MAY 2021

SUSTAINABLE INDIA TRUST

2020-21

ANNUAL REPORT

CONTENTS

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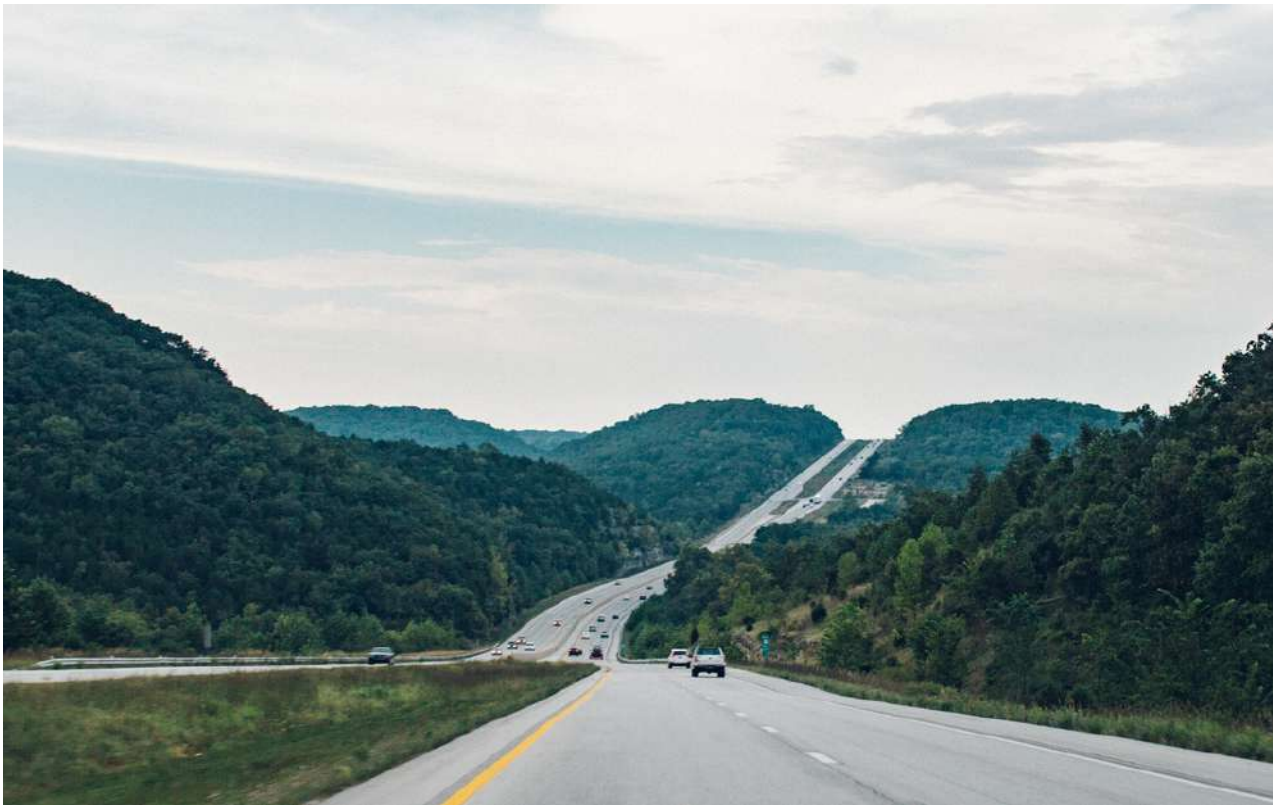
ACTIVITIES

1. SIT organized a follow up meeting for WP: 1.1, 1.3 and related partners under SANH on 17th March 2020 to plan a briefing note for Regional Working Group Meeting of SACEP held in March-April 2020.
2. SIT members also organized zoom virtual internal meetings on 6th, 14th and 21st April 2020 to discuss the work status of INMS and SANH projects to plan future activities accordingly.
3. SIT, in collaboration with Society for Conservation of Nature (SCON) organized a GOOGLE MEET on 5th June 2020 to celebrate World Environment Day and to have a discussion on various administrative activities of SIT like Audit report for the year of 2019-20; Status of FCRA/DSIR applications of SIT and other proposed activities for the year 2020-21.



4. Fifth Plenary Meeting of the "Towards INMS" project (INMS-5)

Prof. N. Raghuram and Prof. Tapan Kumar Adhya from SIT participated in Fifth Plenary Meeting of the "Towards INMS" project (INMS-5) organized and hosted by INMS project co-ordination unit virtually on zoom from 7th July 2020 to 10th July 2020 to provide overview and updates of the activities going on under different components of INMS including component 1 (Tools and Methods for the N cycle), component 2 (Global quantification of N flows, threats and benefits), component 3 (Regional demonstration of Full Nitrogen Approach) and component 4 (Awareness raising and knowledge sharing, the International Nitrogen Assessment, and the UN Environment Programme Nitrogen Working Group).

'Towards INMS' is a 6M USD project, is implemented by the UN Environment with funding through the Global Environment Facility (GEF). It is executed through the UK Centre for Ecology & Hydrology (UKCEH) representing the interest of the International Nitrogen Initiative. There are over 70 global project partners, supporting the work through co-finance and we will be conducting five funded regional demonstrations.

5. National e-conference on 'COVID 19 and national lockdown: impacts and future strategies in agriculture and environment'

SIT members participated in a national e-conference on 'COVID 19 and national lockdown: impacts and future strategies in agriculture and environment' held by SCON on 20 July 2020. It was attended by over 50 participants from across the country. The speakers included the office bearers of SCON, Prof. YP Abrol and N Raghuram, New Delhi, H Pathak, NIASM, Baramati, TK Adhya, KIIT, Bhubaneswar, A Bhatia and DK Sharma, IARI, New Delhi, U Kulshrestha, JNU, New Delhi. External speakers included Shalini A Tandon, NEERI, Mumbai, B Mondal, BCKV, Kalyani, Sudip Mitra, IIT, Guwahati, GAK Kumar, NRRI, Cuttack, NP Singh, NIAP, New Delhi. A Technical Bulletin by Pathak H, Raghuram N, Adhya TK and Bhatia A (2020) COVID-19 and National Lock Down: Impacts and Future Strategies in Agriculture and Environment. Technical Bulletin, Society for Conservation of Nature, New Delhi, India. pp 29 was published on the topic.

6. Road map towards a Regional Nitrogen Policy for South Asia

Prof. N. Raghuram and Prof. Tapan Kumar Adhya from SIT attended E-conference jointly organized by SACEP and INMS-SANH on 21st July 2020 for 1st Sub-Regional Nitrogen Frame Work Policy Meeting. The main theme of this E-conference was to develop the road map towards a Regional Nitrogen Policy for South Asia.

7. Homage and condolences to the family of Prof. Yash Pal Abrol

SIT and SCON organized a virtual meeting on 29th July 2020 to pay homage and offer condolences to the family of Prof. Yash Pal Abrol, the founder and president of SIT, on his unfortunate demise on 28th July 2020. The office bearers of SCON and SIT issued a brief obituary in the media as well as published a detailed article in Current Science on his contributions.

8. Policies to combat nitrogen pollution in South Asia: Gaps and opportunities

Prof. N. Raghuram, Prof. Tapan Kumar Adhya and Dr. Sangeeta Bansal actively participated in all South Asian Nitrogen Hub (SANH) policy paper virtual meetings started from 22 July 2020 to 29th April 2021 and effectively worked as a team along with other SANH partners for drafting the paper titled “Policies to combat nitrogen pollution in South Asia: Gaps and opportunities.”

9. SIT members participated in COVID-19 Meeting organized by UK Centre for Ecology and Hydrology (CEH), UK on 3rd November 2020 to assess the impacts of covid-19 on WP 1.1. in order to assist the WP leads to plan future activities.

10. SANH Plenary Event, 17th February to 19th February 2021

SIT members attended the SANH Plenary Event organized from 17th February to 19th February 2021 by SANH-CEH, UK to have discussions on variety of topics under different sessions including presentations by students and early career researchers to introduce themselves and their research work to the entire hub, session on Ethics and Safeguarding to provide an overview on how SANH can ensure that work in hub is completed to the highest ethical standard and final session related to updates on work package and research programme progress, a Director's update, discussion on COVID-19 impacts, information on the Stage-gate Review and reporting, information on the SANH MEL strategy and more.

11. SIT-SCON Annual Awards distributed

SIT in collaboration with Society for Conservation of Nature (SCON) organized the SCON & SIT Award ceremony and Webinar on 3rd March 2021 to honour the people contributing remarkably in research and development particularly in relation to sustainable agriculture and nature conservation. The annual awards were announced for excellence in science and recognition for younger scientists. Dr. Anjan Datta and Mahesh Pradhan were selected for the YP Abrol Memorial Award of SIT.

12. SIT attended the 2nd Joint Meeting on 'Global Partnership on Nutrient Management (GPNM) and Global Wastewater Initiative (GW2I)'

Himanshu Pathak and N. Raghuram attended the Second Joint Meeting of the "Global Partnership on Nutrient Management (GPNM) and Global Wastewater Initiative (GW2I)" organized by the Global Programme of Action for the Protection of the Marine Environment from Land-Based Activities (GPA) on 10 June 2020 in virtual mode.

PUBLICATIONS

1. Moring, A., Hooda, S., Raghuram, N., Adhya, T.K., Ahmad, A., Bandyopadhyay, S.K., Barsby, T., Beig, G. Bentley, A., Bhatia, A., Dragosits, U.,Drewer, J., Foulkes, J., Ghude, S., Gupta, R., Jain, N., Kumar, D., Kumar, R.M., Ladha, J.K., Mandal, P.K.,Neeraja, C.N., Pandey, R., Pathak, H, Pawar, P., Pellny, T.K., Poole, P., Price, A., Rao, D.L.N., Reay, D.S., Singh, N.K., Sinha, S.K., Srivastava, R., Shewry, P., Smith, J., Steadman, C.E., Subrahmanyam, D., Surekha, K., Karnam, V., Singh, V., Uwizeye, A., Vieno, M., Sutton, M.A. (2021). Nitrogen challenges and opportunities for agricultural and environmental science in India. Front. Sustain. Food Syst. 5: 505347.

2. Raghuram, N. Sutton, M.A., Jeffery, R., Ramachandran, R., Adhya, T.K. (2021). From South Asia to the world: embracing the challenge of global sustainable nitrogen management. One Earth 4(1): 22-27.


frontiers in Sustainable Food Systems

POLICY AND PRACTICE REVIEWS

OPEN ACCESS

Nitrogen Challenges and Opportunities for Agricultural and Environmental Science in India


CellPress

One Earth

Reflection

From South Asia to the world: embracing the challenge of global sustainable nitrogen management

PUBLICATIONS


CellPress

Gold Standard for the Global Goals 1 ton of CO_2 offset

One Earth

Commentary

The nitrogen decade: mobilizing global action on nitrogen to 2030 and beyond

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[3]ETSIAAB, CEIGRAM/Agricultura Production, Universidad Politécnica de Madrid, Madrid, Spain
[4]School of Geosciences, University of Edinburgh, Edinburgh, Scotland, UK
[5]School of Biotechnology, Guru Gobind Singh Indraprastha University, Sector 16C, Dwarka, New Delhi 110078, India
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https://doi.org/10.1016/j.oneear.2020.12.016

Despite its relevance to most UN Sustainable Development Goals (SDGs), nitrogen pollution still lacks broad visibility and coordinated global governance. A new goal to "halve nitrogen waste" by 2030 would save US$100 billion annually, contributing to post-coronavirus disease 2019 (COVID-19) economic recovery and multiple SDGs. The scientific community is working with the UN to coordinate and accelerate the necessary action.

3. Sutton, M.A., Howard, C.M., Kanter, D.R., Lassaletta, L., Moring, A., Raghuram, N., Read, N. (2021). The nitrogen decade: mobilizing global action on nitrogen to 2030 and beyond. One Earth 4(1): 10-14.

4. Metson, G.S., Chaudhary, A., Zhang, X., Houlton, B., Azusa Oita, A., Raghuram, N., Read, Q.D., Bouwman, L., Hanqin Tian, H., Uwizeye, A., Eagle, A.J. (2021). Nitrogen and the food system. One Earth 4(1): 3-7.

5. Fagodiya, R.K., Pathak, H., Bhatia, A., Jain, N., Kumar, A., Malyan, S.K. (2020). Global warming impacts of nitrogen use in agriculture: an assessment for India since 1960. Carbon Management 11: 291-301.

6. 2.1 Ladha, J.K., Jat, M.L., Stirling, C.M., Chakraborty, D., Pradhan, P., Krupnik, T.J., Sapkota, T.B., Pathak, H., Rana, D.S., Tesfaye, K., Gerard, B. (2020). Achieving the sustainable development goals in agriculture: The crucial role of nitrogen in cereal-based systems. Adv. Agron. 163: 39-116.

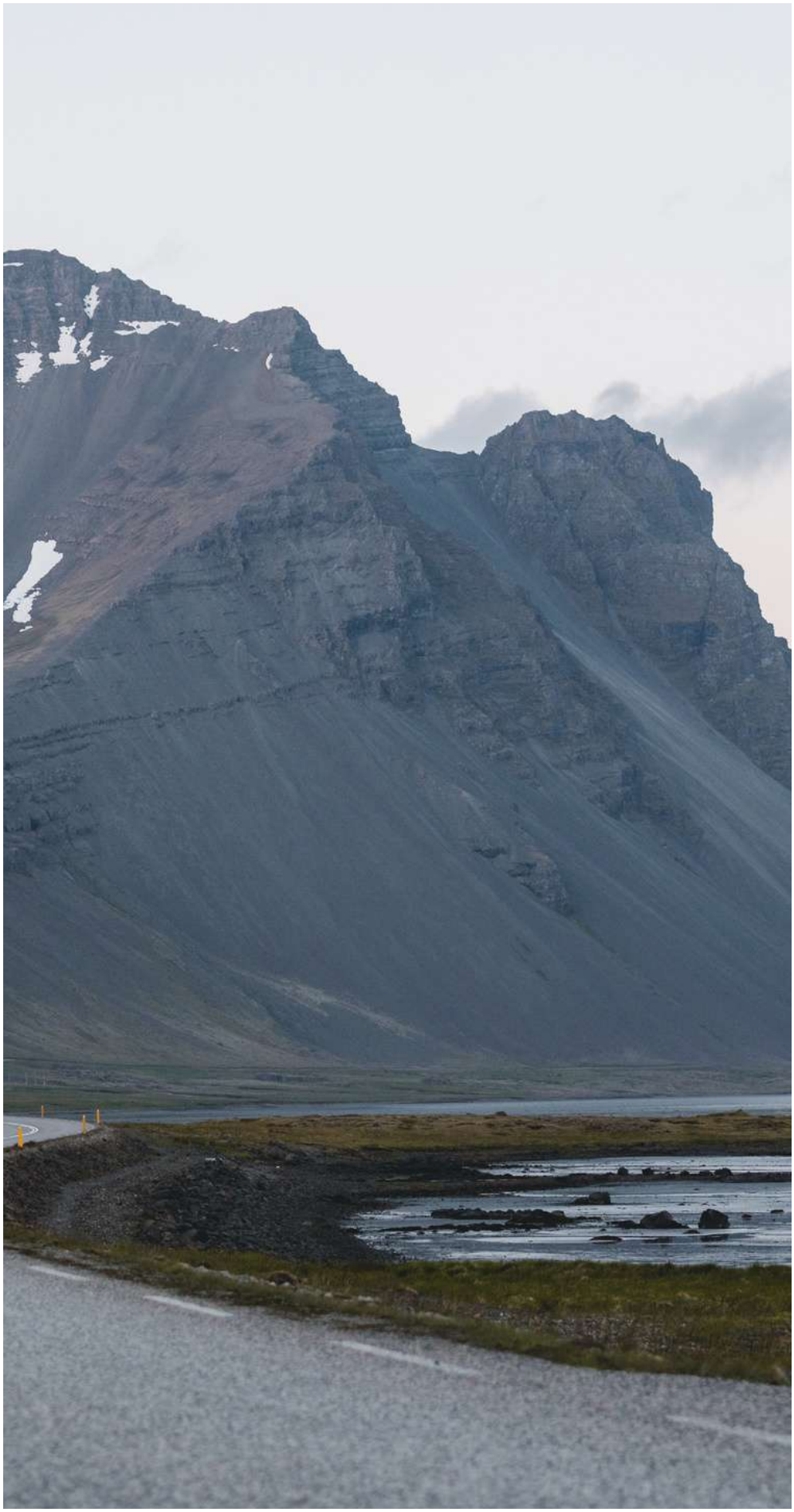
Nandula Raghuram
International Nitrogen Initiative and Sustainable India Trust

Efficiency will reduce pollution

Half of humanity would not have survived without using N fertilizers for food production. However, an excessive focus on production over productivity led to their inefficient use. The resulting losses of ammonia and nitrous oxide (N_2O) to air and nitrates to water cause pollution from cropping, livestock farming, and processing. We also have NO_x pollution (NO_2 and NO) as byproducts of fossil fuel combustion and residue burning, all affecting our health, environment, biodiversity, and climate change.

The India-led UNEP Resolution on Sustainable Nitrogen Management (UNEA-4, 2019) is a good starting point for global action. To achieve it, countries need to minimize their fossil fuel dependence, deter emissions, adopt efficient fertilizer management practices, and develop N-use-efficient crops. Most of the genetic potential to improve N-use efficiency in crops lies unutilized in the germplasm of cereals and other crops. We need to screen and use them for N efficiency rather than for N-responsive yield alone. At least half of the N fertilizers can be replaced with manures and other N-rich wastes without any loss of crop yield while saving N pollution. Further reduction can be achieved with legume-based cropping systems and rotations, biofertilizers, and limiting N waste in agro-industries.

Thus, there are many opportunities to improve N-use efficiency throughout the agri-food value chain to reduce N pollution and achieve sustainable N management.



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