

Workshop - II

Future Earth National Committee

Workshop: Program Strategy and Ideas

Date: 12 March, 2021

Time: 3 PM to 5:20 PM IST

Chair: Dr. M. N. Rajeevan

Moderator: Dr. Smriti Basnett

Attendees: Dr. Harini Nagendra, Dr. Ravi S Nanjundiah, Dr. Sandeep Tambe, Dr. Suresh Babu, Dr. Sunderrajan Krishnan, Dr. T R Shankar Raman, Dr. Vimal Mishra, Prof. S. K. Satheesh, Ms. Sruti Devendran, Ms. Anupama Nair

Regrets: Dr. Aditi Mukherji, Dr. Vandana Prasad

Meeting Purpose: To Discuss Program Strategies and Ideas, and Develop a Program by Future Earth National Committee in India

Part A: Detailed Minutes of the Meeting

Topic 1: Opening and Workshop Agenda

Dr. Smriti Basnett introduced the chair of the National Committee, and the multidisciplinary nature of the members of Future Earth-India, who are experts on climate, water, ecology, palaeosciences. A list of members is given in Appendix I. Dr Basnett gave an overview of the workshop agenda and highlighted the four themes of the Future Earth South Asia Office, which are clean air and energy, food security, water security and health sensitization associated with air and water pollution. Dr Basnett mentioned that few of the themes of the South Asia Office were covered in the first webinar series and that many countries in Asia and South Asia have different country-specific themes based on their working groups and country priority.

Meeting Agenda:

1. Introduction and Briefing, by Dr. Smriti Basnett.
2. Structure of Future Earth Philippines Program, by Ms. Anupama Nair.
3. Structure of Future Earth Taipei, by Dr. Jeffery Lee, Science Officer, National Committee-Taipei
4. Recap of the two-day Future Earth South Asia Webinar, by Ms. Sruti Devendran.
5. Discussion between NC members and invited guests: To Discuss Program Strategies and Ideas, and Develop a Program by Future Earth National Committee in India, chaired by Dr. M. N. Rajeevan.
6. Closing Remarks by Dr. M. N. Rajeevan and Future Earth South Asia.

Dr. M. N. Rajeevan, Chair of the Future Earth NC-India, also welcomed all participants to the meeting. He noted that the two-day webinar session prior to the workshop had been a successful event and opened the floor for discussion with regards to the way forward for Future Earth in India.

Topic 2: NC definition and NC model in Philippines

Structure of Future Earth National Committee and Programs

Anupama Nair gave an overview of Future Earth National Committees around the world. She described them as independently organized groups of professionals in sustainability science, representing Future Earth communities in their countries or local regions in the Future Earth global structure. These Committees are typically hosted by national science academies, national funding organizations or leading research universities or institutes. They also tend to work closely with the Global Secretariat Hub in their country or Regional Office in their region to coordinate the national programs and initiatives of Future Earth. Another point she noted was that Future Earth NCs try to be as diverse as possible, with representation from various sectors.

Anupama also presented the Future Earth Program in the Philippines. They received initial funding from the Department of Science and Technology of the Philippines for staff, and national and regional workshops, and are currently developing new proposals for further funding. They have multiple Clusters, headed by senior scientists and researchers on a volunteer basis, focusing on various Sustainable Development Goals. Various workshops have been organized by all Clusters, with plans to develop actionable projects with government and other stakeholders. She went over a few different themes that the clusters focus on, some of which include Marine and Coastal Ecosystems, Fresh Water Supply and Hydrologic Cycles, Terrestrial Ecosystem and Land System Change, etc.

Structure of Future Earth Taipei

Dr. CH Jeffery Lee explained the background and structure of Future Earth Taipei.

He began with an introduction to Future Earth, explaining that it derives from 4 global programmes: WCRP, DIVERSITAS, GLOBAL IGBP, and IHDP. Future Earth was established in 2013 and started operating in 2015. It has 10 Global Research Projects (GRPs) and 11 Knowledge-Action Networks (KANs). Currently, eight KANs are operational: Water-Energy-Food Nexus, Ocean, Natural Assets, Urban, Health, Finance and Economics, Systems of Sustainable Consumption and Production, and Emergent Risks and Extreme Events.

Dr. Lee said that Academia Sinica, which hosts and funds Future Earth Taipei, has 3 themes, Mathematics and Physical Sciences, Life Sciences, and Humanities and Social Sciences, which are useful for interdisciplinary and transdisciplinary research. Academia Sinica's mission is to promote sustainability science, and their strategy is to build domestic networks and link to international networks. Their tasks are to organize, and co-organize and participate in Future Earth events, sustainability science conferences, and capacity building programs.

He then explained the structure and functioning of Future Earth Taipei, which comprises a National Committee, a Secretariat and 11 Working Groups. The current National Committee (2019-2021) consists of 31 members: 17 International Program Researchers, 6 Domestic Program Researchers, and 2 Stakeholders each from Citizen's Groups, Industry, Funding Agencies and Policymaking. All Committee members meet annually. A Standing Committee of nine National Committee members and a National Committee Chair are elected by all National Committee members biannually. The Chair then nominates an Executive Secretary from the National Committee, whose nomination must be approved by the Standing Committee members. The Standing Committee meets biannually.

Each Working Group (WG) of Future Earth Taipei includes one Advisor from the Standing Committee, one Coordinator appointed by the Standing Committee, and all the members of the WGs are invited by the Coordinator. Eight out of the eleven Working Groups focus on themes relevant to Future Earth's active KANs, and the remaining three are relevant to other initiatives of Future Earth (Early Career Research Network, Sustainability in the Digital Age, and NGOs). The WGs aim to build local networks of thematic sustainability research and participate in Future Earth's initiatives. All activities planned by the WGs need to be approved by the National Committee.

Topic 3: Recaps from the 2-day Webinar

Sruti Devendran presented a recap of all sessions of the two-day Future Earth South Asia webinar held on 11th and 12th March, the event that had concluded prior to the NC workshop.

Summary of the Keynote Talks:

1. Issue of 'Commons': Reflections from Village Commons and work done by the Foundation for Ecological Security (FES), presented by Mr. Jagdeesh Rao Puppala, Founder and Curator, FES:

Over 205 million acres of land in India are classified as commons, and nearly a third of India's population depends on these commons to meet various needs. Village commons continue to be highly degraded and places of poverty—this crisis has persisted since development models perceive commons as wastelands, and rural communities as being incapable of managing their own resources.

Issues that need to be addressed in this region are:

- Poverty, inequity and ecological health of commons
- Governance – Improving governance with local communities

FES addresses these issues through coordination and collaboration between various agencies and institutions. It also focuses on systems thinking, and using approaches that are distributive, pluralistic and regenerative.

2. Case study of Springshed Development at Soi Village (Arunachal Pradesh) by EB Project Nature, presented by Egam Bassar

The Himalayan mountain region is observing the drying up of many rivers and springs—the drying up of 734 springs which has led to water scarcity in villages of Arunachal Pradesh. Deforestation has found to be the main cause of decrease in the water table in the region.

The project began its operation by constructing 1000 Rain water harvesting structures with the aim of recharging the springshed in the region. Over the following years, a few visible outcomes have been improvement in springshed and the value-addition of forests (orchid gardens, eco-trail and eco-tourism, planting of indigenous multi-purpose trees). The project also saw significant impact on state policy: The Catchment Area Protection Act is being developed with an emphasis on springshed conservation, other water policies and water supply projects are also increasingly considering springshed management.

3. Water issues in Thar desert, presented by Kanupriya Harish, Executive Director, Jal Bhagirathi Foundation

Kanupriya Harish shed some light on the problems faced by communities in the Thar desert. In Rajasthan, 88.7% land area is prone to drought. 74% of villages face water quality problems. Water scarcity leads to no livelihood, no education and affects women and girl children disproportionately.

The institution focussed on education and women empowerment while supporting local communities to strengthen rural and traditional water conservation technology. The institution also facilitated community water harvesting and storage. Jal Bhagirathi Foundation has reached around 500 villages and has revived 20,000 water harvesting structures, and harvested 4000 million litres each year by working with the communities.

4. Issues related to waste management in the Himalayan region, presented by Priyadarshinee Shrestha, Team Lead, WWF-India, Kanchendzonga Landscape

The Zero Waste Himalaya project has been attempting to flip the narrative of the Himalayas as being clean and pristine, since waste management is becoming a major challenge in the region. There are higher costs involved and access issues for waste collection and management, accompanied by limited land availability and many policy gaps. A waste audit study conducted by them identified 97% of the total waste as plastic waste, 58.3% of which were multi-layered. In 2018, a campaign called the 'The Himalayan Cleanup Drive' was carried out, in which 12 mountain states participated. The project continues to conduct more studies on the waste situation in the region. They aim to advocate for extended producer responsibility, promote sustainable waste management pilot projects, and also advocate for relevant policy changes.

Summary of the Panel Discussion on Bridging the Gaps between Science, Policy and Practice:

1. **Real-World Problems are Multi-Faceted:** There is a need to develop holistic solutions which address all aspects and streams of a particular real-world problem. We need to think beyond the political causes of solutions to all problems, and look at their social and scientific aspects.
2. **Importance of 'Boundary Organizations' and 'Catalysts':** Currently there are not enough structures that inform policymakers about technological interventions. Communication is vital to bridge the gap between science, policy and practice, and to connect various spheres of knowledge and synthesize information from them. The path of research to policy becomes effective if it comes through a practitioner's perspective. Boundary organizations and 'catalysts' who understand both perspectives are important to solve these complex issues.
3. **Understanding Tradeoffs through Collaboration:** Collaboration between different stakeholders is important in the context of problem solving. All stakeholders need to comprehend crucial trade-offs. Symbiotic relationships between academicians and policy makers need to be established.
4. **Research Focus on Local Issues:** In India, there is a lack of institutions that look at the local issues, but most of them focus on the global issues. Funding support is required to do more research and look at the local problems. One would also need a policy to mandate this, at a national level. Both the basic science research to develop understanding of the subject, and science that solves real-life problems is needed. It is important to find a suitable balance between these two areas.

Summary of the session talks:

1. **Sustainable Agro-Ecology in the Indian Himalayan Region (IHR): Experiences, Challenges and Solutions:** In this region, currently there is a loss of various crop varieties. Even though many superfoods such as quinoa have come up, it is still reductionist in approach as they don't address the issues such as the lack of seed banks, community participation, and consumer awareness. There is a presence of gender inequality among the communities, and there is a need to amplify the voices of women and build networks of solidarity through community participation and safeguarding common resources.
2. **The Air We Breathe, The Water We Drink: Health Risks associated with Air and Water Pollution:** There are around 79,16,000 premature deaths in Asia due to air pollution. Air pollution affects the central nervous system, cardiovascular system and causes diabetes. 90% of the air pollution

comes from energy, agriculture and transport sectors. Around 16% of India's groundwater is over-exploited, and arsenic is one of the major contaminants. Exposure to arsenic can result in clinical manifestations including cancer and keratosis. In India, 22 out of 35 states are endemic to fluorosis. Fluorosis affects the Gastro-intestinal tract and the urogenital system.

- 3. Turning Challenges into Opportunities: Working the Water-Energy-Food Nexus:** In this session, the speakers talked about "healthy plate", and how a meal balanced in fruits and vegetables is central to the idea of nutrition. Also talked about India's agriculture, which accounts for 20-25% of total energy consumption, and the challenge here was that the energy transition talks elsewhere does not necessarily deal with agricultural energy transitions in India, and this needs to be addressed.

Topic 4. NC Discussion Conversation

Dr. Rajeevan once again welcomed all the NC National Committee members and mentioned that all work that will be taken up by the Future Earth NC- India should have a powerful and productive impact, and should be well known to the people. He opened the discussion with the following agenda:

- Set an agenda for the next two years
- Need to decide which major activities need to be taken up in the four themes, and the resources needed to accomplish them.
- Establish priorities of planned activities.
- Conduct awareness programs, educational programs, conferences, and workshops that could help publicize the activities of the Future Earth India.

Another initiative he suggested was to develop science-based assessment reports on the four themes to better inform better policies. He mentioned the need to have scientific evidence for any policy developed by the Indian government.

Mr. Sunderrajan highlighted the importance of 'boundary organizations' and 'catalysts' and mentioned that these roles are informally played by various actors such as universities in the country. He noted the presence of big gaps between latest sciences and policy outcomes. For example, in the case of the health impacts of air and water pollution, although there is enormous amounts of research taking place, it takes a lot of time for it to be translated to policy makers for their understanding and usage. He said that the role of catalysts and boundary organizations is extremely important in this regard, and that Future Earth could help in playing this role.

Dr. Sandeep Tambe suggested two ways that Future Earth could achieve quick results:

- Embed some of the learning and best practices from the projects and case studies in Rajasthan, Nagaland and Arunachal Pradesh presented in this webinar.
- Recourse and engage with ministerial and governmental contacts through Dr. Rajeevan's office to inform various policy makers in these four thematic areas, and to convene the best experts in the country to make policies, in a way that the demand comes from the policy makers.

He also suggested a third idea, which would take longer to achieve:

- Establish 'Synthesis Centres', by mobilizing the resources from some of the Indian Universities to get the state of the art knowledge from different aspects of the problems, and to present an assessment of the issues from different perspectives.

He mentioned that it was important to know the end-users of the policy documents and briefs in advance. End-users of the policy briefs would need to be involved in the process from the beginning of the policy creation. Policy briefs need to be co-produced by involving the scientists, practitioners and the ministries.

Dr. Suresh Babu noted the huge gap between research and policies related to air pollution and aerosols. He said that policy briefs could be developed on a monthly or quarterly basis and should reach the government. He also supported the idea of a synthesis centre which can collate the work done by various individual groups.

Dr. Vimal Mishra said that It was important to document reports or assessments for each of the sectors or themes under the platform of Future Earth. He said that there exists a huge gap due to the absence of a platform where one can access all the challenges or issues related to water pollution, air pollution etc and a platform where one can find scientific advances. For this, Mr. Mishra suggested having working groups for each of the themes comprising 4-5 people which includes practitioners, NGO's, policy makers and people who are working at the interface of science and policy. Each group could work on reports at par with the National Academy of Sciences. After these reports are done, then white papers on specific topics such as water conservation, water quality etc could be developed. These could be made available to everyone in such a way one can have one document which has all the collective information. Mr. Mishra also mentioned the need to have newsletters on a regular basis.

Dr. Harini Nagendra suggested planning some webinars on Biodiversity and Conservation, and drawing connections to climate change and its impacts on humans and the environment. She said that training materials for government officials and planners could help bridge the gap between academicians and planners. She said that there is a lot of opportunity to synergize the Knowledge Action Networks (KANs) and the FE Global Programmes, as some of these KANs reach out to the national organizations, and this would mean a wider audience for the webinars. Such collaborations would be useful to discuss global issues such as climate change, whether India meets the NDCs etc, and not so much of use to the local issues.

Dr. Harini Nagendra asked if any activities or events focusing on Biodiversity Conservation are being planned by Future Earth. She suggested planning some webinars on Biodiversity and Conservation, and drawing connections to climate change and its impacts on humans and the environment.

Dr. Rajeevan responded by noting that there is an opportunity within MOES to sponsor some research projects or assessment reports in the thematic areas of Biodiversity and Climate Change. For example, some reports about afforestation programs claim that over 30 million hectares of forests were restored in the last 10 years, but they have made little attempts to account for the deforestation. He noted that there is a gap between science and policy which accounts for the problem, which needs to be addressed.

Dr. T. R. Shankar Raman seconded Dr. Harini's remarks and enquiry, and added that connections between biodiversity conservation and climate change need to be emphasized. He also suggested organizing a webinar on biodiversity, climate change and its impacts on humans and forests.

Dr. Harini suggested making training materials for government officials and planners, in case that is within the scope of the Future Earth program, as they could help bridge the gap between academicians and planners.

Dr. Smriti Basnett advised appointing one or two coordinators from the National Committee, and representation from the NC in global Future Earth meetings, which are held once a month, is necessary. She said that the Future Earth South Asia office is focusing on developing policy briefs and knowledge briefs, and a similar program could be designed by the NC.

She said that August would be a good time for the second Webinar on biodiversity and climate change, and that the South Asia Office and Divecha Centre could help co-organize it along with the NC members. She suggested dividing the NC into different groups based on their areas of interest and expertise, to plan the upcoming webinar. Dr. Harini, Dr. Shankar and Dr. Sandeep could work on Forests and Biodiversity, and Dr. Vandana, Dr. Ravi and Dr. Suresh could work on Climate Science.

Dr. Ravi S. Nanjundiah commented that the webinar that had just been organised had many high quality sessions. He suggested concentrating on one or two areas for now. He noted that climate change has links with all themes, and he expressed his willingness to work on the themes and webinar related to Climate Change and Biodiversity.

Dr. Suresh Babu agreed with the points made by all NC members, and expressed his willingness to help coordinate the next webinar on Climate Change and Biodiversity as well. He observed that aerosol research lacks a multi-disciplinary approach, adding that recent findings regarding a reduction in anthropogenic black carbon are not scientifically sound. He also mentioned that aerosol pollution in India is seasonal and can be controlled if industrial activity is restricted during the season. He suggested developing monthly or quarterly policy briefs to be shared with the government. He also commented that knowledge synthesis does not happen in India, although individual groups producing important knowledge are present.

Dr. Rajeevan understood Dr. Suresh's comment, observing that although the problem of air pollution in India is seasonal, the farmers in Punjab and Haryana end up getting blamed for causing pollution by burning crops after harvest season. He said that if industries in the region are shut down or restricted for that particular season, the air would be cleaner, but since different states are governed by different governments, policymaking in this regard becomes difficult. He also noted that the effects of air pollution on human health, as portrayed by some reports, have made faulty conclusions based on empirical relationships mainly for European countries. This had led to an unnecessary scare.

Dr. Vimal Mishra suggested preparing certain documents or reports under each themes of Future Earth in India. He also noted a huge gap between science and policy, adding that there is no single platform

where information about challenges, issues and scientific advancements related to water security, air pollution, etc., can be accessed.

To make this possible, he suggested establishing Working Groups for each theme, comprising 4-5 people. Each working group can be expanded to include practitioners, NGO representatives, policy makers, etc., who work at the interface of science and policy. He said that each group could work on reports at par with those prepared by the National Academy of Sciences. After these reports are made, white papers on specific topics such as water conservation, water quality, etc., can be prepared. These could then be made available to all stakeholders and users. In this way, one document containing all collective information can be created. Dr. Mishra also suggested preparing newsletters, the frequency of which can be discussed, which focus on highlighting success stories and best practices from the field.

Dr. Rajeevan responded by saying that the National Academies do publish white papers and newsletters. He remarked that the newsletter on success stories is a good idea.

Dr. Sandeep Tambe noted the need to know, in advance, who would be using these policy documents and policy briefs, so that they can be tailored to their needs. This can be done by involving end-users of the policy briefs, from the beginning itself. He observed that many policy briefs are created in the country, but they have very little impact. He therefore suggested co-production of any such policy document.

Dr. Rajeevan remarked that this was an excellent suggestion.

Dr. Smriti Basnett said that the Future Earth South Asia office can act as a catalyst for the National Committee, remarking that the previous National Committee was inactive. She asked what next steps need to be taken. She informed that the idea of this webinar was to highlight various issues in the selected thematic areas in India. The immediate steps would be to have a webinar in biodiversity and climate change. She suggested taking inspiration from Future Earth Taipei, and to get more people involved in Future Earth's initiatives. The South Asia network has 8 other countries in its domain, which can be included in regional working groups. She gave the example of the theme of air pollution, which is a regional problem, and can be worked on as a regional issues, versus the example of climate change, which can be worked on as a national issue in terms of regulation.

She highlighted the need to increase resources in the South Asia Office, including the number of workforce. She reminded all attendees that the Philippines' Future Earth Program has around 35 people in it. She said that the National Committee could form a secretariat with few hired researchers who could act as treasurers, program coordinators and liaison officers to network with NC members, South Asia office but and also liaison with the other FE offices around the world.

Dr. Rajeevan asked whether the National Committee of India would have to work with other South Asian countries. He said that the 25 global networks and knowledge action groups could be expanded and built upon.

In reply, Dr. Smriti said that a representative from the National Committee needs to be elected to attend monthly meetings with the global NC network and FE Secretariat. She requested Dr. Harini to explain the Future Earth GRPs and KANs as Dr Harini is one of the members of the FE knowledge group.

Dr. Harini said that in the old version of the various global projects that got consolidated to create Future Earth, including DIVERSITAS, IGBP, Urbanization, etc., there are a few that have continued into Future Earth programs. There are also a few relatively new initiatives called Knowledge Action Networks (KANs), focused on different themes like Urban and Sustainable Consumption and Production. She remarked that some of these KANs reach out to national organizations. She added that there is a lot of opportunity to synergize the KANs and Future Earth's Global Programmes. She gave an example of organizing a webinar linked to the work of a KAN, which could result in a wider audience, and therefore strengthen the program. She noted that if the focus of the NC is on India-specific issues, then this collaboration would not be of great use. However, if global issues are also to be considered, for example, to see if India is meeting its Nationally Determined Contributions (NDCs), then having such collaborations would be beneficial.

Dr. Smriti informed that the focus of the National Committee should be their country's issues and that Future Earth is going through a transition where representatives from all National Committees would have a place in the FE Assembly to voice regional and national concerns in various Science Congress and International platforms. Sustainability research needs to be promoted through networking, between the National Committee to global Future Earth, and vice versa. She then proceeded to give a brief recap of the Taipei model, in which she described the major thematic clusters in their network. She said that the Future Earth Taipei Secretariat connects these clusters with the global Future Earth network.

Dr. Rajeevan noted that the scope of the National Committee could therefore be expanded.

Dr. Sunderrajan Krishnan observed that a lot of the action required is volunteer-driven. He suggested tapping into existing motivations and inspirations of the people, and within the National Committee, since there already exists a whole body of knowledge and activity that is happening. He agreed that support in terms of people and action will be needed in order to develop policy briefs and assessment reports. He also suggested increasing the visibility of the activities of the Future Earth. One way to do this could be to publish a joint statement, related to the latest in science, on certain fixed international annual days dedicated to various relevant environmental issues. These statements could be picked up and shared by the media, and 5-6 specific days in a year can be selected for this. Such an activity could also create a platform for the National Committee to meet, and to serve as a starting point for the national assessments. The National Committee could also get into a habit of meeting frequently.

Dr. Rajeevan agreed with Dr. Sunder's comments and suggestions and asked if a joint statement by the National Committee could be shared on World Environment Day in June, as that would help increase visibility. He asked if Future Earth South Asia has a social media presence.

Dr. Smriti Basnett answered that they do.

Dr. CH Jeffery Lee requested to share a few more details about the structure of Future Earth Taipei (given in the description in the previous section).

Concluding Remarks and Meeting Adjournment:

Dr. Rajeevan asked if there is scope to expand the National Committee to include a couple more stakeholders. He suggested having a core of 10 National Committee members. A representative from the Department of Science and Technology and from the general public could be useful. He then requested all National Committee members to develop a strategy to approach and involve new stakeholders, through his office, and also about what the National Committee can do over the next two years. He said that the National Committee could have up to 10 or 12 different Working Groups, and he suggested that local issues be considered first, followed by global issues at a later stage.

He said that a report from this meeting would be shared with all attendees, with identified action points for the next meeting. He approved the idea of sharing joint statements on particular dates of the year, and he also approved of the idea of making white papers of up to 10 pages. These could be good initiatives.

He asked whether the next webinar could be organized in July or August, and asked the National Committee members to decide whether it would be over one or two days, and to block the dates for the event. He also suggested working on ocean biodiversity, since there is a lot of potential to work on this with relation to climate change as well.

He added that a coordinator for the National Committee would need to be hired. He also suggested hiring 2 or 3 researchers who could work with all the National Committee members in their teams. He said that a position for a coordinator and a researcher/policy analyst could be opened. He remarked that the MOES is funding the Future Earth South Asia office as well, and that 2 more people in the office could be hired. Another option is to pool resources to hire new staff. This could be next in the plan of action.

Prof. S. K. Satheesh responded to Dr. Rajeevan's closing remarks by saying that the Future Earth South Asia office will support the National Committee, in addition to the funds provided by the MOES for all Future Earth activities. He said that a roadmap for the National Committee will need to be prepared, for which he suggested organizing another workshop. Each National Committee member could then meet and finalize a plan.

Dr. Smriti Basnett said that a meeting report will be prepared and circulated with all National Committee members and invited guests shortly, and that the South Asia Office will help convene the next meeting with the Chair and NC members in April. She thanked all National Committee members and invited guests for joining the meeting.

The meeting was closed at 5:20 PM.

Appendix I-

List of Future Earth National Committee Members, Guests and Attendees

Future Earth National Committee India:

Dr. M. N. Rajeevan, Chair, Future Earth National Committee, India, and Secretary, Ministry of Earth Sciences, Government of India

Dr. Aditi Mukherji, Principal Researcher, International Water Management Institute

Dr. Ravi S. Nanjundiah, Director, Indian Institute of Tropical Meteorology

Dr. S. Suresh Babu, Head, ATRF, Space Physics Lab, VSSC, Indian Space Research Organization

Dr. Sandeep Tambe, Professor, Indian Institute of Forest Management

Dr. Sunderrajan Krishnan, Executive Director, Indian Natural Resource Economics and Management Foundation

Dr. T. R. Shankar Raman, Scientist, Nature Conservation Foundation

Dr. Vandana Prasad, Director, Birbal Sahni Institute of Paleosciences

Invited Guests:

Dr. Harini Nagendra, Professor, Azim Premji University

Dr. Vimal Mishra, Associate Professor, Indian Institute of Technology – Gandhinagar

Dr. CH Jeffery Lee, Science Officer, Future Earth Taipei

Future Earth South Asia:

Prof. S. K. Satheesh, Director, Future Earth South Asia

Dr. Smriti Basnett, Co-Director, Future Earth South Asia

Ms. Anupama Nair, Program Coordinator, Future Earth South Asia

Ms. Sruti Devendran, Science Officer, Future Earth South Asia