence of all-season jetties is very important. The Sundarbans Development Board has a program for construction of RCC Jetties and so 131 such jetties have been built in the area.

### 2.1.3 Health

Rising salinity and sea level pose multiple health challenges in the region. It becomes worse during floods when movement between islands or even within the island is completely blocked. To add to this, their existing livelihoods makes them spend extended hours in highly saline waters. Shubhankar Banerjee, Founder of NGO Soul which conducts medical camps in the villages on a regular basis, said,

*“Most of the people in the Sundarbans face stomach ailments majorly related to (in)digestion and acidity because of the saline water. Anaemia and calcium deficiency is another big health issue that they face – both females and males”.*

The health care centres too are few and far between. Dr. Sourav Mandal, Medical Officer, Basirhat Health District, said, *“We have conducted medical camps and found that people are struggling to make ends meet. One of the reasons behind poor access to health services is transportation. If someone gets a heart attack, they often die by the time they reach the hospital. During labour pain, women have to cross the river and sometimes take a boat ride which could take 4 to 5 hours”.*

### 2.1.4 Education

While several organizations have attempted to bring in quality education in the islands, many schools that they leave behind are severely under-staffed, with broken classrooms – which further fails to draw them back in. “There is a sharp rise in drop-out rates since 2009,” says Asok Bera, a primary school teacher in Sagar block’s Ghoramara island, which is especially vulnerable to floods and submersion. “Here the river snatches our land, houses and homes, and the storms [take] our students,” says Amio Mondal, a teacher at Amrita Nagar High School in Amtali village of Gosaba block, “We [teachers] feel helpless.”

## 2.1.5 Service enterprises

While there are some small stores in each of the villages, many of them are just an extension of their huts and caters to essential day-to-day commodities only. Barring exceptions such as fish catching and selling, there are very few established sustainable enterprises in these islands. In islands and villages where community members are linked with enterprises that have a mainland connection (products such as fish, chicken, eggs and to some extent, milk), the prospects look promising. However, these approaches need to be formalized and streamlined in order to create many more avenues and opportunities.

## 2.2 Livelihoods that are disaster resilient and help in adaptation to climate change

There are several livelihoods that exist and more can be taken up by the households. A combination of more than one of the following livelihoods which are disaster-resilient and help in adaptation to climate change, can either be started or scaled up:

### 2.2.1 Agriculture

#### *i) Salinity tolerant rice varieties:*

There have been reports of use of salt-tolerant rice varieties but it is scanty. Given the local conditions, this can be taken up with certain farms as a pilot. The Knowledge Bank of the International Rice Research Institute (IRRI) carries sufficiently good information on this (See [link](#)).

#### *ii) Integrated Agri-aqua systems:*

This is an appropriate location for vegetable farming as the season can extend a bit longer unless extreme flooding inundates the dikes. If fruit-based multi-tier cropping is practiced on the dikes (Papaya, Guava, Okra, lettuce, pineapple are some examples), the dike of each of the ponds will provide close to 200 sq mtrs of farming land. See example in this video [link](#). This is important as it not only allows to plan and produce in an efficient manner but also that farm diversification is a risk aversion strategy.

### 2.2.2 Fisheries

#### *iii) Short cycle fish species and ponds:*

Given the fact that the havoc of floods followed by its devastation will increase in frequency and intensity over the years, the timing of pond aquaculture is going to be the most important consideration. For example, if June to October is the peak rainy season, it allows for at least six months (December to May) for pond aquaculture even in low lying areas with little or no dike protection. Such ponds should consider two types of crops – one, short cycle species such a Tilapia; and two, the already used Indian Major Carps (IMC) varieties but the size to be introduced to ponds in December to be post-fingerling stage. This will allow the fish to reach marketable size before the rainy season sets in. For ponds that are in higher grounds and are additionally protected by well-established dikes, can have extended periods of fish culture.

#### *iv) Mud Eel Culture:*

Monopterusuchia, also known as Kuche maach in WB, is found abundantly in freshwater marshy lands in several parts of India. While Monopterus eels may not necessarily fetch a high price (IndiaMart sells it for INR 350/Kg), it has a tremendous food value. The breeding season matches with the onset of the rainy season. There are a range of information materials that can be found. These mud-eels can be reared in earthen ponds (see [link](#)) to small containers (see [link](#)) or in cemented tanks (see [link](#)).

#### *v) Mud Crab Culture:*

Mud crab fattening predominates farming practices in Sundarban as opposed to grow-out culture. Locally, mud crab fattening is known as chamber chas and has been practiced since the late 1990s (Nandi et al., 2016) although the contribution of mud crab to fisheries is an age old practice in Sundarbans. The Food and Agriculture Organization of the United Nations (FAO of the UN) has a very simple and practical Crab Culture manual that can be downloaded from this [link](#).



*vi) Ornamental Fisheries:*

West Bengal in general and Kolkata is particular is the hub of ornamental fishes. Depending upon the species (both freshwater and brackish-water varieties), it is relatively far less complicated and also not a very expensive activity.

Additionally it has a good market demand as well. In the following links, there are some examples from West Bengal. See [Ornamental Fisheries of Cichlids](#); and a more detailed video on [Ornamental Fisheries](#).

*vii) Farmer owned and managed hatcheries:*

Other than the cost factor, access to good quality seeds and fingerlings is a major hurdle. Pilots of farmer(s) owned and managed hatcheries that will, in addition to providing sustainable source of seeds, fry and fingerlings in the region, also become a primary source of sustainable livelihood. Smallholder fish farmers have to rely heavily on outsourced seed supply and therefore having one in the community goes a long way. Given the adversities of the environment, it also makes sense to do so as it can be done at the household/backyard and elevated lands.

### **2.2.3 Bee keeping and livestock rearing**

*viii) Bee keeping:*

The name Sundarbans comes from the famous Sundari tree and the scope of producing organic honey coming straight from the Sundarbans could be well placed. This can be done both by individual households as well as informal and formal collectives. This is also important from a futuristic point of view. This is already being done in the Sundarbans (see [link](#)).

*ix) Backyard poultry farming:*

Several of the households, though, have backyard poultry, their numbers are meagre (sometimes as little as 5 to 10 birds per household). If this can be scaled up between 30 to 50 birds per HH, it can become an important livelihood activity catering to both food security as well as income generation. There are several examples of this being practiced in the Sundarbans (see [link](#)).

#### *x) Black Bengal goat:*

This variety, though mostly black, is also grey and white, is a prolific breeder and though may have very little milk value, is known for its meat and skin. It is highly resistant to common diseases and survives without formulated feed if grazing grounds are available. An adult male goat can gain weights up to 25 Kgs. In many parts of West Bengal and Bangladesh, this variety of goat means a lot to landless and poor households and communities. (See [link](#)).

### **2.2.4 Non-farm livelihoods**

#### *xi) Tourism as a composite livelihood sector:*

The Sundarbans Tiger Reserve is a major tourism destination and a small number of local people participate in the tourism sector as vendors, boatmen and guides. However, rarely any household subsists entirely on tourism-based income since such jobs are seasonal (Does Tourism Contribute to Local Livelihoods? A Case Study of Tourism, Poverty and Conservation in the Indian Sundarbans: Guha & Ghosh, 2007). A majority of the local service providers operate with very little or no capital investment. Yet households participating in tourism-related activity are better off than those who do not. Some of the advantages of tourism coupled with other livelihood options are:

- Additional incomes though seasonal, offers an opportunity and scope for taking it up as an enterprise;
- The sector requires diverse skills but also provides an opportunity for those unskilled;
- Carries a potential for linkage with local enterprises based on the varied needs of tourists; this also provides an opportunity for local artisans and crafts;
- Given the importance of wildlife conservation, this sector can not only cater to the need but also amplify the cause;

As of now tourism is restricted to winter months that are pleasant and also have easier access to the islands given there are less chances of rain and floods.

### **2.2.5 How to make these livelihoods sustainable?**

In addition to making them disaster and climate change resilient, there are at least three requirements for making these livelihoods sustainable:

#### *Taking an Enterprise Approach:*

People have to move from subsistence to surplus production for the local and distant markets. This means they have to begin with the demand side first – produce what can be sold in addition to what they have to consume for themselves. This requires access to new opportunities of the kind listed above, and mastering their underlying technology and skills.

#### *Starting with Own Capital:*

The second aspect is to mobilise capital for these new livelihood enterprises. Institutional credit is a predominant source of finance and plays a pivotal role in the development of an economy. Given the limited presence of banks, own funding is the way to go at the beginning, till say INR 10,000 and later may be from SHGs and microfinance institutions, till the amount of investment is below INR 100,000. But as the enterprises grow and some at the higher scale have to be set up, the investment per enterprise may be up to INR 1,000,000 per household and this will require bank financing.

#### *Partnerships with Market Actors:*

Given the limitations of financial resources and / or lack of access for both individuals as well as communities, getting into sustainable partnerships create avenues. An example from the Sundarbans is that of “Kejriwal Honey”, one of the largest exporters of honey from India, that have partnered with local communities and have provided opportunities to households by providing training, infrastructure (bee boxes, etc.) and facilitation. The other kinds of partnership that is emerging is with established collectives such as FPOs etc.



## 2.3 Organising community-based initiatives for adaptation

The Sundarbans region is characterized by lack of electricity, safe drinking water, health services, educational facilities, and has poor communication network. Additionally a large percentage of people belong to socio-economically backward category. As if this was not enough, the seasonal and / or permanent migration particularly that of the younger generation, adds to the hardship. The vicious cycle consists of many more negatives, most of which has been discussed in details in the earlier sections. All of this leads to limited livelihood opportunities, constraints of health, low and uncertain agriculture productivity and extremely high unemployment rates. Under such circumstances, actions by individuals or a few households is not adequate to move the needle. What is needed are organised community based initiatives. We give below a few examples:

### 2.3.1 Women's Self-Help Groups and SHG Federations

The concept of Self-Help Groups was primarily brought in as a tool to empower women, especially in communities where the role of women was no more than running household chores. From a study conducted for a representative sample of the women-run SHGs under the aegis of Sandeshkhali LAMPS, it has been noted that since joining the SHG movement, the economic condition, decision-making power relating to expenditure, status within the family and the society has increased favourably for the women members.<sup>5</sup>

### 2.3.2 Fish farmers' producer organization

FPOs are becoming very popular and successful in several parts of the country with huge plans of thousands of more FPOs in the country. However, there are very few examples of FPOs in Fisheries. Recognizing the importance and potential of the fisheries sector, the Government of India launched a flagship scheme, Pradhan Mantri Matsya Sampada Yojana (PMMSY) (visit [www.ncdc.in](http://www.ncdc.in)). PMMSY will be implemented over a period of five years from FY 2020-21 to FY 2024-25. As announced in the Union Budget 2020, 500 Fish Farmers Producer Organizations/Companies (FFPOs/Cs) would be set up to economically empower the fishers and fish farmers and enhance their bargaining power.

### 2.3.3 Panchayats – Gram panchayat and panchayat samitis

The primary unit of local self-government under the 73rd Amendment of the Indian Constitution is the Gram Panchayat, which is quite empowered in West Bengal. It has devolution of powers, funds and functionaries. There are three sources of funds - local body grants, as recommended by the Central (14th and 15th) Finance Commissions, funds from centrally sponsored schemes such as MGNREGA and funds released by the state governments on the recommendations of the State Finance Commissions. Each Gram Panchayat has an appointed Secretary and at the Panchayat Samiti (Block) level there are a number of officials for different functions. Thus it is very important that Panchayats in the area buy into the idea of working towards amphibious living opportunities.

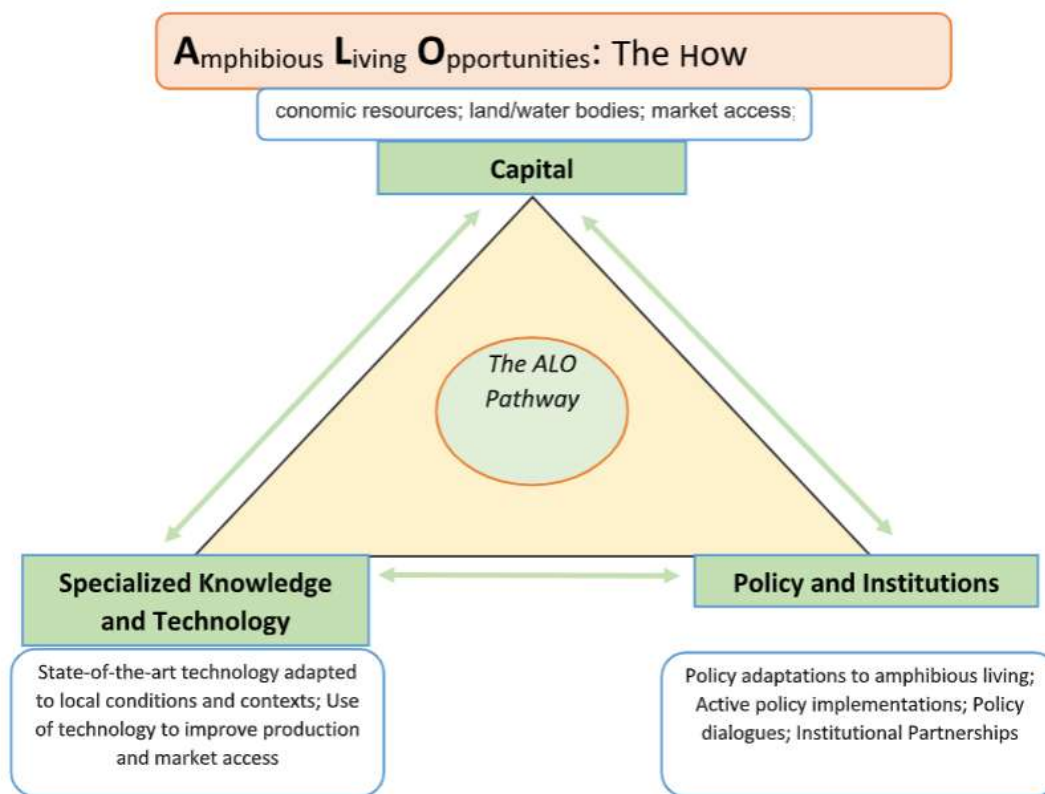
### 2.3.4 Cooperatives

There is a long history of cooperatives in the Sundarbans. Sir Daniel Hamilton had started the cooperative movement in the Sundarbans in 1902 and since then, various cooperative societies have come up with the support of NGOs such as the Tagore Society for Rural Development of Rangabelia in Gosaba. The government has established several Large-Sized Multipurpose Co-Operative Societies (LAMPS) in the area and these need to be oriented towards amphibious living opportunities.

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<sup>5</sup> (Source: [www.jgi-global.com](http://www.jgi-global.com) – Handbook of Research on Microfinancial Impacts on Women Empowerment, Poverty, and Inequality; 2019).

### 3 Amphibious Living Opportunities: How to actualize these?



**Figure 3: The three pillars of the ALO pathway**

#### 3.1 Capital

Given the critical situation that has been described in the earlier sections, it is evident that none of this will be possible without adequate support of capital – economic resources, land/water bodies and eventually access to appropriate markets. Capital is required at three levels:

- Restoration of common property resources and creation of resilient public infrastructure. This will largely have to come from international and national sources such as the Green Climate Fund,<sup>6</sup> and the Government of India coastal area schemes, NREGS, etc.
- For collective value addition, enterprises and common facilities which serve a large number of primary, household level micro-enterprises. For example, a fish processing factory, which buys fish from individual fishers, adds value and markets, much like the AMUL model in dairy. This type of capital will have to come from private sector entrepreneurs and bank loans.
- For primary, household level micro-enterprises. As already suggested, this will have to come from household savings, borrowings from family and friends, loans from SHGs and MFIs.

#### 3.2 Specialised knowledge

Each Amphibious Livelihood needs expert knowledge, its extension, and skills to implement the knowledge. To enhance productivity and market access, even the resource poor communities now have some degree of access to smart phones, for example. Being isolated from the mainstream market and technical support has taken its toll. There are various avenues by which these communities can benefit by way of use to technologies that can be adapted to local conditions and contexts.

<sup>6</sup> <https://www.greenclimat.fund/sites/default/files/document/funding-proposal-fp084-undp-india.pdf>

### 3.3 Inter-institutional collaboration - The panchmukhi samvaay

No single actor is capable of addressing the development problem alone. The Panchmukhi Samvaay or Collaborative Pentagon provides a practical structure for the implementation of inclusive and sustainable development. Its five sides are (1) Civil Society Institutions; (2) Government including elected Panchayats and Municipalities (3) Private Enterprise Sector – from micro to corporate (4) Financial Institutions and (5) Knowledge Institutions including Universities and the Media. The community is at the centre of all this. This is depicted below:



### 4 A call to action

As the dark prospects of cyclone-disasters and climate change induced rise of sea level loom over the Sundarbans, the communities need to be helped to usher in the new dawn of ALO - Amphibious Living Opportunities, comprising (i) adaptation of habitat and services (ii) livelihoods that are disaster and climate change resilient and (ii) organising community based initiatives.

This is a call to action at various levels – individual households, small collectives, larger collectives and community in general; to adapt the habitat as well the livelihoods to the upcoming change. They will have to get together and prioritise activities in terms of urgency, ease, returns and importance – things that can and should be done immediately, those that are mid-term and eventually the long-term ecosystem improvement approach.

They will have to work towards achieving institutional synergy – along the lines of the Panchmukhi Samvaay or Collaborative Pentagon suggested above. And all this will have to be done urgently, they have only a few years to respond.

# Assessment of tank restoration work by PRADAN in four districts of Tamil Nadu

*Dr. Sanjiv Phansalkar, Vikas Anvesh Foundation*

In the semi-arid regions of South India, tanks and ponds play a very important role in providing water for irrigation, domestic use and drinking water. These water bodies are also essential for livestock, support local ecosystem, recharge of ground water, control of floods etc. However, in the last several decades tank irrigation has drastically decreased due to several socio-economic and institutional factors. PRADAN (Professional Assistance for Development Action) restored few tanks and ponds in the four district of Tamil Nadu. This article is the summary of a full assessment report of PRADAN's work in Tamil Nadu to restore tanks.



## Background

Madurai and its surrounding districts in Tamilnadu have been showing a declining trend in rainfall during the last 30 years. The Northern part of Madurai receives an average annual rainfall of 840 mm while the Eastern part receives a little more at 900 mm. Virudunagar has smaller average annual rainfall of 820 mm. Sivagangai is even drier. These areas receive rainfall during both South West as well as Returning Monsoon, the former contributing about 40% of the annual rainfall. Landscapes in these areas present a somewhat grey picture of almost wasteland like appearance with frequent and large clumps of *Prosopis juliflora* revalidating their status as semi-arid territories.

Of the 1,53,400 ha. net sown area of Madurai district, close to two thirds is irrigated. Dug wells canals and tanks are the principal sources of irrigation in the district. The stage of ground water development is 62% in the sense that 62% of the replenishable ground water resource is drawn for irrigation and domestic uses. There were 3 Over-exploited blocks in the districts of which 2 were classified as “critical”. In consequence of high withdrawal of water, salinity as well as fluorine levels have been rising in ground water in the district. Central Ground Water Board has cautioned against unbalanced ground water development in this region.

Tanks constitute an important means of water use in agriculture. In fact, their place was eminent in the scheme of things for agriculture before the advent of motorized pumps. Tanks were in general managed through a fairly elaborate social institutional system. Farmers with land in the tank command would together take the responsibility of managing the water distribution as well as the maintenance of the inlet waterways as well as the tank structure. A person appointed to ensure equitable distribution of water, traditionally called “neerkatti” was paid in kind by each of the user farmer giving a portion of his crop output to him. Farmers contributed labour for managing the structure and clearing the inlet water ways. Norms existed regarding the multiple uses of water (animal feeding, domestic use, irrigation, recreational etc.)



Scholars tend to agree that the advent of motorized pumps as well as decline in the social institutions have together contributed to the continuous decline in quality of structures and the inlet water course, reducing the quantity of water stored and thus reducing the irrigation potential. This was done because those farmers who wielded power in earlier times were the first to acquire pump sets to exploit then reasonably abundant ground water, used it through formal or informal water markets and thus gained both relative independence from the tanks systems as well as power over other farmers. Yet as the topography and rainfall pattern suggests, tanks do occupy an important place for several farmers. Today one may say that in almost equal measure they support drinking water security, ground water recharge and crop irrigation.

Efforts have been under way in several locations to mobilize the community to try and restore the tanks, clear the water way so that they get filled up and revive the system for equitable use of the tank water across different user groups. In fact, tank restoration has become an important program in the civil society world as well as development administration.

## The project

Looking at the criticality of water to the very life of people here, Interglobe Aviation had financially supported PRADAN to undertake restoration of tanks and ponds in Madurai and Virudunagar districts. PRADAN was expected to restore 8 tanks and 10 ponds. The restoration was aimed at increasing the quantity of water stored and available in each tank / pond, to make critical irrigation available to the farmers in command area of these structures, to promote tree plantations on tank bunds, and also to include landless community by encouraging fish cultivation in the water bodies. The tanks and ponds were expected to be seen and used by the communities as multiple-use water structures combining irrigation, fishing, recreational and domestic uses.

Under the project, cumulatively, over 240 ha of water bodies have been restored benefitting over 650 farmers in growing their crops and has benefitted over 3,500 households through other routes such as domestic use, livestock watering etc. Given that the total money spent has been a little over a crore, this is a huge achievement. This has been made possible by mobilizing the communities, by creating awareness about the possibility of restoration and a willingness to work towards it among the community members. The communities have contributed towards these works. In one place Vandal, over 1.8 ac of land owned by several households was donated to the community for creating a new pond. Virtually every tank restoration task had community contribution in cash, in terms of some labour as well as in kind by providing stones and sand where needed.



## Tangible impacts of tank restoration work

### I. Farming:

Paddy is the most popular field crop in this region and people depend on irrigation for growing paddy as it is a rain deficit area. All registered users always press for obtaining water for growing paddy. Restoration of tanks has made it possible to supply water to farmers. Here are a few examples from our field observations.

#### Vadavirukkai:

farming has been under severe water stress since 2014-15. No rabi crop was cultivated in the last five years before the rehabilitation work taken up by PRADAN. The inlet channel was in a veery bad shape due to siltation and encroachment blocking the inflow to the tank. As part of the project, the inlet channel of about 2 km was revived, of this 1.1 km is retrieved from encroachment and excavated to its fullest width.

This brought a very good amount of water into the tank which is lasting through the year. The tank has not gone dry since the rehabilitation work. Over 40 farmers have gone for rabi crop during the last two years. Further, they were mentioning several farmers downstream were able to get some residue water due to the availability of surplus water in the tank. Cotton crop during rabi season during last year fetched them a very good production with about 4 quintal of cotton per acre. This has resulted in increase of income by a very substantial sum. Some farmers reported income increase by about Rs. 3 lakhs.

#### Sevalur:

Farmers in Sevalur depend on Kandeneri tank for farming. Almost all the farmers were in huge distress as they could not cultivate even one crop for last 3-4 years due to lack of enough water in the tank to do cultivation. Though the village has 26 open wells, many of them are not in functional condition. Less than 10 farmers with functional wells were able to cultivate a limited portion of their land. Some of the land that use to be under cultivation were also infested by invasive Prosopis as they were left fallow for several years. Deepening of tank and rehabilitation of supply channels rejuvenated the tank and helped all the farmers in the village to go for cultivation. Farmers invested about 10,000 per acre to clear the Prosopis infested land and bring them back under cultivation. More than 70 acres of land were cultivated with paddy with yield range of 20-30 quintals per acre resulting in income of about 30-50,000 per acre.

#### Kattanur:

Kattanur tank is one of the big tanks in the region with the water spread area of about 250 acres. The government spent over 20 lakhs, just two years back to rehabilitate the tank and they did not do the channel work. The supply channel is not excavated to its fullest length, width and depth in the last fifty years and more. In the last thirty years the encroachment has been detrimental to the tank. Though the supply channel is several kilometer in length, PRADAN excavated around 1 km upto the village limit due to fund limitations. But this has by itself proved very effective in bringing water to the tank that is lasting till now. Similar to Vadavirukkai village, the farmers were not cultivating rabi for several years due to unavailability of water. The rehabilitation work in the supply channel helped the revival of the tank. The water is still available in the tank and the farmers have cultivated second crop this year.

*Table 2 Basic profile on tanks rehabilitated under the project*

Name of Tank	Vadavirukkai Tank	Kilanguni Tank	Alavidangan Tank	Kattanur Tank	Sangani Tank	Thenkadukkai Tank	Nalloor Tank	Kurchi Tank	Varavani Tank	Kandeneri Tank	Sirukulam Tank
Panchayat name	Alavidangan			Kattanur				Muthur	Varavani	Sevalur	Meesalur
Water spread area in ha	16.49	14.09	16.05	26.05	11.795	11.49	11.46	13.85	36.78	53.30	18.61
Bund length in m	1,500	1,800	1,800	2,300	1,100	1,800	1,500	1,600	3,600	2,240	1,550
Number of users	42	28	46	58	34	68	38	40	58	67	250
Total households supported	113	60	46	193	85	153	112	90	526		
Agriculture	42	28	46	84	34	68	38	40	58	51	41
Livestock	42	8	2	51	2	2	11	7	16	16	35
Domestic use	29	24	46	58	49	83	63	43	126	43	65
Registered command area in ha	30.59	14.60	22	47.20	29.80	20.48	25.60	13.40	46.40	20.50	10.94
Extended command area in ha	48.60	31.60	96.60	90.40	61.80	45.78	35.60	56	34.40	7.28	-
Water availability (2018-19) (Months in the year)	4	6	3	5	4	4	4	5	4	2	2
Water availability (2019-20) (Months in the year)	4	7	5	4	5	5	4	5	5	2	3

**Table 3 Basic profile on ponds rehabilitated under the project 2.2 Tangible impacts of tank restoration work**

Name of Pond	Kattanur Oorani	Sangani Oorani	Vadavirukkai Maraikuttai Oorani	Thenkadukkai Oorani	Dharmam Oorani	PRADAN Oorani	Manthai Oorani	Veerachelliya-puram Oorani	Pudupatti Oorani	Palaiyurapatti Oorani
Name of the Panchayat	Kattanur	Kattanur	Alavidangan	Kattanur	Vandal	Vandal	Meesalur	Veerachelliya-puram	Kottanathampatti	Kottanathampatti
Water spread area in ha	8.22	2.3	0.48	1.35	0.58	0.50	3.77	2.64	0.40	0.60
Length of the bund in m	950	980	480	830	760	302	580	740	220	342
Water availability (2018-19) (Months in the year)	5	4	5	5	2	0	2	2	1	2
Water availability (2019-20) (Months in the year)	8	4	5	5	2	0	2	2	3	5

## 2. Drinking water:

When tanks retain water, they also ensure that dug wells have water. This helps farmers for drinking water. Once the tank dries up or has no water, wells too go dry and are not able to provide drinking water. Drinking water is the everyday need of every household. Tank restoration has helped the villages in this regard as well.

### Vadavirukkai:

The community depends on a well located in the tank close to supply channel for their drinking water. Due to siltation and encroachments, the supply channel was defunct and the well-used to go dry at the start of summer. Drinking water issues were rampant two year ago. All the households were forced to rely on tanker-based drinking water supply which would cost them upto Rs.3,000 per month. Rehabilitation of supply channel and the tank deepening around the well has ensured that well get recharged effectively. Now, the people are confident that their well has enough water to take them through till next monsoon. Further, the continuous presence of water in the tank has also improved the quality of water in the well by decreasing the salinity of water in the well. Water gets pumped to an overhead tank near the village for getting distributed to the households. Further, the drinking water pond in the village was also rehabilitated by deepening and creation of new supply channel inlet pipe. Though the water appears to be muddy, villagers use a traditional method of using a plant seed to obtain clarified water.

### Vandal:

This pond has been constructed from the scratch by the PRADAN team and community. Though this hamlet had a tank bund close to their settlement, unlike most villages in this region they did not have exclusive drinking water pond. It has been an aspiration of the village for a very long time to build a drinking water pond for their hamlet. Though PRADAN team did not encourage or support the idea of building a new pond, persuasion of villagers over several meetings and their collective will convinced PRADAN to take up this work. Since there is no common land available to construct the new pond, 21 villagers with their land close to the field channel offered their land spread of about 1.8 ac for building the new pond. The construction has been recently completed and named after PRADAN.

### Pazhaiyurpatti:

Though the village has couple of drinking water schemes and piped water connection, they are either not reliable or expensive for many households to completely depend on it. The drinking water pond is dependent on Periyar-Vaigai canal for water replenishment. The pond became shallow with weak bunds. Villagers came together to rehabilitate the drinking water pond with the support of PRADAN. Though the funds were limited, community contribution and presence of excavator in the village and his volunteering made it possible to rehabilitate the pond. Soil is rocky and PRADAN team considers this pond work as one of difficult earthwork they have done and community volunteers played a significant role in it. Though some water used to be available before the project, the supply use to be limited. Women in village prefer to use water from this pond for cooking. They consider this water to give them tastier food and also reduces their body ailments. With respect to economics, the RO water supply comes at a price of Rs. 4 per kodam (a pot with about 10 litre capacity). On an average, most household consume one pot from RO water supply for every two days and two pots daily from the drinking water pond.



### **3. Environment:**

While the benefit of water to farming and households are relatively tangible, ecological services like impact of rejuvenated water bodies on presence of bird population. A study by Bombay Natural History Society (BNHS) along with PRADAN indicates a presence of over 92 species of birds, of which 16 are migratory species from Arctic and Himalayas and the rest local migrants, across three adjoining tanks Sivagangai. Though we do not have expertise in this subject, we sighted over 20 varieties of birds during our field visits.

### **4. Fisheries:**

Fishing has been a huge value addition for the villagers. Traditionally the fish harvest happens as a community activity during the summer when the tank is about to run out of water. The event has some basic rules in the methods and means you catch and all the catch you have is for your own. As the water in the tank reduces, an auspicious date is fixed through a village meeting and announced. This event is like a festival where the villagers invite their relatives and friends for the event. Kandeneri tank in Sevalur is very popular for this event. However, there are few tanks where the fish harvest is sold on bid and the community group will be paid for the same. Often, the value of fish harvested and the returns through the bid are not shared with outside people. Since PRADAN had introduced several thousands of fingerlings in each of the water bodies covered under the project, it was estimated that the community will get a harvest in the r

### **5. Livestock:**

Livestock plays an important role in the livelihood of the farmers. Production of milk and presence of cooperative milk procurement units makes the dairy farming viable and regular source of income. Similarly, market for meat is also lucrative and hence a large population of small ruminants is also visible. Tanks and ponds are the key source of water for the livestock. While there are prescriptive rights for the tank water to be used for agriculture, usually there is no restriction on livestock consuming water from a tank. Villagers do not prohibit the herders from different villages to rear their livestock and drink water from their tank. Similar to purchase of drinking water for the households from private tankers, villagers pay about Rs.2-3 per pot of water for their livestock during summer when their tanks go dry. This has been the situation for the last 4-5 years. Rehabilitation of tanks has a double fold impact on livestock where ample water in the tank ensures healthy and productive animals and cuts down the expenditure on purchase of water for animals.

## **Other impact of the project**

### **1. Community's technical knowledge:**

Villagers consider that their traditional knowledge on tanks and ponds has been dwindling and the current younger generation are not aware of most of their cultural practices to safeguard and revive the water bodies. PRADAN team has been working in the subject in similar regions for past several decades and is pioneering the technicalities of these water structure. Their implementation design is bringing the people closer to science behind the water structures. The disconnect of communities with that of science behind chain of tanks is getting reduced with increasing participation of the community in design, implementation and maintenance of the water structures.

### **2. Attention received by communities:**

The project activities have got significant attention from media and as well as the government bodies for several reasons. The first reason is the effectiveness of the intervention in addressing the water issues and the second reason is the level of participation from the community in implementing the rehabilitation work. Many of the project activities has been reported by local and regional media outlets. Further, the project work has grabbed attention of various bureaucrats and government engineers as they have all been implemented in half or less than half of the budget of similar rehabilitation works they have carried out in the same region. In some villages, people were proudly sharing that their work which is part of the project has become a benchmark and several officials from district administration keep visiting the site for learning.



### 3. Social capital:

Progressive villages with relatively lesser conflicts among the villagers tend to respond better in terms of participation and ownership of rehabilitation of water bodies. As discussed in the earlier section, unity among villagers becomes the core for a successful rehabilitation work.

### 4. Endless demand:

In most cases, villagers have their untold aspiration to revive the water bodies in their village. However, neither there is any engagement of community in government-initiated rehabilitation nor the villagers trust and participate in most of the government initiatives. PRADAN team over the years appears to have earned their trust and villagers are quick to respond and participate. A trigger to the aspirations of the villagers followed by technical and legal guidance and facilitation of balanced participation imparts ownership among the villagers results in higher probability of impactful and sustainable rehabilitation of water bodies.



# Green bank can help India turn carbon neutral

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*Dhruba Purkayastha*

Sectors like power and steel, which are today among the major carbon emitters, need heavy investment to cut their carbon footprint. This would require companies to have access to significant 'green finance', top industry executives said during a panel discussion as part of the ET Sustainability Forum.

Green finance includes financial instruments lent with the intention of promoting environmental sustainability, usually at a lower cost compared to other sources of funding.

While there is significant green finance available globally, there is a paucity of such capital in India and hence there is a need of a mechanism for Indian companies to tap into the global capital, the executives said during the discussion, moderated by Dhruba Purkayastha, the India director at the Climate Policy Initiative.

For example, the steel sector. It is considered as a 'hard-to-abate' sector given the heavy reliance NSE 1.34 % on coal in blast furnaces and for generating electricity, said Seshagiri Rao, the joint managing director of JSW Steel NSE 0.46 %. The situation is particularly bad in India. "The average carbon emissions per tonne of steel (production) globally is 1.85 tonnes. In India, it is 2.5 tonnes," the steel executive said.

While the industry is gunning for efficiency in energy and material consumption and increasing the use of electricity from renewable sources, these measures alone won't fix the emissions of the sector, he said. For that, there is "huge" research going on to free the sector from its coal addiction and replace it with hydrogen. "If not today, in the near future, we're very confident that hydrogen will become affordable (enough) to replace coking coal," he said. And this is where there is a need for green financing options to fund this transition, he added.

There are also challenges around what projects get classified as green and thus get access to green finance, he said. For instance, there could be projects that may help reduce emissions but may not be termed as 'green'. Like an investment in a new blast furnace which may be significantly more efficient than the one it replaces, but isn't a green project as it will still have significant carbon emission.

The power sector is an even bigger emitter than steel. By some estimates, power generation causes 30% of all carbon emissions. If the sector moved to sustainable means of power generation, it would also help the transport sector cut its carbon footprint given its increasing reliance on electric mobility, said Praveer Sinha, managing director and chief executive of Tata Power. Mobility generates about a fifth of all emissions.

However, the issue with renewable sources of power generation is that they are intermittent. While there is a range of solutions being explored to overcome this challenge, it requires significant investments. Globally, there is a big trend towards decentralisation of power generation with renewable energy, Sinha said. All kinds of consumers - whether commercial, residential or industrial - could generate their own power from sources like solar and wind. They can also sell the excess power back to the grid or to the local community. "So, just from being a user of energy, they are now a producer and a seller of energy," he said. This would be of relevance particularly in lesser-served communities and rural areas. This movement will empower communities and businesses, he said.

This movement for decentralisation of power generation again needs support from innovative financing instruments, Sinha said. "The whole financing arrangement that we have today needs to undergo a huge transformation." Today, financing is concentrated on the credit risk of the customer. But that needs to make way for a retail-driven system where lending is based on the borrower's ability to leverage the energy generated to pay back, he said. Such a transformation in lending would need support from both the government and the whole lending ecosystem.



While the industrialists outlined their requirements and concerns, lenders said there were a lot of challenges at their end too. "We have to do a lot more to be able to attract finance into India," said Kaku Nakhate, country head - Bank of America India. "Globally, I think most of the financing has gone into sustainability-linked or ESG-linked bonds. Blended finance has been another such vehicle."

Sustainability - and ESG-linked financing looks to promote social and governance aspects also along with environment conservation. Green finance is a subset of these and focuses on environmental aspects, as per a description given by the United Nations Environment Programme. Blended finance is a combination of private or public capital and philanthropic or development funds in such a way that the latter assume more risk in a development project. The 'blending' helps increase the pool of funds, as every dollar of the concessional capital attracts multiple orders of private capital, and thus it helps make a larger impact.

In the current year, around 10.5% bonds in emerging markets were ESG-linked, whereas the number was just 0.7% in India, Nakhate said. The share was as high as 25% and 20% in China and South Korea. Anirban Mukherjee, managing director and partner at Boston Consulting Group, concurred with Nakhate. Green investments of \$200 billion are needed annually to meet India's net-zero target, he said. Of that, the country is managing just about \$20 billion currently. Even there, a large part comes from traditional public and domestic sources. "So, the need to deepen green finance and tap into international funds is really stark and really immediate," he said. "Specifically, in terms of the blended finance."

Nakhate agreed on the need for popularising the concept of blended finance in India. "Multilateral agencies are willing to put in initial funds for newer kinds of clean technologies which probably have not seen the light of the day," she said. "And that's when banks can come in with slightly costlier capital and the blended finance will be much cheaper, which will make the projects viable."

There have been instances of using blended finance in India before, according to Mukherjee, but that was often to tackle a singular problem of taking a proven technology to newer markets or scaling a proven technology. However, in the case of green finance, the problems are multifaceted - right from the technology being unproven to markets being new and a lack of scale.

For this, there is significant concession capital available globally that makes decision based on the cost of inaction, he said. "There is a need to then structure together and use creativity to bring in the capital which is available. But the structures need to be built and the regulators and the banks have to come together to do that," he said. Beyond blended finance, regulators may also look into opening up the Indian bond market to make it easier for Indian companies to tap into global capital, Nakhate said. "To attract capital, we do need to open up bond markets and get them included in indices."



Further, Indian regulators could also think about bringing in the concept of 'green bank', she said. A green bank specialises in using innovative financial tools in partnership with the private sector to fund the kind of green and transformational projects that Rao and Sinha mentioned above. "Countries like Japan, Australia, Malaysia, Switzerland, the UK, all have green banks," the Bank of America executive said. "We always talk about the bad bank. But we could change the nomenclature to green banks."

The Reserve Bank of India has taken cognisance of the industry's requirements and published a discussion paper on climate risk and sustainable finance on its website last month, RBI chief general manager Sunil Nair said. The central bank has also published a survey of Indian and foreign banks on what they think about sustainable finance. "This, coupled with the discussion paper, will set the tone going forward as to how climate risk and sustainable finance can be taken forward," Nair said.

RBI has also been permitting banks to lend for renewable energy generation through priority sector lending, he said. "But it doesn't stop there. A lot more work needs to be done and the Reserve Bank is conscious of that. The amount of finance required for climate risk and sustainable finance is huge," the RBI executive said. "So, we want the stakeholders to respond to the discussion paper. Post that we will come with a roadmap as to how we should go forward."

Green banking has percolated down not only into bonds or loans, but it is also going into areas like supply chain financing and cash management, said PD Singh, managing director and head of corporate banking at JP Morgan India. However, unless there is a financial incentive, cleaner technologies will not get adopted very quickly, he said.

Sharing an anecdote, Singh said JP Morgan had engaged with Bridgestone for supply-chain financing. Suppliers of the tyre maker would get better pricing if they have a superior ESG-rating. This gives the suppliers and the entire ecosystem an incentive to be more transparent and move towards higher sustainability. "What is important is that all of this is replicable, and all of this is in the public domain for other corporate to step in and take action on," Singh said.

*Courtesy: The Economic Times, 08 August 2022*





# A new momentum for mountains: Aspen declaration by Mountain Partnership

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*Mountain Partnership is the United Nations' Alliance founded in 2002 is dedicated to mountains. It is guided and inspired in its actions and commitments by the Universal Declaration of Human Rights (1984) and several other socially and environmental declarations of the United Nations. The Mountain Partnership advocates for addressing the challenges facing mountain regions by tapping the wealth of diversity of its members as well as promoting the sharing of knowledge, experiences, information and expertise of its members to stimulate, concrete initiatives at all levels that will ensure improved quality of life and environment in the world's mountain regions. The sixth Global Meeting of the Mountain Partnership took place at the Aspen Institute in Aspen, USA on 27, 28 and 29 September 2022. To strengthen its work on sustainable development of mountain areas, the Partnership in this global meeting agreed and released this declaration.*



## Preamble

Mountain ecosystems provide people and the planet with essential goods and services such as water, food and biodiversity. Home to about 1.1 billion people, mountains are also centres of cultural diversity and traditional knowledge. However, biodiversity loss, climate change, land degradation and pollution among other impacts are severely and increasingly affecting mountain livelihoods and ecosystems. Meanwhile, mountain people are among the world's poorest and most vulnerable: in 2017, half of the rural mountain dwellers living in developing countries faced food insecurity.

Mountain communities are highly dependent on small-scale and family-based agriculture. Living at the frontline of the climate crisis, exposure to natural hazards, lack of key services, and impacts arising from crises and conflicts are factors contributing to the high vulnerability of mountain populations, particularly for women, persons with disabilities, children and people in vulnerable situations. The COVID-19 pandemic has further disrupted life in mountains and compounded existing vulnerabilities.

Recognizing successful, locally-driven experiences of transformative change; identifying new and sustainable livelihood opportunities; acknowledging Indigenous People and Local Communities' (IPLC) rights; adopting new and supporting existing practices that combat land degradation, drought and desertification and that assist mountain ecosystem restoration; and promoting climate change adaptation and mitigation, biodiversity conservation, disaster risk reduction, and resilient agrifood systems are urgent requirements for achieving the United Nations (UN) 2030 Agenda for Sustainable Development.

## Noting that:

1 The principles and legal obligations of the UN Framework Convention on Climate Change (UNFCCC), the UN Convention to Combat Desertification (UNCCD) and the Convention on Biological Diversity (CBD), including that of the future Post-2020 Global Biodiversity Framework and the Sendai Framework for Disaster Risk Reduction (SFDRR) as well as their respective programmes of work and agendas linked to the achievement of the Sustainable Development Goals (SDGs) (2015), strongly orient the work of the Mountain Partnership.

2. The Mountain Partnership is also guided by the conclusions and recommendations of the World Meteorological Organization High-Mountain Summit Call for Action (2019); the Intergovernmental Panel on Climate Change (IPCC) Sixth Assessment Report (AR6), which includes the Special Report on the Ocean and Cryosphere in a Changing Climate (2019) and the Cross-Chapter Paper on Mountains in the Working Group II Contribution to AR6 on Impacts, Adaptation and Vulnerability (2022); the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) Global Assessment Report on Biodiversity and Ecosystem Services (2019); the resolution A/RES/74/227 on sustainable mountain development adopted by the UN General Assembly (UNGA) on 19 December 2019; and the report A/77/217 on sustainable mountain development adopted by the UNGA on 22 July 2022.

3 The Kyrgyz Republic will propose to include the 2023-2027 “Five-Years of Action for the Development of Mountain Regions” in the triennial UN General Assembly resolution on sustainable mountain development as an outcome of the International Year for Sustainable Mountain Development 2022.

In light of the unfolding biodiversity, climate, pollution and health crises, while recognizing climate and intergenerational justice concerns, and building on the new momentum provided by the proclamation of the IYM 2022, we, the members of the Mountain Partnership, commit to:

- increase efforts towards the implementation of the 2030 Agenda for Sustainable Development, aiming to secure the contribution of resilient mountain ecosystems and communities to a more sustainable world; and
- support the establishment of processes and mechanisms within the Mountain Partnership that engage diverse stakeholders and rights holders across society in strengthened science-policy dialogues and multistakeholder dialogues, thereby jointly identifying and addressing knowledge needs associated with the implementation of the 2030 Agenda for Sustainable Development in mountain areas.



Furthermore, we, the members of the Mountain Partnership commit to:

- engage the international community to help address the challenges faced by mountain countries in achieving the 2030 Agenda for Sustainable Development, including addressing the impacts of climate change, biodiversity loss, land degradation and pollution;
- mobilize countries with mountainous territories to jointly advocate for their interaction in the UN multilateral processes, including following up on the implementation of upcoming major outcomes such as the Post-2020 Global Biodiversity Framework;
- establish, support, and strengthen existing cooperation mechanisms between mountain countries to increase targeted investments and impact that align with efforts to achieve the 2030 Agenda for Sustainable Development and to protect and improve the conservation of mountain ecosystems;
- promote cooperation among mountain countries on economy, social development, environment, culture, tourism, science and education, in line with the achievement of the SDGs;
- maintain the structure of the Mountain Partnership, avoiding the creation of additional bureaucracy, to continue to effectively advocate for mountain regions;
- contribute to implementing the UN Decade on Ecosystem Restoration 2021-2030, engaging in particular with UNEP and FAO as custodian agencies;
- support the ongoing efforts toward the establishment of globally binding instruments to combat plastic pollution;
- encourage efforts to address the underlying drivers of vulnerability to climate change, including poverty, marginalization, exclusion from social safety nets, and gender inequalities;
- ensure mountain women and Indigenous peoples' access to resources, including land, social protection and capacity building, to enable their economic autonomy and decision making;
- encourage education efforts to empower and enable children and youth to become change agents for sustainable mountain development;
- consider the outcomes of the 2021 UN Food Systems Summit and of the 10 principles of agroecology developed by FAO (2018) for the development of sustainable food systems in mountains;
- increase finance and private sector inclusion and contributions for climate change adaptation, water management, sustainable land management, ecosystem restoration, pollution prevention and disaster risk management in mountains;
- expand public and private investment in innovation, including, connectivity, e-mobility, digital and soft infrastructure in mountain areas, to reduce the digital gap with cities and make mountain areas more attractive to young people by supporting technological entrepreneurship;
- enhance capacity building, knowledge transfer, research, monitoring, and data access on mountain and cryosphere issues at local, national, regional and international levels, including associated Indigenous knowledge and sustainable customary practices, while creating synergies with the efforts of other organizations and initiatives; and
- implement the priorities of the Sendai Framework for Disaster Risk Reduction 2015-2030 to enhance the resilience of mountain communities and build their capacity to anticipate, cope with and recover from disaster.

To support these commitments, we request the Mountain Partnership Secretariat, inter alia, to:

- engage and support Mountain Partnership members in international advocacy processes for mountains where appropriate and necessary;
- enhance the visibility of the actions of the Mountain Partnership and its members through communication and awareness-raising campaigns, as stipulated in the Mountain Partnership Advocacy Strategy 2022-2025, to increase support in different areas and at different scales;
- engage and support Mountain Partnership members in the observance and follow-up of key outcomes of the IYM 2022;
- ensure that Mountain Partnership members' efforts, impacts and results on sustainable mountain development are considered by the global political agenda and shared in relevant fora and platforms and processes to impact; and
- up-scale initiatives and projects, as appropriate, in support of the sustainability and resilience of mountain communities and ecosystems, including support to sustainable and resilient mountain food systems.



# हेलंग आंदोलन: जल-जंगल-जमीन-जीविका के अंतर्संबंधों के लिए लड़ता-जूझता पहाड़

जीत सिंह

ब्रिटिश राज के दौरान से ही उत्तराखण्ड का समाज जंगल और आजीविका के अंतर्संबंधों को बचाने और मजबूत करने के लिए आवाज बुलंद करता आ रहा है। अंग्रेजों द्वारा उनीसवीं शताब्दी से ही वनों पर नियंत्रण बढ़ा दिया गया था, लेकिन 1902 में औपनिवेशिक सरकार ने वनों का वर्गीकरण कर वनों से स्थानीय लोगों के सामाजिक, आर्थिक एवं सांस्कृतिक अधिकार खत्म कर दिये गये थे। इस आदेश के बेहतर क्रियान्वयन के लिए वर्ष 1911 से 1917 तक वन बंदोबस्त किया गया। इस निर्णय के प्रतिकार में पूरे कुमायूँ क्षेत्र में बड़ा जन.आंदोलन हुआ। इसी के परिणामस्वरूप अंग्रेज सरकार को फॉरेस्ट ग्रीवेंस कमेटी का गठन करना पड़ा और इस कमेटी की संस्तुति पर ही वन पंचायत व्यवस्था को लागू करना पड़ा। इसके अलावा टिहरी गढ़वाल तथा उत्तरकाशी में भी समय-समय पर टिहरी रियासत तथा औपनिवेशिक सरकार के खिलाफ वनों के दुरुपयोग तथा स्थानीय लोगों के हक-हकूकों के लिए बुलंद आवाजें उठती रहीं। 1970 के दशक में एक बार पूरा पर्वतीय क्षेत्र तब चर्चा में आया जब स्थानीय पर्यावरण और आजीविका की कीमत पर वनों का व्यापारिक कटान का भारी विरोध हुआ। इस विरोध को चिपको आंदोलन के नाम से जाना जाता है। इसके अलावा छीनो-झपटो, मैती आंदोलन तथा रक्षा सूत्र जैसे तमाम आंदोलनों की जननी यह उत्तराखण्ड की भूमि रही है।

**चिपको आंदोलन की जमीनी कहानी कार्यकर्ताओं की जुबानी सुनने के लिए नीचे दिए लिंक पर क्लिक करें।**



<https://www.facebook.com/Sadbhavana.net/videos/724671428798699>

पिछले कुछ दशकों में बड़े इन्फ्रास्ट्रक्चर प्रोजेक्ट जैसे जल विद्युत परियोजना, रोड़, बिजली लाईन आदि के कारण वनों का बड़ी मात्रा में कटान एवं भू-उपयोग बदला गया है। केन्द्रीय पर्यावरण मंत्रालय की वेबसाईट पर दर्ज आंकणों के हिसाब से अब तक वन संरक्षण अधिनियम के तहत पूरे राज्य में 67,748.74 है० वन भूमि गैर वन उपयोग के लिए हस्तांतरित की जा चुकी है। बड़े स्तर पर हुए इन वन भूमि हस्तांतरण ने कई गांवों के वनों पर निर्भरता को बदला है। कई क्षेत्रों में समय-समय पर प्रोजेक्ट कार्यदायी एजेंसियों और ग्रामीणों के बीच वनों पर अधिकार और उसके उपयोग के लिए वाद-विवाद होता रहता है। अमूमन प्रदेश में हर इन्फ्रास्ट्रक्चर प्रोजेक्ट के आस-पास के लोग वनों को लेकर प्रोजेक्ट कार्यदायी एजेंसियों से मतभेद रखते हैं। हालांकि अधिकतर विरोध का दायरा बहुत छोटा होता है और गांव से बाहर के लोग इनमें नहीं जुड़ पाते हैं। ऐसा ही एक विरोध चमोली जनपद के हेलंग गांव में भी था। इस गांव की महिलायें और विष्णुगाड़ जल-विद्युत परियोजना की कार्यदायी संस्था टिहरी हाईड्रो डेवलेपमेंट कॉर्पोरेशन के बीच गांव के समीप पंचायती वन के उपयोग को लेकर विवाद था। यह वन भूमि मूल रूप से वन पंचायत की थी जिसे प्रोजेक्ट कार्यदायी एजेंसी ने अपने मलवे के निपटान के लिए अधिग्रहित किया। गांव वालों का कहना था कि इस वन भूमि से वे पीढ़ियों से अपने पशुओं के लिए चारा प्राप्त करते हैं, और वे किसी भी हालात में इस वन भूमि का दूसरा उपयोग नहीं होने देंगे।

15 जुलाई 2022 को हेलंग गांव की महिलाओं और टिहरी हाईड्रो डेवलेपमेंट कॉर्पोरेशन के बीच चली आ रही खींच-तान ने नया मोड़ लिया जब कार्यदायी एजेंसी के निर्देश पर सी०आई०एस०एफ० के कुछ जवानों ने हेलंग की तीन महिलाओं को विवादित वन भूमि से चारा घास काटने के कारण हिरासत में ले लिया। यह घटना उत्तराखण्ड में पर्यावरण के साथ सह-अस्तित्व की भवना को प्रदर्शित करने वाले लोक उत्सव हरेला के ठीक एक दिन पहले हुआ। वरिष्ठ पत्रकार राजीव लोचन शाह इस घटना का जिक्र करते हुए लिखते हैं-



हरेले से एक दिन पूर्व, 15 जुलाई को जोशीमठ; जनपद चमोली के निकट हेलंग गाँव की मन्दोदरी देवी और उनकी तीन साथी जंगल से घास लेकर घर लौट रहे थे। पहाड़ का यह एक सामान्य दृश्य है। मगर उस रोज मोटर सड़क पर उन्हें उत्तराखंड पुलिस और विष्णुगाड़ पीपलकोटी परियोजना में तैनात औद्योगिक सुरक्षा बल के लगभग एक दर्जन जवानों ने घेर लिया। उनके साथ बदसलूकी की गई, उनकी घास छीन ली गई और उन्हें घण्टों थाने में बिठाये रखा गया। उनसे पानी के लिये भी नहीं पूछा गया। इन घसियारियों (घास काटने वाली महिलायें) के साथ डेढ़-दो साल की एक बच्ची भी थी। बाद में शराब पीकर शान्ति भंग करने के आरोप में इन लोगों का चालान कर उन्हें छोड़ दिया गया।

घटना की पृष्ठभूमि यह है कि विष्णुगाड़ पीपलकोटी परियोजना बनाने वाली कम्पनी टिहरी हाइड्रो डेवलपमेंट कॉरपोरेशन की नजर हेलंग के चारागाह पर है, जहाँ वह अपनी निर्माणाधीन सुरंग का मलबा फेंकना चाहती है। इसके लिये उसने चमोली के जिला प्रशासन को अपने प्रभाव में लेकर यह दिखाने की कोशिश की है कि वहाँ पर खेल का मैदान बनाने के लिये यह मलबा डाला जा रहा है। मन्दोदरी देवी और हेलंग की महिलायें इस बात का विरोध कर रही हैं। नियमानुसार भी गौचर और पनघट की जमीनों पर किसी तरह का विकास कार्य नहीं किया जा सकता।

उत्तराखंड में घट रही ऐसी अन्य अनेक घटनाओं की तरह यह घटना भी आयी गयी हो जाती। लगातार विस्तार पा रहे मुख्यधारा के मीडिया, जिसमें अब जगह-जगह कुकुरमुत्तों की तरह उग आये ब्लॉग भी शामिल हैं, का ध्यान सरकारी विज्ञप्तियों पर ही केन्द्रित रहता है, जनता के दुःख-कष्टों पर नहीं। मगर सोशल मीडिया पर एक वीडियो वायरल हो गया, जिसमें उनका घास का गठुर छीनने की कोशिश करते पुलिस वालों से बहस करती मन्दोदरी देवी और उनके साथ की एक रोती हुई घसियारिन का दृश्य था। यह वीडियो जहाँ-जहाँ पहुँचा, संवेदनशील लोगों में गुस्से की लहर फैल गई।

**उत्तराखण्ड पुलिस अधिनियम 2007 अन्तर्गत अपराध का संयोजन**

बुक संख्या 150 जनपद - चमोली क्र.सं. 9912

श्री/श्रीमती/सुश्री..... पुत्र/पुत्री/पत्नी.....

निवासी/निवासिनी..... जिला.....

आगमन किये जाने का स्थान..... दिनांक.....

आप द्वारा उक्त स्थान/समय/स्थान/पर उत्तराखण्ड पुलिस अधिनियम 2007 के अन्तर्गत निम्नलिखित धारा का उल्लंघन किया गया है। जो दण्डनीय है।

कृपया कारण बताएं कि क्यों न आपके विरुद्ध उक्त अपराध के लिए दण्डात्मक कार्यवाही की जाये। साथ ही स्पष्ट करें कि क्या आपको उक्त अपराध स्वीकार/अस्वीकार है? क्या इसके लिए माननीय न्यायालय में प्रतिवाद करेंगे/नहीं करेंगे।

मुझे उक्त अपराध स्वीकार है तथा इसके लिए माननीय न्यायालय में प्रतिवाद नहीं करूंगा और उक्त अपराध के लिए निर्धारित शमन शुल्क ( रुपये..... ) स्वीकृत से देने को तैयार हूँ।

हस्ताक्षर ( आरोपित पक्ष )

उत्तराखण्ड पुलिस अधिनियम 2007 के धारा 83(2) द्वारा प्रदत्त अधिकारों का प्रयोग करते हुए उपरोक्त अपराध के लिए निर्धारित शुल्क ₹..... स्वकीरोक्ति पूरी नकद वसूल कर संयोजित किया गया।

वसूला गया शुल्क शमन शुल्क

1. अंकों में.....

2. शब्दों में.....

हस्ताक्षर आरोपित पक्ष

पूरा पता.....

शमतकर्ता के हस्ताक्षर

नाम.....

पद नाम.....

क्षेत्र का नाम.....

## हेलंग एकजुटता मंच

सोशल मीडिया पर वायरल हुए एक छोटे से वीडियो ने संवेदनशील लोगों को झकझोरा, कई लोगों का मानना है कि हेलंग की यह घटना उत्तराखण्ड की अस्मिता पर एक प्रहार है। जंगलों से चारे के लिए घास तथा ईंधन के लिए लकड़ियां लाना पहाड़ की जिंदगी का एक अहम हिस्सा है। इन कामों में खासतौर पर महिलायें शामिल होती हैं। यही कारण है कि नवम्बर 2021 में उत्तराखण्ड सरकार ने घसियारी कल्याण योजना का शुभारंभ किया था। इस योजना का उद्घाटन खुद केन्द्रीय गृह मंत्री श्री अमित शाह तथा प्रदेश के मुख्यमंत्री श्री पुष्कर सिंह धामी ने किया था। पिछले कुछ वर्षों में भी कई घटनायें घटित हुईं लेकिन उन घटनाओं का प्रतिकार करने के लिए सामूहिक और प्रदेश स्तरीय दबाव नहीं बन पाया। लेकिन यह घटना हाल ही में सम्पादित हुई 45 दिवसीय उत्तराखण्ड राष्ट्रीय सद्भावना यात्रा के तुरंत बाद घटी थी। इस यात्रा में प्रदेश के बहुत सामाजिक और पर्यावरणीय कार्यकर्ताओं, विचारकों और संगठनों ने हिस्सा लिया था। इस यात्रा के दौरान उत्तराखण्ड के लगभग सभी जनपदों से होते हुए तकरीबन 4500 किमी का रास्ता तय किया गया। 200 से अधिक छोटी-बड़ी बैठकें और लगभग 10 हजार लोगों से सीधा संपर्क साधा गया था। यात्रा में उत्तराखण्ड के स्थानीय मुद्दों पर चर्चा की गई। इस यात्रा में राज्य के तमाम सामाजिक एवं पर्यावरणीय कार्यकर्ताओं, विचारकों और नेताओं ने खुल कर हिस्सा लिया। 8 मई से 21 जून 2022 तक चली इस यात्रा के अंत में प्रसपर मानवीय सद्भावना तथा प्रकृति और मानव के बीच सद्भावना के विचार को जीवंत रखने के लिए एक सद्भावना कार्य संचालन समिति का गठन किया गया था।

15 जुलाई 2022 को हेलंग में हुई घटना का उत्तराखण्ड सद्भावना यात्रा से जुड़े लोगों ने प्रतिकार तो किया ही लेकिन उसे व्यापक रूप देने का भी निर्णय लिया गया। इस घटना के ठीक 7 दिन बाद 22 जुलाई 2022 को उत्तराखण्ड सद्भावना संचालन समिति ने एक बैठक आयोजित की। इस बैठक में तमाम अन्य सामाजिक कार्यकर्ताओं को भी आमंत्रित किया गया। इस बैठक में निर्णय लिया गया कि मंदोधरी देवी तथा उसके दो साथियों के साथ हुई बद्सलूकी के विरोध में 24 जुलाई 2022 को हेलंग कूच का आह्वान किया जाय। इस बैठक में लिये गये अन्य निर्णय निम्नलिखित हैं।

1. हेलंग की घटना पर तथा वहाँ के संघर्ष के साथ एकजुटता का संकल्प दोहराया गया
2. इस पूरे प्रयास को सामूहिक नेतृत्व में पूरा करने का संकल्प दोहराया गया, तथा इसे हेलंग एकजुटता मंच कहा जायेगा
3. हेलंग एकजुटता मंच पूर्णतः शांति और अनुशासन के साथ हेलंग पहुँच कर स्थानीय संघर्ष को अपना समर्थन देगा तथा उस संघर्ष के साथ एकजुटता व्यक्त करेगा यदि पुलिस या प्रसाशन द्वारा रास्ते में रोका गया तो शांति पूर्ण तरीके से शोशल मीडिया के माध्यम से अपनी बात कहेंगे।
4. भविष्य के कार्यक्रम संबंधित घोषणा मंच से करने के बजाय कार्यक्रम समाप्ति के बाद प्रेस के माध्यम से कहा जायेगा, भविष्य के कार्यक्रम के लिए सीनियर साथी प्रदेश भर में साथियों के साथ आमराय बनाने की कोशिश करेंगे
5. जो साथी व संगठन हेलंग नहीं पहुंच पा रहे हैं वो अपनी अपनी जगह से हेलंग के समर्थन में अपनी अपनी जगह पर कार्यक्रम करेंगे, इसके तहत ज्ञापन देना, प्रदर्शन एवं शोशल मीडिया संबंधित कार्यक्रम हो सकते हैं

## हेलंग कूच-

24 अगस्त को प्रदेश भर से लोग हेलंग पहुँचे। उन्होंने वहाँ जुलूस निकाला और सभा की। सभा को मन्दोदरी देवी ने भी सम्बोधित किया। उनका आत्मविश्वास देखने लायक था। सभा में आसपास के इलाके की अनेक महिला जन प्रतिनिधि भी शामिल थीं। हेलंग में ही सरकार से निम्नलिखित माँग की गई कि

1. महिलाओं से घास छीनने, उन्हें डेढ़-दो साल की बच्ची सहित हिरासत में रखने वाले CISF व पुलिस कर्मियों को निलम्बित कर उनके खिलाफ वैधानिक कार्रवाही की जाये।
2. उत्पीड़ित महिलाओं के खिलाफ अभियान चलाने वाले चमोली के जिलाधिकारी हिमांशु खुराना को उनके पद से हटाया जाये तथा उनके पूर्वाग्रह को देखते हुए उन्हें भविष्य में किसी सार्वजनिक पद पर नियुक्ति न दी जाये।
3. वन पंचायत नियमावली तथा वनाधिकार कानून का उल्लंघन कर दी गई वन पंचायत की गैरकानूनी स्वीकृति को रद्द किया जाये और इसके आधार पर पेड़ काटने वालों के खिलाफ वैधानिक कार्रवाही की जाये।
4. टीएचडीसी के विरुद्ध नदी में मलबा डालने और पेड़ काटने के खिलाफ मुकदमा दर्ज कर वैधानिक कार्रवाही की जाये। टीएचडीसी व अन्य परियोजना निर्माता कम्पनियों के कामों की जनता की भागीदारी के साथ अनुश्रवण की व्यवस्था की जाये।
5. हेलंग प्रकरण की उच्च न्यायालय के किसी सेवारत अथवा सेवानिवृत्त न्यायाधीश से जाँच करवायी जाये।

गांधीवादी एक्टिविस्ट और विचारक भुवन पाठक लिखते हैं कि “हेलंग में आयोजित सभा विविधता और समग्रता का अद्भुत संगम थी। स्थानीय साथियों व समुदाय ने कोई कसर नहीं छोड़ी तो आन्दोलन के समर्थन में दिल्ली, रामनगर, देहरादून, उधमसिंह नगर, भवाली, रामगढ़, अल्मोड़ा, बेरीनाग, बागेश्वर, गरूड़, द्वाराहाट, सल्ट, गैरसैण, धूमाकोट, श्रीनगर, गुप्त काशी समेत चमोली जनपद के नेता, कार्यकर्ताओं ने भागीदारी की। स्थानीय महिला मंगल दलों की उपस्थिति उत्साह जनक थी। महिलाओं ने दमदार तरीके से जल, जंगल और जमीन के साथ अपने रिश्ते की पैरवी की और कंपनी और सरकारी दमन को ललकार लगायी। इसके अलावा पूरे प्रदेश में अल्मोड़ा, देहरादून, रामनगर, नैनीताल व पिथौरागढ़ में साथियों ने अपने अपने ढंग से एकजुटता और समर्थन का प्रदर्शन किया। इस मायने में यह एकजुटता बहुत महत्वपूर्ण रही सभी साथियों को अभिनंदन और आने वाले दिनों के कड़े संघर्ष की शुभकामनायें”।



मंच से जुड़े लोग जो इस दिन हेलंग नहीं पहुंच पाये उन्होंने अपने-अपने क्षेत्रों में धरना-प्रदर्शन आदि आयोजित किया। देहरादून के गांधी पार्क में राज्यभर के दर्जनों सामाजिक संगठनों ने विरोध-प्रदर्शन किया गया। इस प्रदर्शन में जन विरोधी भू-कानूनों तथा विकास के नाम पर अंधाधुंध पेड़ों के कटान का भी प्रतिकार किया गया।

### प्रदेश व्यापी प्रदर्शन

22 जुलाई 2022 को हेलंग में आयोजित सफल बैठक और विरोध के बाद हेलंग एकजुटता मंच के सदस्यों ने तय किया कि यह घटना उत्तराखण्ड की अस्मिता और सम्मान के विरुद्ध है इसलिए प्रदेश के अलग-अलग स्थानों से भी इसका प्रतिकार कर सरकार को ज्ञापन सौंपा जाना चाहिए। इसी उद्देश्य के साथ तय हुआ कि 1 अगस्त 2022 को मंच से जुड़े सभी लोग अपने-अपने क्षेत्रों में जिला मुख्यालय, मंडल मुख्यालय, तहसील आदि पर विरोध दर्ज कर सरकार से हेलंग में तय किये गये मांगों पर कार्यवाही करने के लिए ज्ञापन सौंपेंगे। इस बीच सरकार के कुछ अधिकारियों ने 26 जुलाई को हेलंग में मंदोधरी देवी के घर जाकर उनसे बात की।

1 अगस्त को जोशीमठ, कर्णप्रयाग, श्रीनगर गढ़वाल, न्यू टिहरी, उत्तरकाशी, मंसूरी, देहरादून, सतपुली, रामनगर, रूद्रपुर, भवाली, भीमताल, चौखुटा, कोकीलबना, बड़ेत, धूमाकोट, सल्ट, भिकियासैण, अल्मोड़ा, थलीसैण, गरूड़, बागेश्वर, मुनस्यारी, पिथौरागढ़, टनकपुर, चंपावत, थराली, मिदनापुर दिनेशपुर, नैनीताल जिला मुख्यालय, शामा, बागेश्वर गोपेश्वर, पोखरी, पौड़ी सहित उत्तराखंड के लगभग पैंतीस स्थानों पर, ग्राम स्तर से लेकर कमिश्नरी स्तर तक, हेलंग एकजुटता मंच की ओर से धरना-प्रदर्शन किये गये और अधिकारियों को उक्त मांगों को लेकर ज्ञापन दिये गये। अभी सरकार ने इन मांगों पर ध्यान नहीं दिया है। अलबत्ता मुख्यमंत्री ने इस घटना की जाँच गढ़वाल मंडल के आयुक्त को सौंपी है। 15 जुलाई को हुई घटना में पुलिस ने एक 2 साल की बच्ची को भी महिलाओं के साथ थाने ले जाया गया। हेलंग मंच के सदस्यों ने यह मुद्दा भी मुखरता से उठाया था। इस दौरान महिला आयोग और बाल अधिकार संरक्षण आयोग ने भी हेलंग की घटना का संज्ञान लिया और चमोली पुलिस अधीक्षक से जवाब मांगा है।



इस दौरान हेलंग एकजुटता मंच के कई सदस्यों ने कई तरीकों से अपनी बात को साझा किया। सोशल मीडिया, डिजिटल मीटिंग्स, वीडियो और फोटोग्राफ के अलावा कलाकारों ने कविताओं और गीतों के माध्यम से भी अपनी आवाज उठाई। मंच के एक सदस्य ने नीचे लिखी एक कविता के माध्यम से महिलाओं और पहाड़ का दर्द उकेरने की कोशिश की।

उस दिन वो लुटी क्या घास ही थी  
 मजबूर पहाड़ी आस भी थी  
 जल जंगल छीना, घर भी छीना  
 फिर भी न तेरी यह प्यास बुझी।  
 उस दिन जो लुटी क्या घास वो थी  
 नेता तेरा, अफसर तेरा, पूंजी का यह अस्त्र भी तेरा  
 झुकी दबी पीठों की पर ही निर्लज्ज तेरी तलवार तनी  
 उस दिन जो लुटी क्या घास ही थी  
 रामपुर तिराहे पर वो किसके खूं की धार बही  
 पापी की गोली बता दुष्ट किसके सीने के पार हुई  
 किसके हिस्से आई कुर्बानी, दावत किसने हर बार करी  
 उस दिन वो लुटी क्या घास ही थी  
 मजबूर पहाड़ी आस भी थी  
 वाह रे लुटेरे, पहाड़ी को भगाने वाली तूने क्या शातिर चाल चली  
 निकल पहाड़ी, भाग यहाँ से,  
 छीन घास तूने माता से तूने अपने दिल की बात कही  
 उस दिन जो लुटी क्या घास ही थी  
 मजबूर पहाड़ी आस भी थी

संभलो, जागो, उठ जाओ वरना... तेरी जमीन, लेकर जंगल और पानी संग, दूजे मालिक के पास चली उत्तराखण्ड में महिलाओं के मुद्दों पर संघर्षरत महिला मंच शुरू से ही हेलंग एकजुटता मंच के साथ खड़ा था। महिला मंच ने अलग-अलग स्थानों पर हेलंग की घटना का प्रतिकार किया। इसके अलावा महिला मंच और प्रदेश के अन्य महिला संगठनों ने निर्णय लिया कि वे 9 अगस्त 2022 को भारत छोड़ो दिवस के असवर पर एक बार फिर हेलंग कूच करेंगे। महिला मंच की ओर से जारी बयान में कहा गया कि "हालाँकि महिला मंच इस मुद्दे के साथ शुरू से ही जुड़ा है और महिला मंच का मानना है कि यह मुद्दा सिर्फ THDC के मलबा फेंकने तक ही नहीं है बल्कि महिला अस्मिता से भी जुड़ा है। उत्तराखंड के अंदर ही उत्तराखंड की महिलाओं के साथ इस तरह के अभद्र व्यवहार का महिला मंच पुरजोर विरोध करता है"।

महिला मंच के सदस्यों ने माना कि हेलंग की घटना उत्तराखंड की समस्त महिलाओं का अपमान है। उत्तराखंड की लड़ाई महिलाओं ने जल, जंगल, जमीन पर अपने अधिकारों के लिए लड़ी थी और आज उसी उत्तराखंड में उन्हीं महिलाओं को उनके अधिकारों से बेदखल किया जा रहा है। 9 अगस्त 2022 के लिए महिला मंच ने भू-माफिया उत्तराखण्ड छोड़ो के नारे के साथ हेलंग कूच करने को आह्वान किया। 9 अगस्त 2022 के प्रदर्शन से पहले महिला मंच तथा हेलंग एकजुटता मंच ने नीचे दिया गया पर्चा तैयार किया जिसे बृहद स्तर पर वितरित किया गया।





## जल जंगल जमीन हमारी । नहीं सहेंगे धौंस तुम्हारी।।

साथियों, 15 जुलाई को राज्य के दूरस्थ पहाड़ी हिस्से में एक घसियारी महिला के साथ जो हुआ उसकी एक झलक ने सम्पूर्ण राज्य में आक्रोश की एक लहर पैदा कर दी । एक महिला.. घास लाती हुई .. और पुलिस की छीना झपटी ..! एक महिला जो इस राज्य की बुनियाद में रही है । राज्य आंदोलन की पहली पंक्ति में । जिसने राज्य आंदोलन में सत्ता के दमन को सबसे विभत्स रूप में झोला । एक महिला जो इस पहाड़ को आज भी अपनी पीठ पर उठाए है ।.. घास वही पहाड़ है जिसे महिलाओं के श्रम ने अभी भी बचाए रखा है जिंदा रखा है । पुलिस वही पुलिस है जिसके दमन के बीच से राज्य को जीत कर लाए थे ।

इस दृश्य ने हर आम ओ खास को शहरी ग्रामीण को नौजवान वृद्ध को भीतर से झकझोरा । और इसने लोगों को पुनः राज्य आंदोलन के बुनियादी सवाल को हल करने की लड़ाई को सतह पर ला दिया ।

इसी का परिणाम था कि 15 तारीख को हुई घटना का जो वीडियो 16 को प्रसारित हुआ उसके महज दो दिन बाद 19 को पूरे राज्य में लोगों ने घटना के विरोध में प्रदर्शन किए ज्ञापन दिए और इसके 4 दिन बाद ही 24 जुलाई को राज्य के तमाम हिस्सों से लोग हेलंग में जुटे । । अगस्त को पूरे राज्य में 13 जिलों में 35 स्थानों पर पांच सूत्री मांगों को लेकर धरना प्रदर्शन व ज्ञापन दिए गए।

हेलंग की इस घटना से न सिर्फ जल जंगल जमीन के बुनियादी सवाल को सतह ला दिया है वरन राज्य आंदोलन की बिखरी हुई शक्तियों को भी एकजुट कर एक मंच पर लाने का काम किया है । अब इस मंच के साथ साथ हम आप सबकी जिम्मेदारी है कि इन सवालों के हल होने तक इस संघर्ष को जारी रखें । राज्य बनने के बाद सरकारों ने नए नए कानूनों के जरिये उत्तराखण्ड की जमीनों की लूट को आसान किया है । आज हालत यह है कि उत्तराखण्ड के भू कानून का लाभ उठाते हुए कोई भी कितनी भी भूमि खरीद सकता है जिससे उत्तराखण्ड भू माफियाओं की खुली लूट का चारागाह बन गया है । पहले से ही बहुत अल्प कृषि भूमि वाले इस राज्य में कृषि भूमि की इस लूट से भविष्य में यहां के निवासियों के सम्मुख इसका संकट पैदा हो जाएगा ।

72 प्रतिशत वन भूमि वाले इस राज्य में वन कानूनों का शिकंजा इतना कड़ा है कि लोगों के पास अपने ही खेत में अपने उगाए लगाए पेड़ों पर भी अधिकार नहीं है । अपने आस पास जंगल होते हुए भी लोग लकड़ी के लिए बाहर से आई लकड़ी पर निर्भर हैं अपने जंगलों पर अधिकार की सौ साल पुरानी लड़ाई में अंग्रेजों से लड़ कर जो अधिकार हमने हासिल किए थे आज वे भी गंवा दिए हैं । वन अधिकार कानून 2006 के माध्यम से लोगो के परंपरागत वन हकों को मान्यता देने के बजाय सरकार वन पंचायतों में मिले हकों को भी हड़पने के लिए आतुर है।

उत्तराखण्ड को ऊर्जा प्रदेश बनाने के नाम पर हमारे पानी को सरकारों ने पहले ही बड़ी बड़ी कम्पनियों को बेच दिया है । अपनी नदियों पर घाटों पर भी जनता का अधिकार खत्म कर दिया गया है । बहुत सी जगहों पर लोग शवदाह करने के लिए भी कम्पनियों की कृपा पर निर्भर हो गए हैं । इन कम्पनियों से मिलने वाला रोजगार भी नितांत अस्थायी किस्म का है। अपना जल जंगल जमीन गंवा कर, हक अधिकार के बदले, महज कुछ सालों के लिए चंद लोगों को कुछ हजार रुपये में बंधुआ बना कर यह लूट को जायज बनाने का षड्यंत्र के सिवा कुछ नहीं है ।

इसके कारण पहाड़ जगह जगह से कमजोर कर दिए गए हैं । जगह जगह भू धंसाव व भू स्खलन से लोगो के घर मकानों में दरारें आ गयी हैं । यह सब पूरे पहाड़ में एक बड़े विस्थापन का कारण बन रहा है । जबकि आपदाओं से ग्रस्त लोग पहले ही वर्षों से विस्थापन की प्रतीक्षा में हैं ।

अपनी जमीन अपने जंगल और अपने पानी पर जनता के बुनियादी अधिकार की जो मांग उत्तराखण्ड आंदोलन के बाद भी पूरी नहीं हुई वह लड़ाई यह आंदोलन इन बुनियादी सवालों के साथ हल करे इसलिए जरूरी है । हेलंग की घसियारी महिला की लड़ाई महज एक चरागाह बचाने की, महज एक कम्पनी के हाथों अपने हक अधिकार लुटने लूटे जाने की लड़ाई नहीं है इसकी बुनियाद में यही जल जंगल जमीन पर जनता के हक अधिकार के मूल सवाल हैं । इसलिए हेलंग की इस लड़ाई को इसकी मंजिल तक पहुंचना जरूरी है ।

पांच सूत्री तात्कालिक मांगों के साथ इस लड़ाई को पहाड़ के उत्तराखण्ड के जन जन तक ले जाए जाने की जरूरत है । उत्तराखण्ड राज्य के भविष्य व अस्तित्व के लिए यह संघर्ष जरूरी है ।

आइये बेहतर उत्तराखण्ड के लिए..जनता के उत्तराखण्ड के लिए.. महिलाओं के सम्मान के लिए...पहाड़ के अस्तित्व व अस्मिता के लिए..इस संघर्ष को मजबूत करें । शहीदों के सपनों को मंजिल तक पहुंचाने के लिए इस लड़ाई को इसके मुकाम तक ले जाने के लिए एकजुट हों !

9 अगस्त भारत छोड़ो दिवस के अवसर पर  
महिलाओं के हेलंग कूच के लिए जारी ...

हेलंग एकजुटता मंच

हेलंग एकजुटता मंच द्वारा जल जंगल जमीन पर जनता के अधिकार की लड़ाई के लिए समस्त उत्तराखण्ड में वितरण हेतु जारी .....

राजीव लोचन शाह इस पूरे घटनाक्रम का जिक्र करते हुए लिखते हैं कि “पचास साल पहले गौरादेवी ने अपनी साथियों के साथ रेणी गाँव में चिपको आन्दोलन का बिगुल फूँका था। गौरादेवी को अब देश का बच्चा-बच्चा जानता है। हेलंग रेणी से बहुत दूर नहीं है। आज हेलंग से मन्दादरी देवी और उनकी साथियों ने कम्पनी राज और माफिया राज के खिलाफ शंखनाद किया है। उत्तराखंड के लोग धीरे-धीरे उनके साथ जुट रहे हैं। चिपको आन्दोलन का नया दौर शुरू हो रहा है”। हेलंग में 15 जुलाई 2022 को कुछ महिलाओं के साथ हुई बदसलूकी के प्रतिकार को व्यापक समर्थन मिला। प्रदेश भर के सामाजिक एवं पर्यावरणीय नेताओं, कार्यकर्ताओं और विचारकों ने इस अभियान के जरिये उत्तराखण्ड की अस्मिता का प्रश्न खड़ा किया। इस मंच से जुड़े लोगों और उनके द्वारा लगभग एक माह से अधिक समय में बार-बार पर्वतीय जीवन और प्रकृति के साथ सह-अस्तित्व को केन्द्र में रखा। बार-बार इन लोगों द्वारा संदेश दिया गया कि पहाड़ के जल, जंगल और जमीन पर किसी भी प्रकार का प्रहार सीधा पहाड़ के जन पर प्रहार है।





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