



INTERNATIONAL YEAR OF
MILLETS
2023

Mighty Millets

for Food, Nutrition & Health Security





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for Food, Nutrition & Health Security

M S Swaminathan Research Foundation,
Chennai



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Foreword

As the International Year of Millets 2023 (IYAM) has ended, we need to think about how to consolidate the gains made and promote millets in the future. We have learned a lot about the health and nutritional benefits of millets - being rich in fiber, proteins, antioxidants, micro-nutrients, as well as gluten free. Further, being C4 crops, they contribute to mitigating climate change, have a lower carbon footprint, lower need for water and are therefore climate resilient crops. However, it is worrying to note that over the last few decades, millet cultivation and production in India have either declined or remained stagnant. The reasons for this are technical, economic, and behavioral.



On the technical side, there has been inadequate research both to understand the unique traits and nutritional properties of various millets, especially the minor millets. There has been little advance in mechanical planting as well as harvest and post-harvest technologies. Many minor millets today still require women to hand pound the millets and therefore it is not possible to scale up consumption unless we bring in new technologies. These technologies need to be not only large-scale mills, but also household or community level processing technologies which can encourage women self-help groups to use it to improve their livelihoods and earn an income and also to improve household consumption. The lack of a well-established market for millets and a lack of minimum support price (MSP) also are disincentives to farmers to shift to millets. Finally, food habits and consumer preferences have over a period of time led to shifting of land for the cultivation of high value cereal grains or other commercial crops, lowering the production of millets.

The IYAM 2023 has done a lot to improve awareness and knowledge about the health benefits of millets and we need to continue to build on that. MSSRF hosted a conference on “Mighty Millets for Food, Nutrition and Health security” in August 2023, in which many stakeholders from farmers to women self-help group members, to technologists, researchers and policymakers were present, and there were a number of recommendations that came out of out of this conference.

Some key areas include the need for more research on systematically characterizing the millet germ plasm, particularly for the conservation of varietal diversity in small millets. While currently many states have a Millet mission, the focus has been on Ragi, Jowar and Bajra and we have neglected the host of minor

millet varieties that have been traditionally grown and eaten in India. Many of these may have unique properties in terms of digestibility, nutrient bioavailability, glycemic index, proportions of different micronutrients, and therefore the nutritional and genomic characterization of all these millet varieties is an urgent priority. We also need more clinical studies to prove the health benefits of different millets in different clinical conditions. We need more research on improving digestibility and addressing rancidity and storage issues because we know that polishing millets while reducing the rancidity also reduces the nutritional content. We also need advanced modeling and risk projection for climate vulnerability in the context of millets and future food security for India.

To encourage farmers to expand the area under cultivation and to support existing millet farmers, we need several policy interventions. Farmers should have access to germplasm for participatory varietal selection and yield enhancement, considering local agro-ecological factors. We need to invest in community-driven seed systems for conservation and ensuring quality seeds availability. It would be important to nutritionally profile any seeds that are released nationally, so that when farmers and consumers are choosing seeds, they are also aware of the nutritional properties and the price that a particular variety commands in the market should be linked to its nutritional advantages.

There is a need for the Poshan Abhiyaan or the National Nutritional Strategy to incorporate the need for dietary diversity – our diets must include more fruits and vegetables and a nationwide intensive media campaign is needed on the importance of consuming locally grown and locally available cereals, pulses, fruits, and vegetables, with a reduction in consumption of ultra processed foods. If we want to achieve the SDG goals of a healthy population by 2030 (and protect our environment), we need to think about how our agricultural policies and strategies are going to contribute to that goal because our health depends on what we eat and what we eat depends on what our farmers grow. So, the road to health is through nutrition sensitive and climate sensitive agriculture.

Soumya Swaminathan
Chairperson, MSSRF



M S Swaminathan Research Foundation,
August 6-8, 2023

Background Note

To unleash the potential of climate smart millets to improve food and nutrition security, the United Nations General Assembly in its 75th session in March 2021 declared the year 2023 as the International Year of Millets 2023 (IYM 2023). This focus is necessary to increase the production and consumption of these ancient food grains. The IYM 2023 consolidates and pushes for global cooperation to promote millet in different ways. Millets, a traditional food for more than half a billion people across Asia and Africa, is currently cultivated in more than 130 countries. India is one of the largest producers of millets and is leading the IYM 2023 celebrations worldwide.

With Prime Minister Shri Narendra Modi's vision of "Vasudhaiva Kutumbakam" (The World is One Family), IYM 2023 is an occasion for India to promote Millets as Nutri-cereals globally and place them prominently on the world food map. The Director General, FAO Mr. Qu Dongyu said that the IYM2023 would provide us with a unique

opportunity to give visibility to crops that have great potential to strengthen global nutrition, food security, agro-biodiversity, decent jobs and economics to improve the lives and livelihoods while accelerating Climate Action.

Hon'ble Prime Minister, Shri Narendra Modi has also shared his vision to make IYM 2023 a "People's Movement" and position India as the 'Global Hub for Millets'. Recognizing the enormous potential of millets, that also aligns with several UN Sustainable Development Goals (SDGs), the Government of India has prioritized and rebranding these millets as "Shree Anna".

Millets are largely cultivated under rainfed systems and in most part of India, under de-fault organic systems. In India, millets are primarily a Kharif crop, requiring less water and agricultural inputs in comparison to other grain staples. Millets are dual purpose crops, cultivated both for food and fodder, thus providing food/livelihood security to millions of households and contributing to

farm income. Millets, being a C4 crops, contribute to mitigating climate change and have a relatively lower carbon footprint.

Millets are considered as 'Smart Food' due to its nutritional status. They are wholesome grains, rich in dietary fibre packed with protein, antioxidants (like phenolic flavonoids), nutrients (calcium, iron etc) and other minerals. In addition, they are gluten-free, and highly preferable by people with celiac disease or following a gluten-free diet. They have numerous health benefits, including lowering blood sugar and cholesterol levels, controlling lifestyle diseases.

The IYM 2023 will raise awareness about the contribution of millets to Food, Nutrition and Health Security; motivate stakeholders to increase production, improve quality of millets; and increase investment in research and development. With this context, to create mass awareness on the diversity of millets, their invaluable nutritional properties, environmental benefits and their important role towards a healthy society, **M.S.Swaminathan Research Foundation** has organised International Conference on **Mighty Millets for Food, Nutrition and Health Security** on 6-8 August 2023 with the following objectives:

- To explore the innovative Research and Development initiatives in millets and facilitate networking and partnerships nationally and internationally
- To increase awareness on millets as a supplement/alternate to rice, wheat and maize; their nutritional benefits and culinary practices
- To understand the unique nutritional properties of the various millet species
- To explore opportunities for improving the livelihood of small and marginal farmers who are the major cultivators of millets in rainfed lands.
- To understand the role of millets in adaptation to climate change.
- To provide a platform for millet farmers to exhibit value-added millet products
- To provide an opportunity for private companies, entrepreneurs, and start-ups to network with scientists and farmers in developing more value-added products from millets



In the conference, over thousand internationally and nationally acclaimed scientist, policy makers, researchers, value-chain experts, students, scholars and farmers across the country participated.

Conference YouTube Link:

<https://youtube.com/playlist?list=PLzBW9IguAXpaEYbKw8Xitg-TU4EBWF2xo&si=Ub2GeVdeTUt4vfWU>



During the conference various millet products were displayed and sold at stalls by farmers from Jeypore district, Odisha; Kolli Hills, Namakkal district; Wayanad, Kerala; Poompuhar and Jawadhu Hills, Tamil Nadu. International and national research institutes, private companies and Non-governmental organizations such as ICRISAT, GIZ, IIMR, Protection of Plant Varieties & Farmers' Rights Authority, National Biodiversity Authority, Revitalising Rainfed Agriculture Network, Tata Soufull Pvt Ltd., Borne technologies, Millet Magic, Earth 360 and other Farmer Producer Organization's also displayed their work and products at millet pavilion.





Key Takeaways

Research and Innovation

- 01 A global initiative for systematically characterizing millet germplasm. There is a need for focusing more on conservation of varietal diversity in small millets.
- 02 A common platform for exchange of experiences and learning for the benefit of millet farming communities.
- 03 A database to document and validate traditional knowledge on millets.
- 04 Retention of nutrition during processing, digestibility & phyto availability ; Rancidity & storage issues; Polishing vs non polishing of millets to reduce rancidity; Profiling phytochemicals and anti-nutrients; Data on Nutrient bioavailability.
- 05 Need to understand the glycaemic properties of different millets for effective meal planning, impart dietary advice.
- 06 Scientific studies to prove health benefits of different millets - clinical trials are needed.
- 07 Advanced modelling and risk projection for climate vulnerability in the context of millets and food security.

Development and Extension

- 01 Establishment of Millet Bio-Park and outlets of millet value added products is needed to support local economy
- 02 Farmers should be facilitated access to germplasm for participatory varietal selection and yield enhancement considering agro-ecological factors.
- 03 Alternate/community driven seed systems can be an effective strategy for conservation and enhancement of productivity of landraces and ensuring availability of quality seeds.
- 04 Millets and biofortified varieties are to be positioned in climate-nutrition development programs at regional and global levels.

- 05 There is a need to focus on drudgery reduction through millet processing units at grassroots level
- 06 Promote Millet Farmer Facilitators to expand area under cultivation and attract more farmers towards millet farming.
- 07 Millets to be included in curriculum of schools, colleges and universities and as meals in schools and Anganwadis.
- 08 Create a coalition among agencies involved in millet promotion.



Policy Initiatives





Session Recommendations





Session I: Millets Diversity & Agro-Ecology: Ex-situ and In-situ on-farm Conservation Challenges and Opportunities



This session dealt with issues concerning the on-farm diversity management in varied agro-ecologies and the contributions of custodian farmers in safeguarding farmers' varieties in the country. The challenges and opportunities in Ex-situ and In-situ conservation of the wide range of millet diversity were deliberated. The session brought out the fact that strategic interventions are inevitable for addressing challenges of conservation, cultivation, processing and marketing for the promotion of millets.

1.

Agro ecology based in situ on farm conservation strategies need to be in place specifically for the conservation of landraces.

2.

Relevance of enhancing utilization of ex situ germplasm conserved in national and international gene banks was highlighted. Farmers should be given access to germplasm for participatory varietal selection and yield enhancement considering agro-ecological factors.

3.

A global initiative can be brought in for systematically characterizing the millet germplasm. Also, it highlighted the need for focusing more on conservation of varietal diversity that exists in minor or small millets.

4.

Alternate/community driven seed systems can be an effective strategy for conservation and enhancement of productivity of landraces apart from ensuring availability of quality seeds.

5.

There should be a common platform for exchange of experiences and learning of R&D institutions for the benefit of farming communities.

6.

Traditional knowledge related to millets needs to be documented and validated and a database information system to be developed.

7.

Create enabling policy support for sustainable in situ –on farm practices



Session II: Crop Improvement, Production Technologies and Sustainable Intensification of Millets in the Era of Climate Change



Sustained millet production, yield gap and production economics are the critical concerns in millet systems. The increasing weather vagaries and climate risks impose serious threat to millet farming systems. Latest advancements in crop improvement and novel production technologies to ensure sustainable intensification in millet farming was discussed.

1.

Increasing industrial utilisation of sorghum can dramatically alter the demand.

2.

Collaboration across all stakeholders - farmers, research institutions, NGOs, administration and others.

3.

Involvement and investment of private sector, in millet commercialisation.

4.

Policy advocacy: minimum levels nutrients in national variety release of staple crops– for example – iron and zinc in pearl millet. There is a need for the integration of nutrition concerns in varietal release

5.

Millets and biofortified varieties must be positioned in climate-nutrition development programs at regional and global levels.

6.

Need advanced modelling for nutrition indicators and risk projection for climate vulnerability.

7.

Neglected crops, marginal lands and vulnerable peoples to be looked at through an agroecology lens which promotes inclusivity.

8.

To address supply-demand mismatch, focus from farm to plate, on each aspect of the millet value chain.

9.

Returns to farmers and their perception is an important aspect - At each level of the value chain, it is important to note the two-way transactions that go beyond goods and money -Each aspect in the value chain should be subjected to the Knowledge-Policy-Practice interaction, an evolving triad.

10.

Recommendations from the People's Convention on Millets for Millions have synergies with many SDGs and should be explored.

11. Strategies for promoting millets:

- * Policy support and incentives to millet farmers
- * Good quality seeds and strengthening value chain
- * Replacing low-yielding cultivars
- * Setting up of millet procurement centers as in other crops
- * Promotion of millet-based processing industries
- * Awareness generation among school and college students
- * Promotion of millets in wastelands and non-conventional areas
- * Alternate fodder source
- * Setting up of Millet clusters





Session III: Research & Development Innovations in Agricultural Mechanisation and Post-Harvest Processing Technologies in Nutri-Cereals



Drudgery in millet production and post-harvest processing are the key concerns of the small and marginal farmers in the country in the last two decades. Both public and private sectors have innovated appropriate technologies to ease the work burden and reduce drudgery in processing millet. The gaps were identified and current research and innovations in the area of agricultural mechanization and post-harvest processing in millets.

1.

By 2030, value addition of millet would rise to 20% and our demand for millets will be 33% more than our current supply - Need to bring in more focus on the supply side and bridge the gap

2.

There is a need for research in development of convenience foods using millets - due to lack of gluten in protein

3.

There is a need to focus on drudgery reduction through millet processing units at grassroots level

4.

Processing of millets is imperative to provide clean, de-stoned and de-hulled good grade millets whilst not affecting their nutritional qualities

5.

Mechanisation in millet farming has to be promoted. Farmers face the challenges with the shift from bullock-drawn to tractor-drawn cultivation. Capacity building of farmers in handling such machines and access to machineries are important to attract farmers to mechanise their farming.

6.

Suitable technologies and infrastructure are required for proper drying and processing of millets. Community level infrastructure development is important considering the size of landholding

7.

Farmers face challenges in sowing, harvesting & dehulling of *Kodo* and *Kutki* millets and need to address the challenges



Special Session: Millet Cafe



Millet Café Panel was represented by the Chefs’ of Lead Hotels, Representative from South-India Chef Association and emerging and successful entrepreneurs in the middle class hotel segments, and the traditional push cart vendor, who deal with millet food in the countryside would share their views. The perspectives across sectors from the millet Food industry shed light on the challenges, prospects and new opportunities in the Millet food chain sector.

1.

Need a scientific approach in popularising millet food in day to day life

2.

Researchers, academicians, technologists and policy makers should come together on recommendation for millets on what kind of millets to take on a daily basis, its health impact, technological processing to remove the negative impact of millets and who can or cannot consume millets.

3.

A protocol on quantity for consumption of millets is required.

4.

Also people should be made aware of the instantiation of millets in a commercial way on its health effects.

5.

The 4 C approach by Professor M.S. Swaminathan is required in disseminating the knowledge about the scientific consumption of millets to the world where the real farmers be the brand ambassadors.





Session IV: Harnessing & Strengthening Value Chains of Millets



Government, NGOs, Private sectors are taking various steps and measures to support the development of different kinds of value chains in millets. There are community-centred value chains, Government initiated public value chain through the Millet Mission Programmes, and private value chain actors connecting urban demand. In this session different typologies, emerging issues, protocols, statutory needs, and compliances to be met in harnessing and sustaining value chains in millets were discussed.

1.

There is an imperfect market for millet in India with multiple players and diverse stakeholders in both supply and demand side of the millet market

2.

Building capacity of the FPOs on millet value chain

3.

Creating an enabling environment for the entry of start-ups to build millet enterprises.

4.

To improve the supply side, asset / infrastructure building at community level is essential.

5.

Trained Millet Farm Facilitator may help in expanding area under cultivation and attracting more farmers towards millet.

6.

Export market for millets need to be explored. APEDA has been working to create export market by organizing Buyer-Seller meetings in different cities.

7.

To attract international consumers, we need to develop effective communication strategies covering ecological and nutritional importance of millets.

8.

Maintaining quality standards for post-harvest management, processing and packaging of millets is also essential to explore export market.

9.

Branding and product development in accordance with the demand of the people

10.

R&D investment is required to handle storage pest. There is a need for a network for quality storage infrastructure.



11.

Traditional knowledge and practices are to be embedded in production, storage and marketing of millets.



12.

Agro-ecology based approach in essential for conservation of landraces.





Session V: Millets: The Untapped and Underutilized Nutritious Functional Food Grains



Millets are magic grains. Scientists are exploring the untapped potential of millets for its nutritional, nutraceutical and health properties. Various research and development organizations have been researching unexplored areas, such as millet genomics, breeding, nutrition profiling, and abiotic stress. The panel shared the latest findings in millet research advancement.

1. Research is needed in the areas of -

- * Compositional change during processing, digestibility & phyto availability
- * Rancidity & storage issues
- * Retention of nutrition during processing

- * Polishing vs non polishing of millets to reduce rancidity
- * Profiling phytochemicals and anti-nutrients
- * Data on Nutrient bioavailability

2. Millet meal on glycemc responses need to be studied

3. Establishment of Millet Bio park and outlet of millet value added products.

4. Recommendations for Interventional “National Nutrition Strategy” -Millets

- * Creating awareness among the community
- * Sensitization of Gram Panchayats, AWWs and SHGS

- * Facilitating a nationwide IEC and intensive media campaign on nutrition
- * Social Behaviour Change driven Nutrition Education involving Participatory Learning and Action (N-PLA) Approach covering Dietary diversity (5 food groups a day).



Session VI: Industry Perspectives on Millets, Markets Environment and Strategies for Sustaining Efforts



International Year of Millets has kindled a lot of interest among farmers, youth, consumers, and value chain actors in popularizing millets. In India, various states have taken efforts to provide support for millet promotion, Industries have played a crucial role in the promotion of millets and enabled the system for mainstreaming it successfully. In order to sustain the interest in millets among the public as well as to be the global leader, the industry needs sustainable support system from research & development and schemes through public policy. The panelists deliberated on various dimensions in marketing in the country as well as exporting to other regions of the world and suggested that -

1. Consistent effort is required to include millets in diets as behaviour change takes time.
2. Policy on millet should be in perspective of farming, food security and small holder farmer income.
3. More disposable income to make millets affordable.
4. Millets should be positioned as super food like quinoa of Bolivia and lot more noises to be given to promote consumption.
5. Research and development, collaboration, scientific engagement with community, advocacy and partnership is required to position millets across the globe improve markets.
6. Need to work on its market acceptability, and it has to be a win-win for cooperatives corporates and consumers.
7. Start-ups and farmers in millet cultivation have to work as cooperatives, adopt ICT tools to connect to the market and adopt strong bridge among the farmers.
8. Food system transformation is to come up with millet products which are appealing and not compromising taste.
9. All stakeholders from research institutes, academia, industry, NGO's and policy makers should come together for a long term plan for food system commitment.

10.

Need for trending through better– packaging & mainstreaming millet-based food.

11.

Millet supply chain to be regulated.

12.

Need to understand how industry can get along with millet farmers.





Session VII: Panel Discussion on Enabling Policy Environment for Millets as 'Climate Smart Nutri-Cereals'



In the recent past, both central as well as state governments have initiated various policy interventions to support millets cultivation and consumption in the country. Millet as a nutri-cereals has been included in the food security programme in India. The Panellists deliberated on various policy avenues and best practices in conservation, enhancing production and sustainable use and set a way forward charter plan for new dimensions of research, extension and public distribution system.

- 1.** Comprehensive policy to promote millets across India
- 2.** Need for consolidated data on millets, to conserve the millets and maintain its diversity in India
- 3.** Separate policy on promotion of farmer producer companies and farmer producer organisations in millet sector
- 4.** Policies to promote area-specific major and minor millets are required as all millets are not getting equal importance
- 5.** Creation of coalition among agencies involved in millet promotion
- 6.** Synergies among ongoing policies and programmes to promote millets
- 7.** Collection of evidences and narratives on millets in a way to attract scientists for better research.
- 8.** Work with industries to address quality seeds, improving production, product development etc
- 9.** Formulas to engage tribals in promoting millets, approach to get IPR for their knowledge and creation of success stories from existing practices.
- 10.** Include cultural, socio-economic diversity of people engaged in millets cultivation while framing policies.
- 11.** Policies should have equal level field, pro-poor, affirmative action oriented and should include gender sensitive component.
- 12.** Price differentiation to be incorporated while pricing millets produced by women farmers.

13.

Millets to be included in curriculum of schools, colleges and universities.



14.

Multiple burden on women in areas such as production, reproduction at households and participation at village meetings to be considered while framing policies





Key Recommendations



Research and Innovation



Development and Extension



Policy Initiatives



Research and Innovation

- 01
- 02
- 03
- 04
- 05
- 06

There is a pressing need for a global initiative for systematically characterizing millet germplasm, and conservation of varietal diversity in small millets.

A common platform for exchange of experiences and learning for the benefit of millet farming communities.

A database to document and validate traditional knowledge on millets.

Strategies for promoting good quality seeds and strengthening value chains.

Need methods, appropriate technologies and skill building in sowing of millets

Suitable technology for proper drying of millets and maintaining quality standards in post-harvest management, processing and packaging of millets is also essential to explore export market.

- 07
- 08
- 09
- 10
- 11

Traditional knowledge and practices to be embedded in cultivation, storage, product development and marketing of millets.

Research and development investment is required for safe storage to handle storage pests

Study culinary practices of millets by chronicling traditional menus.

Support Start-ups with different types of foods – Aspirational food with organics/gluten free/vegan/ Next generation foods on millets.

Retention of nutrition during processing, digestibility and phyto availability ; Rancidity and storage issues; Polishing vs non polishing of millets to reduce rancidity; Profiling phytochemicals and anti-nutrients; Data on Nutrient bioavailability

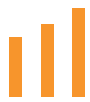
- 12 Need to understand the glycaemic properties of different millets for effective meal planning, impart dietary advice: Combine high glycaemic foods with low glycaemic foods such as pulses
- 13 Scientific studies to prove health benefits of different millets - clinical trials are needed.

- 14 Need advanced modelling for nutrition indicators and risk projection for climate vulnerability in the context of millets.
- 15 Standard formulations of products - fair trade practices in millets

Development and Extension

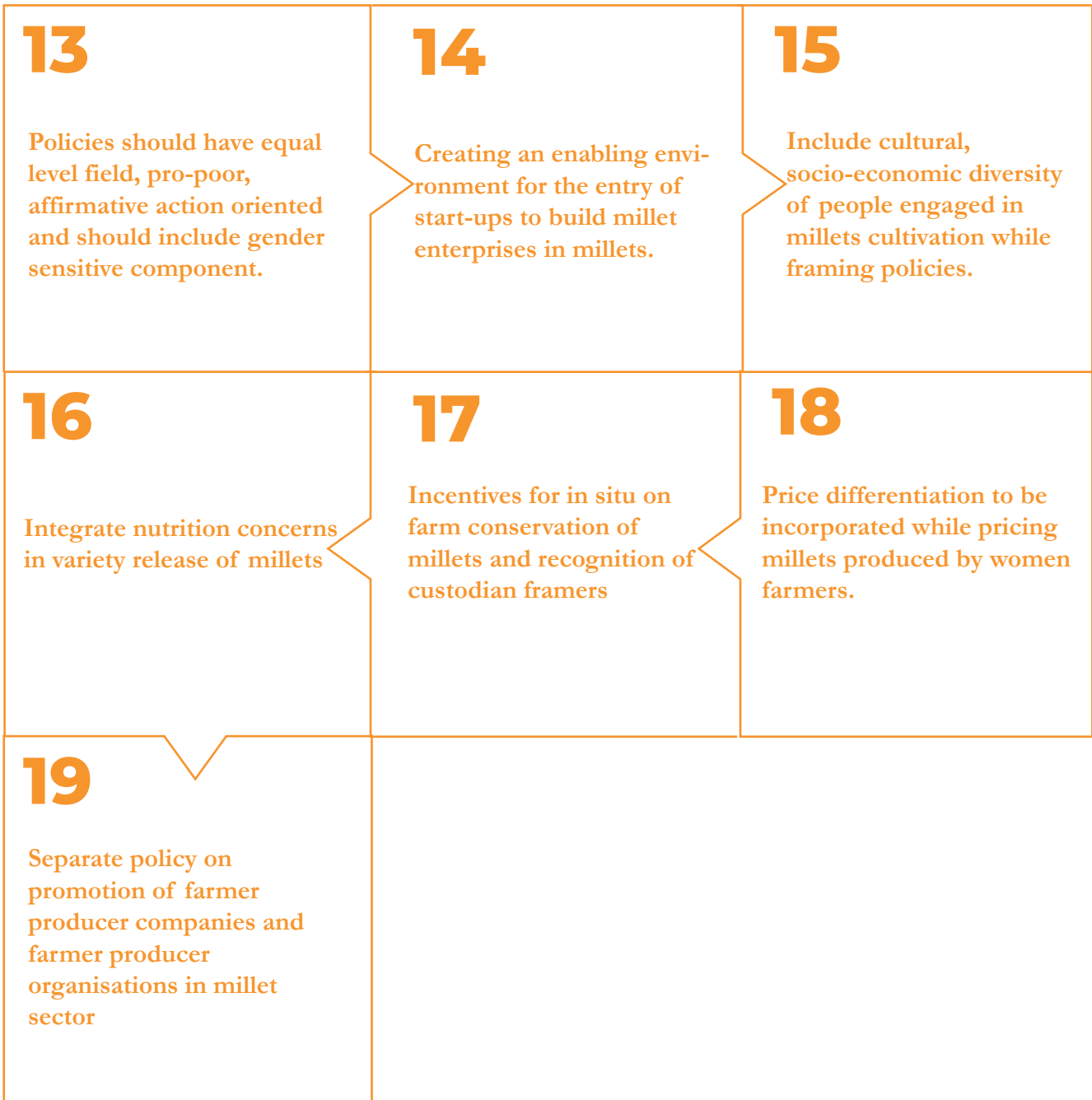
- 01 Agro ecology based specific in-situ on-farm conservation strategies need to be in place viz., for the promotion of landraces.
- 02 Neglected crops, marginal lands and vulnerable peoples to be looked at through an agroecology lens which promotes inclusivity.
- 03 Build formulas to engage tribals in promoting millets, compensation for their knowledge and creation of success stories from existing practices.
- 04 Establishment of Millet Bio-Park and outlet of millet value added products is needed in resource ecologies to support local economy
- 05 Relevance of enhancing utilization of Ex situ germplasm conserved in national and international gene banks highlighted and Farmers should be facilitated access to germplasm for participatory varietal selection and yield enhancement considering agro-ecological factors.
- 06 Sustainability of the Community seed banks and developing alternate/ community driven seed systems can be an effective strategy for conservation and enhancement of productivity of landraces and ensuring availability of quality seeds.
- 07 Work with industries to address quality seed and improving production.
- 08 Millets and biofortified varieties are to be positioned in climate-nutrition development programs at regional and global levels.
- 09 Returns to farmers and their perception is an important aspect - At each level of the value chain, it is important to note the two-way transactions that go beyond goods and money -Each aspect in the value chain should be subjected to the Knowledge-Policy-Practice interaction, an evolving triad.
- 10 There is a need to focus on drudgery reduction through millet processing units at grassroots level

- 11 Processing technologies and machines are imperative to provide clean, de-stoned and de-hulled good grade millets whilst not affecting their nutritional qualities
- 12 To improve the supply side, asset building at community level is essential
- 13 Promote Millet Farmer Facilitators to expand area under cultivation and attract more farmers towards millet.
- 14 Need to develop effective communication strategies covering ecological and nutritional importance of millets.
- 15 Branding and product development in accordance with the demand of the people are also to be catered.
- 16 Start-ups and farmers in millet cultivation have to work as cooperatives, adopt ICT tools to connect to the market and adopt strong bridge among the farmers.
- 17 Efforts are needed to bring ownership of the FPOs and build their capacity to handle the issues collectively
- 18 Creating an enabling environment for the entry of start-ups are essential to build enterprises around millet on the demand side
- 19 Building women's agency as they play crucial roles from production to consumption in millets
- 20 Need to work on its market acceptability, and it has to be a win-win for cooperatives corporates and consumers
- 21 Media influencers and chefs should promote the use of millet in their recipes and menus.
- 22 Millets to be included in curriculum of schools, colleges and universities and as meals in schools and Anganwadis.
- 23 Create of coalition among agencies involved in millet promotion.



Policy Initiatives

01 Need for consolidated data on millets, to conserve the millets and maintain its diversity in India	02 Research and development, collaboration, scientific engagement with community, advocacy and partnership is required to position millets across the globe improve markets.	03 By 2030, value addition of millet would rise to 20% and our demand for millets will be 33% more than our supply - Need to bring in more focus on the supply side and bridge the gap
04 Governments need strengthen productivity via technologies and improved genetic varieties,enhancing supply initiatives, both directly through public procurement and price incentives and indirectly by raising consumer awareness of health and dietary benefits.	05 Policy advocacy needed for ensuring minimum levels of nutrients in national variety release of staple crops– Example – iron & zinc in pearl millet. Needs to have policy support for sustainable in situ on-farm practices.	06 Need for National Nutrition Strategy for Creating awareness among the community, Sensitization of Gram Panchayats, AWWs and SHGS, Facilitating a nationwide IEC and intensive media campaign on nutrition, Social Behaviour Change driven Nutrition Education involving Participatory Learning and Action (N-PLA) Approach covering Dietary diversity including millets (5 food groups a day)
07 Address supply-demand mismatch, focus from farm to plate, that is, on each aspect of the millet value chain – selling cost is crucial	08 Market linkages and Minimum Support Price for small millets, and procurement policy.	09 Encourage participation of private and public sector in mainstreaming nutrition through millets
10 Export market for millets need to be explored. APEDA has been working to create export market by organizing Buyer- Seller meetings.	11 National policy alignment of crop-nutrient combination standards is needed	12 Policies to promote area-specific major and minor millets are required as all millets are not getting equal importance



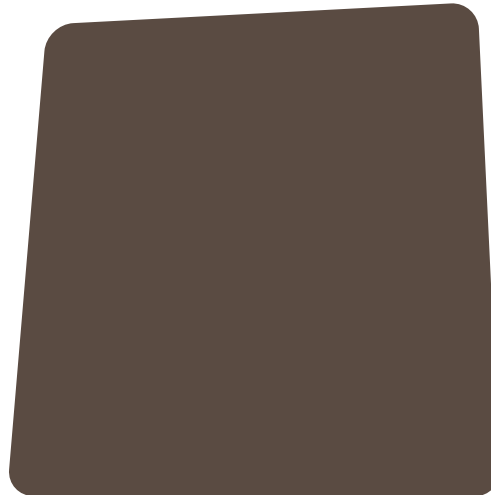
Research and Innovation



Development and Extension



Policy Initiatives



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SCIENCE FOR SUSTAINABLE DEVELOPMENT

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