



SUSTAINABLE
INDIA TRUST



2024-25

ANNUAL REPORT



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**Sustainable India Trust,
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“Many challenges in the agriculture sector can be reduced by promoting natural farming and pulses production.”

– PROF. N. RAGHURAM

Message from our Leaders

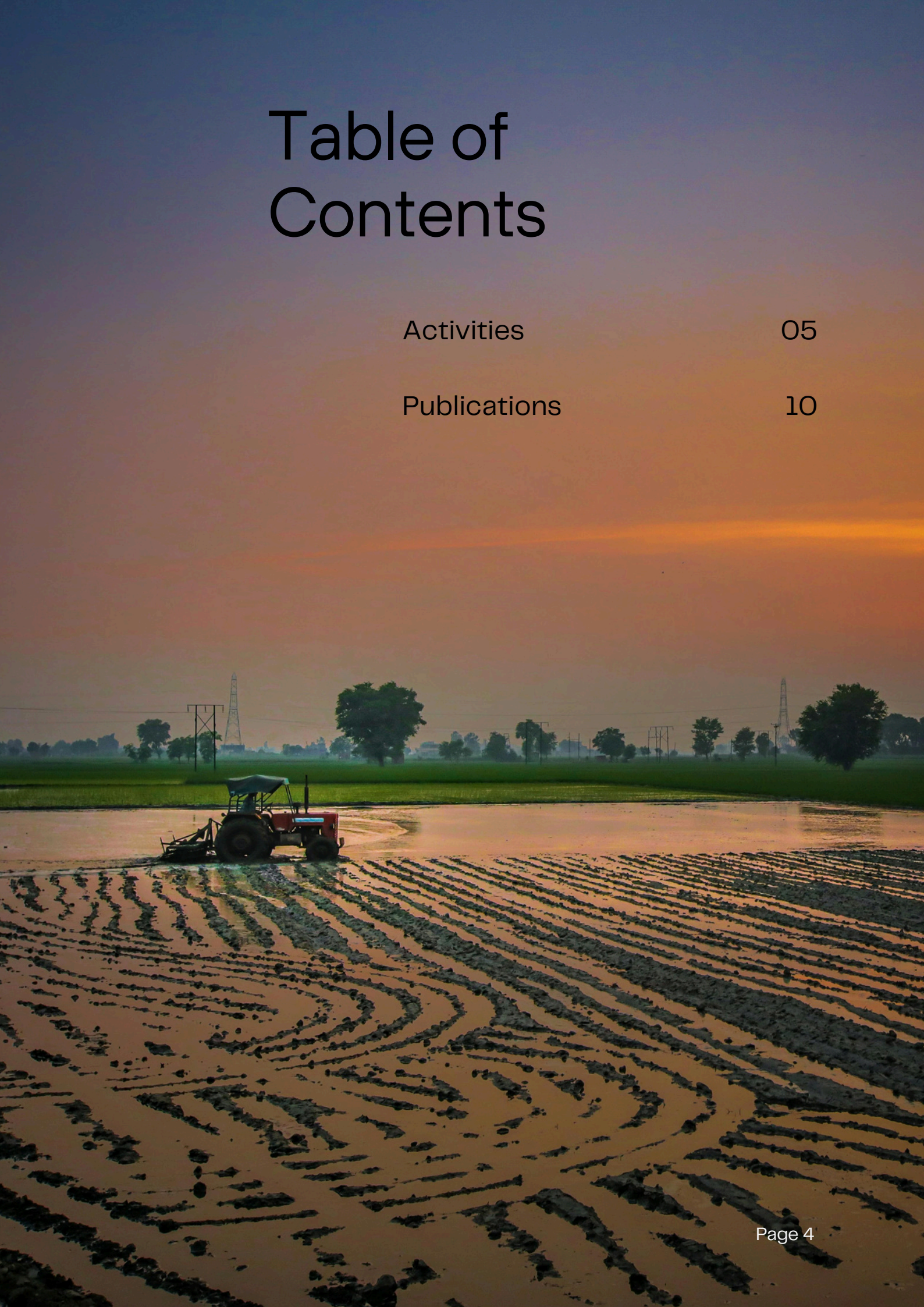
The market is hot in the discussion about getting a fair price for crops to the farmers and increasing their income and also providing food products to the consumers at an affordable price. For a long time, farmers have been protesting for other demands, including MSP guarantee. The list of crops procured at MSP includes about a dozen commodities today. But, due to the high focus on wheat and paddy, farmers also grow more of these two crops. On the other hand, farmers have become disillusioned with crops like pulses, oilseeds and coarse cereals due to lack of adequate attention for the purchase of other crops.

Pulses, oilseeds and natural farming also need to be promoted on the lines of wheat and rice. This will help in reducing fertilizer bills on the one hand, and on the other hand will also boost farmers' income and crop diversification.

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Activities

1. Dr. Alex Pires from the UN Environment Programme, Nairobi, visited the Sustainable India Trust at NASC on 09 April 2024. He saw the water testing equipment and other infrastructure developed to conduct the UNEP SSFA and discussed the status of the project on 'Management of nutrients and micro-plastics from wastewater to prevent eutrophication and plastic pollution in Delhi'. He also interacted with Dr. Sangeeta Bansal, Dr. Prabhat Tanwar and Dr. Sarita Bansal, who implemented the UNEP SSFAs and analysed the data. He was particularly interested to know how to engage with the government stakeholders to take up these findings and carry forward the necessary interventions for sustainable management of water and nutrients in Delhi and beyond. There were multiple follow-up meetings in this regard with him (online) and other UNEP officials as well as government stakeholders such as the Delhi Jal Board, with whom the findings of this project were shared later in the year. The project was successfully concluded and reports were submitted to UNEP and DJB. The publication of the findings in peer reviewed journals is to be pursued during 25-26.

2. Prof. Raghuram joined the adhoc group of UNEP-accredited S&T Major Stakeholders to promote the need for an intergovernmental Science Policy Panel on Chemicals, Waste and Pollution on behalf of SIT. He has attended some of its meetings online and have also interacted with the main organizers in person during his visit to Nairobi in May 2024.

3. Prof. Raghuram and Prof. Adhya attended and presented our Indian work related to the INMS and SANH projects on agricultural nitrogen use efficiency in India and South Asia at the XXII International Nitrogen Workshop, 17-21 Jun., Univ. of Aarhus, Aarhus, Denmark.



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4. SIT was represented for the first time (by Prof. Raghuram) at the 69th United Nations Civil Society Conference held at Nairobi during 9–10 May, 2024. It is a premier event at the United Nations that brings together academia, senior UN officials, national permanent representatives to UN, prominent international civil society organizations, youth, public opinion makers and media to discuss issues of global concern. This year's conference was the first to be ever organized in Africa, in the runup to the Summit of the Future held in Sept. 2024 at the UN Headquarters in New York. The two-day conference at Gigiri, Nairobi titled "In support of the Summit of the Future", attracted over 1000 participants and had many plenary and parallel sessions/workshops over two days on diverse themes. They included, Sustainable development and financing for development, International Peace and Security, Science, technology and innovation and digital cooperation / The Global Digital Compact, Youth and Future Generations / The Declaration on Future Generations, and Transforming global governance. A recurring point in discussions was the poor social connect between knowledge producers/providers (such as scientists, teachers, technologists), policy makers and the civil society, the need for establishing strong linkages between them on all sustainability issues, leveraging technology. Prof. Raghuram made many interventions related to sustainable nitrogen and nutrient management, need to build systems for evidence-based policy, need to incentivize scientists to go beyond primary research and highly specialized journal publications to secondary, tertiary and higher levels of aggregation of scientific knowledge for policy inputs, mechanisms to prevent parachute science and build local capacity for knowledge production and evidence-based policies, leveraging climate financing or colonial reparations to enhance S&T infrastructure and R&D funding, role of journals to bridge the documentation gaps between scientists and policy makers, etc. Many of them were recorded and well received. More importantly, he was able to meet some important functionaries of the UNEP involved in the ecosystems division and other related branches to understand the emerging funding opportunities and explain SIT's areas of expertise for any future projects to be undertaken at SIT.

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5. Prof. Raghuram attended several steering committee meetings of the International Nitrogen Initiative as its Chair Emeritus. Among other things SIT was applauded for its excellent organisation of the INI's International Nitrogen Conference at GGSIPU in Feb 2024 in New Delhi.
6. SIT was represented by Prof. Raghuram virtually in the meetings of the UNEP working group on nitrogen, which was formed as a follow-up of the India-led UNEP resolution (UNEA 4/14) on Sustainable Nitrogen Management. India's roadmap on nitrogen management was well received by the working group. It was deliberated and finalized in the meetings of the Interministerial National Nitrogen Steering Committee, of which Prof. Raghuram is a member. The tenure of this committee expired during this year and efforts to revive it are in progress, to guide the national policies and actions on nitrogen management.
7. Prof. Raghuram was an invited Panelist at an interdisciplinary session on 'Bold Targets and Breakthroughs for Climate Resilience' at the Global Bio India conference held between 12-14 Sept 2024 at Pragati Maidan, New Delhi, India. He spoke on sustainable nitrogen and nutrient management for climate change and sustainable development and was very well received.
8. In recognition of the work of SIT in the field, Prof. Raghuram N. was invited by the Centre for Science and Environment as a resource person for two of its training programmes held during this year at the Anil Agarwal Environment Training Institute, Nimli, Rajasthan. He lectured on 'Nitrogenous emissions in Agriculture' during the CSE-AAETI Climate week training programme on 'Towards Climate-Resilient Agriculture' during 15-16 Oct, and also during the CSE training cum workshop on 'Framing Agriculture-Climature Connections' during 21-23 Aug, 2024.
9. Expanding the interdisciplinary linkages of SIT in the scientific community and civil society, Prof. Raghuram delivered a keynote lecture on 'Crop nitrogen use efficiency for sustainable agriculture - balancing bacterial N-fixation with plant N-assimilation' at the 65th Annual International Conference of the Association of Microbiologists of India (AMI), 14-17 Nov, 2024, at the Guru Jambheshwar University of Science & Technology, Hisar, India. During this visit, he also held an online meeting with Nihkil Goveas, Uday Vaddi and colleagues representing the work of Environmental Defense Fund on climate-smart agriculture in India. This was followed by an online event to formally close the SANH project.

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10. During the Global Soils Conference held at the NASC complex, New Delhi during Nov 19–22, Prof. Raghuram presented Prof. Himanshu Pathak with the YP Abrol Memorial Award on behalf of SIT. Later during this conference, Prof. Raghuram gave a lecture on ‘Nutrient pollution, biodiversity, nutrient use efficiency and nutrient recycling for sustainable agriculture’, based on which he was invited to contribute a book chapter.
11. On the invitation of the World Bank, Prof. Raghuram attended its ‘World Soils Day’ event on 5th Dec. 2024. He was able to interact with several stakeholders from the World Bank, ICRISAT and other international bodies, Indian civil servants and scientists from the central and state govt bodies. Several practical aspects and challenges of sustainable nutrient management were discussed.
12. At a civil society workshop on ‘Agro–ecological Approaches for Just Transitions: An Indian Lens’ held during 12–14 Dec, 2024 at the USO House, New Delhi, Prof. Raghuram presented the SIT work on Nutrient management issues for sustainable agriculture & beyond. This was followed by another plenary lecture on ‘Nutrient management for sustainable agriculture and nutritional security’ at the AIPSN Conference during 27–30 Dec, at the West Bengal University of Animal and Fishery, Sciences, Belgachia, Kolkata. Prof. Raghuram argued that improving fertilizer use efficiency and reducing fertilizer demand is in the interest of the farmers for sustainable agriculture, amidst concerns on fertilizer subsidy.
13. SIT’s media outreach included a Radio talk by Prof. Raghuram on Nitrogen pollution and triple planetary crisis, under the ‘Science Talk’ series on the All India Radio on 30th Jan. 2025, New Delhi.
14. SIT was privileged to facilitate the work and stay of Prof. Eric Davidson from the University of Maryland during Jan–May 2025, as he was hosted as the Indo–US, Nehru–Fullbright distinguished senior scholar by Prof. Raghuram at Gur Gobind Singh Indraprastha University. His tenure and work in India generated considerable interest in SIT on India’s pioneering efforts towards green ammonia production on a large scale, mainly as a part of the energy transition towards green hydrogen, but also as a potential fertilizer. Profs. Raghuram and Eric Davidson were able to visit ACME and interact with other players in the field. They also gave seminars at the Centre for Energy, Environment and Water (CEEW), New Delhi, in which Prof. Raghuram spoke on ‘Nutrient management for nutritional security & sustainable development’ on 18 Feb. 2025.

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15. As a part of our continued commitment towards the outcomes of the completed GEF–UNEP–INI–CEH project ‘Towards INMS’ that ended in 2023, Prof. Raghuram attended multiple editorial meetings online with INMS partners throughout the year as one of the editors of the forthcoming book on International Nitrogen Assessment. All the chapters (including regional chapters such as one on South Asia) have been peer reviewed, edited and are being finalized for publication with the Cambridge University Press.
16. At a hands-on Workshop for young scientists on measurement of free radicals, held during 10–11 Mar 2025 at NIPGR, New Delhi, Prof. Raghuram, delivered a keynote talk on ‘Nitrogen oxides in reactive nitrogen pollution and triple planetary crisis’.



Publications

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3. Raghuram, N., Kant, S., Chardon, F., eds. (2024). Nitrogen use efficiency: Plant biology to crop improvement. Lausanne: Frontiers Media SA. doi: 10.3389/978-2-8325-5222-3. 170p.
4. Jaiswal D. and Raghuram, N. (2024). Molecular Interventions for Improving Crop Nitrogen Use Efficiency: Trends, Opportunities and Challenges in Rice. In Improving nitrogen use efficiency in crop production, Ladha J.K. (Ed), Burleigh Dodds Science Publishing, Cambridge, UK, ISBN:13: 9781801464703. Pp: 57-112

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