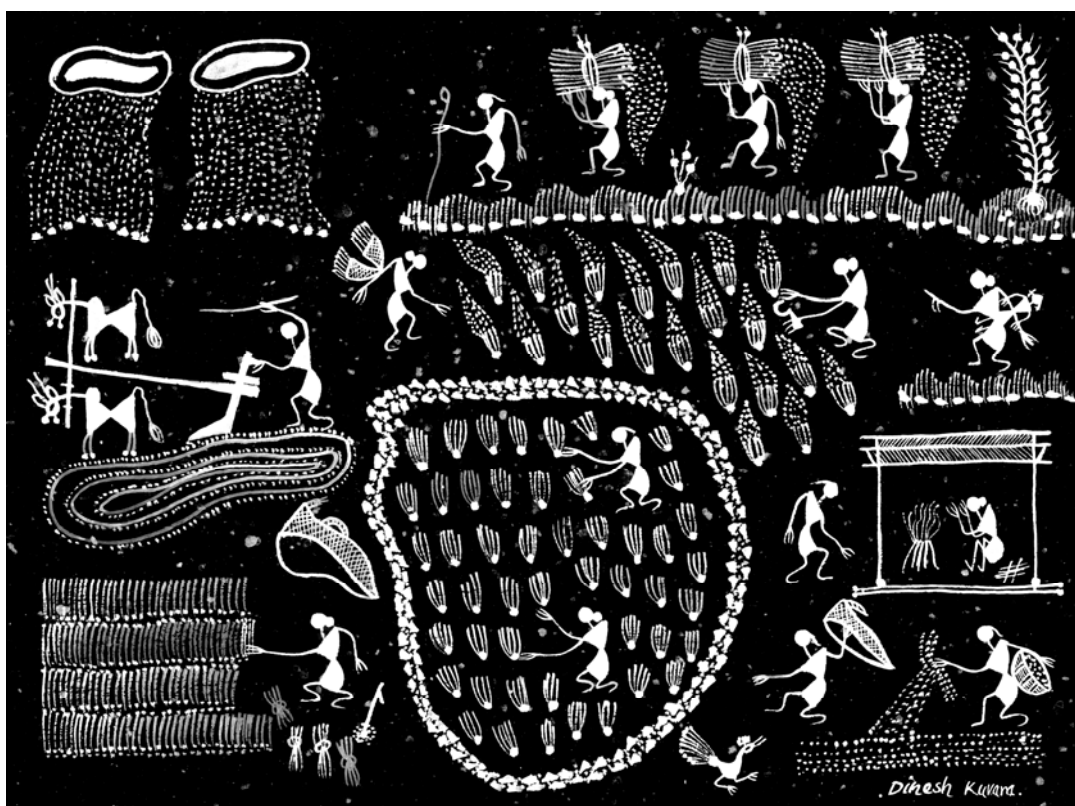


Report of the National Consultation on The Impact of Climate Change on Livelihood and Support Systems

16th & 17th February 2010
Bio Medical Ethics Centre, Mumbai



Community Development Trust
Integrated Rural Development of the Weaker Sections of India
Society for Participatory Action and Reflection
&
Vikas Adhyayan Kendra

Concept Note

Climate is understood as the average state of the weather- the temperature, rainfall, amount of sunlight, frost, etc. Climate Change then refers to the phenomenon of changes in the Earth's climate over time. However, the term is not understood so simply now. In recent usage climate change refers to changes in the modern climate with reference to global warming. These climatic changes have been identified as those of increase in the average temperature of the Earth's surface and oceans; widespread changes in the extreme temperature with decreasing frequency of cold days, cold nights and frost, while hot days and nights have become more frequent; increase in the atmospheric water vapour; increase in the global average sea level; reduction in the mountain glaciers and snow cover; change in the trends of precipitation; more intense and longer droughts and/ or intense tropical cyclone activity

Global warming of the Earth's surface along with oceans in tandem with natural occurrences such as continental drift, volcanoes, ocean currents, the Earth's tilt, comets and meteorites, variations in solar radiation and the resultant green house gasses can be held as the primary cause of global warming of our '**environmental space**'¹. The changes are occurring in our environmental space. It is interesting to locate the entire discussion within the concept on an 'environmental space' since this also refers to the total amount of pollution, non renewable resource, agricultural land and forests that can be used globally without impinging on access by future generations to the same resource. Emissions are being released by all member countries – some less and some more. Once the gasses have been released, our environmental space is a much warmer place.

The complex predictions regarding the impacts of the change in climate on different aspects of livelihood has already been stated. However, this is not an event that is going to occur; it is a phenomenon that is being witnessed in various parts of India already. The changes that have taken place have affected the natural and human systems independently or in combination with other determinants to alter the productivity, diversity and functions of many eco systems and livelihoods. Yet these impacts are not uniform.

The poor are most vulnerable to climate risks. Heavy dependence on ecosystem services has placed their welfare and survival at the mercy of environmental conditions. As the availability and quality of natural resources decline due to natural and human induced pressures, so does the viability and capacities and resources at their disposal to respond to stress such as droughts and floods, their ability to meet basic needs and move out of poverty is constrained. Climate change therefore, threatens to exacerbate existing vulnerabilities and further entrench development disparities. Those with the least suffer the most.

Agricultural communities represent the core of the Indian economy and agriculture provides food and livelihood to most of its population. Any change in the climate would result in

¹ Cited in Banerjee, Souparna and Pratap Pandey (Ed.) (2009), "**Climate Change – Politics and Facts**", Centre for Science and Environment, New Delhi.

Environmental Space can be defined as 'the amount of any particular resource a commodity, or an individual can consume without threatening the continued availability of that resource, assuming that everyone in the World is entitled to an equal share.

hampering food security, lower (or increase) crop yields, change the type of crops grown and more importantly threaten the entire means of a livelihood. At another level, climate change affects the inputs that go into agriculture too. Hence, soil fertility, irrigation facilities, floods and droughts would also be seen to change, hence, those that depend on agriculture and among those that depend on it for self sustenance would be left even more vulnerable and at high risk.

The changes in climate have resulted in a rise in sea levels and therefore the **fishermen's community** for their survival and existence. This has vast implications on those dependent on fishing – low fish yields, change in the varieties of fish catch, exposure to erratic weather patterns, etc. The population living on the coast is left highly vulnerable to disasters in the process.

Water resources will be hit hard too as erratic rainfall patterns affect the hydrological structure of the rivers and the plains. Flash floods, intensive cyclones and droughts will be seen to occur more often now. This in turn affects those dependent on agriculture and forests too.

In India a large population of people lives in or near the **forests** and on **mountains**. They depend on the forest and hill resources for their livelihoods. Any changes in the climate has affected the bio diversity of the area which affects the forest produce, livelihoods, a loss of income and a loss of fuel and building materials too.

Increased extraction of **natural resources** such as minerals associated with increased industrialisation has led to increased mining activities and a resultant pollution of the rivers and adjoining areas. Thus, affecting the communities who are otherwise living in these areas, practicing a livelihood, etc.

Because not all communities are equally endowed with social and environmental assets, disaster vulnerabilities differ from socio economic group to group. Therefore, certain sections of the population are particularly vulnerable to natural hazards. It is essential that one looks at key areas of ecosystems, water, food, health and settlements in order to tackle the impacts of climate related disasters.

Objectives of the Consultation

Climate changes most apparent in the erratic weather conditions such as floods, droughts, cyclones, etc are affecting the levels of people at work. The most visible impact of climate change is upon the poorest and most vulnerable, including indigenous people and backward communities. The picture is complicated further by the paradigm of development adopted – the existence of poverty, corporatisation of agriculture, deforestation for SEZs, absence of an appropriate land tenure system, increased momentum towards bio fuels. Existing public policies and institutions are not ready to meet new needs and challenges in cooperation with the existing ones.

There is therefore, a need to re-examine the current development discourse at various levels with reference to climate change and also in the localised context. Therefore it is important we look at technological deployment that contributes to climate change, financial instruments that support

environmentally sustainable expansion, emphasis on productivity, etc and move towards a **people centered alternatives** in the era of climate change.

What are the people centric options for surviving the changing climate?

- Impact assessment of the situation at hand
- The collective should be able to chalk out a plan to generate large scale awareness amongst the communities and move towards capacity building
- A two pronged approach to mitigation and adaptation needs to be examined. However, it is not a question of just adaptation as a means to survive. One needs to examine how the current focus on mitigation can be integrated into adaptation at all levels of planning and implementation in the local, national, regional and global contexts.
- Examine how people at the grassroots could be engaged in adapting to the changes and exploring alternatives for environmentally sustainable livelihood practices that are appropriate to their local realities
- It would be useful to look into indigenous coping strategies and traditional solutions in the process of developing contextually appropriate adaptation responses so that one is able to integrate them into broader climate change framework.
- It is imperative that specific research and developmental activities to support sustainable solutions and responses to these effects (such as crop productivity patterns, developing variants that would adapt easily to the ongoing and projected climate change variations) is also an urgent requirement.
- The collective should also think about how we can develop an advocacy agenda at the global level too so as to form pressure groups to influence policy decisions
- Hence, the need for a regular consultation and dialogue with the stakeholders on climate change and the development paradigm adopted.

Assessing the increasing vulnerabilities in livelihood

Vikas Adhyayan Kendra² has always responded to the emerging socio political context and issues which often calls for critical review of its activities to make the intervention relevant to the emerging context. Hence, the decision to work on a manual on climate change and its effect on the vulnerable groups in India. We wanted to understand these changes in the process of putting together a document that compiles instances of observed impact on livelihood and support systems due to changes in the climate in the various parts of the country. We are joined in this effort by **Integrated Rural Development of the Weaker Sections of India (IRDWSI)**³,

² Vikas Adhyayan Kendra (VAK) is a secular voluntary organization established in 1981 to be an interface between Scholars, Academics and Social Activists; to initiate the process of social awakening through critical reflection and alternative discourse thereby contributing to strengthening people's struggles towards the goal of a just and more humane social order. VAK believes that people are the subjects and makers of history. Their creative energies are expressed in their day-to-day activities as well as in their movements. These valuable experiences often, however, remain undiscovered and diffused. A crucial need is to crystallize and consolidate these experiences so as to lead towards a critical social theory. Hence, it seeks to contribute to this process through the facilitation of a continuous dialogue and interaction between theoretical research and living experience of the people. (Please do have a look at our website for more information on the organization- www.vakindia.org)

³ **Integrated Rural Development of Weaker Sections in India** is an NGO working with tribals and other vulnerable communities in Koraput and Malkangiri Districts of Orissa. Their aim is "to accompany the poor on a long term basis to

Koraput (Orissa), **Community Development Trust**, Mumbai⁴ (Maharashtra) and **Society for Participatory Action and Reflection (SPAR)**⁵, Kolkata (West Bengal).

For the document we collaborated with various organizations in Uttar Pradesh, Uttaranchal, Bihar, West Bengal, Karnataka, Kerala, Madhya Pradesh, Tamil Nadu, Andhra Pradesh, Assam and Orissa to be able to study the changes occurring in the regions along the coastlines, forests, tribal communities and in the agricultural areas. These case studies are an attempt to document changes in the climate and its impact on the vulnerable groups in India. The document attempts to put together various affected groups and communities in India and how they are coping with changes in the climate so as to be able to generate their livelihood and existence. These case studies reflect how a particular group/ community or a means of livelihood has got affected and the coping strategies that they have employed or whether they have been able to cut down on emissions and some of the effects.

The case studies have documented the following aspects:

- A livelihood pattern for the vulnerable group/ community in question
- The changes that have occurred in their livelihood patterns
- A discussion on the reasons for these changes as understood by them.
- Our assessment of why these changes have occurred.
- If there have been any - the adaptation techniques that have been utilized by the communities so far and also how they came to adopt these changes.
- In some cases, the communities have adopted coping strategies- a description of the increased vulnerabilities therefore.
- Learning for the future and practical tips for the rest of the community

Proceedings of the Consultation

The deliberations at the consultation were spread over two days. Presentations on the case studies compiled were taken up on the first day and half of the second day. This was followed by a plenary on “*Strategising Options for Adaptation and Mitigation*” by a board of panel members. Participants were split into groups according to the eco systems they had researched

fulfill the programmes of capacity building, community organization, empowerment and sustainable development through a systematically designed process of human potential development, natural resource development and the development of people made resources."

⁴ **Community Development Trust, Asha Kendra** situated in Puntamba (Maharashtra) was established in 1982 and works with grass-roots organizations by providing them with data and advocacy material related to their work. Major areas of concern since 1982 have been: Dalit and Adivasis, Gender Rights, Livelihood Security, Alternative Health, Environment and Ecology.

⁵ **Society for Participatory Action and Reflection [SPAR]**, a value based, pro-people NGO, is committed to the empowerment of the poor and marginalised. SPAR presently facilitates people's organizations and accompanies them in their development endeavour in 494 villages in Orissa, Jharkhand, Bihar and West Bengal. Their mission is to ensure social, economic, political and cultural empowerment of Scheduled caste, scheduled tribes, women, children, other backward castes and minority community in West Bengal, Jharkhand and Orissa directly and through partnership cooperation with other development actors.

on for discussing people centered alternatives for the collective to work ahead on. The consultation ended with a sharing from the group discussions and paving a road map for the work ahead.

The consultation began with a brief introduction of the participants from various parts of the country. All of these participants had been involved in collecting data and formulating case studies on the impacts of climate change on livelihoods practiced in rural India.



Dr. T. Jayaraman⁶ addressed the participants in his key note speech by introducing climate change as a challenge for Science in terms of its application, its technology and its scientific understanding. The overarching perspectives to looking at the issue of climate change are – production systems, nature and environment, and social systems. One has to also look at climate policy and how factors such as vulnerability and adaptation, climate science, and mitigation are linked to it and therefore to each other.

The essential problem lies in the fact that development activities have to be carried out in a carbon constrained world. Again, then development of industry and agriculture means cap on carbon emissions and other finite resources like water. It also means examining issues of consumption, well being and the socio political fabric of the community which is getting affected and which is vulnerable.

One has to actually look at the whole debate of carbon emissions in terms of fair share versus actual share too, i.e. according to per capita. Availability of carbon space on the basis of nation state needs to be seriously questioned. It is more important to discuss equity rather than nation state in this regard.

There is an essential linkage between vulnerabilities and coping. They both should involve building “real” adaptive capacities which means essential human development, reinforcing infrastructure by the State, ensuring social infrastructure mechanisms, and favourable macro economic conditions.

The challenge for sustainable development is a challenge for livelihood. Sustainable development till now is only a local concept despite all the global theories. In the era of climate change a large scale strategy is required and it is important that linkages with national and global economies be made. The concept of sustainable development and the strategies that emerge out of it should necessarily account for social and economic transformation. The challenge for livelihood then is to consider the present and the future, where and when and which way do we

⁶ Prof. T. Jayaraman received his basic training in Physics culminating into a Ph. D. in Theoretical Physics from University of Madras in 1984. Subsequently he has worked in India and outside for almost 20 years in theoretical physics. He has had long standing interest in the issues of science and society and has written and spoken on such matters since his student days. Special areas of interest include nuclear policy, science and technology policy and political economy, issues in innovation theory and practice and more recently climate change. He has been closely associated with the People’s Science Movement since his student days. Prof. Jayaraman currently chairs the Centre for Science, Technology and Society at the School of Habitat Studies in Tata Institute of Social Sciences (TISS), Mumbai.

go. The challenge for livelihood also lies in changing environment (forest, water and bio diversity), changing natural conditions. New livelihoods instituted as a result should reduce dependence on agriculture and common property resources.

The concept of environmental poverty was also examined in the keynote speech. It was discussed in view of access to resources.

Presentation of Case Studies

The case studies presented were as follows. Brief details have been provided below:

❖ Himalayan Ecosystem

- Garser (Uttaranchal) – Himalaya Swaraj Abhiyan

❖ Forest Ecosystem

- Similiguda (Orissa) – Orissa Development Action Forum
- Chandil, Khunti, Khukhradih, & Bokaro (Jharkhand) – Vikas Adhyayan Kendra
- Kodagu District (Karnataka) – Coorg Organisation for Rural Development



❖ Coastal Ecosystem

- Poonthura (Kerala) – ADHWANA
- Satabhaya (Orissa) – Orissa Development Action Forum and Vikas Adhyayan Kendra
- Kanyakumari District (Tamil Nadu) – Vikas Adhyayan Kendra
- Vishakapatanam District (Andhra Pradesh) – Keya Acharya



❖ Delta Ecosystem

- Sunderbans (West Bengal) – Vikas Adhyayan Kendra

❖ River and Plains Ecosystem

- Saharanpur (Uttar Pradesh) – DISHA
- Barpeta District (Assam) - North Eastern Social Research Centre
- Bundelkhand region (Madhya Pradesh) – Vikas Samvad
- Darbhanga district (Bihar) – Mithila Gram Vikas Parishad

❖ Mining as an effect on the Ecosystem

- Chandil, Jadugoda, Bokaro (Jharkhand) – Vikas Adhyayan Kendra
- Bauxite Mining in Orissa – Vikas Adhyayan Kendra
- Impact of Mining in Goa – MAND Goa

❖ Instances of Adaptation

- Water Storage System in Tamil Nadu – Keya Acharya
- Natural Resource Management in Bundelkhand – Keya Acharya

Overview of the findings:

What's happening to the mountains?

- **Case in example of Garser in Uttaranchal**

- Pattern of rain and snowfall have changed –untimely; hence the nitrogen content brought into soil has changed
- Average temperatures have gone up – though this could be due to local reasons too
- Mining and collection of sand from the river beds has depleted the catchment area
- Local and traditional knowledge associated with weather forecasting fail to apply anymore as..how the elders put it “they cannot read the stars anymore”. This then affects the sowing, cultivation and harvest patterns
- Types of trees found in the forest have changed - Lingur, Mehul, Keraw and Timul were available in the forests and curries were prepared with them. Now these are rare.
- Trees with broad leaves are no longer found- hence, moisture absorption is low and grass growing underneath for cattle is also less
- Earlier forest areas were left to be rejuvenated for short periods- now that does not happen



The Forests – Changing the culture of our tribal people

- **Karnataka**

- Kodagu district is facing a crisis as increased deforestation and rise in temp. in the area have changed the essential nature of the forest – timber, herbs, water, farming lands
- Industrial effluents, cutting down of trees, and cultivation of the wrong trees have depleted the ground water levels, and the moisture in the soil

- **Orissa**

- Increase in temp in the area; less and erratic rainfall;
- Resulting in crop infestation, low quality of crops and vegetables grown; flowering of fruit trees have changed, herbs and NFTP has reduced;



- Mining activities in the forest areas has further changed weather and soil patterns in the area
- **Jharkhand**
 - Forest cover has reduced due to increase in temp; low water availability, deforestation, mining, etc
 - Change in the paddy cultivation in the forest
 - Traditional herbs are not found; affecting NTFP

The Coast of India

- **Orissa**
 - Rise in sea levels at Satabhaya. Added to that temperature of the area has increased thereby leading to the building up of more cyclone or tornado like storms
 - Both fisher folk and farmers have been affected by the ingression of the sea on their coast and erstwhile farming land
- **Tamil Nadu**
 - Nature of the coast in the area has changed – shrinking and change in the breeding ground of fish
 - Natural coastal erosion has been worsened by sand mining, collapse of sand dunes, etc
 - The fertile and abundant estuarine areas have got increasingly salinised
 - Sea walls, groynes and jetties have only increased the problem
- **Kerala**
 - Sea shore is disappearing as there is a rise in sea levels
 - Sea water temperatures have risen – change in the variety of fish found
- **Andhra Pradesh**
 - Dwindling fish catch, increasing trawling, over fishing, coastal industrialisation
 - Sea surge increase post tsunami, sea water ingress, destruction of mangroves, less rain during breeding season
 - Increased debt and poverty situation for the fisherfolk of Vishakapatnam district
- **Sunderbans**
 - Rise in river and sea water levels; increased salinity levels in the soil and river; 0.01°C rise in temp. levels;
 - 2 islands in the south have vanished –



Lohachara and Bedford

- Change in the paddy cultivation in the area; fish catch has reduced and many varieties are no longer seen
- Increases siltation in the rivers, thus embankments are constantly flooded
- Loss of the mangrove heritage of the region

Cultivation in the Plains

• Bundelkhand

- Collapse of classical water structures
- Case of beetle leaf producers; vegetable producers
- Inland fisher folk are being put at stake
- Historically a dry region, but the little rain that used to come is erratic now
- Impacts are being seen on livestock, migration is high, etc as local support system such as NREGA has failed



• Assam

- Recognized as a bio diversity hot spot and eco region – now with increasing deforestation- intense floods and droughts have become a common occurrence
- Cultivation used to be a sole occupation in various parts has now changed to more informal labour activities; production of paddy has been reduced; cropping seasons have reduced;
- Gradually a lot of agricultural land is being converted to laying brick kilns or water pump sets have further depleted the water levels

• Bihar

- Erratic rain patterns, increased moisture in the air and intense floods has affected the paddy cultivation in North Bihar
- The nature, duration of each season has changed and this has affected the sowing and harvesting patterns of paddy
- Socio cultural nature of the villages have changed
- Unscientific building of embankments have left many families stranded and further impoverished when agricultural fields are turned marshy or full of sand

• Uttar Pradesh

- Case of Saharanpur has been cited where erratic and insufficient rainfall, temperature fluctuations has led to a drop in the yield of Mangos and a change in the cash crops grown by farmers in the area to Litchi
- Agricultural labourers working in these orchards have also been affected as the one



steady source of employment has failed for them

Mining and Carbon Emissions

- **Orissa, Jharkhand and Goa**

- GHG emissions from Orissa make up as much as 1% of global emissions due to mining
- Pollution of rivers and streams due to red mud and ash pond overflows; depletion of water quality and fish catch and fish variety in the rivers such as Brhamanhi (Orissa); Damodar and Subarnekhya (Jharkhand) and Khandepar (Goa) – to name a few
- Depletion of forests in all the 3 states- more acute in Jharkhand – livelihoods of people dependant on forests is being threatened
- Habitat of animals in the forest area and fish in the water has been affected – thus affecting those dependant on inland fishing
- Erratic rainfall has further accentuated any chances of minimal cultivation that is possible in the areas now
- Health related stress is another area altogether.



Panel Discussion:

“Strategies and Planning: Paving the Way Ahead”

Panel members: William Stanley, Geetha Bhardwaj, Max Martin, and Rev. N. L. Karkare



At the end of the presentation of case studies and discussions ensuing from them, panel members a plenary session was held with William Stanley, Geetha Bhardwaj, Max Martin and Rev. N. L. Karkare as the panelist. The essential purpose of the panel was to tie in the findings from the case studies and guide the group discussions on the way ahead. The panelists offered strategies that could be adopted at the grass root level and for advocacy on the issue of climate change and its impact on livelihoods. The key discussions were as follows:

William Stanley:

- It is important not only to discuss the damages that have taken place, but also to look at what can be done in the future to reduce the risks and vulnerabilities involved and hence, reorganize development
- It is essential that the community be made to realize why the changes are occurring along with understanding natural disasters is not a result of only global warming but is also human induced

- The knowledge of early warning systems is disappearing. It is necessary that these systems and this knowledge be kept in place with the community and used as a part of the adaptation technique.
- There are issues with the government relief code in respect to resettlement and rehabilitation. It is old and no longer serves the context of today's situations. Hence, immediate relief and rehabilitation as a solution for adaptation is not correct as it does not talk about rehabilitating livelihoods
- It is important that capacity building of vulnerable communities be instituted and this should encompass traditional knowledge, disaster preparedness, immediate relief, rehabilitation of livelihoods, spread of knowledge systems from and to other eco systems, linking climate change to development models, etc
- It is important that a collective addresses issues in strengthening communities at the ground level and village democracy and governance.

Geetha N. Bhardwaj:

- Climate change is a local phenomenon and therefore is community led and oriented. It is important that documentation be done on a regular time frame thus being able to guide the resources available to the community.
- The community should be made to leverage with what is available with the State.
- CSOs could be channelized into establishing indicators for studying the changes and further channelizing the information. They should be made to act as watchdogs for monitoring the government and mobilizing for campaigns at the local, national and global level.
- It is important that knowledge flow in the local context is established for the sake of establishing adaptation strategies. *Bhoogyan* was given as an example where collection of information from the grassroots on adaptation or changes that are occurring are made available through mobiles, etc or people's voices through community radio
- It is equally important to document good practices
- Further documentation is required on climatic analysis of geo climatic zones, disaggregation of the impact of climate change, etc
- One also has to examine whether we are heightening the vulnerabilities of an already vulnerable population

Max Martin:

- A multi disciplinary understanding of climate change at the ground level needs to be done – hence, better research, communication and action
- Some of the issues one needs to look at are – to what extent climate change associated with the environmental changes and disasters risk contribute to migration, which sometimes becomes permanent, contributions of developmental activities and pressure of a globalised economy, do spatial practices of the state further localize and marginalize these people, do people react to their environment or adapt to it or flee from it?, how does culture of the livelihoods change, migration of the people leads to secondary disasters, etc
- It is important that notes and ideas are shared, and this can be best done if we listen to people, and work around it for short term and long term strategies.

Reverend N. L. Karkare:

- It is important to see the impact of climate change and erratic weather conditions on the most vulnerable population of the Dalits and Adivasis.
- Being Dali or Adivasi means one is landless, or an agricultural labourer and the sufferings are further enhanced due to climate change
- They are dependant not only on land owners but also the vagaries of nature
- However, on many instances they have the support of traditional knowledge which has come out of ages of suffering and being in the position that they have been forced into. It is this knowledge system that should be used to empower them to be able to mitigate the changes taking place.

Report of the Group Discussions held

Participants at the workshop were divided into groups according to ecosystems that have been discussed and documented to further discuss their findings, examine the commonalities in different areas in a similar ecosystem and move towards evolving a strategy for adaptation and bringing about a change. The discussions were as follows:

Rivers and Plains ecosystem



- Development should be inclusive, Development for all
- Participatory approach is very important
- There should be proper analysis of laws and rules. We should challenge such projects which may cause destruction to environment and ecology
- Gram Sambha and Gram Panchayat should be involved at the time of planning for their development
- There should be water management instead of

Flood Management. Idea of interlinking rivers is wrong, it should be defeated

- Traditional systems should be encouraged
- Review of National Action Plan in terms of society is necessary
- Balances use of fertilizers should be carried out (At Initial Statage) and Organic Farming
- Capacity Building and Community Mobilization on the issue of climate change is required

Coastal ecosystem

- Understanding existing risk involved, coping mechanism and traditional knowledge, interact with scientific experts, sharing of experiences of different regions and community vigil groups
- Interface with the governance systems, participation in decision making process

- Ensuring traditional livelihoods as and when a change has occurred
- Mitigation – promote sustainable technologies, renewable energy, appropriate technology and bring about a green revolution in industries
- Per capita emissions involve an inbuilt injustice in the method- how do the rich be made responsible for their consumption – this should be taken at a campaign level and a class discussion be initiated in this regard
- Environmental governance at the community level is required for the creation of a governance system



Forest and Mining

- People’s resistance on the issue of their land, their forests and their common property resources being taken away is already there. This has to be further encouraged and strengthened
- Direct development interventions are man made which are intentionally for growth but in the implementation they affect the people who live there and depend on those resources
- In the forest areas, the situation of drought is only increasing and becoming worse. In the



drought prone areas the situation is different and people are adept at adapting to the changes. But this is not the situation in the forest areas and this is increasingly becoming a problem.

- The collective and the CSOs have to work together with the community to show and evolve workable alternatives to the problems that currently thrive. These alternatives should use local community skills and abilities

The Way Forward: Decisions emerging from the Consultation - A “people centric approach” to Adaptation and Mitigation

- **Research and Knowledge sharing**
 - Linking climate change to development issues
 - Establishing the indicators for change leading to further research
 - Mapping the existing and future vulnerabilities in various eco systems
 - Adopting a multidisciplinary approach to understanding the issue and looking for alternatives
 - Understanding and adopting the traditional early warning systems available in the local wisdom and knowledge system of the people

- **Networking**
 - Identification and networking with grassroots level organisations and activists who could identify and strengthen the people's movement towards a change
 - Dissemination of information
 - Act as a watchdog – monitoring the government and other decision making bodies
- **Capacity Building**
 - Raising awareness and reinforcing traditional wisdom and knowledge
 - Strengthening communication amongst the people; use of ICTs in the process could be encouraged
 - Strengthening community and village democracy and governance systems
 - Creation of an environmental governance at the community level
- **Advocacy and Campaign**
 - Rehabilitation of livelihoods
 - Advocacy for an alternative paradigm of growth and development
 - Leveraging the community with what is available for lobbying with the decision making bodies and the State

Tasks Groups Formed

❖ **Coastal Ecosystem**

- Mary John
- Max Martin
- Santosh Patnaik
- Reggie Gomes

❖ **Forest Ecosystem**

- Anirudhh Agnihotri
- William Stanley
- Pushpa Toppo
- Sailesh Chakravarty

❖ **Rivers and Plains Ecosystem**

- Sachin Jain
- DISHA, Saharanpur
- Rashinkar
- Narayanjee Choudhary

❖ **Mountain Ecosystem**

- Gita Bharali
- Himalaya Swaraj Abhiyaan

❖ **Communication and Coordination**

- Ajit Muricken
- Surabhi Sinha
- Geetha Bhardwaj
- Prabhakar
- William Stanley
- Sailesh Chakravarty

List of Participants
The Impact of Climate Change on Livelihood and Support System – Case Studies from India

The Impact of Climate Change on Livelihood and Support System – Case Studies from India – 16th and 17th February 2010						
Serial No.	Name of Participant	Organisation				Signature
			Address	Phone No.	E-mail ID	
1	Gita Bharati	North Eastern Social Research Centre	110, Kharghali Rd., Guwahati 7810 004 Assam	098540 79946	gitabharati09@gmail.com	
2	N. J. Choudhary	Mithila Gram Vikas Parishad	India Rest House, Nr. National Cinema, Darbhanga Bihar	099553 44811	mgvp91@gmail.com	
3	Satya Narayan Prasad	Nirmal Prakand Swarajeya Sabha	Village /Post Bhapalia Dist : Supaul (Bihar) 852 105	094316 69359	nirmalprakandswajyasabha@rediffmail.com	
4	R. N. Rashinkar	C.D.T. Asha Kendra, Puntamba	At: Naigaon, Tal: Shirampur, Dist: Ahemdnagar	092725 71990		
5	Bebitai Tupe	----- -----	At: Sawkhedganga, Tal: Vaijapur, Dist: Aurangabad	095616 19122		
6	Savita Jadhav	Lok Paraya Aurangabad	At: Awwalgaon, Tal: Vaijapur, Dist: Aurangabad	092737 01338		
7	Eknath Soma B	----- -----	At: Loni Khurd, Tal: Vaijapur, Dist: Aurangabad	095795 69094		
8	Durang Basu Malick	Vikas Adhyayan Kendra	Vikas Adhyayan Kendra , Malad West, Mumbai 64	099301 63127	yak.mumbai@gmail.com	
9	Prabhakar Nair	ICOR	St. Pius College, Goregaon West, Mumbai	022 2875 6953	prabhakar@usnl.net	
10	L Pankajakashan	Santhigram	Santhigram Kazhuvur PO., Pulluvila, Thiruvanthapuram	0471 2269780, 0471 6452511	santhigramkerala@gmail.com	
11	Dr. J. M. John	ADHWANA	Koodaram, Menakuam KZM,NM 695 582	0471 2705640	adhwana@rediffmail.com	
12	Keya Acharya	Journalist IPS	B122, Century park, 48, Richmond Road, Bangalore 560 025,	080 2559 4597	keya.acharya@gmail.com	
13	Bhanthidasan S.	ARULAGAM	KanyaKumari , Tamil Nadu	09843211772	director@arulagam.org	

14	Sailesh Chakravarty	SPAR	49/53, P K M Shah Rd., Kolkata 700 033	098300 21514	sailesh22@gmail.com	
15	Kelly Schut	Vikas Adhyayan Kendra	D-1 Shivdham, 62, Link Rd., Malad West, Mumbai 64	022 2882 2850	kelly_schut@yahoo.com	
16	William Stanley	IRDWSI	Semiliguda, Orissa 764 036	098491 20377	stanley111@gmail.com	
17	Pushpa Toppo	IIBA	CASS, Kasiadili	09798325588		
18	Sebasitian Rodrigues	Mand-GOA	31/A, Igree, Vaddo, Manna, siolim, Goa	09923336347	mandgoa@gmail.com	
19	Geetha Bhardwaj	One World South Asia	C-5 Qutab Institutional Area , New Delhi,	09810548262	geetha.bhardwaj@oneworld.net	
20	Sachin Jain	Vikas Samvad	F-7 / 226. 1 st Floor, Opp. Dhanvantri Complex Area Colony Shahpur, Bhopal	099777024847	india.sachinjain@gmail.com	
21	Firoz Ashraf	VAK	VAK Malad West, Mumbai	09323284889	ashrafin33@yahoo.com	
22	Santosh K	ODAF		09437010062		
23	Aniruddh Agnihotri	Disha Social , Saharanpur U.P.	Sultanpur , Chilkana , Saharanpur U.P.	09690187900	aniruddh.agnihotri@gmail.com	
24	Reggie Gomez	FCR	Forum for Child Rights (FCR) Mark Mansion F- 1, St. Augustine Vaddo, Santa Cruz, Goa 403 005	0972388377	reggiegomes@bsnl.in	
25	Max Martin		307 RMV Orchards, Seenappa Layout, New BEL Rd., RMV Stage II PO Bangalore 560 094	09845146718	maxmillanmartin@gmail.com	
26	NITI M	TISS	TISS, Deonar Mumbai	09920148120	neetimishra83@gmail.com	
27	T Jayaraman	TISS	TISS Deonar, Mumbai	09892222841	tjayaraman@gmail.com	
28	Surabhi Sinha	VAK	VAK Malad West, Mumbai	09820442955	surabhi_sinha@hotmail.com	
29	Suresh Shelke	VAK	----- -----	09869230298	-	
30	Ajit Muricken	VAK	----- -----	09821433729	-	

31	Dr. J. Mary John	ADHWANA	Koodaram, Menamkulam, Kazhakkootam TVM, Kerala 695 582	094479 71846	adhwana@rediffmail.com	
32	Sushovan Dhar	VAK	VAK , Malad West , Mumbai	094330 34134	dharsushovan@gmail.com	