



Sustainable India Trust

ANNUAL REPORT

2021 - 22

MAY 2022



1234567890

SUSTAINABLE INDIA TRUST

ANNUAL REPORT 2021-22

www.sustainableindiastrust.org

T: +91-11-2152 0154

E: sustainableindiastrust@gmail.com

Twitter: @SusIndTrust

Address:

F4, A Block, NASC Complex,
1st floor, National Rainfed Area Authority
building, PUSA, Dev Prakash Shastri Marg,
Delhi 110012, India

MAY 2022

SIT ANNUAL REPORT 2021-22

©2022 Sustainable India Trust

ACTIVITIES

1. SIT President Prof. N. Raghuram attended the **Executive Group meeting** of the **UKRI-GCRF-SANH Project on 8th Apr 2021**.
2. Prof. N. Raghuram and Prof. Tapan Kumar Adhya attended the **SANH Partner briefing meeting** on 12 April 2021 and work package leader's meetings on 13-14 Apr 2021 in online mode.
3. Prof. N. Raghuram and Prof. Tapan Kumar Adhya attended the coordinating lead authors' meeting on **South Asian Nitrogen Assessment Chapter** as a part of the International Nitrogen Assessment on 14 April 2021 under the INMS project in online mode.
4. Prof. N. Raghuram attended the editorial meeting on **Regional Demonstration Chapters** under part 3 of the International Nitrogen Assessment on 19 April 2021 under the INMS project in online mode.
5. Prof. N. Raghuram and Prof. Tapan Kumar Adhya virtually attended the international event on **Nitrogen for Climate and Green Recovery** during 29-29 Apr 2021 in Colombo. It was jointly hosted by the British High Commission and the Government of Sri Lanka with the support of the South Asia Cooperative Environment Programme (SACEP), UKRI GCRF South Asian Nitrogen Hub Project and the GEF/UNEP International Nitrogen Management System (INMS) Project.

6. SIT members virtually attended the meeting of SANH partners on Zero Budget Natural Farming organized by Prof. Lindsay Jaacks, University of Edinburgh.

7. Prof. N. Raghuram attended the Editors' meeting online on the International Nitrogen Assessment on 12 May 2021 under the INMS project.

8. Prof. N. Raghuram and Prof. Tapan Adhya attended the Steering Committee meeting (online) of the International Nitrogen Initiative on 26th May 2021 in their capacities as the INI global Chair and South Asia Regional Director.

9. Prof. N. Raghuram attended the coordination meeting on 27 May 2021 online for a nitrogen event, during the World Environment Day celebrations with UNEP and others and also participated as a Speaker.

10. SIT members attended the 8th Global Nitrogen Conference N2021 held virtually during 31 May-03 Jun. from Berlin, Germany, jointly organized by the INI and the Govt. of Germany. As the INI Chair, Prof. N. Raghuram chaired some sessions, presented a keynote lecture on 'Improving plant nitrogen use efficiency: From Phenotype to Genotype' and led the deliberations on the Berlin Declaration on Sustainable Nitrogen Management for the SDGs which was adopted unanimously.


11. SIT members attended the special online event on 03 Jun 2021 held to present the first YP Abrol Memorial Award jointly to Dr. Anjan Datta and Mr. Mahesh Pradhan (both from UNEP), as a part of the 8th Global Nitrogen Conference (N2021) held virtually from Berlin, Germany. The Award event was widely reported in the Indian and international media, especially in South Asia.

12. Prof. N. Raghuram and Prof. Tapan Adhya attended the online event held by FAO to release its Report on Global Soil Pollution on 4th Jun 2021. The same day, they also attended the UNEP-UAF World Environment Day Webinar on Sustainable Nitrogen Management for Ecosystem Restoration, in which Prof. Raghuram presented a Keynote lecture on 'South Asia: A hotspot for nitrogen pollution'

13. Prof. N. Raghuram and Prof. Tapan Adhya attended the online SANH project meeting on 18 Jun 2021 in their capacity as the leaders of various research packages of the project, apart from the major role of SIT in RP1 on the nitrogen policy arena.

14. Prof. Raghuram attended the online editorial meetings on the International Nitrogen Assessment book on 18, 22 and 23 June and 02 July 2021, under the INMS project, in which SIT is a major partner from South Asia.






15. SIT and SCON office bearers had a joint meeting on 5th Jul 2021 to discuss the continuing impact of COVID19 on activities beyond meeting the targets of ongoing projects, the announcement of the next SCON & SIT awards etc.

16. Prof. N. Raghuram organized and chaired an online ASPB Workshop on Plant Biology for Crop Nitrogen Use Efficiency and Sustainable Nitrogen Management on 18 Jul, 2021, as a part of the American Society for Plant Biology annual meeting and PB21 Worldwide summit. The event attracted several speakers and attendees from several countries, in which he presented his own research on NUE in rice: From phenotype to genotype.

17. Prof. N. Raghuram delivered an online presentation on 'Nitrogen in agriculture and climate change' at the AIPSN Webinar on Agriculture and Climate Change on 21 Jul, 2021 organized by the All India Peoples' Science Network, to stimulate wider engagement between science and society on contemporary issues.


18. To take such engagement further through a teach-the-teacher approach, Prof. N. Raghuram delivered an online presentation on Nitrogen in agriculture and climate change at the AIPSN Webinar on Agriculture and Climate Change on 21 Jul, 2021 organized by the All India Peoples' Science Network, to stimulate wider engagement between science and society on contemporary issues



19. SIT in association with International Nitrogen Initiative (INI) and UNEP Global Partnership on Nutrients Management (GPNM), organized an affiliated virtual session on Sustainable Nitrogen Management for Sustainable Food Systems on 28th July 2021 during the Pre-Summit ahead of the main UN Food Systems Summit (Sept. 2021). It set the stage and agenda for the main summit by bringing together diverse actors from around the world to leverage the power of food systems to deliver progress on all 17 Sustainable Development Goals (SDGs).

20. As a part of the wider outreach programme on sustainable nitrogen management, Prof. Raghuram gave a presentation to a distinguished international network of JNU alumni on 'Climate change beyond carbon and net zero talk' on 04 Sept., 2021 from New Delhi. It was attended by an interdisciplinary group of intellectuals from India, USA and elsewhere abroad.


21. SIT members Prof. N. Raghuram and Sangeeta Bansal attended several SANH online meetings on stakeholder analysis from 14 Sept 2021, to help the project partners to map the views of various stakeholders on various aspects of reactive nitrogen pollution and its management.



22. Prof. N. Raghuram and Prof. Tapan Kumar Adhya attended an online introductory meeting on 15 Sept 2021 to welcome the new DG of the South Asia Cooperative Environment Programme (SACEP), Dr. Masumur Rahman from Bangladesh. They highlighted the strong South Asian cooperation on reactive nitrogen and the role of SACEP in the emerging South Asian leadership of global intergovernmental cooperation on sustainable nitrogen management.

23. On the same day, Prof. Raghuram also had an online meeting with the UNEP Global Waste Water Initiative (GWWI) to discuss the development of a project on estimating nutrient recovery potential from waste water in collaboration with the UNEP Global Partnership on Nutrient Management (GPNM), an idea that Prof. Raghuram has mooted in the joint meeting of both the partnerships in Nairobi in 2019.

24. Prof. N. Raghuram and Prof. Tapan Kumar Adhya attended the first (online) meeting of the high level inter-ministerial National Nitrogen Steering Committee on 22 Sept. 2021. It was set up by the Ministry of Environment, Forests and Climate Change (MoEFCC) to guide the implementation of the India-led first ever UN resolution (UNE4/14) on Sustainable Nitrogen Management. SIT is the only organisation to contribute two members to this distinguished committee to deal with the multidimensional challenge of reactive nitrogen pollution. Prof. N. Raghuram made a presentation to the Committee on Indian nitrogen assessment and its regional and global linkages.

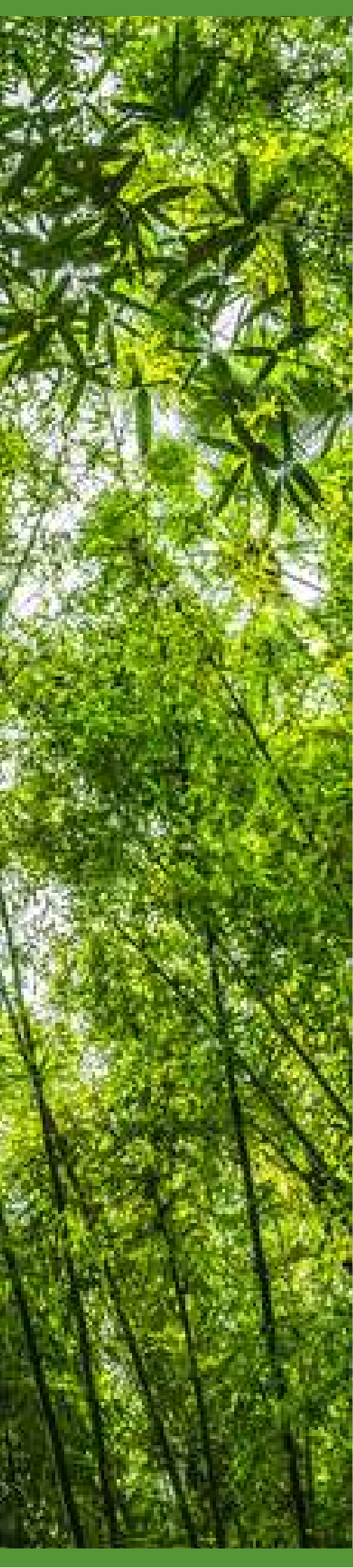


25. SIT virtually participated in the MoES UKRI event on nitrogen on 29th September 2021, ahead of the UNFCCC COP26, which was held at Glasgow between 31 Oct to 13 Nov 2021. It was organized by the Ministry of Earth Sciences, Government of India and UK Research and Innovation to explore the gaps, feasibility and opportunities for adaptation and resilience research for climate change.

26. SIT members participated in the online plenary event of the project partners of UKRI-GCRF-SANH on 06 Oct 2021, in which the impacts of COVID on the funding and activities of the project were discussed. SIT once again highlighted how it is doing its best to fulfil all the commitments under the project, despite the fact that it could not receive any money for the project beyond the first instalment, due to the changed forex norms and the pending status of its FCRA application.

27. SIT and SCON office bearers met on 21 Oct 2021 to discuss their annual awards, including the SIT's Prof YP Abrol Memorial Award.

28. As a part of the wider outreach programme on nitrogen, Prof. N. Raghuram made a presentation at the KK Biotech International Webinar on 23 Oct., New Delhi on the topic 'Haber-Bosch Process of nitrogen fixation, Borlaug's green revolution and the current challenge of sustainable nitrogen management', which was attended by scientists across several disciplines from several countries, including EU and USA.



29. SIT members participated in the special event ‘Rediscovering Nitrogen’ as a part of the events associated with UNFCCC COP26, which was held at Glasgow between 31 Oct to 13 Nov 2021. SIT also participated online in the SACEP COP26 Blue Zone event on 03 Nov 2021.

30. SIT signed the Small Scale Funding Agreement (SSFA) on 1st December 2021 with United Nations Environment Programme UNEP to execute the project titled “Nutrient management of wastewater to prevent eutrophication in Delhi, India”.

31. Prof. Raghuram attended the crucial Executive Group meeting of the UKRI-GCRF-SANH project on 14 Dec 2021, which discussed the budgetary and programmatic readjustments in view of the COVID-19-induced fund cuts and operational difficulties in some components of the project. SIT highlighted how SIT and other Indian partners on the project were working hard to ensure minimal impact of such developments on their own contributions to the project.

32. SIT in collaboration with Society for Conservation of Nature (SCON) organized the SCON & SIT Award ceremony and Webinar on 23rd December 2021 to honour the people contributing remarkably in research and development particularly in relation to sustainable agriculture and nature conservation. All the awardees presented 7-8-minute presentation on their silent accomplishments.

29. SIT members participated in the special event 'Rediscovering Nitrogen' as a part of the events associated with UNFCCC COP26, which was held at Glasgow between 31 Oct to 13 Nov 2021. SIT also participated online in the SACEP COP26 Blue Zone event on 03 Nov 2021.

30. SIT signed the Small Scale Funding Agreement (SSFA) on 1st December 2021 with United Nations Environment Programme UNEP to execute the project titled "Nutrient management of wastewater to prevent eutrophication in Delhi, India".

31. Prof. Raghuram attended the crucial Executive Group meeting of the UKRI-GCRF-SANH project on 14 Dec 2021, which discussed the budgetary and programmatic readjustments in view of the COVID-19-induced fund cuts and operational difficulties in some components of the project. SIT highlighted how SIT and other Indian partners on the project were working hard to ensure minimal impact of such developments on their own contributions to the project.

32. SIT in collaboration with Society for Conservation of Nature (SCON) organized the SCON & SIT Award ceremony and Webinar on 23rd December 2021 to honour the people contributing remarkably in research and development particularly in relation to sustainable agriculture and nature conservation. All the awardees presented 7-8-minute presentation on their silent accomplishments.

33. SIT office bearers attended important online meetings on the Sri Lankan initiative to pilot a follow-up resolution on nitrogen management to the UNEA 5.2, including those held on 12, 13, 17 and 18 Jan 2022.

34. SIT members (Prof. N. Raghuram, Prof. Tapan Kumar Adhya and Dr. Sangeeta Bansal) actively participated in all South Asian Nitrogen Hub (SANH) policy paper virtual meetings for carrying out the necessary research and for the development of the manuscript titled “Policies to combat nitrogen pollution in South Asia: Gaps and opportunities” which was eventually published on 28th January 2022 in the British Journal, Environmental Research Letters. The sheer number of SIT personnel and its partners is an evidence of SIT’s significant research contribution towards South Asian policy arena under the SANH project.

35. Prof. Raghuram attended the online Editors’ meeting on the International Nitrogen Assessment book on 27 Jan 2022 and 15 Feb 2022.

36. Prof. Raghuram attended the online meetings of NGOs on nitrogen ahead of UNEA5.2, in which SIT participated as a UNEP-accredited NGO.

37. SIT members have successfully attended various monthly SANH Work Plan 1.1 virtual update meetings (9 nos.) organized from April 2021 to 9th March 2022 and substantially contributed in stakeholder analysis and towards the development of National Nitrogen Policy Report of India; SACEP-SANH report on “South Asian Regional Cooperation on Sustainable Nitrogen Management”; different policy briefs/papers etc.

38. SIT members have also successfully attended SANH RP4 meeting on “Upscaling of Nitrogen Fluxes across South Asia” on 16th February 2022 to learn and understand more about sources of nitrogen pollution and their impacts on human health and data and integration of nitrogen flows.

39. Prof. N. Raghuram from SIT gave a talk on “Improving rice nitrogen use efficiency for sustainable nitrogen management: From phenotype to genotype and beyond” on 17th February in DiSTAP Seminar Series organized by MIT, Singapore.

40. SIT members have led the South Asian partners in the development of a preliminary South Asian nitrogen assessment chapter for the forthcoming book on International Nitrogen Assessment as a part of the Towards INMS project. The chapter titled “Assessment of Nitrogen Fluxes, Impacts and Solutions in South Asia” being finalized to be published in 2023 is a result of several scientific exchanges and virtual meetings throughout 2021-22.

41. SIT developed and submitted a research article entitled “Long-term trends of nitrous oxide emission from fuel combustion in South Asia” to Environmental Research Letters for publication on 22 September 2021 authored by Dr. Sangeeta Bansal, Prof. N. Raghuram, Prof. Tapan Kumar Adhya, Prof. Himanshu Pathak, Md. Mizanur Rahman, Dendup Tshering, Khem Raj Dahal, Abdul Wakeel and other South Asian Partners under International Nitrogen Management Systems (INMS). This is an important contribution for South Asian Nitrogen Assessment.

42. SIT member actively participated in online Focus Group Discussion-Stakeholder analysis for policies related to agriculture sector organized by TERI School of Advanced Studies on the behalf of the UKRI-GCRF South Asian Nitrogen Hub on 18th February 2022.

43. SIT as a UNEP-accredited NGO participated online in the deliberations on UNEA 5.2 resolutions at Nairobi on 01-02 Mar 2022. SIT was represented by Prof. Raghuram.

44. Prof. Raghuram from SIT has cochaired the meetings of the SANH Ethics Advisory Committee with Prof. Roger Jeffery from the University of Edinburgh. The last meeting of 2021-22 was held on 4th March 2022.

45. SIT also took part in the virtual meet on “Synthetic N and crop production policy brief” organized by SANH on 21st March 2022. Aim of this meet was to develop a policy brief that will cover regional and national level summary on the statistics, available for new reactive nitrogen for crop production. It will provide an overview into the chemical fertilizer production, import, export and consumption in South Asia. SIT has effectively contributed for the development of this policy brief which is going to be released soon after final review and editing.

46. SIT participated in the online meetings of SANH RP1 and RP2 on 23-24 Mar 2022.

PUBLICATIONS

1. Yang A.L, Raghuram, N., Porter, S., Adhya, T.K., Bansal, S., Panda, A. Nissanka, S. Shazly, A., Hassan R., Watto, M.A., Anik, A.R., Joshi, R., Jayaweera, A., Pokhrel, A., Kaushik, H., Kanter, D., Chowdhury, S., Sharmin, S., Das, S., & Jeffery R. (2022). Policies to combat nitrogen pollution in South Asia: Gaps and opportunities. *Environ. Res. Lett.* 17: 025007 doi: <https://doi.org/10.1088/1748-9326/ac48b2>
2. Madan, B., Malik, A. and Raghuram, N. (2022). Crop nitrogen use efficiency for sustainable food security and climate change mitigation. In *Plant Nutrition and Food Security in the Era of Climate Change*, Kumar, V., Srivastava, A., Penna, S. (Eds), Elsevier, Academic Press. ISBN 978-0-12-822916-3. Pp. 47-72.
3. Udvardi, M., Below, F.E., Castellano, M., Eagle, A., Giller, K.E., 2 Ladha, J.K., Liu, X., Maaz, T.M., Nova-Franco, B., Raghuram, N., Robertson, G.P., Saha, M., Roy, S., Schmidt, S., Tegeder, M., York, L.M., and Peters, J. (2021). A research road map for responsible use of agricultural nitrogen. *Front. Sustain. Food Syst.* 5: 660155. doi: 10.3389/fsufs.2021.660155.



4. Raghuram, N. and Beig, G. (2021). Climate Change Is Not Just About Carbon, There Is Nitrogen Too! Outlook 12 Aug.

5. Raghuram, N. (2021). Two South Asians from UNEP shared the first YP Abrol Memorial Award. Current Science 120 (12), 1810.

DATABASE

Database Development SANH nitrogen-relevant policy database (2021): Yang, A.L.; Adhya, T.K.; Anik, A.R.; Bansal, S.; Das, S.; Hassan, R.; Jayaweera, A.; Jeffery, R.; Joshi, R.; Kanter, D.; Kaushik, H.; Nissanka, S.P.; Panda, A.N.; Pokharel, A.; Porter, S.D.; Raghuram, N.; Sharna, S.C.; Shazly, A.; Shifa, S.; Watto, M.A. , 2021. Nitrogen-relevant policies from South Asia collected by the South Asian Nitrogen Hub (SANH) 2020-2021. NERC EDS Environmental Information Data Centre.
<https://doi.org/10.5285/e2f248d5-79a1-4af9-bdd4-f739fb12ce9a>



SUSTAINABLE INDIA TRUST

ANNUAL REPORT 2021-22

©2022 Sustainable India Trust