The TIGR²ESS Programme: Context, Vision and Legacy

TIGR²ESS
Transforming India's Green Revolution by Research and Empowerment for Sustainable food Supplies

Since the 1960s, intensive agriculture in India's Green Revolution has led to multiple inequalities and unsustainable pressure on natural resources. As the climate changes, there is an urgent need for a more sustainable, resilient, and equitable food and water system for the world's fastest growing population.

'A wonderful collaboration where complementary skills have brought about new knowledge.'

Prof Usha Vijay Raghavan

Context for the Programme

The father of India's original Green Revolution, M.S. Swaminathan, has warned the nation that yields are threatened by increasing temperatures and drought. The vulnerable sectors of societies were highlighted at being most at risk and likely to be facing malnutrition once more.

Vision of the TIGR²ESS Programme

Through the GCRF Grow Call, we aimed to future-proof food-system processes across contrasting agroclimatic zones in India. The consortium initiated a network of interdisciplinary collaborations across science, engineering and social science researchers. The programme incorporated regular dialogues, training and engagement programmes with a focus on equal opportunities and female empowerment.

Fundamental research activities ranged from the molecular basis of crop improvement, to the evaluation of water conservation and delivery of alternative cropping systems. These were coupled with novel interventions to improve education, health, nutrition and promote financial independence and resilience for rural communities.

TIGR²ESS Delivery and Outcomes

In this summative brochure of case studies, we celebrate high impact outputs which have arisen across relevant fundamental science and societal research questions. Our understanding of crop diversity and varietal traits has been advanced for intensively irrigated and semi-arid dryland staples (wheat, millets, sorghum) across India's agroclimatic zones, informed by archaeological and contemporary methods for best practices in managing common water resources.

Across the programme's six Flagship Projects, researchers established novel technologies and approaches, which were translated through community engagement activities and workshops. Outputs from their research have led directly to: policies being adopted to promote water conservation, marketing diversification, female entrepreneurship, and education for food and nutritional security in the communities most vulnerable to climate change.

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