Prof.YP Abrol Memorial Awardee
Dr.Anjan Datta

- Dr.Anjan Datta did Masters and PhD in Development Studies. He worked with national and international NGOs; national government and various academic and research institutes in Bangladesh, UK and the Netherlands as well international institutions e.g.World Bank, Asian Development Bank, DFID-UK, European Union and UN agencies. As the UNEP Program Officer, he initiated GPNM.
- Published extensively on land and water resources management.Author/Editor of three books. Published numerous articles in academic journals and many research monographs.
- Currently works as an Advisor to the International Centre for Climate Change and Development, co-managed by the IIED-London and Independent University Bangladesh.

Sustainable India Trust

Dr. Anjan Datta

(INTERNATIONAL CENTRE FOR CLIMATE CHANGE AND DEVELOPMENT, UK)

is conferred

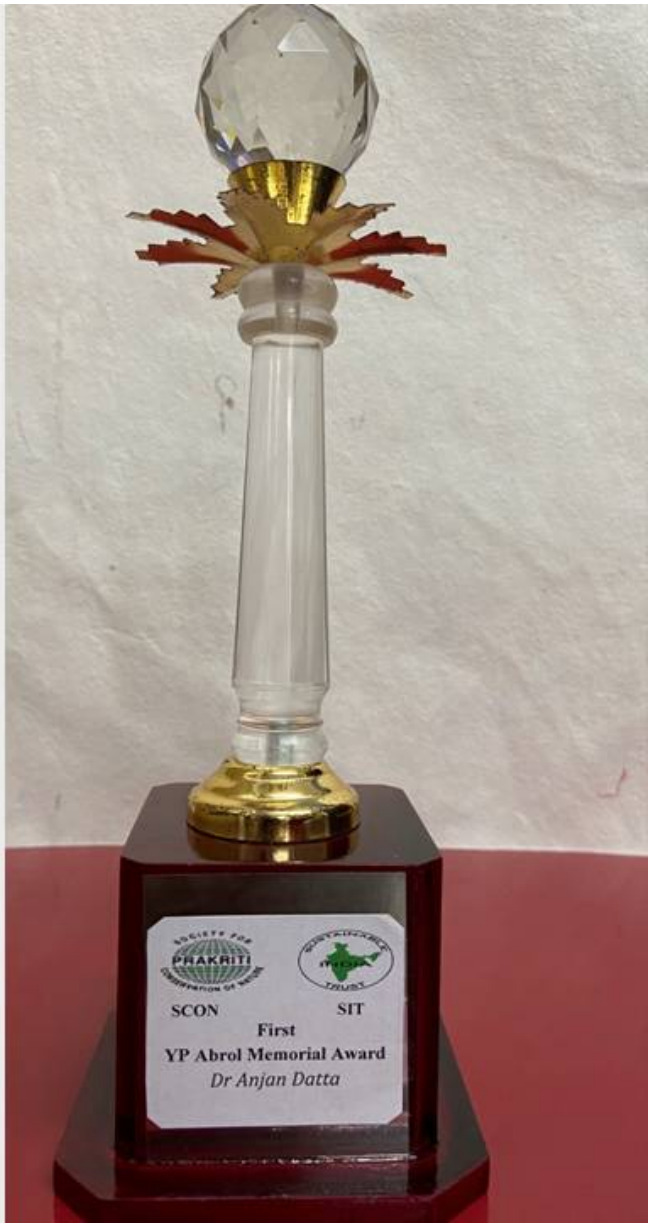
Prof. Y. P. Abrol Memorial Award 2020

for excellence in science and policy towards
sustainable nitrogen management

on March 3, 2021

PROF. N. RAGHURAM
President, SIT

PROF. T. K. ADHYA
Trustee, SIT



Prof.YP Abrol Memorial Awardee
Mr. Mahesh Pradhan

- Mr. Pradhan is Coordinator, Global Partnership on Nutrient Management (GPNM) in the UNEP Ecosystems Division, Nairobi, Kenya.
- Serves as the Focal Point for the United Nations Environment Assembly (UNEA) on Sustainable Nitrogen Management. He is a Member of UNEP's Task Team on Resilient Agriculture and Food Systems.
- At UNEP's International Environmental Technology Centre (IETC) in Osaka, Japan during 2016-2019, he woked on holistic waste management at the global, regional and national levels.
- During 2011-16, served as Chief of UN Environment's Environmental Education and Training Unit, based at UNEP headquarters in Nairobi, Kenya.

Sustainable India Trust

Mr. Mahesh Pradhan

(UNITED NATIONS ENVIRONMENT PROGRAMME, KENYA)

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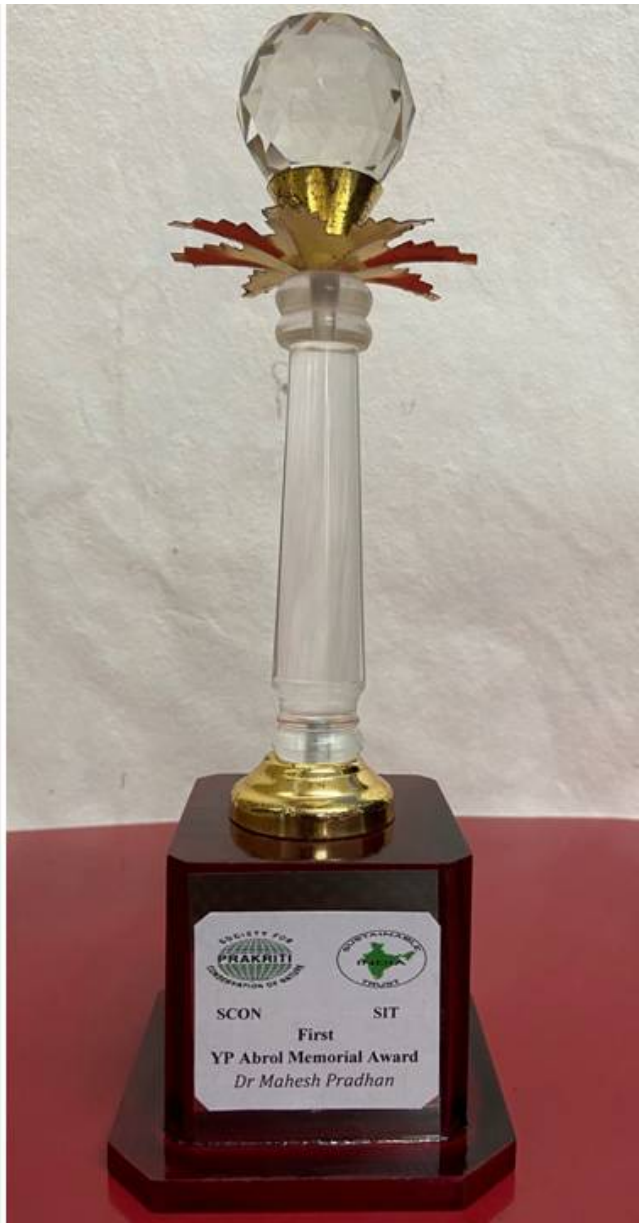

Prof. Yash Pal Abrol Memorial Award
Anjan Datta's acceptance speech

Honorable Chairperson – Prof. H. Pathak, Executive President, Society for Conservation of Nature (SCON), Prof. Kulshreshtha Vice-President SCON; Dr. Mridula Abrol Founder Member of SCON and Sustainable India Trust (SIT), Prof. T.K. Adhya, Chairman of Award Committee, Prof. N. Raghuram, President SCON and SIT; Dr. Arti Bhatia, Secretary General of SCON, Family Members of Prof. Abrol; Fellow Award Recipient, Friends and Colleagues - Good Morning, Good Afternoon.

I am honored and humbled by the decision of the Sustainable India Trust Executive Members for selecting me as one of the recipients of the Prof. Yash Pal Abrol Memorial Award.

I express my deep appreciation and sincere gratitude to Sustainable India Trust and SCON for conferring this honor on me.

Dear Friends

Holding of this special event during the INI conference and virtual presence of so many distinguished personalities from various parts of the world, representing the communities of science, industry, policy-making and academia is a testimony to the fact that we value and greatly appreciate the enormous contributions that Prof. Abrol made in addressing the twin global challenges: managing nutrients and ensuring food security.

I met Prof. Abrol many years ago in New Delhi. I was instantly impressed with his personality and his capacity to communicate complex scientific issues in simple language. He could comfortably switch back and forth on hard science and demonstrate how results of scientific investigations could be used for making pratical policy choices to support actions on the ground. This great skill, among others, established Prof. Abrol as a trusted person among diverse groups of actors and audiences. Prof. Abrol as I have seen, could walk in the corridors of power as well as hard-core scientific community with equal ease.

Let me now turn to the issue of nutrient management that was very dear to Prof. Abrol

As we are all aware, the efficient and effective use of nutrients underpins food security. There is no denying the fact that much of the increase in food production over the past half century can be attributed to the use of synthetic nitrogen fertilizers. However, now there is also a general consensus that when used at the wrong time, or the wrong rate, or in the wrong form and put in the wrong place, adverse impacts can occur as un-used nutrients can find their way into the environment.

The importance of reconciling nutrient removal with nutrient additions has been recognized in the discussions and political deliberations of the UN system, and there is a call to define and then assess trends in nutrient performance.

The nutrient use efficiency (NUE) as an indicator was first tabled for deliberations of the governments during the Inter-Governmental Review meeting of the Global Programme of Action (GPA-IGR) in 2012 held in Manila, The Philippines. In that meeting, though the governments could not reach a consensus on the NUE concept and its values, it certainly generated interest and caught the attention of the governments that urgent actions are warranted, and they agreed to work on defining strategies to address this challenge. Since then the work continued at multiple levels. During the 4th United Nations

Environment Assembly (UNEA-4) in 2019 a decision tabled by the Government of India finally secured global community's firm commitment to address the nutrient challenge. The governments asked UNEP to facilitate dialogues between policy makers and practitioners to deepen understanding of the issues for action, and report on the progress during the 6th United Nations Environment Assembly (UNEA 6), which will be in 2023.

So what is our collective understanding?

It is now acknowledged that crop nitrogen use efficiency (NUE) should be an indicator of progress towards the goal to end hunger, achieve food security, improve nutrition and promote sustainable agriculture for protecting our environment.

Science and industry have supported the development of appropriate indicators to assess NUE. There is a general consensus that NUE should represent the balance between nutrients applied and the proportion of nutrients recovered in produces within the boundary of the system analyzed. The science also signaled that the NUE does not describe pathways of internal nutrient transformation within a system.

Furthermore, different crop types are likely to have different NUE, and national and regional NUE values may reflect the particular mix of farming systems within a defined geographical space.

It is also argued that NUE is best interpreted in terms of a trend of changing NUE over time, rather than attempting to interpret a single snapshot of a single year's estimate for a farm or a nation. This is due to the fact that a single estimate of NUE is strongly influenced by the crop or animal production system, and it is difficult to define whether a single estimated value of NUE is inherently good or bad. If repeated over time, however, a trajectory of NUE values can provide a very useful indicator of whether progress is being made to improve NUE within a given cropping system in the context of the climate, soils, and commerce of the region.

Like most of you I am confident that science community can address these questions without much ambiguity, and in recent past progress has been made in this regards too.

India is in the forefront of this scientific discourse

A recent article titled "Nitrogen Challenges and Opportunities for Agricultural and Environmental Science in India" published on 18 February 2021 in the Frontiers of Sustainable Food System a group of 42 scientists representing 22 institutions (12 from India and the rest from the USA, UK, Italy and the Netherlands) discussed various options of better nitrogen management. Some of these distinguished scientists are at the helm of SCON, SIT and INI, and present with us today.

The article noted that by 2030 biological NUE in India should be increased by at least 20–30%. And interestingly, the article also suggested simple methods to monitor progress and concluded, I quote: "the use of leaf color sensing shows great potential to reduce nitrogen fertilizer use on-farm by 10–15%. This tool, together with the usage of urease inhibitors when using urea-based fertilizers, and better management of manure, urine and crop residues, could result in a 20–25% improvement in NUE of India by 2030"[1].

[1] https://www.frontiersin.org/articles/10.3389/fsufs.2021.505347/full

This is good news indeed, as we now have some clear answers to the complex issue of NUE and monitoring progress!

Over the past years a few more developments have also taken place. Now there is a FAO endorsed code of conduct for sustainable use of fertiliser. The European Commission has also enacted a policy framework that imposes limits to nitrogen pollution of air and water, and several member countries have set their national targets accordingly. India has revised its fertilizer policy and introduced nutrient based subsidy to promote efficient use of fertilizer.

Notwithstanding the above, there are ample scientific evidences that human activities have pushed the nutrient cycles (nitrogen and phosphorus) beyond the tolerance limits of the planet earth.

To redress this we need to accelerate our discourse both in the frontier of science and policy making. I am however, aware that the unfortunate global pandemic has added a new challenge and created a web of impacts that we must take into consideration while we pursue research and suggest policy options. It is now evident that due to the pandemic, achieving SDG 2 (zero hunger) now looks less likely. The lockdowns continue to disrupt global food chains and intensify the inadequacies of the global food system. The FAO estimates that around 83 million people, and possibly as many as 132 million, may go hungry because of the economic recession triggered by COVID-19. 100 million people could be pushed into extreme poverty.

Such alarming statistics touched the souls of many. The Star Tribune[2] published from Minneapolis, USA on 23 February 2021 published a joint letter by a group of 24 scientists, economists, researchers and winners of the World Food Prize who asked US President Joe Biden (on 23 February 2021) to focus on alleviating global hunger, poverty and malnutrition. They called on the president to take immediate action by re-establishing American global leadership to end hunger, and play a leadership role in the upcoming UN Food Systems Summit (due for September 2021) and other global initiatives. They also suggested that he refreshes the US evidence-based policy and investment to achieve the goal of ending hunger and expand the USAID Feed the Future initiatives.

I sincerely hope the global leaders take cognisance of these hard facts in their deliberations in the upcoming UN Food Systems Summit in September.

Let us briefly reflect on the Way Forward

The global community, as we are all aware, is promoting the slogan t "build greener and build better". The slogan however, to my mind, needs further qualifications. Like many others, I would argue that we do not need only a green recovery: we in fact need a green and inclusive recovery. This would call for serious re-examination of "growth at all costs" approach to economic development and redefining the role of markets in our society. We simply cannot afford to be a silent observer of a process and drift from having a market economy to becoming a market society, a society where just about everything is up for sale, where market relations and market incentives and market values come to dominate all aspects of life. Rather, within the framework of "inclusive growth" we should be facilitating multi-stakeholders discourse to decide what kind of economy and society we want to create for ourselves as we emerge from the pandemic and how the citizens could play a central role in defining and deciding recovery approaches.

[2] https://www.startribune.com/world-food-prize-laureates-ask-biden-to-elevate-hunger/600026429/?refresh=true

Let us keep a close watch on how the global leaders respond to such challenges and continue to articulate our voices to redefine policies and redirect resources to ensure and enhance human wellbeing, protect our environment and accelerate our march to achieve sustainable development.

I am very pleased to see that the INI 2021 Berlin Declaration that is being tabled for adoption today is framed under the title "sustainable nitrogen management for the SDGs" where many of these issues are clearly articulated for action.

For, defining a collective agenda and an implementation strategy would certainly require reconciliation of contrasting view-points of the science community, industry and policy-making bodies of the government.

I am fully aware that there is at times a lack of appreciation of the involvement of non-state stakeholders in the design and implementation of policies. However, experiences have shown us that persistent dialogues pave the way for defining a collaborative agenda.

Prof. Abrol was a firm believer in free and open discourse to pursue integrative planning for addressing the nutrient challenges within the broader environmental policy making. It is worth reiterating that this pragmatic collaborative approach resulted in several policy reforms in India including the globally acclaimed Indian nutrient based subsidy policy.

Let us recommit to take such cooperative process further. I strongly believe that through dialogues and sharing of experiences we will be able to redefine our approach, realign our forces and redirect our efforts for the twin-challenges of nutrient management and protecting our environment to augment our efforts in realising our collective vision: "Development as Freedom" that was appropriately coined by one of the bightest minds of our time Nobel Laureate Professor Amartya Sen.

Honourable Chairperson and distinguished participants, I thank you for your attention.