



A Decade of Dissemination and Collaboration:

ZTM & BPD Unit's Journey from Innovation to Impact



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The Zonal Technology Management and Business Planning and Development (ZTM & BPD) Unit at ICAR-Indian Agricultural Research Institute (IARI), New Delhi, has exemplified the effective dissemination of agricultural technologies developed by IARI scientists over the past decade. Through sustained efforts in forging partnerships, enhancing outreach, and facilitating widespread adoption, the unit has emerged as a key driver of innovation transfer in Indian agriculture.

A Mission-Oriented Approach to Dissemination

Year	No. of technology	No. of Industrial Partners
2016-17	7	34
2017-18	41	28
2018-19	9	39
2019-20	6	119
2020-21	26	50
2021-22	80	65
2022-23	46	108
2023-24	58	177
2024-25	95	215
Total	368	835

Since its inception, the ZTM & BPD Unit has been focused not merely on technology commercialization but on ensuring that scientific innovations reach the fields and hands of the farming community. Between 2016-17 and 2024-25, the unit has facilitated collaborations with **over 835 industry and institutional partners**, leading to the **dissemination of a wide range of technologies**.

These include improved crop varieties, value-added processing techniques, bio-inputs, post-harvest solutions, and precision agriculture tools.

Each collaboration is grounded in a shared vision—to translate research into action. Through Memorandums of Agreement (MoAs), licensing partnerships, and transfer of technologies, the unit has made IARI innovations accessible to private players including large, medium and small companies, Multinational Corporations, startups and farmer producer organizations (FPOs), extending the reach of these technologies across states and agro-climatic zones.

Expanding Outreach and Building Trust

Over the years, the ZTM & BPD Unit has consistently expanded its footprint by onboarding a growing number of partners. Starting with **34 collaborations in 2016–17**, the unit saw steady increases year after year, reaching to **215 new partnerships by 2024–25**. This growth reflects the trust and confidence that stakeholders have placed in IARI's research outcomes and the unit's facilitation mechanisms.

The network of collaborators is as diverse as the technologies themselves, including stakeholders from **agriculture, biotechnology, food processing, environmental management, and digital agri-tech sectors**. Each partnership has opened up new pathways for innovation to reach the grassroots, helping farmers access tools and practices that are not only scientifically validated but also economically and ecologically viable.

Bridging Research with Practice

The ZTM & BPD Unit serves as an essential conduit between the research community and end-users. By translating complex scientific knowledge into usable technologies, the unit ensures that innovation does not remain confined to laboratories. Instead, it is contextualized, scaled, and adapted for practical use in real-world agricultural systems.

One of the key elements of the unit's success has been its **emphasis on capacity building**. Awareness programs, field demonstrations, knowledge-sharing workshops, and stakeholder engagement events have been regularly conducted to ensure that partners and users understand the benefits, applicability, and operationalization of the technologies.

Promoting Collaborative Innovation

In keeping with national and global priorities for sustainable agriculture, the unit has worked actively to promote **multi-stakeholder partnerships culminating in the form of professional service agreements**, reaching collaborators in novel technological segments. These efforts have enabled Indian agricultural technologies to find relevance and application in other technological domains with a convergence to agriculture.

The technologies disseminated through the unit have addressed key challenges such as **climate resilience, pest and disease management, yield enhancement, resource efficiency, and post-harvest losses**. These contributions are aligned with broader policy goals, such as doubling farmer incomes, improving nutritional outcomes, and achieving environmental sustainability.

Technology Spectrum and Farmer-Centric Innovations

Over the last decade, the ZTM & BPD Unit has facilitated the dissemination of **368 different technologies** developed at IARI. These span across:

- **Improved crop varieties** (wheat, rice, maize, vegetables, pulses, etc.) with enhanced yield potential and resistance traits
- **Biofertilizers and biopesticides** that promote sustainable soil and plant health
- **Agri-machinery** innovations for small and marginal farmers
- **Climate-smart technologies**, including irrigation scheduling tools and decision support systems
- **Value-added processing technologies** and shelf-life extension solutions

These innovations have reached thousands of farmers either directly through technology licensees or via partners engaged in grassroots extension. In many cases, the dissemination has led to the emergence of new startups and micro-enterprises, contributing to rural employment and local entrepreneurship.

Catalyzing Impact Beyond Commercialization

While the commercial viability of technologies is important, the ZTM & BPD Unit has maintained a clear focus on **social impact and inclusivity**. Through strategic collaborations with smaller enterprises and startups, several technologies have been scaled up in resource-constrained settings.

The unit also supports **women-led enterprises**, youth innovators, and agripreneurs by offering them easier access to technologies and mentorship support. This inclusiveness has amplified the impact of scientific research across socio-economic strata.

A Model of Institutional Collaboration

The success of the ZTM & BPD Unit is rooted in the **synergistic collaboration between scientists, technology managers, legal experts, and communication professionals**. The unit has developed robust mechanisms for managing intellectual property, evaluating technologies for readiness, facilitating legal agreements, and providing post-transfer support.

By aligning with the objectives of the National Agricultural Research System (NARS) and the Indian Council of Agricultural Research (ICAR), the unit continues to contribute to national goals in agricultural development, rural prosperity, and food security.

The Road Ahead

As the demand for resilient, sustainable, and scalable agricultural solutions continues to grow, the ZTM & BPD Unit remains committed to its mission of **bringing science to society**. The journey over the last decade has laid a strong foundation for the future—with deepened collaborations, enhanced capacity for outreach, and a vibrant ecosystem for technology diffusion.

With a growing repository of innovations and an ever-expanding network of partners, the unit is well-positioned to further its efforts in ensuring that IARI's research reaches every stakeholder—from lab to land, and from innovation to impact.