

## Architect of India's Green Revolution departs

**T. Ramakrishnan**  
CHENNAI

Mankombu Sambasivan Swaminathan, popularly known as M.S. Swaminathan, the legendary agricultural scientist and a key architect of the country's Green Revolution, passed away at his residence in Chennai on Thursday, following age-related issues. He was 98.

It was the back-to-back severe drought in the mid-1960s that compelled the political leadership and scientific fraternity to look for solutions to overcome the "ship-to-mouth" existence. The country was



**M.S. SWAMINATHAN: 1925-2023**

dependent on foodgrains imported from the U.S. then. Dr. Swaminathan worked closely with two Agriculture Ministers, C.

Subramaniam (1964-67) and Jagjivan Ram (1967-70 & 1974-77) for the success of the Green Revolution, a programme that paved the

way for a quantum jump in productivity and production of wheat and rice through adoption of chemical-biological technology.

### Funeral tomorrow

A spokesperson for the M.S. Swaminathan Research Foundation (MSSRF) said the funeral will take place on Saturday. His mortal remains will be kept on the MSSRF campus in Taramani on Friday for the public to pay respects.

Recalling his contributions towards ensuring food security, Tamil Nadu Chief Minister M.K. Stalin said the funeral will be held with police honours.

Dr. Swaminathan is survived by three daughters – Soumya Swaminathan, former Chief Scientist, World Health Organization; Madhura Swaminathan, Professor, Economic Analysis Unit, Indian Statistical Institute, Bengaluru; and Nitya Rao, Director, NISD, University of East Anglia, the U.K.

His wife, Mina Swaminathan, who was Distinguished Chair, Gender and Development, MSSRF, died in March 2022.

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## **Architect of Green Revolution departs**

Born in Kumbakonam on August 7, 1925 to M.K. Sambasivan, a surgeon, and Parvati Thangammal, Swaminathan had his schooling there. His keen interest in agricultural science coupled with his father's participation in the freedom movement and Mahatma Gandhi's influence inspired him to pursue higher studies in the subject. Otherwise, he would have become a police officer, for which he got qualified in the late 1940s. By then, he got two undergraduate degrees, including one from the Agricultural College, Coimbatore.

On obtaining a postgraduate degree in cytogenetics in 1949 from the Indian Agricultural Research Institute (IARI), New Delhi, he earned a Doctor of Philosophy degree from the Cambridge, where he met his wife, who was also pursuing higher studies there. He did his post-doctoral research at the University of Wisconsin. In 1954, Dr. Swaminathan joined the Central Rice Research Institute (CRRRI), Cuttack and later, IARI. In July 1966, he became IARI Director, the post he held till 1972. It was during this stint in his long career that he shot to fame.

### **Awards and recognitions**

Dr. Swaminathan, who was a recipient of the Padma Shri in 1967, was chosen for the Ramon Mag-saysay award for community leadership in 1971. He was awarded the Padma Bhushan in January 1972. He became Director-General of the Indian Council of Agricultural Research (ICAR), and in 1979, was made the Principal Secretary, Union Ministry of Agriculture and Irrigation. When Indira Gandhi became the Prime Minister again in 1980, he was appointed Member (Agriculture, Rural Development, Science and Education), Union Planning Commission, and, for a few months, he served as the Deputy Chairman of the body.

Between 1982 and 1988, he headed the International Rice Research Institute (IRRI), Philippines. In 1987, he became the first to get the World Food Prize and the first foreigner to receive the Golden Heart Presidential Award of Philippines. Two years later, he was conferred with Padma Vibushan.

Immediately after returning to India in 1988, the veteran agriculture scientist established a not-for-profit trust – MSSRF – with the proceeds he got from the Food Prize. The Foundation, which began functioning in Chennai since 1989, aims to accelerate use of modern science and technology for agricultural and rural development to improve lives and livelihoods of communities.

In November 2004, the Union government made Dr. Swaminathan chairman of the National Commission on Farmers. Popularly known as the Swaminathan Commission, the panel's main recommendation to the Centre was that minimum support price should be at least 50% more than the weighted average cost of production.

Dr. Swaminathan was a nominated member of the Rajya Sabha from 2007 to 2013. The first World Agriculture Prize, instituted by the Indian Council of Food and Agriculture, was bestowed to him in October 2018.

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**Controversies**

He had his share of controversies. As head of the ICAR, he had to bear the brunt of the attack when a senior agronomist of the IARI reportedly died by suicide following his non-selection as professor.

In March 1978, Jyotirmoy Bosu, a tall Leftist leader and a member of the governing body of the ICAR, publicly accused the Institute of having a "one-man show," a charge promptly refuted by the Janata government. More than these instances, Dr. Swaminathan's critics hold him responsible for certain ill effects of the "Green Revolution", including ecological damage and benefits of high-yield technology eluding small and marginal farmers. To this, he responded with the idea of "evergreen revolution," with emphasis on crop and livestock productivity in perpetuity without ecological or social harm.

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## Govt. plans to establish primary animal rescue centres in all districts

**The Hindu Bureau**  
CHENNAI

The Tamil Nadu government has planned to set up a primary animal care centre in each district using MP MLA funds.

The development comes at a time when work on three rescue centres - at Tiruchi, Madurai, and Coimbatore - are already in progress. At the eighth State Wildlife Board meeting chaired by Forest Minister M. Mathiventhan on September 26, members raised the need for more primary care centres for animals.

The demand for rescue centres, not just in forest areas, is due to rapid urbanisation, according to Supriya Sahu, Additional Chief Secretary, Departments of Environment, Climate Change and Forests. Animals such as deer, peacock, monkey, all of which are protected species now, and snakes, are increasingly found injured in urban settings, she said.

The new centres will be meant for emergency or



Animals such as deer, which are increasingly found injured in urban settings, will be taken care of by the centres.

primary care for wildlife and are proposed to be set up using Members of Parliament Local Area Development Scheme (MLA-LAD) and Members of Parliament Local Area Development Scheme (MPLAD) funds. The centres will come up especially in large forest areas, said Ms. Sahu.

Efforts to expedite sea turtle conservation was also discussed at the meeting. In January 2023, the government announced setting up of a sea turtle conservation centre in Chennai at ₹6.30 crore.



## Should generative Artificial Intelligence be regulated?

PARLEY

**G**enerative Artificial Intelligence (AI) is like the proverbial genie out of the bottle. In less than a year, chatbots like ChatGPT, Bard, Claude, and Pi have shown what gen AI-powered applications can do. These tools have also revealed their vulnerabilities, which has pushed policymakers and scientists to think deeply about these new systems. Should generative AI be regulated? Arul George Scaria and Trisha Ray discuss the question in a conversation moderated by John Xavier. Edited excerpts:

**What is the legal framework on which generative AI rests, and who owns content?**

**Arul George Scaria:** This is an issue being discussed in jurisdictions across the globe, and different jurisdictions may eventually take different positions on it. So, let's start from a jurisdiction that has most clarity on it, which is the U.S. If you look at practices of the U.S. Copyright Office, as well as the approach taken by one of the U.S. courts in a recent decision, only human beings can own copyright. This means that most of the output generated by AI tools today is outside copyright protection. There is some noise around the need for copyright protections being given to companies involved in generative AI. But the position that the U.S. Copyright Office has taken is that there will be no copyright over these [AI-developed] works when it is not authored by a human.

This is in contrast with India's position. A couple of months ago, an intellectual property lawyer in India filed a copyright registration application for a painting. The initial application, claiming that the painting was generated by AI alone, was rejected. Subsequently, when he filed it as a jointly authored work, the copyright office accepted the application. This is a bizarre situation because we have not had any in-depth deliberations on whether AI-generated works are subject to copyright protection. So, the copyright office was jumping the gun when they granted joint authorship to a work which was generated by AI. And when the matter became a controversy, they issued a withdrawal notice to the human co-author. But when I checked the copyright office's website, it shows that the registration has not been revoked yet. This is a problematic situation. These two jurisdictions illustrate the kind of complexity in this area.

**Trisha Ray:** The U.S. is quite ahead, at least on starting to think about different approaches to how AI would interact with existing copyright law. The U.S. Copyright Office's guidance on generative AI only recognises copyright for



A smartphone with the ChatGPT logo screens

works created by people. But AI is a little different, so we can see it in different ways. One is where I'm just giving a very basic prompt to a generative AI model. For example, 'write me a 300-word essay on copyright and generative AI'. Here, the AI is doing the most 'creative labour'. But when I, as a prompt engineer, give more detailed inputs and transform what the model has produced, I can arguably apply for copyright. So, it's still an evolving debate and there is no clear 'yes' or 'no' answer. Generative AI is new, at least in public consciousness, not new as a technology. We're still in the first few years of this debate coming into legal and policy circles and we are likely to see a more nuanced interpretation over time.

**How do you see the European Union's AI Act in the context of what is happening in the U.S. and India?**

**TR:** In general, the way the EU has been regulating emerging tech and AI has been very focused on individual protections against large platforms and companies that dominate the market. I expect that to be an aspect to be taken into account in the EU's AI Act well. Another legal tool, the EU Digital Markets Act, is designed to level the playing field by imposing interoperability for the so-called 'gatekeeper' platforms. In the current landscape, when we think about who is building and investing in large language models and generative AI models, it is heavily concentrated towards large entities. ChatGPT is backed by Microsoft; Llama is backed by Meta. This is certainly one challenge that the EU AI Act might look into.

**AGS:** I would like to highlight two points from the EU AI Act. One, the transparency-related obligations it is trying to bring on, in terms of generative AI. For example, if something is generated through generative AI tools, then it needs to be tagged as material generated by an AI tool. That's important. Two, the suggestion to provide at least a short summary of the training



The EU is taking a risk-based approach wherein they are prohibiting certain kinds of practices and suggesting ex-ante assessments for certain others.

ARUL GEORGE SCARIA

material used, which is important from a copyright perspective. Whether all this will be successful or not, only time will tell.

The EU is taking a risk-based approach wherein they are prohibiting certain kinds of practices and suggesting ex-ante assessments for certain others. With respect to limited-risk ones, they are bringing in transparency requirements. This kind of graded approach towards risk is important in the current context. The EU is taking bold initiatives and initiating discussions at the global level, which is remarkable.

**Could you contrast the EU's graded approach with the U.S.'s legal framework?**

**AGS:** The U.S. is taking a far more relaxed approach. I don't know whether it's because they're underestimating the risk involved or whether it's because of their general outlook towards regulation. In the specific context of generative AI, I think we are underestimating the diverse risks. For example, in the education sector, you will notice that there is no control on how generative AI tools are used by students. Are there any age restrictions? Content restrictions? And if all platforms have some age restrictions, are they enforced? The answer is no. Also, there is hardly any awareness initiative on the potential risks of using generative AI tools in education. To me, these tools have extreme long-term negative effects on critical thinking and the creative capacities of students. And we are actually working without any kind of guard rails. So, we should at least initiate a discussion on a risk-based approach. Maybe, we should develop our own indigenous approach.

**TR:** To add to the risks, generative AI is compounding or can compound some existing online threats like the use of deepfakes for disinformation campaigns. This can include simple things like using ChatGPT to make phishing emails sound convincing. There are multiple ways in which cheaper and more accessible generative AI models can compound issues that we're still struggling to regulate, especially in cybersecurity and online harms.

**AGS:** And these can threaten the basic foundations of our democracy. India is going to have a national election in 2024. Are we even discussing what will be the impact of these generative AI tools on fair and transparent

elections? There are hardly any discussions.

**How do we approach AI through an Indian legal lens?**

**AGS:** Constitutional law provides certain safeguards against discrimination. But to address this specific issue, we require two things. One, a comprehensive regulatory framework, by which I mean both horizontal regulations that would be applicable across sectors and vertical regulations which are sector-specific. Two, we need more clarity on data protection. If you look at the Digital Personal Data Protection (DPDP) Act, 2023, you will notice that it does not apply to any personal data that was publicly made available by the user to whom the data relates. This, in effect, legitimises all the scrapping that was done by these AI companies. These are the areas where we need to have a more nuanced approach.

**TR:** The DPDP Act has gone through many lives before it was finally passed. It started as something that was supposed to protect individuals from data collection both by the private sector and the government. It has since taken on a new life as something that's more focused on generating economic value. Though it does hold private entities a little more accountable, individual rights have weakened considerably. Now, the expectation is that the proposed Digital India Act is going to fill some of the gaps left by the DPDP Act. At least that's what we've been hearing from the IT Ministry. We'll have to see what shape it takes. It would be more advisable to have a leaner regulation, rather than over regulation.

**What happens when companies say that explaining their language models will lead to trade secret exposure?**

**AGS:** They rely on the trade secrets regime to guard against disclosure. They are scrapping data from across the globe, but they don't want to actually show the details of the training data or the details of their model. But when there is enormous social harm, I don't see any reason why we shouldn't force them to disclose it. They would try to argue that it is a trade secret, but during the pandemic we saw discussions as to whether there should be a kind of compulsory licensing against trade secrets. I would say that maybe this is one of those instances where a compulsory licensing-like regime is a must in view of the broader social consequences.



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# MGNREGS social audit unit in a state of paralysis in many States

Recovery in cases flagged by these units over the past three years ranges from 13.8% to 20.8%; the Union government, which funds the units, has been lax in delivering funds, while State governments fail to act on the cases that have been revealed

**Sobhana K. Nair**  
NEW DELHI

An enduring criticism against the Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS) is its alleged high rate of corruption. But the scheme's inbuilt mechanism to combat it, the social audit units meant to detect any cases of malpractice, seems to have failed.

As per the statistics available with the Union Rural Development Ministry in the ongoing financial year, less than 14% of the amount flagged by the auditors has been recovered so far.

The figures for the previous financial years are equally dismal.

## Poor recovery

In the ongoing financial year, the social audit units have flagged misappropriation of ₹27.5 crore. After action was taken in some of these cases, the amount came down to ₹9.5 crore out of which only ₹1.31 crore has been recovered so far, a mere 13.8% of the total.

The financial year 2022-23 has a similar story; after taking rectifying measures, the recoverable amount



**Credibility at stake:** A dismal recovery rate of graft money threatens the credibility of the MGNREGS audit process since it makes the entire exercise futile. FILE PHOTO

was pegged at ₹86.2 crore but the recovery amounted to only ₹18 crore, just 20.8% of the total. In 2021-22, one of the social audit units flagged one of the highest amounts of misappropriation at ₹171 crore but only ₹26 crore, 15% of the total, was recovered.

## Fund-starved units

Section 17 of the Act governing the scheme says that the gram sabha "shall monitor the execution of works". Each State has social audit units that are supposed to work independently of the implementing authorities.

To take stock of the situation, the Ministry on Tuesday held a seminar for the social audit units from the States, MGNREGA commissioners, civil society, and other stakeholders.

A bleak picture emerged at the seminar, of fund-starved social audit units, working without training or adequate personnel. The social audit unit's sole responsibility is to flag cases of malpractice. Recovering the money, and reprimanding the officials responsible, is up to the State governments.

A dismal recovery rate threatens the credibility of the audit process since it makes the entire exercise

futile, said Rakshita Swamy, Social Accountability Forum for Action and Research (SAFAR), who attended the seminar.

"The Union government has weaponised the lack of social audits to withhold funds for MGNREGS for the States. But the Ministry, which directly funds the social audit units so that they are able to maintain their independence from the States, is not getting funds to them in time. For example, units in Karnataka and Bihar have not got funds for nearly two years now," she added.

Over the past three years, there has been a

consistent trend of the same States reporting "zero number of cases" and making "zero recoveries".

The BJP-ruled States of Gujarat and Goa, the northeastern State of Meghalaya, and the Union Territories of Puducherry and Ladakh have been on this list for all three of those years.

There are other States such as Telangana, where an active social audit unit has flagged several cases, but the recovery rate remains low.

For example, in the ongoing financial year, ₹6.6 crore was flagged by the auditors to be recovered; so far, only a meagre ₹2,087 has actually been recovered.

## No cases or no money

"We welcome the vigilance by the Centre and their pressure on the States to recover the misappropriated money. But the States that identify several cases of misappropriation are taken to task for not making the recovery. Worse than these States are those that show no cases at all. Which clearly means, there is no monitoring here," said Nikhil Dey, founder member of the Mazdoor Kisan Shakti Sangathan, who also attended the seminar.



# Sarabjot-Arjun-Shiva trio delivers another gold

The 10m air rifle team's performance offers solace after Saurabh finishes a disappointing fourth in the individual event; Anush bags individual bronze in the equestrian Dressage event



On the podium: The men's 10m air pistol team finished on a high while Anush, astride Etro, took the third spot. PTI



## ASIAN GAMES

+ **Uthra Ganesan**  
HANGZHOU

In an event where India's Saurabh Chaudhary owns the Asian Games record, Indian shooters faltered to finish fourth and eighth respectively but not before combining to add yet another team gold, this time in 10m air pistol, from the ranges to the country's medal tally.

Sarabjot Singh, Arjun Singh Cheema and Shiva Narwal combined to score 1734 points to finish on top, just one point ahead of host China and four away from third-placed Vietnam. Like in several other

events, it was a brilliant fightback from the Indians, who all required a series of 10s on their final shots to keep China at bay and they managed to come up with the goods. That all three were placed low down the order with scores of 92 and 95 for Narwal and Sarabjot respectively in the opening round only made the comeback more special.

"It is an unexpected gold, to be very honest. But it is my first Asian Games so getting a medal, that too gold, is very special. We are like brothers, competitive on the range and close out of it... so doing this with them feels really nice," Sarabjot said.

The 21-year old from Chandigarh, who also finished fourth in the indi-

vidual event - he was one of two Indians in the individual final, along with Cheema - admitted he was disappointed with the individual performance but for someone shooting at less than 100 per cent fitness, it was a creditable outing.

Chaudhary shot 240.7 in Jakarta five years back for the Games record while Vietnam's Quang Huy Pham took gold with 240.5 points. Sarabjot shot 199.

### Feeling unreal

Anush Agarwalla continued his winning form in equestrian, adding an individual bronze in the Dressage event to the team gold a day earlier.

Riding astride Etro, Anusha totalled 73.030

points - 69.900 for technical and 76.160 in the artistic section - to finish third. Teammate Hriday Chheda, however, was eliminated after blood was spotted on his horse Chemxpro's leg.

"The feeling is unreal. I still don't believe I have won the bronze even after winning the team gold. I knew I had a good partnership with my horse and I knew it would be a good day when I got up in the morning. I just felt good about it, I even texted my mother that we will get something.

"My horse has been amazing all through, it's been a long and often difficult journey but holding this medal today, I feel it was all worth it," said Anush after the event.