



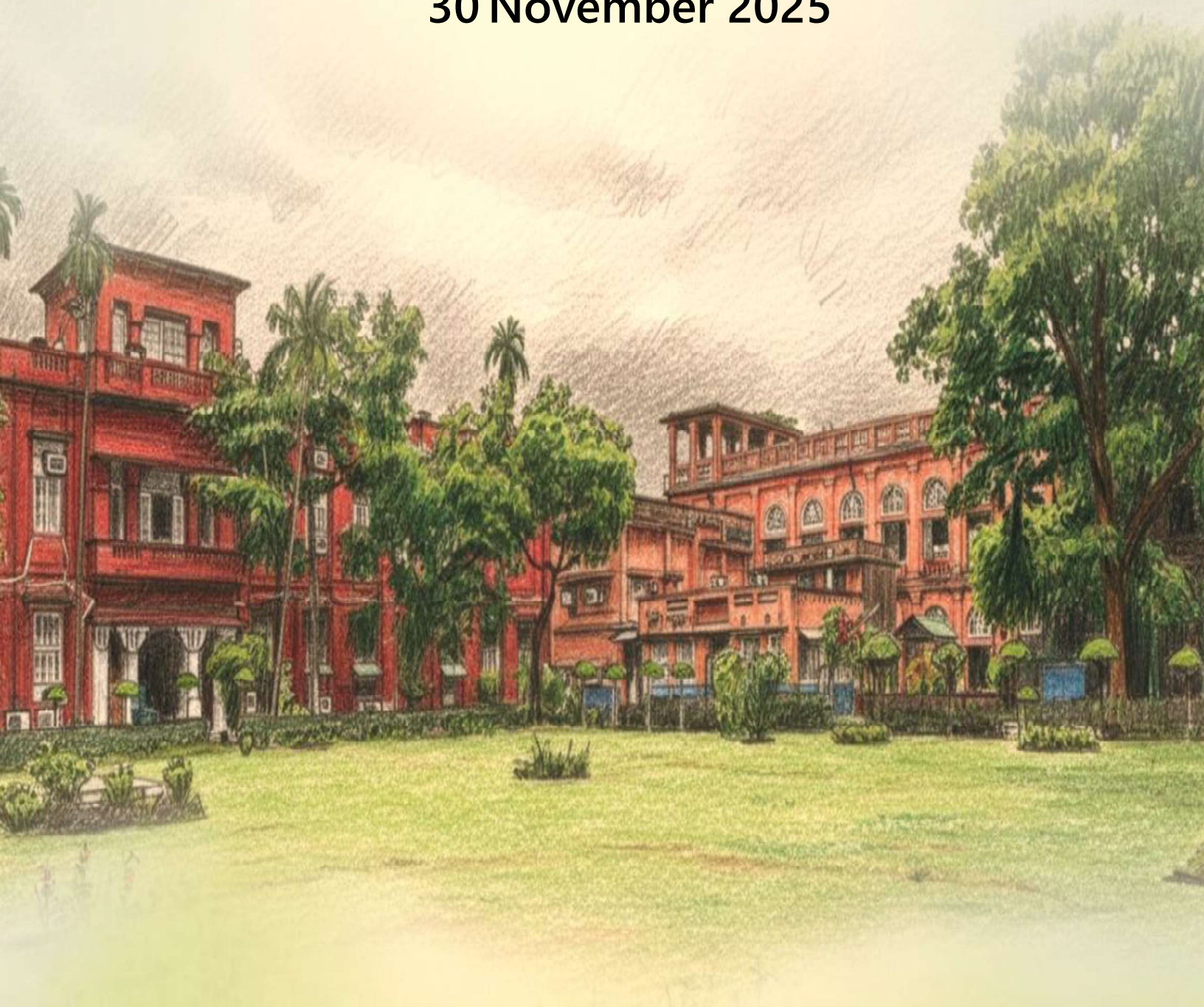
BOSE INSTITUTE

(AN AUTONOMOUS INSTITUTE UNDER
DEPARTMENT OF SCIENCE & TECHNOLOGY, GOVT. OF INDIA)

109TH FOUNDATION DAY

86TH ACHARYA J. C. BOSE MEMORIAL LECTURE

30 November 2025



Special Lecture by Chief Guest



Prof. Abhay Karandikar

Secretary

Department of Science & Technology, Govt. of India



Dr. Soumya Swaminathan

WHO's Chief Scientist

Former Director General of the Indian Council of Medical Research (ICMR)

Ministry of Health and Family Welfare, Government of India

Dr. Soumya Swaminathan is a globally renowned pediatrician and expert in tuberculosis and HIV research, with over 40 years of experience in clinical care and research. Her career has been dedicated to translating research into impactful health programmes and integrating science into health policy.

She recently served as the Chief Scientist at the World Health Organization (WHO), where she established the Science Division and also played a key role in coordinating global scientific efforts, including the establishment of Covax for equitable vaccine distribution during COVID-19. Earlier, she was the Director General of the Indian Council of Medical Research (ICMR) (2015-2017).

Since February 2023, she is the Chairperson of the MS Swaminathan Research Foundation (MSSRF) and the Principal Advisor to India's National Tuberculosis Elimination Programme. She co-chairs the global commission of "Our Common Air" and also chairs the Scientific Advisory Board of ICMR. She is a Fellow of the US National Academy of Medicine, Academy of Medical Sciences (UK), and all major science academies in India. She has also authored over 480 peer-reviewed publications. She holds honorary doctorates from Karolinska Institute, EPFL Lausanne, and McGill University.

Dr. Swaminathan's current focus is on addressing the health impacts of climate change on women and children, and transforming food systems to strengthen nutrition security.



BOSE INSTITUTE

KOLKATA

Director
and
Staff Members of Bose Institute
request the pleasure of your company at the

**THE OBSERVANCE OF
109TH FOUNDATION DAY**

and

86TH ACHARYA J. C. BOSE MEMORIAL LECTURE

Speaker

Dr. Soumya Swaminathan

WHO's Chief Scientist

Former Director General of the Indian Council of Medical Research (ICMR)
Ministry of Health and Family Welfare, Government of India

titled

Fragile Futures: The Climate Crisis and Its Toll on Women and Children

on

30 November 2025

Prof. Chandrima Shaha

CSIR-Indian Institute of Chemical Biology
Jadavpur, Kolkata

will preside over the programme.

Venue:

Bose Institute Rajabazar
93/1, A.P.C. Road
Kolkata - 700 009

RSVP: <https://forms.office.com/r/5qwT3TTZLq>

Or scan

(Please RSVP by 24 November 2025)



Prof. Kaustuv Sanyal

Director
Bose Institute



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THE OBSERVANCE OF
109TH FOUNDATION DAY

and

86TH ACHARYA J. C. BOSE MEMORIAL LECTURE

PROGRAMME

30 November 2025

- | | | |
|------------------------|-----|--|
| 14:30 - 14:35 | ... | Invocation |
| 14:35 - 14:50 | ... | Welcome Address & Director's Report by
Prof. Kaustuv Sanyal, Director, Bose Institute |
| 14:50 - 15:00 | ... | Addresses by Dignitaries |
| 15:00 - 15:05 | ... | Introduction to the Speaker by the Chair
Prof. Chandrima Shaha, CSIR-Indian Institute of
Chemical Biology, Jadavpur, Kolkata |
| 15:05 - 15:50 | ... | 86 th Acharya J. C. Bose Memorial Lecture by
Dr. Soumya Swaminathan |
| 15:50 - 16:05 | ... | Chairperson's Address by Prof. Chandrima Shaha,
CSIR-Indian Institute of Chemical Biology, Jadavpur, Kolkata |
| 16:05 - 16:35 | ... | Chief Guest's Address by
Prof. Abhay Karandikar , Secretary,
Department of Science & Technology, Govt. of India |
| 16:35 - 16:40 | ... | Vote of Thanks by the Chairman of
the Foundation Day Committee |
| National Anthem | | |
| 16:45 - 17:30 | ... | High Tea |
| 17:30 - 18:30 | ... | Cultural Programme |



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86TH ACHARYA J. C. BOSE MEMORIAL LECTURE

ABSTRACT

Fragile Futures: The Climate Crisis and Its Toll on Women and Children

Climate change is amplifying existing health risks and creating new threats, with women and children disproportionately affected due to biological, socio-economic, and structural vulnerabilities. Rising temperatures, more frequent heatwaves, extreme weather events, shifting vector ecology, and worsening air pollution are contributing to heightened burdens of disease, malnutrition, and psychosocial stress. For children, climate-related exposures are strongly linked to premature mortality, low birth weight, undernutrition, diarrheal disease, and respiratory infections. For women, impacts are wide-ranging: pregnancy complications, menstrual and reproductive health issues, cardiovascular risks, mental health stress, and heightened exposure to gender-based violence during disasters.

Recent evidence highlights that women and children from low-income households and disadvantaged socio-economic groups face compounded risks, including higher anaemia and undernutrition rates, poor access to antenatal care, and limited menstrual hygiene practices in heat-vulnerable districts. Women engaged in informal work, caregiving, and subsistence agriculture report severe income losses, heat-related illnesses, and mental health strain. Air pollution further exacerbates health risks, reducing bone density, worsening respiratory conditions, and affecting maternal and neonatal outcomes. Extreme heat also undermines household food security and widens gendered economic gaps.

MSSRF's scoping review (2024) and heat impact study (2025) provide strong evidence that climate crises deepen inequities in health, nutrition, and livelihoods. Field testimonies reveal women's daily struggles like heat stress, wage losses, strained caregiving roles, and disrupted family relationships, illustrating the urgent need for gender- and equity-sensitive climate action. Addressing these challenges requires robust research, decentralized adaptation planning, community-led innovations, and stronger health system preparedness, ensuring that women and children are central to climate resilience strategies.

Adaptation and solutions must prioritize equity, with women and children placed at the center of climate resilience strategies. Key pathways include decentralized and gender-responsive planning, heat action plans tailored for vulnerable populations, improved access to cooling, clean energy, water, and nutrition, and stronger integration of maternal and child health into climate adaptation policies. Community-led innovations, livelihood diversification, social protection, and health system preparedness are essential to reduce risks and build resilience. Empowering women through participation, resources, and leadership in climate action will not only safeguard health but also strengthen long-term adaptive capacity for households and communities.



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