

PROCEEDINGS

REVIVING OF AGRO-BIODIVERSITY IN RAINFED AREAS THROUGH TRADITIONAL VARIETIES FOR CLIMATE RESILIENT AGRICULTURE



C. SUBRAMANIAM AUDITORIUM,
Prithvi Training Hall, NASC Complex, ICAR, New Delhi

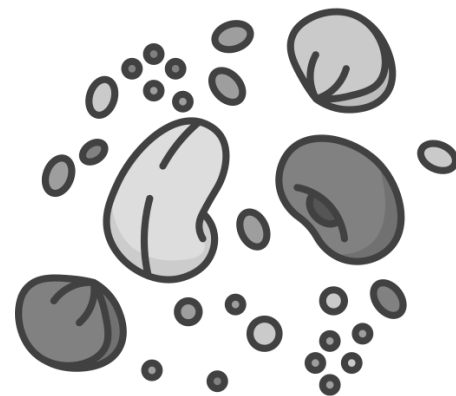


DECEMBER 24, 2024



PROCEEDINGS

REVIVING OF AGRO-BIODIVERSITY IN RAINFED AREAS THROUGH TRADITIONAL VARIETIES FOR CLIMATE RESILIENT AGRICULTURE



DECEMBER 24, 2024

■ Hosted by

National Rainfed Area Authority (NRAA)

Ministry of Agriculture & Farmers Welfare, Government of India,
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■ Acknowledgements with thanks

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■ For more info, <https://www.rainfedindia.org> | <https://www.wassan.org>



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NATIONAL RAINFED AREA AUTHORITY

Welcome!

REVIVING OF AGRO-BIODIVERSITY
IN RAINFED AREAS THROUGH
TRADITIONAL VARIETIES
FOR CLIMATE RESILIENT
AGRICULTURE



C. Subramaniam Auditorium, Prithvi Training Hall,
NASC Complex, New Delhi

COLLABORATIVE WORKSHOP



NATIONAL RAINFED AREA AUTHORITY



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REVIVING OF AGRO-BIODIVERSITY IN RAINFED AREAS THROUGH TRADITIONAL VARIETIES FOR CLIMATE RESILIENT AGRICULTURE

PREFACE

Agricultural biodiversity is the foundation of resilient food systems, particularly in rainfed regions where climate variability poses significant challenges. Traditional varieties (TVs), developed through centuries of farmer-led selection, hold immense potential for enhancing climate resilience, nutritional security, and local livelihoods. However, the mainstream seed system has largely overlooked these varieties, necessitating urgent interventions to conserve, promote, and integrate them into formal agricultural frameworks.

To address these critical issues, the National Workshop on "Reviving Agro-Biodiversity in Rainfed Areas through Traditional Varieties for Climate-Resilient Agriculture" was held on December 24, 2024, at the C. Subramaniam Auditorium, NASC Complex, ICAR, New Delhi. Organized by the National Rainfed Area Authority (NRAA) in collaboration with the Revitalizing Rainfed Agriculture (RRA) Network, the workshop brought together key stakeholders, including policymakers, scientists, seed conservers, Civil Society Organizations (CSOs), farmers, and research institutions to deliberate on strategies for scaling up traditional varieties within the mainstream government seed system.

Discussions highlighted that only 6% of India's agricultural biodiversity is utilized, leaving vast potential untapped. Despite modern agriculture advancements, 60-70% of seeds are still sourced informally, highlighting the need for stronger community seed systems. State-led efforts in mainstreaming Traditional Varieties (TVs) were shared from Odisha, West Bengal, Himachal Pradesh, and Tamil Nadu, where proactive initiatives have been taken to document, conserve, and promote traditional seed systems through formal recognition, financial incentives, and integration into government programs. Experts from ICAR-NBPGR, PPV&FRA, and research institutions stressed investments in varietal characterization, seed quality assurance, and participatory programs to maintain genetic integrity. Market potential and value addition were also discussed, with stakeholders highlighting the unique nutritional, aromatic, and taste properties of TVs, which can be leveraged for premium pricing in niche markets.

Several key action points emerged from the discussions, emphasizing the need for a National Framework for TVs to support the conservation, registration, and dissemination of traditional seed systems in alignment with formal policies. Strengthening farmer-led seed systems through financial support, infrastructure development, and decentralized certification processes was identified as a priority. There was also a focus on scaling state-level innovations, encouraging the adoption of models like Odisha's Landrace Varietal Release Committee, Tamil Nadu's incentive-based conservation program, and West Bengal's seed pricing strategies for traditional rice varieties. Additionally, expanding research and development investments in TVs while conserving their originality, including studies on nutritional profiling, climate resilience, and agronomic performance in collaboration with ICAR, SAUs, and CSOs, was highlighted. Lastly, market integration and consumer awareness were emphasized, calling for stronger branding, certification, and value chain linkages to improve the marketability of TVs and ensure higher price realization for farmers.

The discussions, enriched by diverse stakeholder participation, have resulted in key action points detailed in the proceedings. Moving forward, effective collaboration among all partners will be crucial in advancing these initiatives.

(Dr. SABYASACHI DAS)

(DR. PANKAJ KUMAR)





डॉ. प्रमोद कुमार मेहरदा, भा.प्र.से.
अपर सचिव
भारत सरकार
कृषि एवं किसान कल्याण मंत्रालय
कृषि एवं किसान कल्याण विभाग
कृषि भवन, नई दिल्ली-110001



Dr. Pramod Kumar Meherda, I.A.S.
Additional Secretary
Government of India
Ministry of Agriculture & Farmers Welfare
Department of Agriculture and Farmers Welfare
Krishi Bhawan, New Delhi-110001

CEO's Message

Rainfed regions account for approximately 51 per cent of our nation's net sown area, playing a crucial role by contributing nearly 40 per cent of our total food production. These landscapes, characterized by low soil productivity and undulating terrains, embody the essence of resilience as they navigate the rhythms of highly seasonal production cycles. In these vital areas, traditional seeds are essential for smallholder and marginal farmers. They are not only robust and drought-resistant but are also perfectly attuned to local conditions, preserving the rich tapestry of our agricultural heritage. These traditional varieties serve as invaluable reservoirs of genetic diversity, offering resistance to biotic and abiotic stresses. Their significance transcends mere cultivation; they are pivotal in enhancing food security, fostering sustainable farming practices, and nurturing our planet's biodiversity. Together, they weave a narrative of hope and sustainability for future generations.

To gain a better understanding of traditional seeds, farmer-owned varieties, and landraces, it is crucial for various stakeholders to engage and collaborate with one another. Officials at the state and district levels from relevant departments, along with academic and research institutions, including the State Agricultural Universities and the Krishi Vigyan Kendras, as well as civil society organisations and village institutions, must develop a coordinated approach to documenting, preserving, storing, and promoting traditional seed varieties and the associated practices that embody farmers' traditional knowledge.

I would like to congratulate the officials from the National Rainfed Area Authority and the Revitalizing Rainfed Area Network for their tireless efforts in organising the workshop on Reviving Agro-biodiversity in Rainfed Areas through Traditional Varieties for Climate-Resilient Agriculture. I hope the insights gained from the workshop will inspire collaborative action among various state institutions towards climate-resilient agriculture.

(Pramod Kumar Meherda)
Additional Secretary &
Chief Executive Officer NRAA
Ministry of Agriculture & Farmers Welfare



REVIVING OF AGRO-BIODIVERSITY IN RAINFED AREAS THROUGH TRADITIONAL VARIETIES FOR CLIMATE RESILIENT AGRICULTURE



EXECUTIVE SUMMARY

As Sri. Faiz Ahmed Kidwai, CEO of NRAA set out in his inputs, the type and quantum of investments made on rainfed areas by different states and schemes need to be profiled as a status report to motivate states to invest more in the climate vulnerable rainfed areas.

The workshop on **"Reviving Of Agro-Biodiversity In Rainfed Areas Through Traditional Varieties for Climate Resilient Agriculture"** was first in the series to stimulate discussions and shape the policy discourse on rainfed areas. The agriculture biodiversity and Traditional Varieties assumes greater importance as our current agriculture becomes more vulnerable to changing climate.

Reinforcing the need to focus on rainfed areas, Sri. Devesh Chaturvedy, Secretary, Ministry of Agriculture, Government of India, emphasised on the need to improve the contribution of Traditional Varieties in improving the potential of rainfed agriculture. He emphasised on the distinct traits of Traditional Varieties like taste, aroma, nutritional values etc., need to be explored for developing niche markets. Sri Devesh Chaturvedy assured his commitment to take the recommendations of the workshop to policy.

The workshop was aiming to foster dialogue among multiple stakeholders to take stock of the current situation and to explore strategies for scaling up adoption of Traditional Varieties in the mainstream government systems. Dr. Sabyasachi set out the contours of the workshop jointly organised by NRAA and Revitalising Rainfed Agriculture (RRA) Network. The workshop included deliberations across multiple stakeholders including seed conserving farmers, experienced civil society organisations, research institutions/ State Agriculture Universities and Government Officials representing ICAR-NBPGR, NRAA, Ministry of Agriculture, PPV & FRA and others.

Only 6% of India's rich agrobiodiversity leaves out large untapped potential for evolving Climate Resilient Agriculture strategies. Explaining the prevalence of Traditional Varieties the Dr. Gyanendra Singh, Director ICAR-NBPGR brought out that even now 60 to 70% of the seed is sourced informally from farmers. Dr. Pankaj Shah, Director (Agri./Horti.), NRAA emphasized the role of rainfed agriculture and TVs in food security and resilience. He noted that the workshop facilitated knowledge exchange and strategies for a sustainable future.

Explaining that the progress made in agriculture production has come at a significant cost - loss of crop diversity, varietal diversity, soil health and nutritional diversity, Dr. Varaprasad observed that the Traditional Varieties deserve a prominent place in agriculture research and development investments to ensure sustainable and resilient food systems.

This was followed by an overview of the existing efforts on Traditional Varieties across the country presented by Ms. Bhagya, Convener of the Working Group on Seed Systems of the RRA Network.

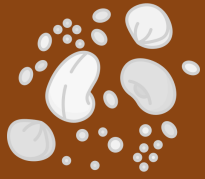
The panel discussion with Seed Conservers profiled the efforts of various seed conserves from the states of Odisha, West Bengal, Himachal Pradesh, Chhattisgarh, Maharashtra and Punjab; the session was moderated by Ms. Kavitha Kuruganti from ASHA network.

The deliberations in the next session focused on the experiences of different state governments and research institutions on Traditional Varieties; the session was moderated by Dr. Trilochan Mohapatra, Chairperson of PPV& FRA. Quality aspects of the Traditional Varieties, the need to develop seed standards for TVs for mainstreaming were emphasised by the Director, ICAR-Indian Institute of Seed Science. Additional Director, Agriculture of Tamil Nadu state explained various initiatives of the state government in promotion of TVs. Dr. Anupam Pal explained about the West Bengal's experience in promoting traditional scented rice under RKVY. State Coordinator of Sri Anna Abhiyan, Mr. Dinesh Balam presented the efforts of Government of Odisha in promoting TVs of millets and explained the setting up of Landraces Varietal Release Committee.

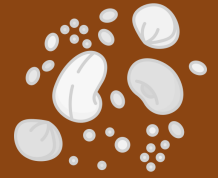
On behalf of the Vice Chancellor, UAS-Dharwad, Ms. Bhagya explained the collaborative work done by the University along with WASSAN to evolve SOPs for mainstreaming TVs and submission of a proposal to the state government. Ms. Kavitha explained the initiatives of Kerala Government.

In the subsequent Group discussion on policies and institutional mechanisms required for mainstreaming TVs, the moderators Dr. Indramani Mishra, Vice Chancellor of VNMKV, Parbhani and Sri. Sanjay Patil summarised the points. Citing the experiences in Odisha, Dr. Trilochan Mohapatra highlighted the need for the Government to support research and development of TVs - in areas like nutritional profiling, along with its promotional incentives to farmers. Explaining that enforcing varietal seed standards on TVs may undermine the inherent advantages of TVs. Echoing this, Dr. PK Singh observed that the TVs need to be conserved in their local agroecosystems as it enables natural evolution of the varieties on field.

Mr. Faiz Ahmed Kidwai, in his concluding remarks reinforced the need for conserving our heritage. The examples from multiple states show the interest of State Governments in promoting TVs. He asked the group to come up with an action plan and recommendations to be submitted to the Ministry of Agriculture and Farmers Welfare; NRAA would continue to host this process. He also elaborated on the opportunities to promote TVs in various schemes such as NMNF.



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The workshop commenced with the symbolic and traditional gesture of lighting the lamp by **Shri Devesh Chaturvedi IAS**, Secretary, Department of Agriculture & Farmers' Welfare, Government of India, **Dr Gyanendra Pratap Singh**, *Director, ICAR - NBPGR*, **Dr. Sunil Archak**, *Head – Germplasm Exchange, NBPGR*, **Dr K.S. Varaprasad**, *Former Director, ICAR-IIOR* and **Dr Sabyasachi Das**, *National Coordinator, RRA Network*.



After the lamp lighting ceremony, welcome address was given by **Dr Pankaj Shah**, *Director (Agri./Horti.)*, NRAA. He mentioned that rainfed agriculture is often underestimated, even as it forms the backbone of the food security of the nation. In this challenging environment traditional varieties (TVs) have stood the test of time, showing their adaptability, nutritional value and ecological harmony. The convention provided a platform for researchers, policy makers, farmers and other stakeholders to come together to exchange knowledge, approach, and pathways to a sustainable future. During the day-long event we shall expect the importance and potential of traditional variety in adapting to climate change, formation of seed systems to conserve agro biodiversity in farming communities to protect their genetic and cultural heritage.



Dr Sabyasachi Das, *National Coordinator, RRA Network* set the agenda for the day. He emphasized on RRA Network's commitment to addressing the unique challenges and opportunities in the country's rainfed areas. RRA Network's collaboration with the NRAA stems from a shared vision of empowering rainfed agriculture, which is crucial for the prosperity of rainfed communities and landscapes. Rainfed areas development requires a holistic approach that integrates all its components— cropping systems, livestock, fisheries and commons in a given landscape; and these production systems and their support systems (seeds, crop systems, agronomy etc.)

need to strengthen the natural resource base - soil, biomass and water and their interlinkages.

These interconnected systems strengthen the climate resilience of the landscape; making it an important strategy for resilience-building efforts. The RRA Network works through thematic working groups, and several state and regional chapters that work in the rainfed areas across the country. A critical aspect of this work is reviving and strengthening seed systems, as they play a pivotal role in improving food systems, ensuring nutritional security, and enhancing the health of farming communities. Diversity, climate resilience and food systems are the 3 important contexts to the work of the Working Group on Seed Systems.

Over the last 15 years, the RRA Network has been working diligently to achieve these goals. Building upon the grassroots experiences of many civil society organisations, it also has received valuable support from institutions like NBPGR, facilitating the exchange of conserved germplasm with farmers. Over the past decade, RRA Network has collaborated with seed saviours, women farmers, and communities to promote Traditional Varieties (TVs) that are well-adapted to local conditions.

As a result of this some states have already begun integrating traditional varieties into formal systems. For example, Odisha has successfully registered four ragi varieties, incorporating them into the seed chain. These efforts highlight the potential for TVs to play a significant role in enhancing resilience and productivity in rainfed regions.

Today's workshop aims to foster dialogue among all stakeholders to explore strategies for scaling up the adoption of traditional varieties within government systems. Establishing a formal seed chain for TVs is critical to achieving this goal, and we look forward to your valuable inputs and deliberations.



Dr. Gyanendra Pratap Singh, *Director of ICAR-NBPGR*, delivered the inaugural address, emphasizing the critical role of biodiversity in addressing the challenges of climate change. He highlighted that while India possesses immense genetic diversity, only 6% has been utilized so far, leaving a vast untapped resource that could transform agriculture. India, with four of the world's 34 biodiversity hotspots, primarily located in rainfed areas, holds great potential for climate-resilient agriculture. NBPGR is actively involved in ex-situ conservation and collaborates with CSOs like BAIF and WASSAN for in-

-situ efforts. A notable initiative, in partnership with NRAA, established a field gene bank for paddy in Assam, showcasing the need for collective programs involving the government, State Agricultural Universities (SAUs), and CSOs to promote *in-situ* conservation. Dr. Singh also stressed the importance of distributing locally adapted, nutrient-rich traditional varieties identified through trials to farmers, enhancing resilience and food security. He noted that while 30-40% of seeds in India come from organized sectors, the majority—60-70%—are still sourced from farmers, underlining the urgent need for a robust seed system for traditional varieties. This workshop, he concluded, holds immense significance in advancing this critical agenda.

Dr. K. S. Varaprasad, *Former Director of ICAR-IIOR*, explained the importance of mainstreaming TVs, highlighting India's remarkable journey from a food-deficient nation to a major food exporter. India is now the largest producer of milk, fibres, and pulses. It ranks second, globally, in the production of several crops, with agricultural exports rising from \$1 billion to \$50 billion, including 30% of the world's rice exports, 100 million tons of meat production, and a major producer of cotton. From 13% area 30% of agricultural GDP is produced through horticultural crops, thus making horticulture a key area to focus.



The progress made by India in agricultural production and trade has come at a significant cost too:

- **HEALTH** - impacting not just human health but also plant health, soil health, resilience, nutrition, and ecosystems—critical aspects of "One Health".
- **CROP DIVERSITY** - 583 crops once cultivated in the country, 90% of investment today is concentrated on just 30-35 crops.
- **VARIETAL DIVERSITY** - in case of paddy 40,000 traditional and 1100 released varieties are there but 30 released varieties cover 70% of the area and one single traditional variety covers 20% of cultivation area.
- **SOIL HEALTH** - loosing of soil nutrition, soil organic matter.
- **NUTRITIONAL DIVERSITY** - concentration of nutrients like Zn (30-33%), Fe (19-30%) and Ca (30-45%) in the foods are decreasing during the period of 1960-2010. Even after being a food secure country more than 200 million people are nutritionally insecure.

In the rainfed context, TVs are uniquely adaptive and resilient, having been naturally selected over generations. Dr. Varaprasad emphasized that seed is the cornerstone of agriculture, and changes in seed systems have transformative impacts. TVs, therefore, deserve a prominent place in agricultural research and development investments to ensure sustainable and resilient food systems. The combination of traditional varieties and natural farming has been proved best in the field.

Dr Sunil Archak, *Principal Scientist, NBPGR* raised pertinent questions on importance of definitions, openness to use Traditional Varieties in all types of agricultural practices, proper documentation.



Shri Devesh Chaturvedi, *Secretary, Ministry of Agriculture & Farmers' Welfare, Government of India* expressed heartfelt gratitude for the organisation of this workshop. He shared that Indian farmers are still collecting, preserving and popularizing the traditional varieties and that is a major encouragement. It is proved that the green revolution mainly became effective in the areas which had irrigation facilities.

Today in our country 54-55% of the area comes under irrigated, remaining is rainfed. More research needs to be done on TVs for improving their potential in rainfed agriculture. Introduction of irrigation changes the seed availability and cropping pattern of the region but unchecked irrigation is a concern. Soil health is the concern in irrigated areas.

Traditional varieties which have special traits such as better taste, aroma, color, cooking quality, nutritional rich etc should be grown in clusters and marketed for high price realisation. In addition, research should be pursued to make improvements in traditional varieties to increase their potential while maintaining their originality.

Not only the cereals, pulses but fruits and vegetables also will be included in the research. Traditional varieties are conserved effectively when they are in use. Product differentiation should be *done by proper research.*



The workshop outcome could be integrated into policy. The Ministry of Agriculture & Farmers Welfare is very keen to promote traditional varieties through different schemes related to agriculture like NMNF, FPOs, seed development, NFSM and horticulture in the *country.*



RELEASE OF “RAINFED REALMS”

A book titled "Rainfed Realms," authored by Mrs. Shyamoli Saini, Mr. Bhairab Saini, Mr. V. Swaminathan, Dr. Anupam Pal, and Mr. Soumik Banerjee, published by the RRA Network was officially released during the workshop.



Experiences on Reviving Traditional Varieties: Ms Bhagyalaxmi from WASSAN shared experiences across different parts of the country on the conservation, characterization and utilisation of Traditional Varieties as part of efforts of RRA Network. She shared about the emerging framework for Community Managed Seed Systems for Traditional Varieties. (Presentation: [Click here](#))

PANEL DISCUSSION WITH SEED CONSERVERS

moderated by **Ms. Kavita Kuruganti**, ASHA Network.



Sri. Sibaprasad Sahu shared that seed conservation is a duty. He explained his experience with seed conservation, sharing the methodology. He recalled the taste and value of traditional vegetables. Traditional varieties are like their children and their duty to protect and pass them to next generations. He suggested not to use chemical inputs for traditional variety crops. He requested Government departments to support TVs with MSP and provide inputs, water and other infrastructure support for conservation and storage of traditional varieties.



Smt. Twarku Devi from Himachal Pradesh shared that she was motivated by her mother-in-law to safe keeping and using it in next season and learnt about traits etc. and taken up seed conservation. She has distributed the seeds among the farming community. She suggested that awareness should be created by the Government for more people to adopt indigenous seeds. She shared that she has been maintaining a seed diversity block with the support of women groups. She suggested creating awareness in schools, colleges and in the community.



Sri. Nakchedaram from Chhattisgarh shared that he was inspired by Dr Richharia, he is mainly focusing on conservation and promotion of traditional varieties. He suggested that the Government should focus on scaling the experiences and protect the areas where still farmers are using the traditional varieties

Shri. Mavanji Pawar from Maharashtra shared that they have identified many varieties of rice which are performing very well. He is from a tribal area where rice and finger millet varieties are more cultivated and consumed. He said that he has characterised varieties with 65 characters and successfully registered three varieties. He suggested that the government should support conservation, characterization, multiplication and popularization, storage and sales/exchange. And support linking to the markets of some specific varieties which are in high demand.



Shri Bhairab Saini from West Bengal shared more than 600 varieties in the last two decades. He said that registration of indigenous varieties should not be done on an individual farmer basis, as it is the heritage of the community and the country. He opined that Governments should support the work going on by farmers who are in seed conservation, nutrition profiling from research institutions and museums to showcase all traditional varieties.

Shri Jagtar Singh from Punjab shared that they have taken up conservation of millet and other crops. He emphasised that the scientific community must have belief that farmers are using the traditional varieties for specific reasons. He suggested that the Government should support diversification of different crops and varieties. All farmers' leaders shared there is great enthusiasm among the younger generation for promotion of traditional varieties.



There was discussion on national heritage sites for agrobiodiversity and identifying seed savours, providing money prizes etc. In a Q&A session scientists, higher officials asked several questions regarding organizational support, field issues, technical support and access to markets.



COLLABORATIVE WORKSHOP

REVIVING OF AGRO-BIODIVERSITY IN RAINFED AREAS THROUGH TRADITIONAL VARIETIES FOR CLIMATE RESILIENT AGRICULTURE



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Post lunch session started after welcoming three guests - Mr. Faiz Ahmed Kidwai IAS, Dr. Indra Mani Mishra, Dr. Trilochan Mahapatra.

The next session focused on the experiences of research institutions and state governments in identifying and promoting Traditional Varieties, moderated by Dr. Trilochan Mahapatra.

Dr. Sanjay Kumar, *Indian Institute of Seed Science* presented online - on the formal and informal seed systems in India and proportion of seed consumed in the agriculture sector. Major focus was on the quality of farmer saved seeds. Unfortunately, we do not have any system to bring traditional seeds into the seed chain. Whatever seed we are producing, we need to bring them into the formal seed system, by maintaining quality assurance. Specific trials are needed of identifying traits specific to a location. Agroecological traits need to be identified. Seed standards for certification i.e. physical purity, genetic purity and germination etc. should be standardized. Once it is done successfully then we can bring it into a formal seed system.



The Additional Director of Tamil Nadu along with a group of Agriculture Department officials presented their views virtually. He shared that the TN govt has introduced a special scheme to conserve, maintain, preserve and distribute traditional paddy varieties. The government provides Rs. 3 lakhs per farmer under this scheme. In 2023-24, the state provided direct benefit support to 2.3 lakh farmers for the conservation, multiplication, and distribution of various traditional paddy varieties. Tamil Nadu also introduced the "Nel Jayaraman Mission" in 2021-22, a vital initiative to preserve the rich diversity of traditional paddy varieties, promote sustainable agriculture, and empower local farmers. This scheme includes the production of truthfully labelled paddy seeds from traditional varieties on 200 acres in state seed farms, with the government procuring the produced local varieties. Additionally, a new initiative was launched for 2024-25 to produce 5.5 metric tons of seeds from traditional pulse and millet varieties. To facilitate seed distribution in 2025-26, the government plans to establish 20 acres of seed farms across key millet-growing districts.

from traditional pulse and millet varieties. To facilitate seed distribution in 2025-26, the government plans to establish 20 acres of seed farms across key millet-growing districts.

Dr. Anupam Paul, *Former Additional Director of Agriculture, West Bengal*, highlighted efforts in conserving various folk rice varieties, emphasizing that many of these traditional varieties have shown significantly higher yields compared to improved varieties. The Agriculture Training Centre (ATC) in Fulia, a government farm in Nadia district, is actively conserving 400 traditional rice varieties and producing seeds of scented rice under the RKVY scheme for distribution to farmers. The government has also implemented a unique pricing system for seeds, with bold rice priced at ₹25/kg, fine rice at ₹30/kg, aromatic rice at ₹45/kg and red black and special rice like Jugal at ₹60/kg—possibly the first initiative in the country to set differentiated seed prices based on rice type.



Mr. Dinesh Balam, *State Coordinator for Shree Anna Abhiyan (Odisha Millets Mission)* shared about the process adopted for mainstreaming of the millets in the state of Odisha. He also shared that four landraces have been released in the seed chain by the innovative landrace varietal release committee process.

In lieu of the representative from University of Agricultural Sciences, Dharwad (UASD) from Karnataka, **Ms Bhagyalaxmi** from WASSAN gave brief detail of their work. VC of UAS-D formed a Steering Committee to form a Standard operating Procedure (SoP) for the Seeds System for Traditional Varieties. The VC, UAS-D invited Directors of Research from all the Agriculture Universities to develop the SoPs. A draft SoP was already prepared and approved by the VC, UASD. They plan to submit this draft SoP to the government of Karnataka for consideration.



Ms. Kavita Kuruganti from the *ASHA Network* shared details about ongoing initiatives in Kerala. In 2017-18, the state launched the "Scheme on Biodiversity and Local Germplasm Conservation and Promotion" with an allocation of ₹2.5 crore, focusing on the conservation and promotion of traditional rice and millet varieties. Under this scheme, support was provided for traditional paddy seed production across 250 hectares.

In 2023, the Kerala government integrated this scheme into the Bharatiya Prakritik Krishi Paddhati (BPKP) program and implemented its first phase.

Dr. Indra Mani, *Vice Chancellor, Vasant Rao Naik Marathwada Krishi Vidyapeeth, Parbhani* summarised the different sessions and he shared that it is important to institutionalise the work of farmers by linking them to research institutes such as ICAR-NBPGR. Modern value chain technologies like block chain can be explored for realising greater share of income from sale.



Dr Trilochan Mohapatra, Chairperson PPFVRA appreciated that system setup in Odisha has been comprehensive and participatory. Similarly, based on the experiences of different states, it would be good to develop a consolidated framework for promotion of Traditional Varieties for the entire country. He encouraged NRAA to take a lead on this. He further opined on the need for a detailed discussion on landrace purity and heterogeneity. If a pure line is selected from a traditional variety, it ceases to be considered a traditional variety. While pure lines can be easily released, Traditional Varieties require a proper framework to preserve their heterogeneity, which is integral to their authenticity and identity. More support should be provided for community seed banks. Branding and linkages to the market may also be very helpful. Conservation and support to the seed system are important things to take up. Registration of Traditional Varieties should be taken up. Documentation is a key aspect. India can become an example in the arena for the world.



Mr. Sanjay Patil from BAIF emphasized the need for mapping and inventoring traditional varieties in rainfed areas, a task that can be effectively undertaken by the Agriculture Department in collaboration with CSOs. He suggested that, alongside documentation, a "Genome Savors" list should also be prepared. While NBPGR is actively involved in the collection and characterization of traditional varieties, its efforts face challenges in hilly regions. Given that CSOs are already working in these areas, they can contribute significantly to exploration and documentation through collaborative efforts.

Dr K S Varaprasad emphasized on the importance of involving grassroots organisations, farmers, FPOs, NGOs in the seed program being proposed by the Government of India. Without active involvement of multiple stakeholders, success may not materialise. He implored that if most of the seeds in the market are truthfully labelled seeds, so why traditional varieties (TVs) have not seen the same success.



Dr. Mohapatra highlighted the important distinction between pure lines and TVs, emphasizing that the government must provide both scientific and financial support to farmers. In addition to supporting farmers, it is crucial for the government to be involved in the marketing and nutritional profiling of TVs. Odisha has set a valuable example by conducting an exercise to understand farmers' perspectives on seed purity. Dr. Mohapatra pointed out that while most seed purity standards apply to TVs, mixing is integral to the essence of TVs. Thus, enforcing seed purity standards may undermine their inherent advantages. Central government funding, along with the ability to leverage support from state governments, CSOs, FPOs, and farmer organizations, is essential to achieving success in traditional variety (TV) conservation efforts. Without such collaboration, the goal of preserving and promoting TVs will not be realized. Conservation should not be an end in itself; the best way to conserve is through their use in farming systems.

Dr P K Singh said that for times immemorial, farmers have been conserving their landraces. Wherever collected germplasm is available, they should be taken back to field areas. Agricultural development occurs in two ways: first, through the development of varieties via genetic improvement, and second, through the natural evolution of varieties in the field. We should focus on retaining original genetic material, instead of complete purification. It is important to ensure they are conserved in their agro-biodiversity hotspots. Many traditional varieties are known locally. It is time to ensure there is enough support for them.



CONCLUDING REMARKS of Mr. Faiz Ahmed Kidwai, Additional Secretary, Ministry of Agriculture and Farmers Welfare, Government of India and CEO, National Rainfed Area Authority (NRAA).



Mr Faiz Ahmed Kidwai said that NRAA should take up the analysis of the type and quantum of investment made on rainfed areas by different states and different schemes. This would motivate states to invest more in rainfed areas. He added that currently, the amount of investment is less compared to the requirement and vulnerability of the ecosystem and the farmers. This workshop is first in series to stimulate discussions and shape the policy discourse on rainfed areas. While

traditional varieties are disappearing, at the same time our agriculture is becoming more vulnerable.

India is a land of diversity, whether it comes to languages or landraces. It is important to conserve this heritage. There are examples from Tamil Nadu, West Bengal, Odisha and others to understand how states are investing budgets to revive and mainstream the traditional varieties (TVs). It is important to come up with an action plan and recommendations which can be submitted to the MoA&FW.

Today it is possible to link these traditional varieties to the market. We can build on the strategies adopted for promotion of millets by the GoI. There is an opportunity to promote TVs in natural farming schemes as well as other schemes at the state and national level. NRAA will continue its consultative process in taking this agenda forward



ACTION POINTS EMERGING FROM THE WORKSHOP

- Secretary, MoA&FW expressed the interest of the Ministry in promoting Traditional Varieties; as an independent initiative or as a part of the ongoing programs like NMNF, Crop Diversification and FPOs schemes. He asked the group to submit the proceedings of the workshop and its recommendations.
- Chairperson, PPV&FRA suggested the group come up with a broad national framework where states will have flexibility as few states have taken up the work and GoI is also thinking to support them.
- Mapping, documenting the community knowledge attached to Traditional varieties, its unique traits, recipes etc., is important along with taking up the research in farmers' fields. Initiatives on value addition and marketing are important as there are consumers who prefer TVs for their nutrition, taste, cooking quality and medical properties; post Covid, consumers are conscious about health and diversity in their foods. Any initiatives on TVs must be Community led initiatives supported by all public institutions and Governments.
- Formal seed systems and seed systems for Traditional varieties can co-exist and complement each other. It requires R &D and public investments.
- CEO, NRAA suggested the group come up with recommendations with an action plan to be submitted to the MoA&FW.



NATIONAL WORKSHOP RECOMMENDATION

Pilot Project on Seed System for Traditional Varieties implementation in 5 to 8 States (Indicators suggesting more diversity of TVs in the district/ state Natural farming is acceptable to the communities) with the following objectives is recommended

- Farmer led mapping and documentation of Traditional Varieties including special traits
- Farmers preferred varieties multiplication and making seed available
- Systematic evaluation of selection of TVs with appropriate checks and collection of characterization data
- Documentation of sustainable package of practices
- Capacity building of all the stakeholders









WEST BENGAL







The closing session included the presentation of awards to seed conservers, followed by a group photo of all participants to mark the successful conclusion of the collaborative workshop.



Dr. Sabayasachi Das delivered the Vote of Thanks, expressing appreciation to all participants for contributing to the workshop's success. ■





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REVIVING OF AGRO-BIODIVERSITY IN RAINFED AREAS THROUGH TRADITIONAL VARIETIES FOR CLIMATE RESILIENT AGRICULTURE

DECEMBER 24, 2024

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