

AGROBIODIVERSITY ROUNDTABLE

AN NCCI
INITIATIVE

MILLETS IN THE KANHA
LANDSCAPE

August 2023



NCCI
NETWORK FOR CONSERVING
CENTRAL INDIA



AGROBIODIVERSITY EXPLORATORY ROUNDTABLE

MILLETS IN THE KANHA
LANDSCAPE

18 -19 AUGUST 2023
MANDLA MADHYA
PRADESH

HOSTED BY THE NCCI

Photograph by Amrita Neelakantan



Photograph by Amrita Neelakantan

ABOUT NCCI NETWORK FOR CONSERVING CENTRAL INDIA

NCCI was formed as an outcome of the Kanha-Pench Landscape Symposium (KPLS) held in February 2014. It emerged from the desire to establish a more direct method for communicating news and resources relevant to management and conservation in the Central Indian landscape.

Our focus is to embrace the complexity and diversity of Central India by engaging with all stakeholders working in this landscape. We aim to chart our course with measured next steps and build from the bottom up. Our approach is iterative, including crowd-sourced priorities, and we conduct scientifically applicable research to find sustainable solutions to real-world problems.

“WE ASPIRE TO BE A NETWORK DEDICATED TO MAINTAINING THE 'JUGALBANDI' OF PEOPLE AND NATURE IN THE CENTRAL INDIAN LANDSCAPE BY LINKING KNOWLEDGE WITH ACTION.”

Jugalbandi : Exploring the duality and the dance of people's livelihoods and ecological integrity in Central India

“MILLETS IN THE KANHA REGION” AN EXPLORATORY ROUNDTABLE



AGENDA

AN EXPLORATORY ROUNDTABLE ON THE BEST PRACTICES, OPPORTUNITIES AND CHALLENGES FACED BY PRACTITIONERS IN THE KANHA REGION

In February 2023, during the fifth Central India Landscape Symposium organized by Network for Conserving Central India (NCCI), participants decided to launch a roundtable on agrobiodiversity around the Kanha Tiger Reserve, with an emphasis on millets.

The NCCI organized this roundtable in line with their vision to maintain the ‘Jugalbandi’ of people and nature in the Central Indian landscape. The goal was to bridge knowledge and action, leveraging millets for healthier diets and climate resilience.

The two-day roundtable aimed to highlight diverse views on millets within the agrobiodiversity initiatives of the region. Our goal was to cultivate a network of individuals united in promoting millets in the region through shared information and collaborative efforts.

EXECUTIVE SUMMARY

The NCCI organized a two-day roundtable in the Kanha region, gathering practitioners focused on millet revival. The event aimed to share perspectives on on-ground challenges and foster collaboration among those committed to promoting millets.



Artwork by Umed Patta*

Three key points emerged:



The NCCI's roundtable highlighted the crucial role of seeds in millet revival:

Seeds for farming:

- Seed quality is essential for crop yield. Farmers use both local and 'improved' seeds. Without formal seed banks, there is a looming threat of seed shortage as millet farming expands.
- Commercial cultivation might lead farmers to prefer high-yield or commercially-owned varieties, risking the decline of traditional millet varieties.

Seeds diversity conservation:

- Conservation of these varieties is vital but should not compromise farmers' livelihoods, requiring both on-site and off-site conservation strategies.



Members agreed there is a noticeable decline in millet cultivation due to challenges compared to rice:

- Millets require more labor for hand processing, harvesting, and yield less commercial profit. This has made paddy the dominant crop, pushing millet farming to less favorable areas, contingent on its economic sense and convenience.
- For a successful millet revival, we need a comprehensive ecosystem that includes formal seed banks, mechanized sowing/harvesting, enhanced processing, market connections, and an efficient post-harvest system.

*Artwork created for NCCI by artist Umed Patta

Based on a Central Indian tribal folktale about the origin of the stars and clouds



EXECUTIVE SUMMARY (CONTINUED)



In the Kanha region, cultivating millets presents unique challenges:

- Although high-effort cultivation yields better results, farmers, due to time constraints and other pressures, may opt for less effective methods. Moreover, currently at this time, there is no Minimum Support Price (MSP) for small millets (like Kodo and Kutki) in Madhya Pradesh
- Millets require laborious hand sowing and harvesting, causing drudgery for farmers.
- To enhance millet farming, there is a need for mechanization to lessen labor intensity, sharing of best practices, and guidelines on storage and spoilage prevention. Implementing these measures can significantly refine millet cultivation in the region.

In summary, attendees found the roundtable beneficial. They valued its action-driven approach, the platform for knowledge exchange, and the chance to network and pinpoint collaborative opportunities. Members agreed the way forward for the NCCI would include similar roundtables supplemented with field visits and distribution of resources.



Press Coverage of the Event



SESSION 1 ROLE OF SEEDS IN THE MILLET REVIVAL

Presentations by:
Soumik Banerjee (*Keystone Foundation*)
Ritesh Shende (*Samerth Charitable Trust*)

Key Topics for Discussion

How important are seeds in the context of rejuvenation of Millets in the Kanha region?

Are there any current or future problems related to seeds that we should consider which may impact this landscape in the long term?

Summary of Discussions and Consensus

Seed Quality's Impact on Yield:

There was unanimous agreement that the quality of seeds is fundamental in millet cultivation, as it directly influences the crop's yield.

Diverse Seed Types in Millet Cultivation:

Roundtable members collaborate with farmers who use either indigenous seeds or improved varieties. There are many varieties of Kodo, Kutki and other types of millets in the Kanha region. Conservation of the seed diversity and knowledge about how to grow them is critical for the future.

Points of Consensus (Continued)

Anticipated Seed Scarcity:

The roundtable participants foresee a potential seed shortage in the future. While farmers currently rely on seeds from prior harvests, supplemented by government-procured ones, increasing trends in millet cultivation could lead to seed scarcity.

Concerns Over Commercial Millet Varieties:

There is a shared sentiment that commercially owned millet varieties should be closely watched.

Their proliferation could threaten the existing diversity of varieties. The members intend to leverage their interconnected networks for this monitoring and avoiding detrimental commercial seed monopolies for millets.



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Points for Action and Future Discussions

Enhancing Yield for Financial Viability:

- The overlap in cultivation time of millets and paddy during the monsoon season creates a dilemma for farmers. Given that paddy is often more profitable, farmers might prioritize it over millets.
- To ensure millets remain an attractive option, there is a need to maintain or boost their yields. Members discussed the potential benefits of adopting improved seeds or high-yielding farming methods that are still convenient for farmers in terms of time and effort.

Need for Formal Seed Banks:

- Currently, farmers manage their seed needs through self-preservation and informal exchanges, ensuring they have sufficient seeds for cultivation.
- However, with the anticipated rise in millet cultivation, these informal seed management practices might fall short.
- The roundtable emphasized the importance of formalizing and enhancing the seed banking process, making it a key topic for future discussions.



Shift to High-Yielding Varieties:

- Farmers emphasizing commercial millet production might prioritize higher-yielding varieties. This could lead to a decline of other lower yielding but more resilient varieties of millet from the landscape.

Conservation Efforts of Millets:

- The region boasts a diverse array of small millets which are native to India. Notably, popular varieties like Ragi, Jowar and Bajra (not extensive grown in the Kanha region) are believed to have roots in Africa.
- A broader conservation strategy to maintain the genetic diversity, particularly in the many varieties of Kodo, Kutki and other native millets is needed. This involves both in-situ (on-site) and ex-situ (off-site) conservation measures.



Points for Action and Future Discussions (continued)

Balancing Conservation and Livelihoods:

- Members acknowledged the practical challenges faced by farmers. It is unrealistic to expect farmers to prioritize seed conservation over their livelihoods by remaining with lower-yielding varieties. As such, farmers will naturally opt for seeds that offer the best returns. The NCCI roundtable members feel this should be recognized and built into our agrobiodiversity initiatives.

Proposal for a Comprehensive Seed Bank:

- Recognizing the contextual challenges and the importance of preserving millet diversity, members proposed the creation of a "Comprehensive Seed Bank of all Millets". This initiative, aimed at safeguarding millet varieties for future generations, is flagged for further discussion in upcoming roundtables.



“बीज की गुणवत्ता सीधे फसल को प्रभावित करती है। कोदो एवं कुटकी फसल की उपज किसान के पास उपलब्ध बीज पर निर्भर करती है।”

“The quality of seeds directly impacts yield. And the farmer’s revenue from Kodo and Kutki crops is considerably impacted by the quality of seeds available to them.”

SESSION 2 CREATING A MILLETS VALUE CHAIN BY PROCESSING AND MARKET LINKAGES

Presentations by:
Ashutosh Deshpande (*Reliance Foundation*)
Vipul Gupta (*Earth Focus*)
Sushila Vatti (*Narmada Farmers Producer Co Ltd,
Mandla*)

Key Topics for Discussion

What is the current state of processing of and market linkages for minor millets?

What needs to be done to enhance millet growth in this region from a holistic perspective?

Summary of Discussions and Consensus

Decline in Millet Cultivation:

There has been a marked decrease in millet cultivation over the past several decades in the region.

Reasons for the Decline:

Shift in Consumption Patterns:

- Local villagers have moved away from consuming millets in favor of more readily available and affordable grains like rice and wheat.
- Moreover, white rice is seen as aspirational and the preferred choice of the urban rich. So, as the region becomes more affluent, white rice is seen to gain popularity.

Increase in Paddy Production:

- Factors such as the use of NREGA funds to transform upland into paddy-suitable land, higher returns due to Minimum Support Price (MSP), easier cultivation methods, and the presence of a robust ecosystem support paddy farming.



Points of Consensus (Continued)

Labor Intensiveness of Millet Farming:

- Compared to rice, millets present more challenges. They are labor-intensive in terms of hand processing and harvesting, and offer limited commercial returns.
- Consequently, paddy has become the primary crop focus, with millet cultivation contingent upon its financial viability and convenience for farmers.

Lack of Quality Processing Units:

- There is a shortage of high-standard processing units in the region. Millets are cultivated locally but then sold unprocessed to traders.
- These traders, in turn, process the grains in cities like Nasik and sell them at elevated prices in places like Gujarat and Maharashtra. This system ensures that farmers receive only a small portion of the final selling price of millets.

Ecosystem Discrepancy:

- In comparison to paddy, millets lack a supportive ecosystem. For a genuine revival of millet cultivation in the region, participants concurred that millets need support equivalent to that of paddy.
- This includes the establishment of formal seed banks, mechanization of sowing and harvesting processes, enhanced processing capabilities, market connections, and a comprehensive post-harvest system. Without these infrastructural supports, a full resurgence of millet cultivation is unlikely.

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Points for Action and Future Discussions

Addressing local consumption barriers and tackling broader commercial challenges, such as processing and market connections, are crucial. Establishing a supportive ecosystem for millets is essential for them to secure a consistent and valued place in the agricultural portfolio of the Kanha ecosystem.

Local consumption to be enhanced using a variety of strategies. A few are listed below:

- **Innovations for processing:** The need for tools or technologies like the Millet Mixie to simplify and make small-scale processing more feasible and affordable was highlighted.
- **Education and awareness to promote benefits:** Continuous efforts are needed to inform locals about the health benefits of millets, efficient farming techniques that yield higher outputs, and the versatile uses of millets, from food to feed and other applications.
- **Improving market connections for well planned growth:** Roundtable participants felt it necessary for the group to work to identify sources of supply for which there is an identified demand. As opposed to creating a well processed product without identifying market linkages for sales to make the same viable.
- **Diversifying uses of millets beyond food:** Some participants shared insights into how millet byproducts are being utilized in animal feed and other commercial ventures. There is a potential to ensure that farmers receive diverse economic benefits from cultivating millets.
- **Engaging with government and advocacy for financial support:** The group acknowledged the positive impact of MSP (Minimum Support Price) on the cultivation of major millets. They felt that minor millets like Kodo and Kutki should also be considered for similar MSP benefits. Dialogues with the government to advocate for this proposal were deemed necessary soon.



SESSION 3 CHALLENGES AND BEST PRACTICES IN CULTIVATING MILLETS IN THE KANHA REGION

Presentations by:
Majyaj Shrivastava (*Wassan*)
Sachin Pathania (*Pradan*)
Kishan Puri (*Earth Focus*)
Ameen Charles (*Community Development Center*)

Key Topics for Discussion

What are the best practices related to Millet cultivation in the region?

Do we need to strengthen our existing knowledge for greater benefit to farmers?

Summary of Discussions and Consensus

Linkage between high effort cultivation and higher yield

- Members of the network discussed the various practices being followed across the region. Discussions on impact of ‘Hand Scattered’ vs ‘Line Sowing’ led to the consensus that additional work is intrinsically linked to higher yields.
- But due to time constraints and various other pressures, the farmer often chooses to use a less optimal way of cultivation. This is because Millet cultivation involves significant drudgery (sowing and harvesting) as it is done completely by hand.
- Due to the nature of crop cycles, the farmer often must choose between giving their time and energy to rice cultivation vis a vis millet. And may end up choosing a lower yield method of cultivation for millets due to its lower return on investment.



Points of Consensus (Continued)

Need for a farmer specific ROI model to choose the right method of cultivation

- Members felt that each network organization had their own package of practices that led to higher yield.
- And the group should share knowledge and collectively arrive at a means to determine farmer specific profit-loss calculations based on land, available labor, and other factors. This would help them guide the farmers to take the right decision in a more structured manner.



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Presentations by:
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Ameen Charles (*Community Development Center*)

Points for Action and Future Discussions

Presenters shared various approaches to increasing the yield of millets. A knowledge-sharing mechanism for best practices would be appreciated by all network members.

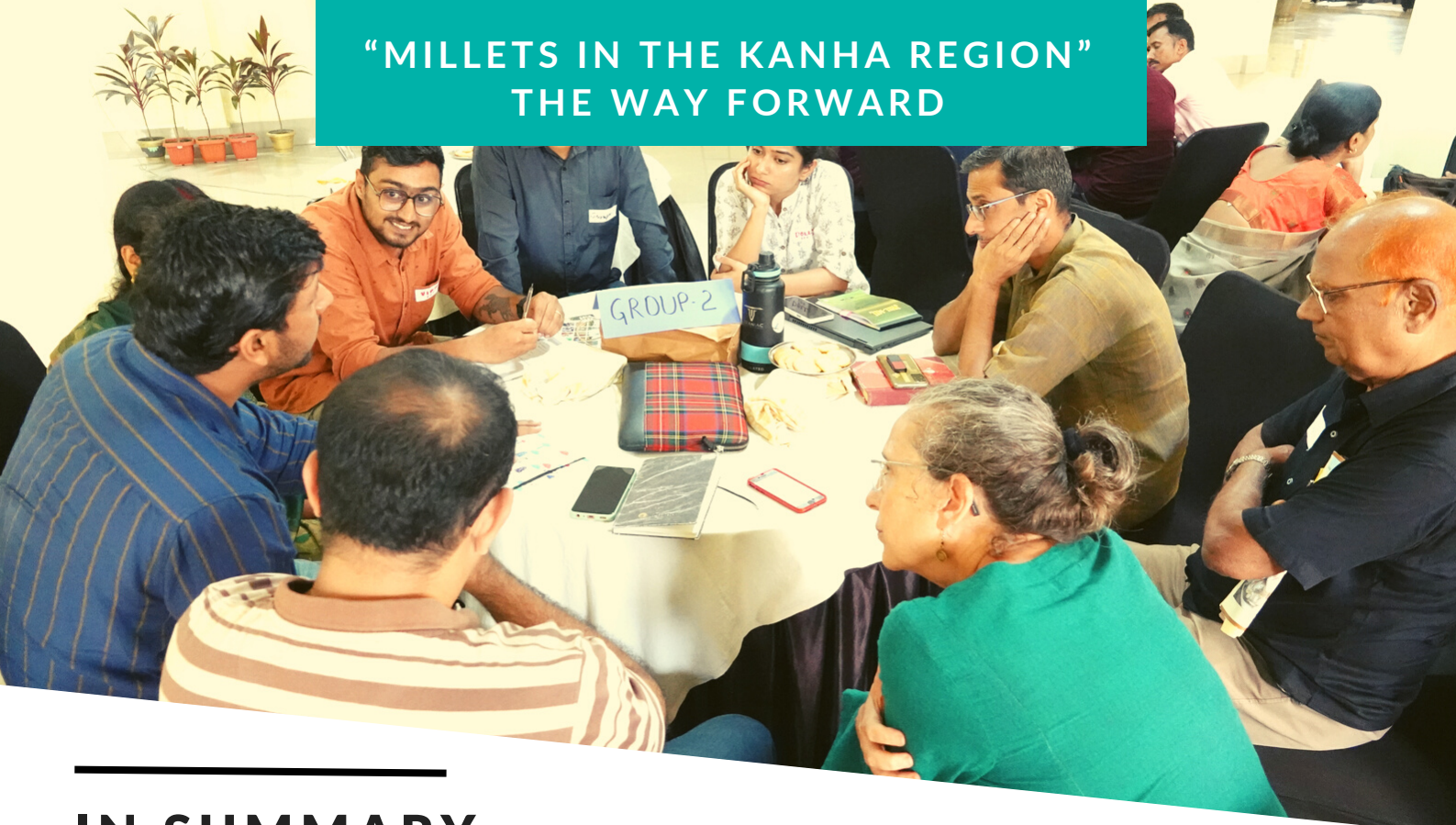
- Need for mechanization: The group agreed the key problem with millet cultivation was the drudgery involved and the lack of a guaranteed return (unlike paddy which has an MSP). As a result, they felt it would be imperative to learn of various mechanical / technological innovations that will reduce farmer drudgery and make millets easier to grow.
- Role of collectivization: Members felt collectivization would enable farmers to raise concerns with local authorities for speedy redressal
- Guidelines for storage to prevent spoilage: Roundtable members spoke of their past experiences with spoilt millet crops – due to improper storage. They spoke of the need to dry the crop properly and then store in a correct manner. So, validated storage practices if correctly curated and communicated, would benefit the people of this region.



“महिलाएं कठिन परिश्रम से खेती करती हैं। हमें अपने लिए इसे आसान बनाने के लिए उपकरणों की आवश्यकता है। अन्यथा हम सब कुछ ठीक से कैसे कर पाएंगे?”

“We, women farmers work really hard on the land. We need labor saving devices otherwise we won't be able to get our work done properly.”

“MILLETS IN THE KANHA REGION” THE WAY FORWARD



IN SUMMARY

THE PARTICIPANTS FELT THE ROUNDTABLE WAS USEFUL AS IT WAS ACTION-ORIENTED, FACILITATED KNOWLEDGE-SHARING, ENABLED NETWORKING, AND ENCOURAGED COLLABORATION.

What to take forward:

- **Bi-annual meetings:** Participants recommend a regular meeting with a well-designed agenda that is in tune with what the NCCI can assist with in its current form. The meetings can facilitate in-person interaction, knowledge sharing, and collaboration.
- **Right mix of participants:** The roundtable members were appreciative of the mix of multiple types of participants including NGOs, researchers, and Didis from the villages.
 - The Didis are leaders of their communities who are FPO galvanizers and dedicated to community progress. Confident and approachable, the ladies brought an important ‘real world’ aspect to all discussions - bringing alive the problems and opportunities of the communities in the Kanha landscape.
- **Proper selection of topics for discussion:** Ground up topics that are practical and relevant were positively received by the roundtable.
- **Active participation and inclusive listening:** Participants appreciated the active and respectful listening demonstrated by all members. Moreover, in breakout sessions, the positive, action-oriented mindset helped them identify areas of collaboration for the region.

THE WAY FORWARD

Members made several suggestions regarding future sessions to be hosted by the NCCI.

The roundtable felt the focus should remain on knowledge sharing for action, higher interactivity, and immersion. A few of the suggestions have been shared herein:



Artwork by Umed Patta

- Onsite / immersive field visits: Members to visit each other for peer learning opportunities on each other's sites.
- Curated note on specific points: Discussion points raised in the roundtable like 'treatment of seed and soil for higher yield' or 'Affordable machines for Processing and Harvesting' could be curated and circulated for review and adoption by practitioners.
- Resource directory: During discussions it was evident that the region has several 'living libraries' with a wealth of knowledge. The participants, especially those directly involved with field level activity, requested for curated notes / playbooks / directory of resource people that could become a library hosted by NCCI.

“WE NEED TO WORK TOGETHER AND DO OUR BEST FOR THE REGION. BALANCING CONSERVATION AND LIVELIHOOD, THAT IS THE KEY”

What is the Millet Revival Plan



NCCI Members suggested a 3-step approach to Millet revival

Stage 1: Village and cluster level revival

To integrate millets into the Kanha landscape, we must increase millet consumption and usage at the village and cluster level by making it easier to harvest and process.

Stage 2: Town level revival

Currently people from towns like Mandla , Balaghat and Kawardha who want to access Millets, either buy it from known farmers or frequent the retail stores. We need to be able to service the towns' requirement via local processing and retail sales. In addition, town level requirements for mid - day meals and other government procurement activities also need to be explored.

Stage 3: Urban metropolitan consumer

Millets are cultivated locally but then sold unprocessed to traders. These traders, in turn, process the grains in cities like Nasik and sell them at elevated prices in places like Gujarat and Maharashtra. This system ensures that farmers receive only a small portion of the final selling price of millets. Linkages to the urban markets, accessible to the Kanha community, like Jabalpur, Nagpur and Raipur can also be explored to secure demand for the crop.

Future Discussion Points

NCCI members also suggested some additional points for future discussions

Recommendations

- 1 What technologies / innovations / post-harvest processes are needed?
Participants have spoken of the need for mechanization and technology to reduce drudgery as follows:
 - What machines / process innovations are there in the sowing of millets that may improve the yield for scattered crops?
 - What machines are available to reduce the drudgery in processing for local / domestic consumption?
 - What machines are available to reduce the difficulty in processing of millets at an FPO level to make it suitable for retail sale?
 - What machines / processes are needed to meet food safety norms?
- 2 What financial instruments are needed ?
 - Need to explore blended financing models that combine government, philanthropic (including CSR) and market led financing.
 - Funds would be used to create a millet ecosystem - creation of seed banks (for current cultivation and future preservation), purchasing equipment to make sowing and harvesting of millets easier, processing machinery to ensure FPOs are able to sell commercial grade millets for retail sale, village-level domestic processing units (Millet Mixie), professional guidance and support for market linkages and discussion with the government for an MSP for minor millets.
- 3 What supporting policies are needed?
 - Roundtable members are of the opinion that policies are to be influenced at state level to begin with. Because, if 3-4 states adopt visible steps forward, then it will become easier to influence policies at the national level.
 - Madhya Pradesh government may be influenced by FPOs and other institutes to adopt pro-millet policies like Chhattisgarh and Odisha - with a focus on minor millets.

"MILLETS IN THE KANHA REGION" THE WAY FORWARD



ANNEXURES

1. PARTICIPANT LIST
2. AGENDA
3. ORGANIZATION ATTENDEES

Participant list

S. No	Name	Organization
1	Ameen Charles	Community Development Center, Balaghat
2	Amrita Neelakantan	Network for Conserving Central India (NCCI)
3	Ashutosh Deshpande	Reliance Foundation
4	Bhumika Yadav	Greenhub
5	Birjo Bai	FPO
6	Chandrakant Yadav	Gramodya Kendra
7	Dolly Aswani	Earth Focus
8	Dujram	Shram Vikas aivam Shodh Sansthan
9	Jyoti Mogre	Parsatola, Self Help Group
10	Kashiram Verma	Gramodya Kendra
11	Kishan Puri	Earth Focus
12	Komal Shandilya	Community Development Center, Balaghat
13	Malyaj Shrivastava	Wassan
14	Mansi Monga	Network for Conserving Central India (NCCI)
15	Ishwar Singh	Reliance Foundation
16	Mehmood khan	Reliance Foundation
17	Naresh Bunkar	Shram Vikas aivam Shodh Sansthan
18	Rini Dutta	Centric Brand Advisors
19	Ritesh Shende	Samerth Charitable Trust
20	Ruth DeFries	Network for Conserving Central India, Columbia University
21	Sachin Pathania	Pradan
22	Samikshya Singh	Samerth Charitable Trust
23	Soumik Banerjee	Keystone Foundation
24	Sushila Vatti	Narmada Farmer Producer Co Ltd,Mandla
25	Swapnil	Foundation for Ecological Security (FES)
26	Tapas Das	WWF India
27	Vibhor Choudhary	Earth Focus
28	Vijender Sharma	Greenhub
29	Vipul Gupta	Earth Focus



AGROBIODIVERSITY ROUNDTABLE MILLETS IN THE KANHA LANDSCAPE

AGENDA

Day 1 : 18-08-2023

Topics	Keypoints	Time
Welcome Address	Welcome address by Prof Ruth DeFries (Network for Conserving Central India, Columbia University)	9:30 to 9:40
Introductions	Individual introductions <ul style="list-style-type: none"> • Organization introductions by chosen representative 	9:40 to 10:45
Tea Break	Chai and networking <ul style="list-style-type: none"> • Members may share brochures about their organization 	10:45 to 11:00
Overview	Brief overview of the session <ul style="list-style-type: none"> • Key learnings from one on one discussions conducted prior to the workshop 	11:00 to 11:15
Discussion on Seeds	Role of seeds in millet revival <ul style="list-style-type: none"> • Presentations by Soumik Banerjee (Keystone Foundation) & Ritesh Shende (Samerth Charitable Trust) • Breakout session • Summary of breakout & discussion 	11:15 to 13:30
Lunch	Break for lunch and networking	13:30 to 14:30
Discussion on Processing & Market linkages	Creating a millets value chain by processing and market linkages <ul style="list-style-type: none"> • Presentations by Ashutosh Deshpande (Reliance Foundation), Vipul Gupta (Earth Focus) & Sushila Vatti (Narmada Farmers Producer Co Ltd, Mandla) • Break out session • Presentation & questions 	14: 30 to 17:30
Reflections	Chai and networking <ul style="list-style-type: none"> • Members share collaboration opportunities and learn about each others organizations and various initiatives 	17:30 to 18:00



AGROBIODIVERSITY ROUNDTABLE MILLETS IN THE KANHA LANDSCAPE

AGENDA

Day 2 : 19-08-2023

Topics	Keypoints	Time
Review of Day 1	Overview of key points discussed in the previous sessions	9:30 to 10:00
Discussion on Cultivation	<p>Challenges and best practices in cultivating millets in the Kanha Region</p> <ul style="list-style-type: none"> • Presentations by Majyaj Shrivastava (Wassan), Sachin Pathania (Pradan), Kishan Puri (Earth Focus) & Ameen Charles (Community Development Center) • Breakout session • Summary of breakout & discussion 	10:00 to 12:00
Summary and Next Steps	<p>Recap and determining the way forward</p> <ul style="list-style-type: none"> • NCCI Team 	12:00 to 13:00
Lunch	Break for lunch, networking and departure	13:00 to 14:00



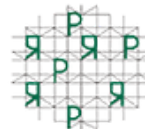
ROUNDTABLE PARTICIPANTS



Community Development Centre (CDC)
Rights in Dignity



FOUNDATION FOR ECOLOGICAL SECURITY





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