

Business Standard

Agri research needs big boost, has to be more focused, say experts

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In A Recent Pre-Budget Meeting That Finance Minister Nirmala Sitharaman Had With Stakeholders From The Farm Sector. | File Photo

Last week, Dr RS Paroda, one of the most respected agricultural scientists in the country, made an impassioned plea in the presence of top PMO officials to raise the research budget for farming and allied activities if the country wants to meet the numerous challenges facing the farm sector.

Paroda, who is also founding chairman of the Trust for Advancement of Agricultural Sciences (TAAS), said that the budget for the Indian Council of Agricultural Research (ICAR) should be raised from its current flat growth to facilitate more focus on research and new cutting-edge technologies.

ICAR is an autonomous body responsible for coordinating, guiding, and managing research and education in the field of agriculture. It is the largest network of agricultural research and education institutes in the world, and has also played a

significant role in the Green Revolution that allowed India to achieve food-sufficiency.

ICAR gets much of its funding from the annual budgetary allocation for the Department of Agriculture Research and Education (DARE).

In response to Paroda's comments, the senior PMO official suggested that before moving on to fundraising, ICAR needed to consider reforming its functioning and activities so that its manpower and financial resources are best utilised. He also talked of several reports in the past that have laid down a roadmap for such reforms and how those could be a starting point.

Paroda is not the first one to raise the issue; before him, several other leading scientists, academicians, and agriculturalists have also called for raising government support for research and development to make Indian agriculture future-ready.

In a recent pre-Budget meeting that Finance Minister Nirmala Sitharaman had with stakeholders from the farm sector, most participants highlighted the need for enhancing the research budget for agriculture, sources told Business Standard.

More bang for the buck

A paper last year by the National Institute of Agriculture Economics and Policy Research (NIAP), which functions under ICAR, found that every rupee invested in agriculture research gives a return of almost Rs 13.85, which is highest amongst all activities linked to farming.

The paper came even as fresh investment in agriculture research decelerated between 2011 and 2022. "Looking towards the growing demand for food and other agricultural products and the future challenges to their production amidst little scope for expansion of agricultural land, it is imperative to invest more in agricultural R&D and prioritise it across disciplines or sub-sectors and regions to maximise economic, social, and environmental benefits," the paper said.

After research comes agriculture extension activities which give the second best return on investment at Rs 7.40 for every rupee spent. Within the broader agriculture and allied activities, the paper found that there are significant differences in the payoffs – or return on investment (ROI) – at the sub-sector level. The ROI from animal science research is significantly higher at Rs 20.81 while that for the entire crop science sector is Rs 11.69. The study also found significant regional disparities in spending on agriculture research. Between 2011 and 2020, Odisha, Rajasthan, Madhya Pradesh, West Bengal, and Uttar Pradesh, which

account for 43 per cent of the country's net sown area, spent less than 0.25 per cent of their agriculture GDP on research.

On the other hand, Jammu and Kashmir, Himachal Pradesh, Bihar, Uttarakhand, Kerala, and Assam spent more than 0.80 per cent of their agriculture GDP on research and development. The study also found that the portfolio of agricultural R&D remains heavily biased towards crops. Livestock and natural resources receive significantly less.

In southern states, however, the spending is more balanced.

Public funding remains low

In India, agriculture research and development is largely public-funded. The study found that from 2011-2020, central and state governments contributed 33.8 per cent and 58.5 percent, respectively, of the total investment in agricultural R&D, while the private sector accounted for the rest at just 8 per cent. While that number has increased of late, it still remains significantly lower than the global average.

"From 2011 to 2020, India spent 0.61 per cent of its agri GDP on research, which is about two-thirds of the global average of 0.93 per cent," the study found.

The proportion of agriculture GDP spent on extension services was 0.16 per cent. In 2020-21, India spent 0.54 per cent of its agriculture GDP on research and 0.11 per cent on extension activities.

Though India's investment in agriculture research and development, both private and public, has risen almost five-fold over the past four decades, the annual growth in research investment has decelerated to 4.4 per cent during 2011-2020 from around 6.4 per cent in 1981-1990. This has been primarily due to sluggish growth in public investment and significant deceleration in the growth of private investment, the study found.

Not only that, a quarterly bulletin by the Indian Council for Research on International Economic Relations' (ICRIER) Centre of Excellence for Agriculture Policy, Sustainability, and Innovations (APSI) released last year also underscored the dire need to double the current budgetary allocation for agriculture research and development to broaden its impact.

"Achieving this would require nearly doubling the current budgetary allocations for ARDE (agriculture research and development expenditure) from the current Rs. 9,941 crores allocated to DARE within the next 2-3 years," it said.

The paper, while advocating relocating funds from subsidies on food and fertiliser towards agriculture research, said that though the National Agricultural Research

System under the aegis of the ICAR released 2,380 varieties of various field crops since 2014, El Nino in 2013 brought down agri-GDP growth to 1.4 percent in FY24 compared to 4.7 percent in FY23.

“We need some satisfactory answers to this. One plausible answer is that whatever has been done so far is not enough to protect Indian agriculture from extreme weather events or there is a serious lack of extension-related activities that might have otherwise aided in research moving from lab to land,” the paper noted.

Dr RG Agarwal, chairman emeritus of Dhanuka Agritech Limited, says that in 2024-25, the ministry of agriculture has been allocated Rs 1.32 trillion, which is 2.7 percent of the total central government expenditure. This is a 5 per cent increase compared to the revised 2023-24 estimate of Rs 1.26 trillion. However, as we approach the Union Budget for 2025-2026, it is crucial for the government to prioritise increasing investment in agricultural research to address the sector's growing challenges, Agarwal said.

He added that this is essential to boost productivity and develop improved seed varieties for crops like pulses, wheat, oilseeds, and cotton. The government should allocate more funds and offer tax incentives to encourage private sector innovation, driving sustainability and resilience in Indian agriculture.

Where does the money for ICAR, DARE go?

Previous Budget documents show that the annual budget of the DARE, under which ICAR falls, is about Rs 8500-Rs10,000 crore.

In FY24, the Budget Estimate for DARE was around Rs 10,000 crore. However, of this around 64 per cent was earmarked for ICAR's Delhi headquarters, primarily for salaries, pensions, and expenses on administrative and logistical support for different schemes under ICAR in order to implement them efficiently.

In contrast, Bayer, which is one of the world's largest agri-sciences companies, in a statement issued in March 2021 said that its annual investment of Euro 2 billion in crop science R&D is nearly twice what its next closest competitors spend.

Two things are immediately clear: one, that spending on agri-research needs to be significantly increased to generate any meaningful impact. And two, that both DARE and ICAR need to allocate their own funds better towards actual research projects than just administrative costs.

First Published: Jan 14 2025 | 3:09 PM IST

Page URL :https://www.business-standard.com/industry/agriculture/agri-research-needs-big-boost-needs-to-be-more-focused-say-experts-125011400620__1.html