

AgroSpectrum

Envisaging Future Updating Present

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Offsetting Extreme
Weather Impact with

**TECH-DRIVEN
INSURANCE**

37

31

AGROVISION
FOUNDATION

**"Sustainability is not an option;
it is the only way forward"**

Why Focus on Renewable Energy
is Crucial for Indian Agri

Eto CONTROVERSY

26 Efforts to Dethrone Reigning King of SPICES?



RENEWABLE ENERGY

31 Why Focus on Renewable Energy is Crucial for Indian Agri



↓ REGULARS

Your Views	08
Editorial.....	09
Policy News	10
Finance News.....	11
Startup News.....	13
Livestocks News.....	15
Asia News	17
People News.....	41
Academic News.....	42
Technology News.....	44
Agri-Inputs News	46
Supply chain News.....	48
Let's Talk Agri	50

SPEAKING WITH

34



"Precision agriculture and data-driven technologies such as satellite imagery are key to reducing costs and wastage"

Dr Dinesh Kumar Chauhan, CEO, Agribusiness and Innovation Platform, ICRISAT



EVENT REPORT

37

Agrovision Foundation Round Table Discussion

"Sustainability is not an option; it is the only way forward"



MICROBOTS

40



Role of Future
AgriTech-
Microbots

Harsh Vardhan Bhagchandka,
President, IPL Biologicals



“Precision agriculture and data-driven technologies such as satellite imagery are key to reducing costs and wastage”

DR DINESH KUMAR CHAUHAN,

CEO, Agribusiness and Innovation Platform, ICRISAT

The International Crops Research Institute for the Semi-Arid Tropics (ICRISAT), has developed the Agribusiness and Innovation Platform (AIP), for agricultural and agribusiness industries. AIP offers a nurturing and empowering atmosphere through its network of experienced mentors, investors, and stakeholders. In an exclusive interview with AgroSpectrum, Dr Dinesh Kumar Chauhan, the recently-appointed CEO of ICRISAT's Agribusiness and Innovation Platform, discusses recent advancements in the AIP programme and how it can strengthen the agri-ecosystem. Edited excerpts:



As the new CEO of the Agribusiness & Innovation Platform (AIP) at ICRISAT, what are your plans for this platform in the coming years?

The role of AIP in the broader scheme of things, is to create, leverage, and aggregate programmes and services to promote agribusiness and enhance partnerships through entrepreneurship development, innovation, and value addition for accelerated agricultural growth in the drylands. AIP operates in three modules, namely Agribusiness Incubator (ABI), Innovation and Partnership (INP) and Nutri-Plus Knowledge (NPK).

ABI supports startups and SMEs to successfully enter markets, by providing technical, research and infrastructural support services and also help scale-up agri-businesses

with global connect through soft-landing services.

INP develops collaborative partnerships with public, private, and allied sectors for agribusiness and entrepreneurship development across value chains. The aim is to improve the livelihoods of small- farmers, with special focus on women to help them thrive as independent, self-sufficient and valuable members of their communities.

NPK focuses on value addition, post-harvest management, nutritional study interventions, nutritional and health claim validations along with food safety awareness in the agri-food sector through innovative processing, product/ technology development and capacity development. The Intellectual Property Facilitation Cell (IPFC) provides IP protection, advisory, and technology transfer services for SMEs to enhance their competitiveness.

These existing programmes enhance agricultural resilience and improve farmers' lives. We aim to maximise their potential, adapt to new opportunities, and establish our platform as a global hub for all our incubation centres. Our goal is to be recognised as a world leader in agribusiness incubation. Additionally, we plan to create a Center of Excellence in Food Processing with a focus on alternative proteins.

What are some of the value chain projects that AIP has worked on in the past or is currently working on?

AIP has implemented a supply chain management project under the aegis of the Government of Tamil Nadu in 10 districts of the State. The project entailed creating primary and secondary processing units for fruits and vegetables through establishment of effective backward and forward linkages. It was also successful in developing the key crop value chains by adopting digital solutions.

Another project, funded by the Walmart Foundation, was focused on accelerating value chain benefits for improved income for small farmers and nutrition for consumers. The project adapted innovative methods through end-to-end value chain interventions along with establishment of kitchen gardens, women-led Farmer Producers' Company (FPC), four primary processing units for ground nut and pigeon pea and a secondary processing unit for manufacturing millet-pulse-groundnut based ready-to-cook and ready-to-eat foods.

We are currently implementing a supply chain management project for fruits and vegetables in Odisha and are involved in building a value chain for millets in Bihar. With the Assam government, we're implementing the Millet Mission.

Similarly, in Africa, ICRISAT has developed and implemented novel agribusiness entrepreneurship promotion models in 12 African countries in partnership with a diverse set of stakeholders from the agricultural and rural development ecosystem.

How does AIP promote inclusive value chains?

The projects implemented by AIP drive the transition into sustainable food systems by prioritising farmer sustainability. We focus on creating inclusive value chains, by following

gender responsive and learning outcomes approaches in building stakeholder capacities. This promotes vibrant rural enterprises and enhances the market linkages for these value chains. For instance, the project at Anantapuramu in Andhra Pradesh, helped in the establishment of a women-led FPC and we conducted capacity-building exercises for the women and youth of the area to effectively participate in the value chain. Awareness sessions on nutrition and health benefits were also conducted to promote millet consumption among the local population and develop a market.

What has been the impact of ABI?

The ABI programme strives to promote agribusiness ventures and agricultural innovations by supporting them with incubation support services in the domain of seed, farm, agri-biotechnology, and biofuels. It supports and promotes entrepreneurs, innovators, startup biotech companies, rural youth, and enterprises.

Since its establishment, ABI has supported 125 startups and 36 incubators. 29 per cent of these startups are also women-led or co-founded by women. We have raised \$50 million in funding and generated 46 strong ecosystem partnerships which are only growing in size. The platform has helped create 3,200 jobs and connected 4 million farmers. In Africa, six value-chain focused incubators were established in five countries, supported by a DANIDA-funded project of the Forum for Agricultural Research in Africa (FARA). In a span of four years, the six incubators promoted 294 enterprises and generated 4,665 jobs. Further, 10 food processing business incubators and food testing labs were set up in Ghana, Mali, Uganda, Cameroon, Angola, Nigeria, The Gambia, Republic of Congo, Zimbabwe, and Rwanda through the India-Africa Forum Summit-II of the Government of India.

One of the incubated startups, XMachines, recently showcased its pioneering concept featuring compact, autonomous AI-driven robots designed to revolutionise various agricultural tasks like seeding, weeding, spraying, and planting on Shark Tank India.

How do the programmes under ICRISAT contribute to enhancing better nutrition and health?

The NPK programme under AIP promotes

growth in the agri-food sector, through value addition and post-harvest management through innovative processing and product development techniques, thereby enabling the achievement of ICRISAT's vision of a prosperous, food-secure, and resilient dryland tropics.

The projects under NPK operate under a model that links agriculture-nutrition-entrepreneurship, thus contributing to building nutri-sensitive food systems. Strengthening local agriculture leads to the development of value-added products, and to produce such nutritious food items, processing infrastructure is required. Hence, a holistic approach towards nutrition through creating agri-entrepreneurs and enhancing agricultural systems is developed.

Giri Poshana (tribal nutrition) was an initiative wherein ICRISAT partnered with the Tribal Welfare Department - Government of Telangana, to improve the dietary diversity and nutrition among the malnourished tribal population. This initiative focused not only on diversifying locally grown climate-resilient millets and pulses to overcome malnutrition and poverty but also on coping with climate change and environmental degradation through climate-resilient crop production.

The intervention involved the supply of nutritious food products developed with sorghum, millets, and pulses by NPK, into the diets of tribal children and women through Anganwadi centres.

Among other things, the initiative improved the nutritional status of 35,000 tribal households leading to a significant reduction in stunting, wasting, underweight, and anaemic conditions among children, adolescent girls, and pregnant and lactating women. It resulted in enhanced dietary diversity, behavioural change in local tribal communities, and access to affordable and nutritious millet-pulse-based food products.

Can you elaborate on the Enabling Systems Transformation programme?

The Enabling Systems Transformation (EST) programme is one of the key global research programmes of ICRISAT, the other two being Accelerated Crop Improvement and Resilient Farm and Food Systems. EST works across all ICRISAT locations in Asia and Africa, and with various dryland agricultural stakeholders, to create a more supportive environment for the

adoption of context-specific sustainable and resilient agricultural practices that can withstand future challenges.

The programme has the following clusters – Markets, Institutions and Policies; Gender and Youth; Agribusiness and Innovation Platform; Knowledge and Capacity Development; Nutrition, Dietary Behaviour and Smart Food; and Technology Adoption and Impact Analysis.

What are the major challenges in agriculture today and how can they be effectively resolved? What role is ICRISAT playing in it?

The major challenges facing agriculture today are climate change, sustainability pressures, labour shortages, rising input costs, and declining productivity. Food insecurity and water scarcity will be exacerbated by climate change. Rainwater harvesting, precision farming, and modification of livestock habitat can be considered as solutions. Agriculture is responsible for colossal carbon footprints and thus the pressures of sustainability arise. Alternative staples that require less input and generate lower carbon emissions such as millets can be introduced into the cropping system. Markets must also be expanded to create demand and raise awareness about the benefits of millet to enable consumers to make choices about nutritious diets. Precision agriculture and data-driven technologies such as satellite imagery are key to reducing costs and wastage as well as optimising inputs. New cultivars that can be adapted to biotic and abiotic stresses can be a potential solution for resolving the challenge of productivity decline.

ICRISAT's mission is to reduce poverty, hunger, malnutrition, and environmental degradation in the dryland tropics. Thus, sustainability is at the heart of all research-based activities undertaken at ICRISAT.

To prevent environmental degradation, we develop climate-smart replicable solutions, in partnerships with public and private sectors, amplifying options for Climate-Smart Agriculture (CSA). Through its research, ICRISAT helps breed crops that exhibit traits such as drought tolerance, heat resistance, and pest and disease resilience in the face of climate change. ICRISAT also promotes sustainable resource use to mitigate the environmental impact of farming. 

Nitin Konde