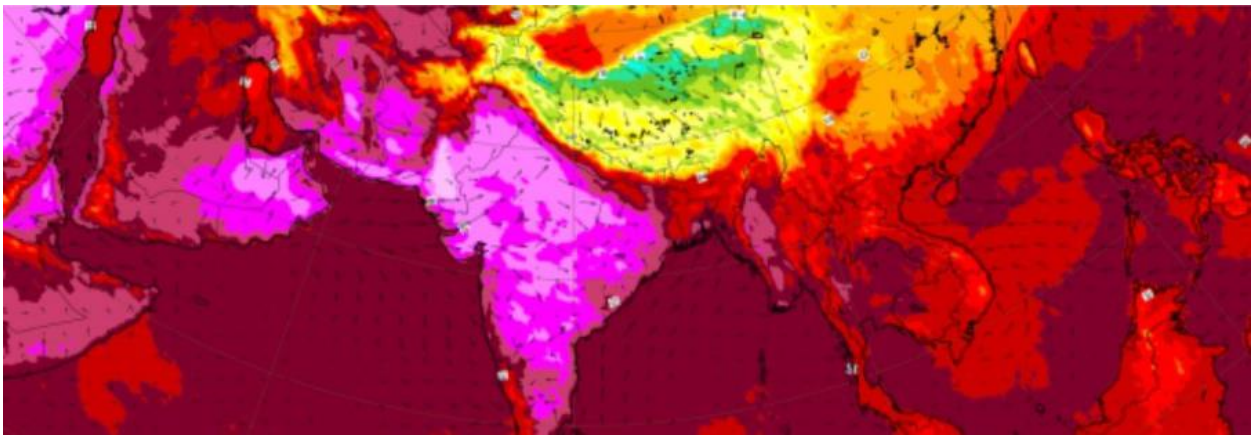
Summary Report



Three Days' Online Training Programme on

"Understanding Recurring Heatwaves: Risk, Impact and the Way Forward for Resilience"

Dates: July 26-28, 2022

Jointly Organized by

Centre for Environment, Climate Change and Sustainable Development (CECCSD),

IMPRI Impact and Policy Research Institute, New Delhi

&

National Institute of Disaster Management (NIDM),

Ministry of Home Affairs, Government of India

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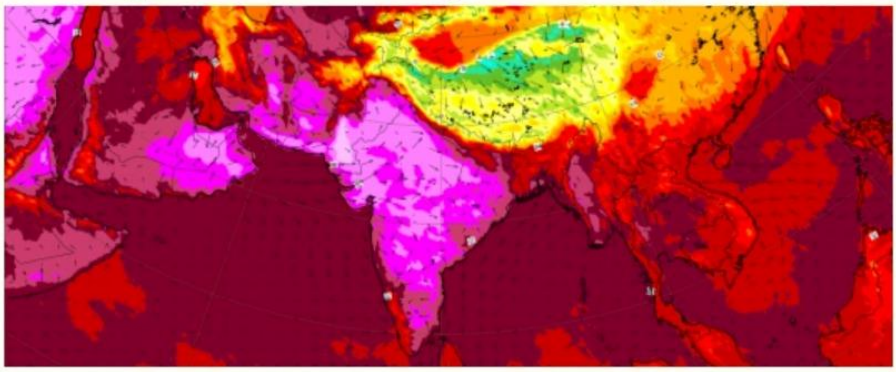
National Institute of Disaster Management (NIDM), Ministry of Home Affairs (MHA), Government of India, and,
Center for Environment, Climate Change and Sustainable Development (CECCSD),
IMPRI Impact and Policy Research Institute, New Delhi
invite you to

A 3-day Online Certificate Training Programme on

Understanding Recurring Heatwaves
Risk, Impact and the Way Forward for Resilience



July 26 to 28, 2022 | 11:00 AM - 1:30 PM IST
Zoom and YouTube Live (on the NIDM Channel)

CONVENORS

Prof Anil K. Gupta
Head ECDRM, NIDM

Dr Soumyadip Chattopadhyay
Visiting Senior Fellow, IMPRI

Dr Simi Mehta
CEO and Editorial Director, IMPRI

PATRON

Shri Taj Hassan, *IPS*,
Executive Director,
National Institute of Disaster Management (NIDM)

MODERATOR AND CONVENOR

Shri Tikender Singh Panwar
Former Deputy Mayor, Shimla;
Visiting Senior Fellow, IMPRI

Registration Fee: Free
Click here for registration: https://training.nidm.gov.in/
Certificates will be provided on 80% attendance
www.impriindia.com | www.nidm.gov.in

Organising Team & Presentations:
Fatima Amin and Dr Kopal Verma, NIDM;
Utkarsh Dwivedi and Diya Goswami, IMPRI

YouTube Live Links:

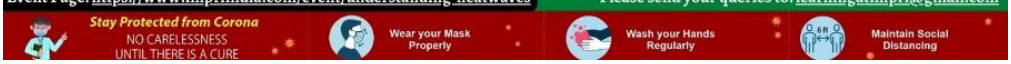
Day 1: https://youtu.be/mpwVnvZ-bxM

Day 2: https://youtu.be/o9WO9lTFbGk

Day 3: https://youtu.be/i_055-9KdP0

Event Page: https://www.impriindia.com/event/understanding-heatwaves

Please send your queries to: learningatimpri@gmail.com



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Contents

Introduction to the Course

This three-day online training programme aims to bring together professionals from academia, civic society, and the commercial and entrepreneurial sectors to start a critical discourse for our time. The overall goal of this programme is to provide a solid interdisciplinary introduction to the Heatwaves in India, prominent impacts of climate change and heat waves, annual preparatory and operational measures to control the crisis of increasing temperatures in India.

The training program aims to create a platform to discuss information from various agencies and exchange experiences between professionals from varied backgrounds and other experts to reduce India's heat wave impacts. This will also assist the area in developing comprehensive Heat Action Plans at different levels.

Background

There is a strong and global scientific consensus that extreme heat waves will become more common worldwide because of the climate change and this change will cause an increase in average global temperatures. Heat-waves are a significant cause of death and morbidity across the world, and the impacts of heat events are likely to increase due to changing frequency, severity, and intensity of heat-waves caused by climate change. Along with high temperatures, high humidity compounds the effects of the temperatures being felt by human beings. Extreme heat can lead to dangerous, even deadly, consequences, including heat stress and heatstroke.

India too is feeling the impact of climate change in terms of increased instances of heat waves which are more intense in nature with each passing year, and have a devastating impact on human health thereby increasing the number of heat wave casualties. According to the World Bank India's average annual temperature increased at a rate of 0.62°C in the 100 years between 1901 and 2020. Heat stroke has killed 11,571 people in the last decade (2011-2020) in India, showed an analysis of the Accidental Deaths & Suicides in India data, published annually by the National Crime Records Bureau.

This three-day online training programme aims to bring together professionals from academia, civic society, and the commercial and entrepreneurial sectors to start a critical discourse for our time. The overall goal of this programme is to provide a solid interdisciplinary introduction to the Heatwaves in India, prominent impacts of climate change and heat waves, annual preparatory and operational measures to control the crisis of increasing temperatures in India.

The training programme is jointly organized by Centre for Environment and Sustainable Development (CECCSD), Impact and Policy Research Institute, New Delhi and National Institute of Disaster Management (NIDM), Ministry of Home Affairs, Government of India.

Program Schedule:

Understanding Recurring Heatwaves: Risk, Impact and the Way Forward for Resilience	
Day 1 | July 26th, 2022	
Expert Session	**Topic**
Himanshu Shekhar Mishra	Rising Threat of Heatwaves in India; Global Warming and the Challenges Ahead
Dr. Naresh Kumar	Role of IMD for the heat wave management over India
Day 2 | July 27th, 2022	
Dr. Gulrez Shah Azhar	Indian Summer: Three essays on Heatwave – Vulnerability, Estimation and Adaptation
Prof Joyashree Roy	Heat stress, Exacerbating Health risks in India: Rethinking approach to Health service Provision
Mr. Anup Kumar Srivastava	Understanding Heatwaves: Risks, Impacts and the Resilience
Day 3 | July 28th, 2022	
Dr May Mathew	Intra-Generational Sustainability Environmental Efficiency improvised as 'May Value'
Dr Manu Gupta	Practitioner's Perspective: Heatwaves experience in India
Dr Pooja Paswan	Designing socio-environmental policies in India. Where to look?

Important Announcements:

The important housekeeping announcements were announced to ensure smooth flow of the programme on all the three days.

These included:

• Join the meeting on time.

• Ensure at least 80% of attendance.

• 15-20 minutes for Q & A after each lecture

• Share your questions on the Q & A Box only and not on the chat box

• The questions must not be posted as an Anonymous attendee.

• Ensure that the questions are precise.

• Refrain from making general comments.

About IMPRI

Impact and Policy Research Institute IMPRI, a startup research think tank, is a platform for pro-active, independent, non-partisan and policy-based research. It contributes to debates and deliberations for action-based solutions to a host of strategic issues. IMPRI is committed to democracy, mobilization and community building. IMPRI seeks to confront the most critical challenges to issues of socio-economic, political and environmental importance through qualitative and quantitative analysis. The analytical framework is strengthened through three types of activities, namely:

- **Building Dynamic Evidence:** The Institute's core strength lies in the interdisciplinary network of diverse and eminent scholars, research professionals with a commitment to conduct cutting-edge research, evidence-based impact assessment, monitoring and evaluation, and advocacy. Cost-effective and intense precision in analysis is its forte.

- **Deepening Public Debate:** Underlying IMPRI's work is a strong commitment to good governance, rule-of-law, tolerance, a market economy, and democratic principles. By leveraging its research, it facilitates the engagement of an informed citizenry with academia, industry and the government through seminars, workshops, conferences, lectures, extensive media presence.

- **Catalyzing Transparent and Accountable Governance:** IMPRI collaborates with the government, academic and research institutions, NGOs, businesses and the civil society for research and advocacy for transparent and accountable governance.

We aim to create a benchmark for the analysis of evidence-based and action-based studies using advanced research methods, and developing innovative techniques for gathering, handling, processing and analysing data. The multidisciplinary areas of research include:

- Agriculture, Food & Nutrition Security and Rural Development;
- Economy and Infrastructure;
- Entrepreneurship, ICT and Innovation;
- Environment, Energy, Climate Change and Sustainable Development;
- Gender, Pluralism & Social Inclusion;
- Governance and Law;
- International Relations and Strategic Studies;
- Livelihoods, Employment and Well-being;
- Public Finances and Macroeconomics;
- Society, Literature, Arts, Sports and Culture;
- Urbanization, Habitat, Transportation and Regional Development;
- Social Sector;
- Science and Technology, and;
- Public Policies, Programs and Scheme.

Founded in 2018, IMPRI Impact and Policy Research Institute is a think-tank for evidence and action-based policy research; monitoring and evaluation; and impact assessment. It has been incubated by NEXUS: The Innovation Hub at the American Centre, New Delhi by the IC2 Institute of University of Texas at Austin, Texas, supported by the US Government.

About National Institute of Disaster Management (NIDM)

National Institute of Disaster Management, Ministry of Home Affairs, Government of India, is the premier institute and statuary body under Disaster Management Act, 2005 for training, research, awareness and capacity building in the field of disaster mitigation and management in the region. The institute lays emphasis on multi-stakeholder interdisciplinary cross- sectoral approach for an effective and efficient pro-active continuum disaster risk management based on participatory integrated multi hazard risk management concept.

Day-wise summary

3 -Days Online Certificate Training Programme on

"Understanding Recurring Heatwaves: *Risk, Impact and the Way Forward for Resilience*"

Day 1 | July 26th, 2022

The three-day Online Certificate Training Programme on the theme **"Understanding Recurring Heatwaves: Risk, Impact and the Way Forward for Resilience"** is a joint initiative of the National Institute of Disaster Management (NIDM), Ministry of Home Affairs (MHA), Government of India, and Centre for Environment, Climate Change and Sustainable Development (CECCSD), IMPRI Impact and Policy Research Institute, New Delhi commenced on 26th July 2022.

Inaugurating the session, Dr Souravie Ghimiray welcomed the speaker and participants to the program, followed by an introduction to the eminent panellists.

Day 1 of the program included distinguished speakers such as **Shri Taj Hassan, *IPS***, Executive Director, NIDM, New Delhi as the patron for the session; **Tikender Singh Panwar**, Former Deputy Mayor, Shimla; Visiting Senior Fellow, IMPRI as Convenor and Moderator; and **Prof Anil K Gupta**, Head ECDRM, NIDM, New Delhi; **Dr Simi Mehta**, CEO & Editorial Director, IMPRI; **Dr Soumyadip Chattopadhyay**, Associate Professor, Visva-Bharati, Santiniketan; Visiting Senior Fellow, IMPRI, New Delhi as our Convenors.

The expert trainers for the programme included **Dr Pooja Paswan**, Assistant Professor, Department of Political Science, Jamia Millia Islamia, New Delhi; **Himanshu Shekhar Mishra**, Senior Editor (Political and Current Affairs), New Delhi Television Limited (NDTV India); **Dr Naresh Kumar**, Scientist E, National Weather Forecasting Centre, India Meteorological Department (IMD); **Dr Gulrez Shah Azhar**, Independent Researcher (Former Researcher, University of Washington & RAND Corporation, USA); **Prof Joyashree Roy**, Bangabandhu Chair Professor and Director, Centre on South and South East Asia Multidisciplinary Applied Research Network on Transforming Societies of Global South, AIT School of Environment, Resources and Development, Asian Institute of Technology (AIT), Thailand; **Dr Manu Gupta**, Co-Founder, SEEDS; **Dr May Mathew**, Founder Trustee and Chief Planner, Centre for Environmental Efficiency, Kochi; **Anup Kumar Srivastava**, Sr. Consultant – Drought and Heatwave (Policy & Plan Division), National Disaster Management Authority (NDMA).

Commencing the program, the convenor for the session, Prof Anil K Gupta, made his opening remarks about the reasons for the recurring heatwaves of late. He mentioned that it is vital to analyse the impact of exposure to these heatwaves and look at the remodelling of development to reduce the effect of heatwave incidences.

Mr Tikender Singh set up the stage by sharing an anecdote with us, talking about how different areas in Delhi itself differ in temperature, something he experienced while cycling across the city. He brought up the point that the problem arises as heat waves become a class issue since most of our population works in the informal sector, which is often outdoors.

Mr Himanshu Shekhar Mishra, Senior Editor (Political and Current Affairs), New Delhi Television Limited (NDTV India).

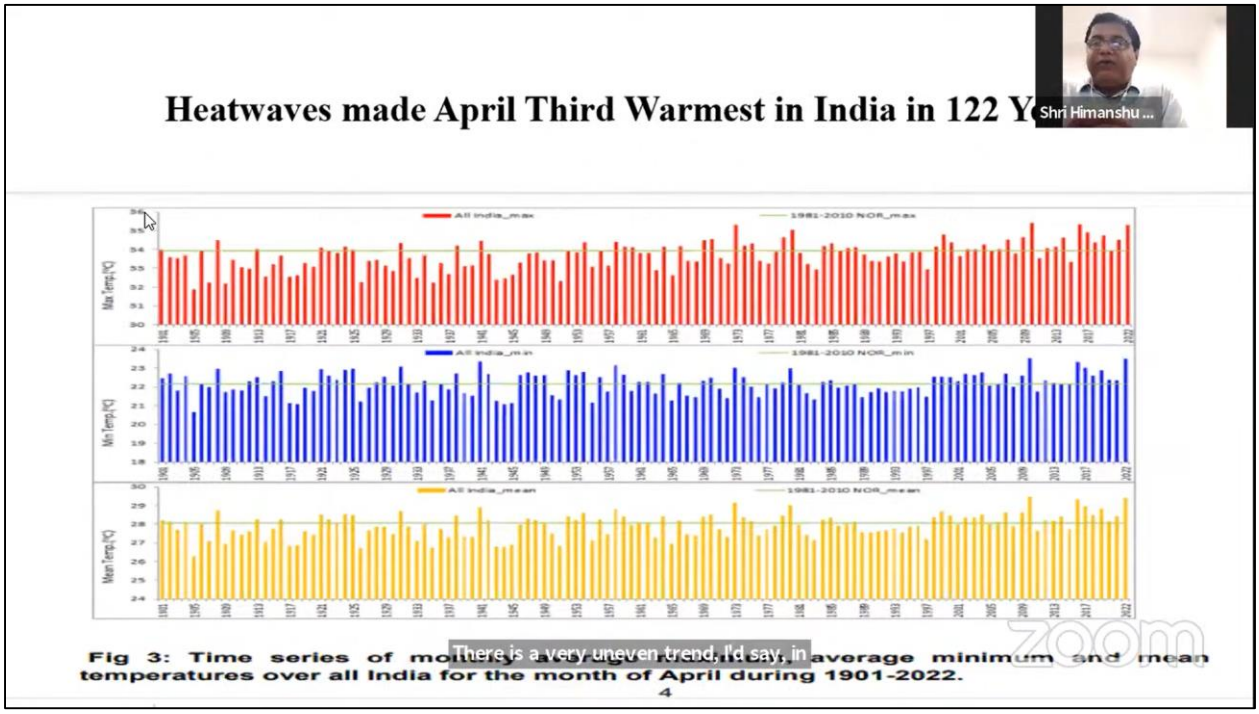


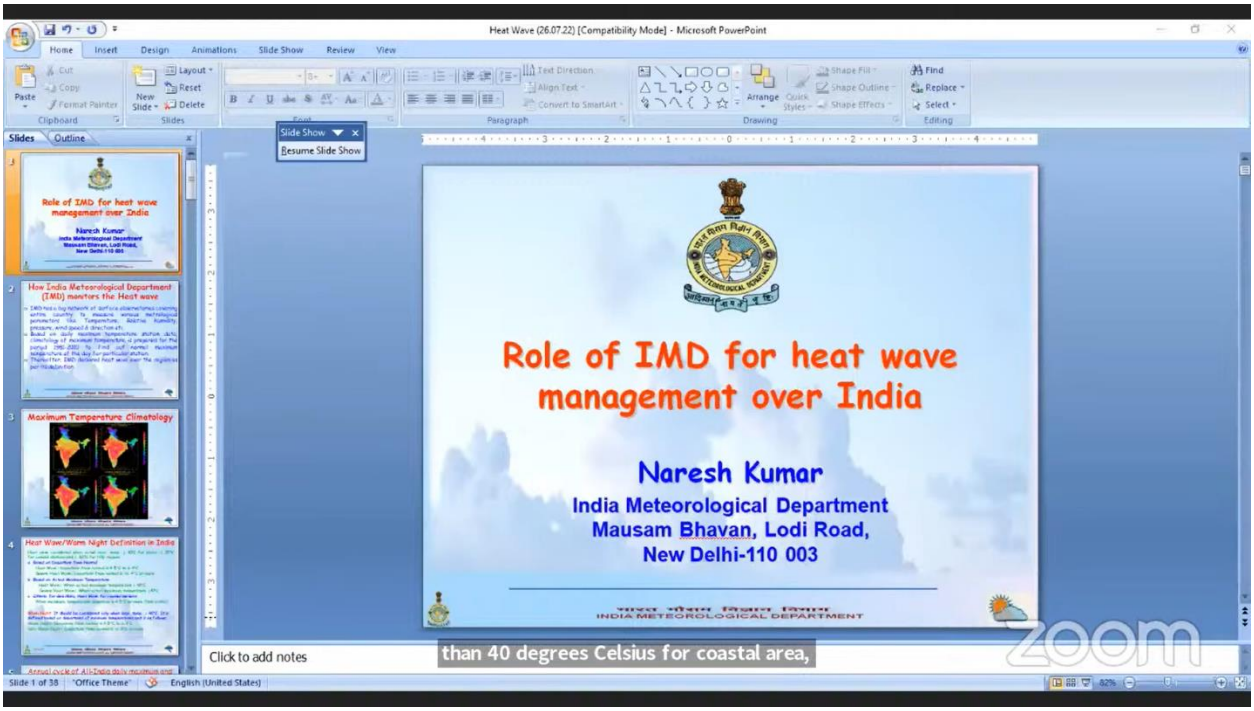
Fig 3: Time series of monthly mean maximum, average minimum and mean temperatures over all India for the month of April during 1901-2022.

Mr Himanshu Shekhar Mishra started by presenting **"Rising Threat of Heat Waves in India"**, also talking about Global Warming and the challenges ahead. He covered the criteria for heatwaves, mentioning that India is at risk in the months of April-June with a high chance of occurrence over most of the country. Heat waves have a significant impact on human health. Excessive exposure leads to dehydration, cramps, exhaustion and heatstroke. Alcohol and its fermentation can lead to poisoning. There has also been a rise in the number of instances of anxiety, palpitations, and behavioural change linked to extreme temperature rise. The worst affected segments include- agricultural labourers, coastal community dwellers, and people living below the poverty level. The Indian Meteorological Department (IMD) has introduced a Heat Action Plan to mitigate the problems at hand. It is a comprehensive early warning system and preparedness plan for extreme heat events. IMD, in collaboration with local health departments, implements the Heat Action Plan in many parts of the country to warn about the heat waves. Mr Mishra shared a Ground Report that he and his team shot in April 2022, on how the Heat Wave had impacted Wheat Crops in Ghaziabad and surrounding areas.

He then spoke about the steps taken by the Government to tackle Climate Change Impact on Agriculture. National Mission for Sustainable Agriculture (NMSA) is one of the Missions within

the National Action Plan on Climate Change (NAPCC). The mission aims to evolve and implement strategies to make Indian agriculture more resilient to the changing climate. The Union Agriculture Minister, Narendra Singh Tomar, announced that to sustain domestic food production in the face of changing climate, the Indian Council of Agricultural Research has launched a flagship network project called "National Innovation in Climate Resilient Agriculture" (NICRA). This project aims to develop and promote climate disaster resilient technologies that help regions prone to extreme weather conditions like droughts, floods and heat waves to cope with such weather incidents. To address the adverse effect of natural risks on crops, the Department of Agriculture ensures comprehensive risk cover to farmers against all non-preventable natural risks (including heatwaves) from pre-sowing to post-harvest stage under the Pradhan Mantri Fasal Bima Yojana (PMFBY).

Dr Naresh Kumar, Scientist E, National Weather Forecasting Centre, India Meteorological Department (IMD).



Dr Naresh spoke of the Role of IMD in heatwave management in India. He began by explaining this year's scientific and geographic reasons for heat waves. Talking about the work done by IMD, he mentioned that IMD has been responsible for issuing warnings at meteorological subdivision levels to different users such as MHA, NDMA, SDMA and transport authorities through email, WhatsApp, and social media channels, press releases etc.

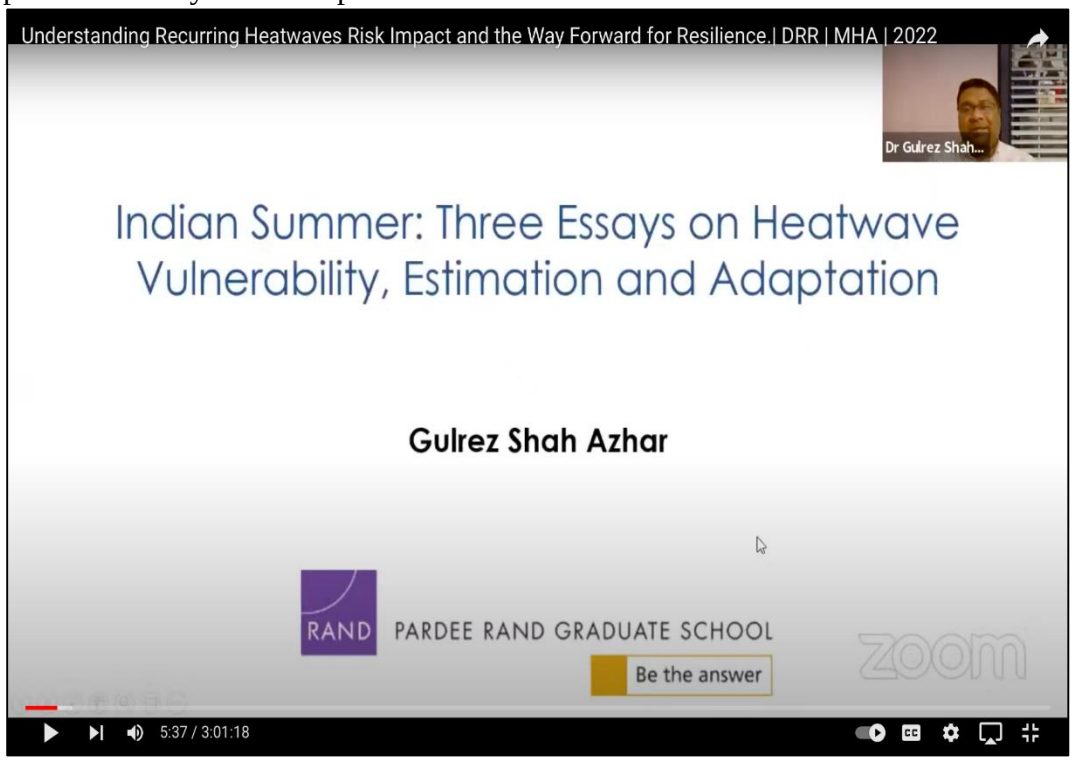
IMD has created interactive maps for monitoring and forecasting information using Geographical Information Systems (GIS). In addition to that, they also have a dedicated page for Heat Wave Guidance on their website that the public can use to create Heat Action Plans. Furthermore, IMD has done the Heat Hazard Analysis of the entire country as another significant initiative.

DAY 2 | 27th July 2022

Day 2 of the programme included eminent panelists **Dr Gulrez Shah Azhar**, an independent Researcher and former researcher at the University of Washington, and **Professor Jayashree Roy** who is the Bangabandhu Chair Professor at the Asian Institute of Technology, Thailand, she is also a Professor of Economics at Jadhavpur University Kolkata and **Mr Anup Kumar Srivastava,** Senior Consultant - Drought and Heat Wave Policy and Planning Division, National Disaster Management Authority (NDMA).

The session commenced with Dr Souravie Ghimiray, IMPRI, welcoming all the speakers and participants to the programme with an introduction to the course and the esteemed panelists.

Dr Gulrez Shah Azhar: Independent researcher and former researcher at the University of Washington. Dr Azhar presented his work ***"Indian summer: three essays on Heatwave, vulnerability, estimation and adaptation***", which emphasized the need to study heat waves, and compared and analysed the implication of heatwaves now and in the future with a focus on India.



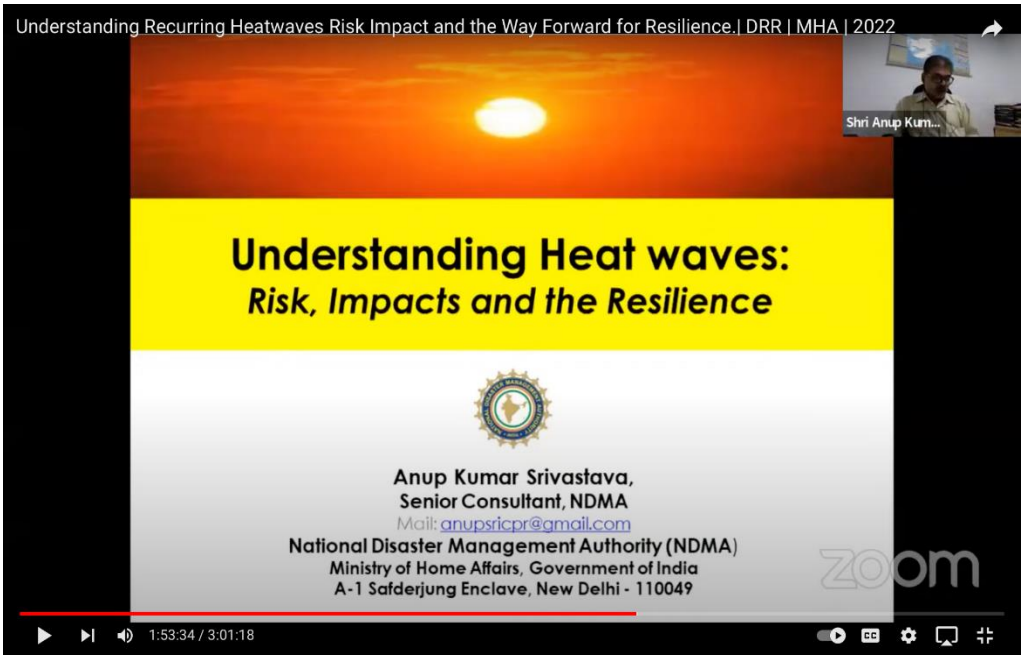
In his talk, he discussed vulnerability assessment, understanding vulnerability domains, the need to protect the vulnerable section of the society, since they are the worst affected due to heatwaves and identifying the most heat-vulnerable districts of the country. Dr Gulrez in his presentation discussed mortality estimation in India and estimated the direct economic costs associated with these deaths. He has highlighted the fact that in India, people in the economically productive older age group are more susceptible to death due to heat and as per projections, nearly 84000 deaths are estimated by the end of the century. Steps to mitigate heat at the individual, community and

federal levels were a significant area of discussion. Dr Gulrez states the predicament of heat waves as a "massive and complex challenge" and adaptation to the system requires a combination of strategies, as steps to be taken in the long run, he suggests to
Reduce human and economic impact
Bottom-up ethnographic research to be used

Prof Joyashree Roy: Bangabandhu Chair Professor at Asian Institute of Technology, Thailand, Professor of Economics at Jadhavpur University, Kolkata and she is the National Fellow of the Indian Council of Social Services Research. Professor Joyashree presented her work "***Heat Stress, Exacerbating health risks in India: Rethinking Approach to Health Service Provision***".

Prof Roy's work majorly focused on accelerating climate action-key to a sustainable environment and discussed the impacts and risks for selected natural, managed and human systems. She stated how health-related indicators are one of the prominent reasons which hold back India's goal of sustainable development. According to her research, climate change will make the present situation of health worse due to the lack of preventive approaches in the health sector. She discusses the potential health impacts such as increased mortality rates, allergic diseases, the rampant spread of infectious diseases, an increase in the number of undernourished people in low-income countries and the spread of waterborne diseases. Prof Roy suggests that the impact of heat stress varies depending on the adaptive capacity and occupational pattern of the people. As a policy plan, she suggests that shades are provided to outdoor workers and air-conditioned spaces in order to achieve 100% workability zones in India. In her presentation, she mentions bringing adaptation, mitigation and sustainability together is a major concern. She highlights the need to give attention to National Preventive Head Care Mission, essential to ensure sustainable development in India. Professor Roy emphasises having an integrated and solution-centric approach in order to achieve sustainable development and to have a combination of preventive health care and cure system to face heat waves and climate-related issues.

Anup Kumar Srivastava: Senior consultant - Drought and Heat Wave Policy and Planning Division- National Disaster Management Authority (NDMA). Mr Anup Kumar presented his work **"Understanding *Heat Waves: Risk, Impacts and the Resilience*"**.

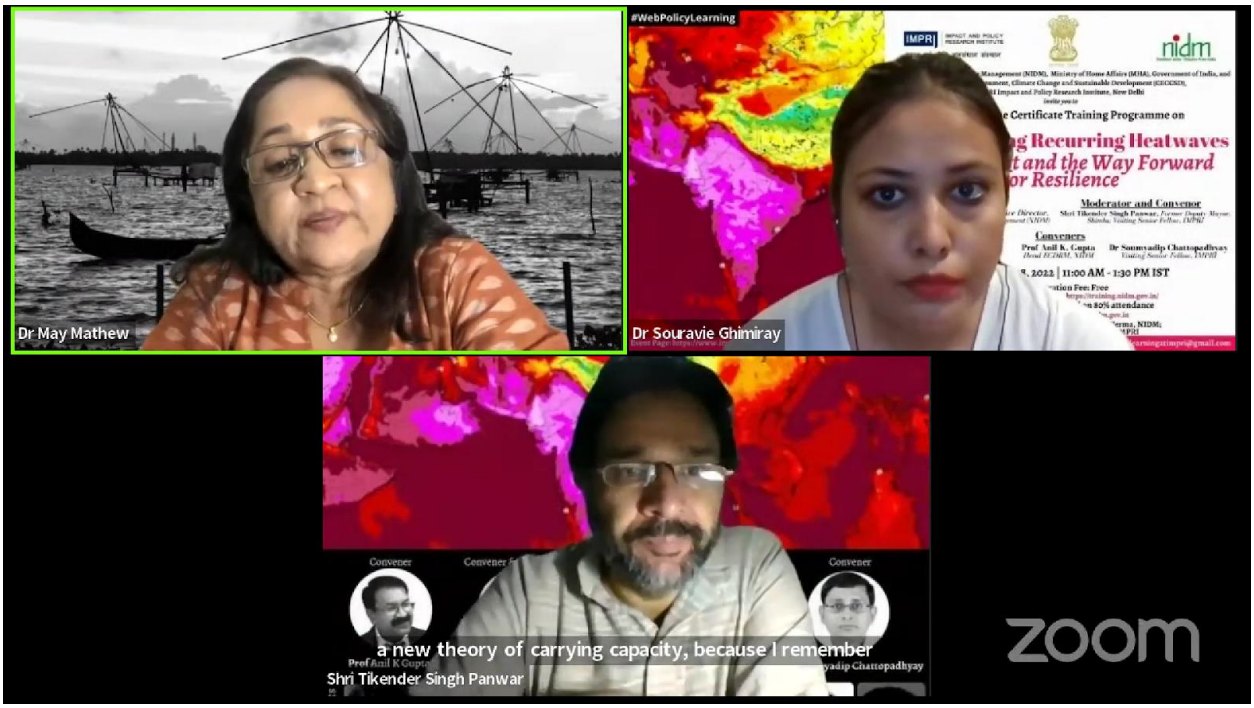


He discussed the impact of heat waves which have caused nearly 25,696 deaths between the years 1992 and 2021, not just humans, the negative effects of heat waves can be observed even in animals, wildlife, water, agriculture, labour and employment. Heat waves have caused a significant impact even on economic activities. Mr Anup Kumar has stated that the lack of an institutional mechanism to heat wave management and the lack of accurate information and data related to the heat wave as major challenges in countering the issue. He projects the need to have a changed policy in India, from relief centric to prevention and preparedness centric. He gave an elaborative analysis of NDMA's action on the Heat waves and a detailed talk on warning systems using colour coding. Mr Srivastava has suggested integrating climate variability, mitigation and adaptation efforts in the Heat Action Plan and strengthening an early warning system as a long-term measure, the usage of cool roofs as a mechanism to reduce heat exposure is a viable option suggested. He also addressed the need of mainstreaming heatwave management and capacity building amongst people and the significance of local-level awareness campaigns in his presentation.

DAY 3 | 28th July, 2022

Day 3 of the program included an insightful and enriching discussion delivered by eminent panelists, **Dr. May Matthew,** Founder Trustee, and Chief Planner at the Centre for Environmental Efficiency, Kochi, **Dr. Manu Gupta,** Co-Founder of SEEDS, and **Dr. Pooja Paswan,** Assistant Professor at the Department of Political Science, Jamia Millia Islamia, New Delhi

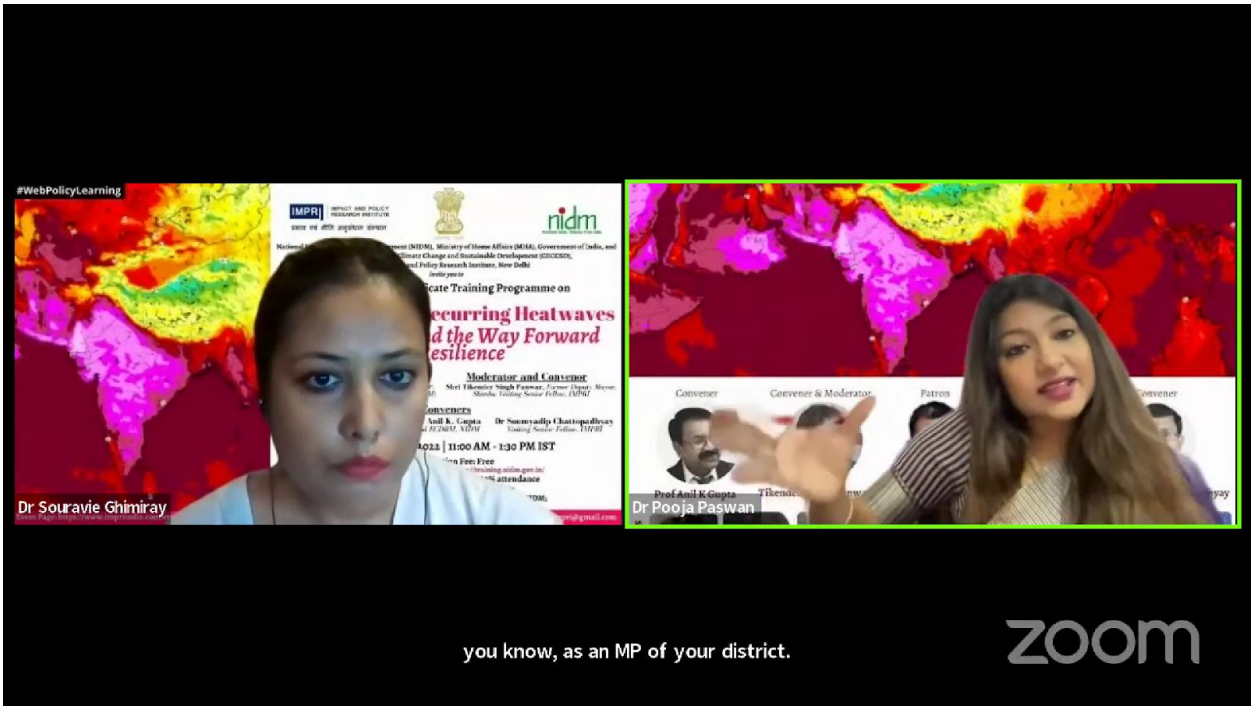
The session was opened with introductory and welcoming remarks from Dr. Souravie Ghimiray, IMPRI.



Dr. May Matthew, Founder Trustee, and Chief Planner at the Centre for Environmental Efficiency, Kochi, opened the session with a brief but well articulate presentation on "New Normalization: India to Become a Role-Model Country— Strengths and Strategies". Talking about the emission of carbon footprints from the 1960s till the present day, she, through data, mentions that from the 60s till the 80s, Earth's regenerative capacity was comparatively higher than from the 80s, which is when Earth's capacity to regenerate Carbon emissions left by Humanity began to decline, the visual effects of excessive atmospheric heating and Climate Change began to show. However, the onset of the 'New Normal' brings hope to an end to the downward spiral of Climate Change. She explains the trajectory to reinstate Earth's regenerative capacity and get progress, can be done through switching to a Circular Economy from the existing Linear Economy. She goes on to explain the correlation of Human Development and Ecological footprint through data and her own conceptual theories "EE and CC environmental deficiency and Capacity theories" to measure effective growth as high HD rate but low EFP, unlike the reverse seen before, which can be attained by India in the near future.

Furthermore, Dr. Matthew highlights potential recommendations on education, health, and urban planning to substantiate her presentation. She finally, ends her presentation by suggesting the way of a circular economy, where developed countries pair with underdeveloped countries in a mutually beneficial partnership and the former provides the latter with HD provisions like sanitization, education, provisions of income, and health while it takes their bio capacity and moves towards being green zone countries. Therefore, the future urban sustainable earth scenario will depict a circular correlation between ecological footprint and HD mapping. She further reinstates the potential India has to launch this model with its states.

Dr. Manu Gupta straight away delves into the Topic of the program, heat waves through perspectives from his Organizations work, which eventually forms the structure of his presentation. He highlighted the effect of climate change in the form of heat waves in the country, and the disproportionate effect of it on communities across the country, with economically weaker sections bearing the toughest brunt. The issue of climate vulnerability in almost 225 out of 728 districts is an alarming concern, adding to the increase in rapid urbanization in cities as slums, mostly for the informal sector, highlights the issue of affordability and its close relation with negligible protection with climate-related risks. He further states the importance of collaboration of academics and policymakers to tackle this issue and further presents an achievement of SEEDS in creating housing models with effective cooling solutions (bringing down indoor temperatures by 6 degrees) to tackle the issue of rapid heating in slums.
He ends with a call of action to future planners, architects, and solution makers to briefly consider this issue and come up with innovative but sustainable solutions that can effectively lead to India's sustainable growth.



Dr. Pooja Paswan opens by centring her presentation on directives for designing a socio-environmental policy in a developing country like India, which, according to her, has confused urbanization with development and draws on the necessity of identifying development with effective resilience to natural and man-made calamities, rather than the building of malls and roads in rural areas, access to resources that ensure one's longevity in life, rather than its reduction. She states that as we rapidly urbanize, we slowly lose touch with what development truly identifies (to enhance the quality of life) and we bask in the effects of urbanization in forms of air pollution and climate risks like the ongoing heat waves. To pivot to prioritizing quality of life over urbanization, she moves on to her presentation, a set of logical but effective directives in creating socio-environmental policies in India. She further emphasizes the need for policies that are sustainable and cater to the needs of all communities, but at the same time require support from the entire community to ensure its success. When it comes to policies tackling climate risks, the collective consciousness of communities is extremely important when tackling the issues.

Key takeaways –

- Participatory urban planning
- Tree planting and introducing the system of cool roofs
- Encourage bottom-up ethnographic research methods
- Integrate and strengthen traditional and scientific practices
- Integrated approach in order to achieve sustainable development
- A combination of preventive health care and a cure system is necessary to face the heat waves and climate-related issues
- Policies in order to mitigate heat
  INDIVIDUAL LEVEL
  - *Education*
  - *Behaviour Change*
  - *Housing modifications*

  COMMUNITY LEVEL
  - *Participatory urban planning*
  - *Tree planting*
  - *Social Capital*

  FEDERAL LEVEL
  - *Introducing building and infrastructure policies*
  - *Heat and Labour policies*
  - *Technological solutions*
- Change India's policy towards heat waves from relief centric to prevention and preparedness centric.
- Strengthening early warning systems and communication systems
- Setting up of state and district control rooms
- Capacity building of health personnel
- Setting up a special shelter for wage employment workers and reschedule their working hours
- Improving forest coverage and green areas
- Integration of climate variability, mitigation and adaption efforts in the Heat Action Plan.
- Our consumption patterns will eventually exhaust the Earth earlier than we can imagine as countries exceed the Earth's regenerative capacity based on their rate of consumption.
- India's consumption rate based on its patterns is far less than developed countries of the Global North like America, Japan, Germany.
- The Global community should take an active part in helping Human Development, especially in developing countries.
- Shifting from an existing linear economic pattern to a circular economic pattern to ensure sustainable progression in the era of the 'new Normal'.
- The Environmental Efficiency of India is very high which is a good sign as compared to most developed countries who have very low environmental efficiencies. Inorder to transition sustainably, India must prioritize urbanization
- Red zone countries can shift to green zone countries through a transition to a circular economy can be done in order to achieve sustainability by:

  - *Developed and Developing countries must pair up instead of Carbon Trading.*
  - *Mutual relation of benefit where resources both for Human Development and Sustainability are exchanged.*
- The Circular economic strategy can be adopted by India within states and with other countries through utilizing a simple two-fold strategy:
- *Ensuring holistic sustainable development in all cities.*
- *Bio capacity training in Human development.*
- Organizations should collaborate to provide people in need with necessities through building affordable products or provision of grants which can help them tackle climate risks.
- Need to develop affordable house cooling solutions like the House owners guide to cooling solutions.
- The need to promote and incubate innovations amongst young creators to ensure affordability while tackling issues of replicability and limited supply atop of sustainability.
- Urgent need to demarcate development from urbanization, the latter may not always facilitate community growth and human development as intended.
- Prioritizing health and provision of health facilities should be done before development. Development in the name of urbanization, infrastructure growth should be done with the aim of improving conditions of human life and not be a source of curbing it.
- We need to balance ecology and human development when approaching policy creation.
- Investment in research to develop innovative technologies that are greener and sustainable.
- Invest economically and politically in the policy-making process to ensure a balance between development and ecological impact.
- Policy makers must objectively view and analyse situations and remove values from facts in order to effectively introduce policies that are helpful.
- Policy makers should identify counterfactuals in order to make efficient policies.
- A need for proper alignment between principles and agents so as to avoid misalignment of policies and goals or of policy impact and output.
  - *In order to successfully implement Environmental policies, the government must not:*
  - *Make mistakes of correlation and cognition when approaching policy research.*
  - *Fail in coordination between concerned ministries, their department and sub-departments when implementing policies.*

Annexure 2 – List of Participants

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Annexure 3 – Media Links

Event Page - Understanding Recurring Heatwaves: Risk, Impact and the Way Forward for Resilience

Day 1 – July 26th, 2022

1. Anchor FM
2. Spotify
3. Google Podcasts
4. YouTube Live (NIDM Channel)

Day 1 - HQ Video (IMPRI Channel)

Day 2 – July 27th, 2022

1. Anchor FM
2. Spotify
3. Google Podcasts
4. YouTube Live (NIDM Channel)

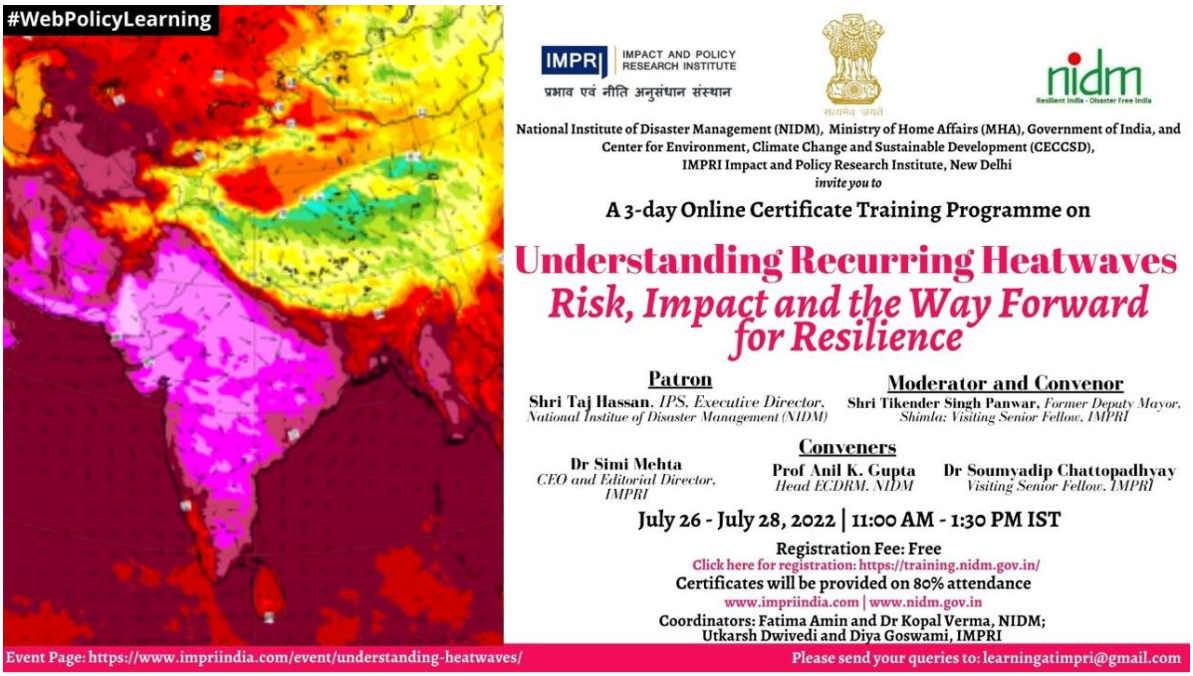
Day 2 - HQ Video (IMPRI Channel)

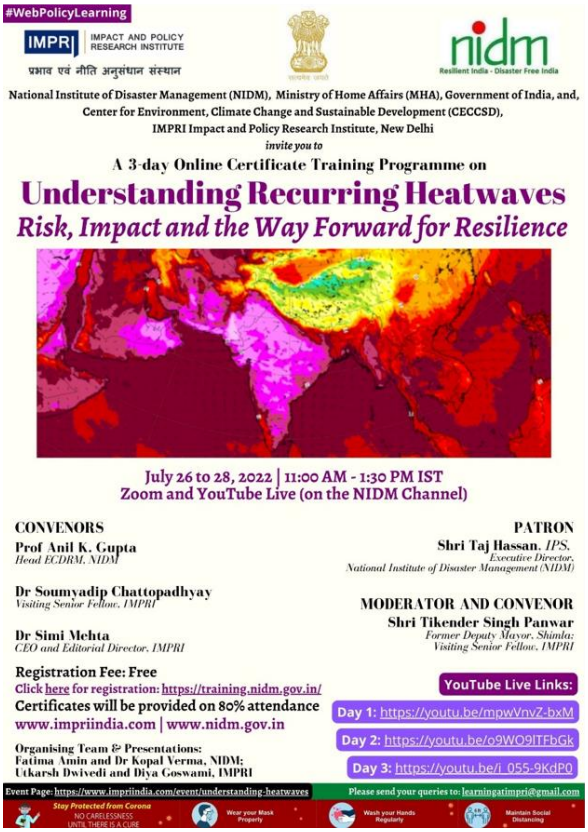
Day 3 –July 28th, 2022

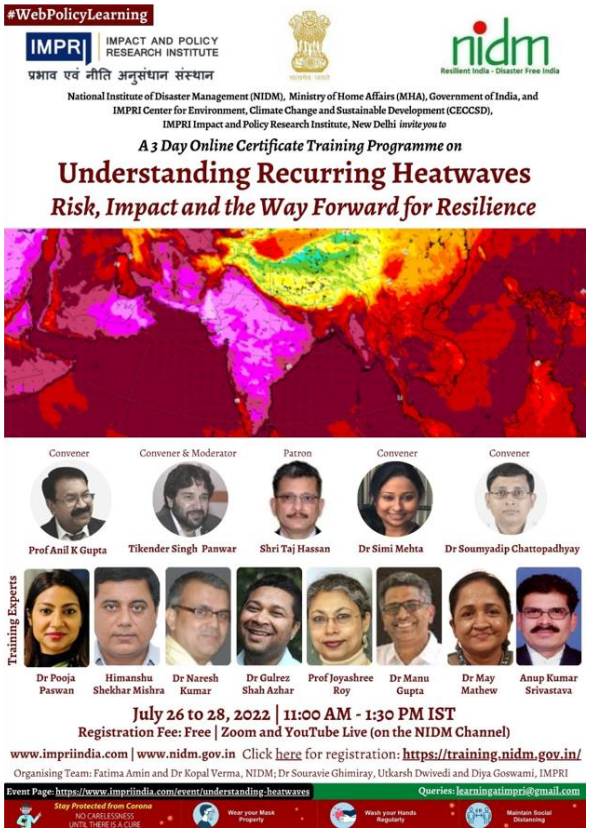
1. Anchor FM
2. Spotify
3. Google Podcasts
4. YouTube Live (NIDM Channel)

Day 3 - HQ Video (IMPRI Channel)

Annexure 4 – Posters







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