Group

January 2023 Edition

Policies Covered In The Edition

1. International Year of Millets: Way to Address Food Security for Rising Population
2. Integrated Cold Chain & Value Addition Infrastructure Scheme to Facilitate the Food Processing Industry
3. 'KRITAGYA' Hackathon to promote Speed Breeding for Crop Improvement

SECTOR SPECIFIC REPORT

(Food & Agriculture)

01 | International Year of Millets: Way to Address Food Security for Rising Population

The UN General Assembly has declared the 2023 as "International Year of Millets" for which the celebration has started from 1st January 2023 around the world. The goal is to scale up the production of millets and increase the overall cultivation area as it is an affordable and nutrient-rich cereal to feed the continuously growing global population and address food security concerns. A year long celebration will help to increase people's participation and make it a mass movement to help in achieving the Sustainable Development Goals (SDGs) for 2030.

It is an early reminder for the governments that comprehensive policy support and direct interventions are needed to scale up the production of this diverse group of cereals. These are the range of small-seeded grasses that include Sorghum (Jowar), Pearl Millet (Bajra), Finger Millet (Ragi), Proso Millet (Cheena), etc which are also known the names like Nutri-cereals, Dryland-cereals, etc.

Source: https://static.pib.gov.in/WriteReadData/specificdocs/documents/2022/dec/doc20221226147401.pdf

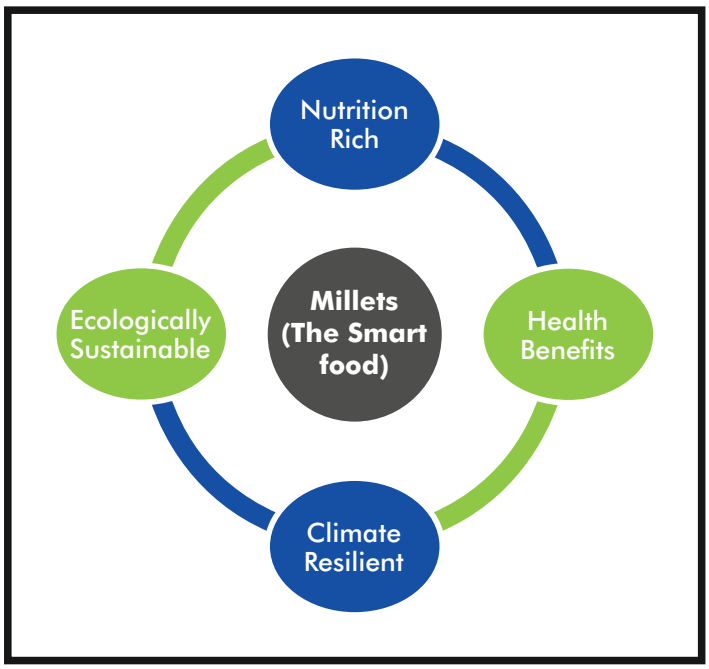
These are rich sources of nutrients with less intervention in terms of irrigation, fertilizers, etc to grow. These have been a traditional staple crop of dry, arid and semi-arid tropical areas of Asian and Sub-Saharan African countries. Other than its nutritional benefits, it has multiple other uses in the form of food, fodder, feed, biofuels as well as brewing that have various benefits for the consumers as well as farmers for a sustainable future.

This ancestral super crop can address many issues of the contemporary world such as farm productivity, empowerment of small farmers, sustainable development, hunger elimination,

biodiversity conservation, agrifood system transformation along with quick climate change adaption. The major significance related to this smart food to be adopted by the masses are as under:

India is among the leaders of millet production as it was among the oldest crops domesticated on Indian land since Indus Valley Civilization. Being a Kharif crop, these require less water and other agricultural inputs such as fertilizers, pesticides, etc for large-scale production. This makes it the traditional choice for food and nutritional supplement for Indian households culturally.

India's millet production touches the mark of more than 170 lakh tonnes in 2019. This contributes 80% of Asia and 20% of global millet production with an average yield of 1239kg/ha significantly higher than the global average.

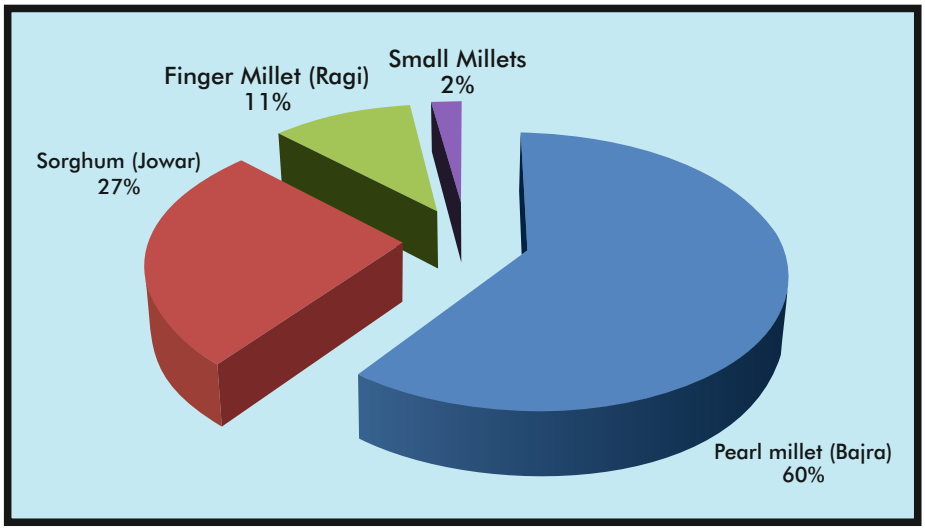


Region-wise Millets Area and Production Region-wise (2019)

Regions	Area (lakh heetare)	Production (lakh tonne)
Africa	489 (68%)	423 (49%)
Americas	53 (7%)	193 (23%)
Asia	162 (23%)	215 (25%)
Europe	8 (1%)	20 (~2%)
Australia & New Zealand	6 (~1%)	12 (~1%)
India	138 (20%)	173 (20%)
World	718	863
		(Source: FAO Stat 2021)

Thus, the celebration will also bring new opportunities for business as well as employment for Indian youth, farmers, as well as women. The revenue generated for further scaled-up production will lead to economic prosperity and numerous health benefits for the consumers. It will help India to be self-sustainable to feed the rising population and minimize the global shocks associated with agrifood systems.

India produces the full range (9 commonly known millet types) of millets and bags the position of largest millet producer and fifth largest exporter of the crop across the world. In the fiscal year 2021-22, 27% growth has been recorded in India's millet production concerning 15.92 million metric ton production in 2020-21. It was the testimony of policy-level direct intervention in the right direction.



Source: https://static.pib.gov.in/WriteReadData/specificdocs/documents/2022/dec/doc20221226147401.pdf

India has planned multiple events to kick off the celebration being the chair of this Year's Steering Committee along with holding the G20 Presidency for the first time. The Indian Embassy in different countries has also planned multiple events to focus on promotional activities related to millet and increase mass awareness to tap its numerous health benefits.

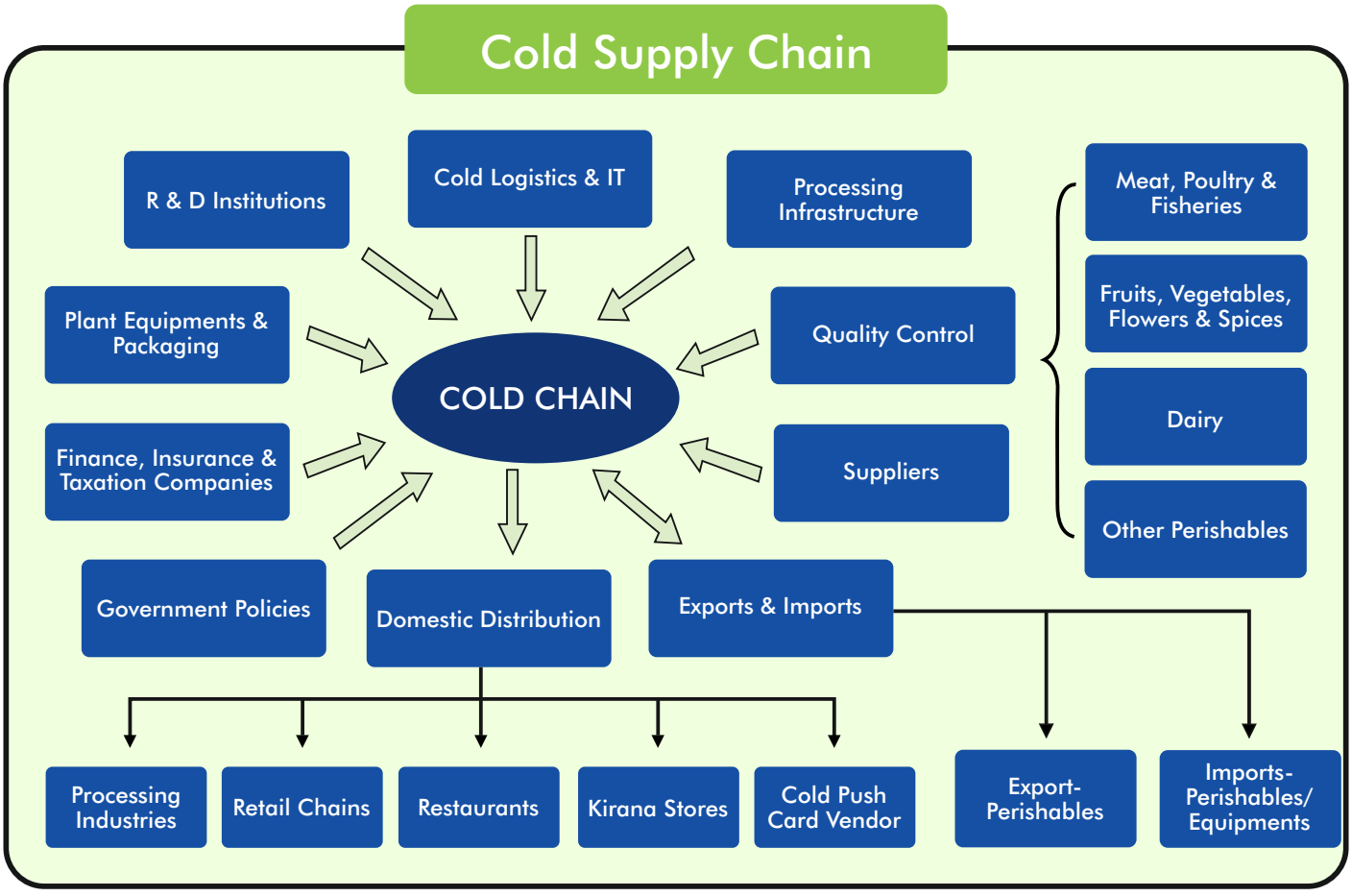
The central ministries and different Indian states are also assigned specifically focused months to conduct promotional and awareness campaigns related to increasing cultivation, production, consumption as well as the adoption of millets in their first food choices.

In this regard to lead by example, the Ministry of Agriculture and Farmer Welfare, Government of India has organized a "Special Millet Lunch' for the Member of Parliament and presented a diverse variety and cuisines of millets to encourage the public. Leaders across the world including the Prime Minister of India have reiterated the need for continued policy support and promotion to increase production and consumption to answer food security issues owing to the ongoing climate change scenario across the globe for our future generations.

02 | Integrated Cold Chain & Value Addition Infrastructure Scheme to Facilitate the Food Processing Industry

On 8th June 2022, the Ministry of Food Processing Industry, Government of India issued the new guidelines for the "Integrated Cold Chain & Value Addition Infrastructure Scheme" under Pradhan Mantri Kisan Sampada Yojana. The scheme is already been in implementation since 2008 and is providing an integrated cold chain and preservation infrastructure facility from the farm gate to the consumer without any hindrance. This affects the whole value supply chain from pre-cooling to the mobile cooling units, sorting, grading, packing facility, etc including the mobile cooling units to facilitate the distribution of horticulture, non-horticulture, dairy, poultry, meat and fish/marine (excluding shrimp).

The scheme gives special emphasis on cold chain infrastructure facility development at the farm level. As this can increase the efficiency of the supply chain from farm gates to retail stores and increase the income of small farmers along with a significant increase in export. It also helps in increasing the shelf life of agricultural products and ensures the right price for their produce in the market. The processed food market growth in India is showing an Annual Growth Rate (CAGR) of more than 14%. Thus, the new guidelines promise numerous opportunities for growth for the stakeholders to invest in the sector and leverage the policy benefits.



Source: https://www.mofpi.gov.in/Schemes/cold-chain/project-components-0

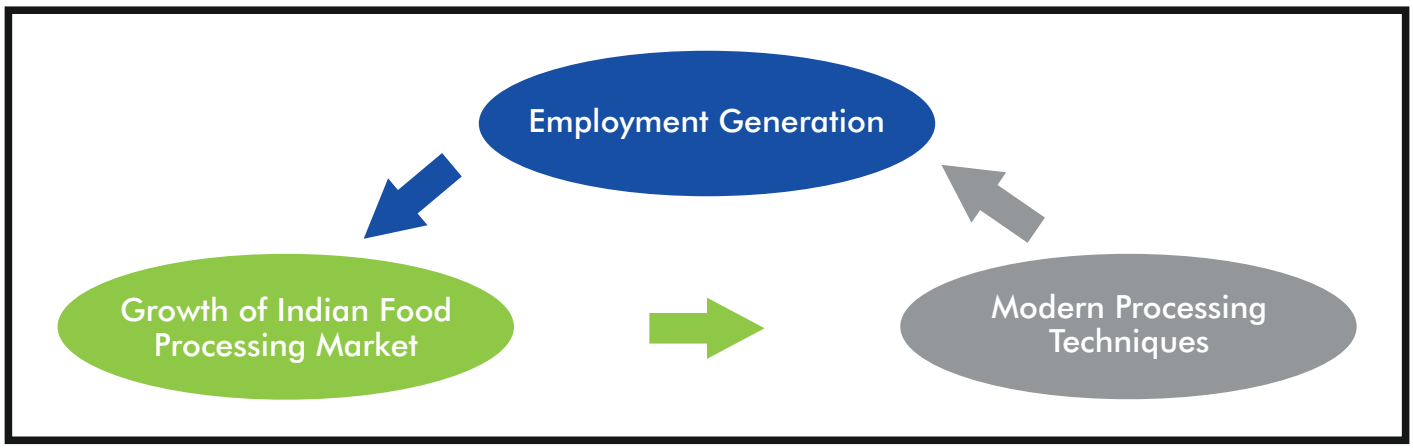
The broad objective envisioned under the policy to facilitate the supporting cold chain and value-addition infrastructure facility in the country are:

The project can be set up by any Partnership as well as a Proprietorship firm including Companies, Corporations, Cooperative Societies, Self Help Groups (SHGs), Farmer Producer Organizations (FPO), etc. These projects need to develop a strong supply chain that can leverage the maximum potential of integrated linkages while reducing the losses in transportation, storage and processing to make them cost-competitive. The eligible components for such projects defined under the scheme are:

- Minimal Processing Centre at Farm Level with Integrated Facilities such as Weighing, Sorting, Grading, Waxing, packing, Pre-Cooling, Normal Storgae, Controlled Atmospher (CA)/ Modified Atmosphere (MA) Cold Staorage, Normal Storage and Individual Quick Freezing (IQF)
- Mobile Pre-cooling Vans and Reefer Trucks
- Distribution Hubs Provision with Multi product and Multi CA/MA Chambers, Cold Storage/ Variable Humidity Chambers, packing Facility, CIP Fog Treatment, IQF and Blast Freezing
- Irradiation Facility

To grant financial assistance for these project components, any two facilities from the first 3 categories will need to be setup by the entities. But the setting up of Irradiating facility alone is sufficient for availing the financial grant under this scheme concerning all related statutory permissions, licenses, clearance, approvals, etc such as Land Use Change Permission and Consent from Pollution Control Board to name a few.

The scheme has widespread implementation across various Indian states and attracts crores of investment to improvise the supply chain management from the farm level to the retail outlets, But along with this, it has many other direct and indirect benefits associated with it which are as under:



Under the new guidelines, the Ministry has approved 24 out of 72 projects to provide financial assistance in the form of grant-in-aid on a milestone basis. Whereas each entity needs to deposit a non refundable fee amount of Rs 20,000/- (Rs 15,000/- for SC/ST Category Applicants). The approval for various projects will be at 35% of the project cost in General Areas and 50% of the project cost in Difficult Areas including projects from SC/ST, FPO as well as SHGs with a maximum cap of Rs 10 crore for each project.

To promote the use of renewable and alternate energy sources in these projects, the cost of technology establishment of a maximum of upto Rs 35 lakh per project is also included in the grant-in-aid along with other physical facilities such as In-house product testing laboratory, temperature-controlled storage, value addition and preservation infrastructure, etc.

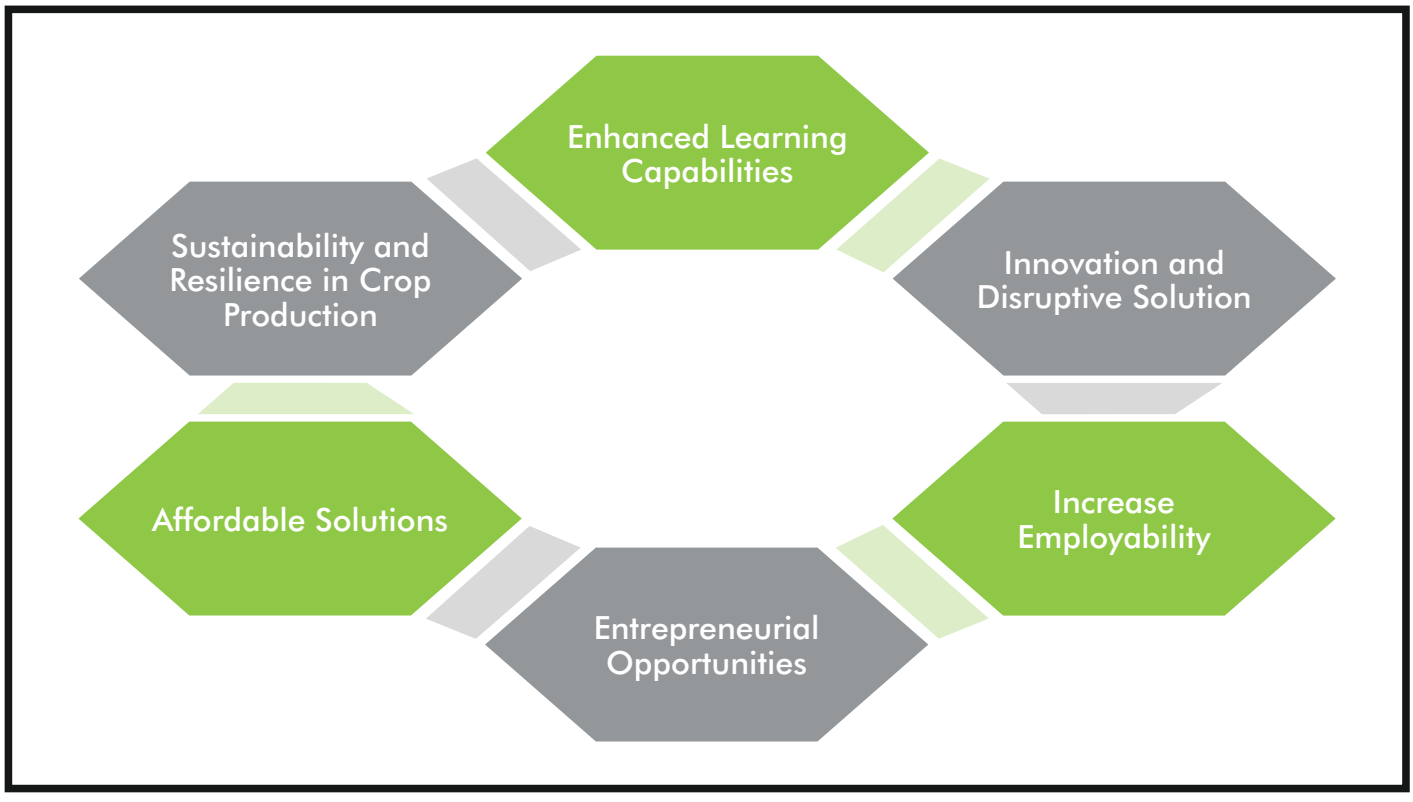
The ministry has set the timeline for completing these Value Addition Infrastructure projects as 24 months and 30 months in General and Difficult Areas respectively. Non-adherence to the set timelines will be liable to a deduction in the grant-in-aid as per the guidelines to keep a check on the optimum utilization of public funds and strengthen the supply chain management in the country. So that it can serve its purpose and reduce the wastage of perishables. It will help them to find the best price for their produce and also help consumers, retailers and food processors to buy these products at affordable prices with much better nutrient levels to benefit all.

03 | 'KRITAGYA' Hackathon to promote Speed Breeding for Crop Improvement

> *Focus on learning, questioning and solving. When you learn, you get the wisdom to question; when you question you get out of the box innovative methods to solve problems; when you do that you grow, nation grows, planet prospers.*
>
> *- Sh. Narendra Modi, Hon'ble Prime Minister of India*

The Indian Council of Agriculture Research (ICAR) in association with its National Agricultural Higher Education Project (NAHEP) and Crop Science Division has organized Hackathon 3.0 "KRITAGYA" in September 2022 to promote 'speed breeding for crop improvement'. It is the third edition of this hackathon where first two editions were targeted to promote 'Innovation in Farm Mechanization' and 'Innovations for Precision and Economical Animal Farming' respectively to provide a platform to develop disruptive solutions through innovating capabilities and move the entrepreneurship drive in the sector.

"KRITAGYA" finds its meaning in itself as KRI means Krishi i.e. Agriculture, TA is used for Taknik i.e. Technology and GYA stands for Gyan i.e. Knowledge. It was a great platform for India's student community, academia, startups, innovators, as well as entrepreneurs to develop innovative technology solutions that can help in speed breeding for crop improvement that can leverage sustainability and resilience to feed the growing population of the country. The multiple benefits of such innovative exercises in India's crop science sector are as under:



The NAHEP is a World Bank (WB) assisted project of ICAR, implemented in 2017-18 for the next five years. In this 50:50 cost has been shared between WB and the Government of India. Its mandate is to support ICAR and Agricultural Universities in the country to provide quality education and relevant additional inputs to the scholars and students for the establishment of a soothing connection between industry and academia.

Along with enhancing overall agricultural productivity, the project is also working towards creating a skilled workforce with gender parity and climate change at the forefront through engagement areas of integration, transformation as well as inclusion.

The applicants in this edition of the hackathon were expected to present the potential solutions to a problem associated with crop improvement. These solutions may be applied at the irvicinity or specific to an area or at the state/zone/national level such as cheap and effective material for rapid generation advancement facilities, precise and handy diagnostic tools for diseases, insect pests, quality of produce, etc use of ICT for seed traceability, digital breeding platforms including other ongoing challenges specific to a variety of crops, seeds, biotic and a biotic stresses. The problem statement under hackathon 3.0 was:

- Business Models for Biofortified Crops value Chain
- Traceability Solutions for Seed Supply Chain Management
- ERP'S (Enterprise Resource Planning Software) for Seed Production and Distribution
- Digital Technologies for High Throughput Phenotyping
- Decision Support System for Pest Forewarning and Management
- Technologies to Reduce Food Miles and Price Risk Reduction
- I0T Applications for Production Planning and Price Risk Reduction
- Smart Storage Structures for Food Grain Storage with an Application of AI
- Smart LED Lights for Speed Breeding
- Business Models for Bringing Efficiency to Edible Oil Value Chain
- Innovative Models for Technology Commercialization
- Application of Augmented Reality (AR) and Virtual Computing (VR) in Seed Quality Management
- Device/Rapid Methods for Micro nutrients Detection in Crops
- Value Added Products From Crop Residues/Milling by Products
- Intelligent Audio Chatbots for Farm Advisory
- Quality Seed Management - block Chain Technology for Ensured Quality
- Digitization of Breeding Platforms

Source: https://nahep.icar.gov.in/Kritagya.aspx#sectionabout

The participation was in a group of a maximum of 4 participants that include not more than one faculty/innovator/entrepreneur. The winners have received a cash prize of up to Rs 5 lakhs for their

innovative ideas. The idea was to bring agriculture education in the country in line with the National Education Policy 2020 and encourage the students to find the solution to practical problems in the sector.

Through this exercise, extended support will also be provided to the winning ideas for the scale-up and collaborations with the help of incubators, MSMEs and investors so that the best use of their ideas for crop improvement can be made and the agriculture production in the country can be scaled up over time.

Resources

1. https://www.fao.org/newsroom/detail/international-year-of-millets-unleashing-the-potential-of-millets-for-the-well-being-of-people-and-the-environment/en
2. https://sdgs.un.org/2030agenda
3. https://pib.gov.in/PressReleasePage.aspx?PRID=1887847
4. https://static.pib.gov.in/WriteReadData/specificdocs/documents/2022/dec/doc20221226147401.pdf
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15. https://pib.gov.in/PressReleasePage.aspx?PRID=1859800
16. https://nahep.icar.gov.in/Kritagya.aspx
17. https://journalsofindia.com/kritagya-2/?print=pdf

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