

Inclusive access to seed: Catalyzing sectoral synergies and tracking change



INITIATIVE ON
Seed Equal

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The CGIAR initiative on Seed Equal focuses on providing women and smallholder farmers access to quality seeds of climate-resilient, market-preferred, and improved varieties with the aim of improving agricultural productivity and promoting food and livelihood security. Seed Equal is one of 32 initiatives of the CGIAR, a global research partnership for a food-secure future, dedicated to transforming food, land, and water systems in a climate crisis.

Contents

Acronyms and Abbreviations	3
List of Plates	4
Background	5
CGIAR Seed Equal and Work Package 6	5
Objectives of the workshop	5
Key insights from the workshop	5
Conceptualizing formal and informal seed systems	5
Challenges to seed system synergies	6
Strategies to enhance synergies between formal and informal seed systems	7
Specific recommendations for synergies to leverage seed production	8
Evidence generation on synergies between formal and informal seed systems	8
Reflections on the seed equity metrics	9
Conclusion and Reflections	10
Annexures	11
Annexure 1: Concept Note	11
Annexure 2: Agenda	12
Annexure 3: List of participants	14



Acronyms and Abbreviations

CSA	Centre for Sustainable Agriculture
CSB	Community Seed Bank
FPC	Farmer Producer Company
FPO	Farmer Producer Organization
ICARDA	International Centre for Agriculture Research in Dry Areas
ICRISAT	International Crops Research Institute for the Semi-Arid Tropics
IFPRI	International Food Policy Research Institute
IIHR	Indian Institute of Horticultural Research
IRRI	International Rice Research Institute
MSSRF	MS Swaminathan Research Foundation
NIAP	National Institute of Agricultural Economics and Policy Research
PGS	Participatory Guarantee System
QR	Quick Response
R&D	Research and Development
SMSP	Sub-mission on Seed and Planting Material
TASAI	The African Seed Access Index
TL	Truthfully Labeled
VPC	Vegetatively Propagated Crop
WP6	Work Package 6

Background

Access to quality seeds is vital to improve agricultural productivity of women and smallholder farmers and to ensure benefits of agricultural research and development reach them. Recognizing the multiple challenges that women and farmers from various marginalized social groups face in accessing quality agri-inputs including seed, several policies and programs have been designed to ensure that vulnerable groups have better access to quality seeds. However, there is scant evidence on their effectiveness in improving women and smallholder farmers' access to quality seeds.

About Seed Equal

CGIAR Seed Equal initiative is dedicated to enhancing access to high-quality seeds of market-preferred, climate-resilient, and nutritious crop varieties for women and marginalized communities, with the goal of accelerating genetic gain on their farms. Work Package 6 (WP6) of Seed Equal focuses on developing strategies to improve seed access for women, youth, and other marginalized farmers. This includes research for development efforts that foster synergies between formal and informal seed systems, support seed entrepreneurship, and implement gender-responsive seed information and delivery pathways.

The workshop, organized by the Seed Equal Initiative WP6, was designed to provide a space for seed system experts from across India to take stock of existing policies and programs that either directly or indirectly impact quality seed access in India, and reflect on potential innovations or policy interventions that could mitigate the challenges these farmer groups face. A review of indicators to measure seed equity developed by the CGIAR Seed Equal Initiative's work package 6 was also a part of the workshop. The experts proposed suggestions for improvement and deliberated on the feasibility of generating data on seed access using these indicators.

Objectives of the workshop

The following were the key objectives of the workshop:

- Identify opportunities for synergistic collaboration between formal and informal seed systems for inclusive and equitable seed access
- Reflect on current seed policies in India using an equity and inclusion lens and propose options for improvement
- Introduce indicators to measure inclusive access to seed developed by the CGIAR Seed Equal initiative, and explore their potential application in India

Twenty-eight seed system experts from research institutions, CGIAR centers, seed companies and civil society organizations participated in the workshop. The workshop adopted a range of methods including panel discussions, small group discussions, flash talks and world cafe to provide participants the opportunity to reflect on various dimensions of seed system equity.

Key insights from the workshop

Conceptualizing formal and informal seed systems

Varied definitions and interpretations of formal and informal seed systems and what constitutes these two sectors pose a challenge for any discussion on seed system synergies. To facilitate discussions, the participants agreed

that any class of seed that is developed by research institutions and is governed by the legal infrastructure of the state would be considered the formal sector. Currently, certified seed and all the mechanisms of certified seed production are included within the formal sector. Informal seed systems are entirely farmer-managed and include various classes of seeds that are either partially or not at all controlled by legal mechanisms. Certain seed classes such as Truthfully Labeled (TL) seeds can be regarded as an intermediate category that could fall under either the formal or the informal sector as they are subjected to some regulatory frameworks but not to the extent that certified seeds are.

The participants highlighted that synergies between the formal and informal sectors are vital for women and smallholder farmers to have adequate access to quality seeds. They emphasized that the assumption that marginal farmers always preferred seeds only from the informal sector is misplaced. An example of women and other smallholder farmers in Jharkhand preferred purchasing ragi seeds from the formal seed sector rather than through local sources was cited as an example.

The participants discussed that it is important to recognise that formal and informal systems are not diametric opposites and overlap in many ways. The transfer of genetic resources between the formal and the informal sectors is a

significant synergy between the formal and the informal seed systems, as was emphasized through the discussions. A common stereotype is that the informal seed sector comprises seeds of indigenous varieties alone, but some of the seeds circulating in the informal seed sector might have originated in the formal sector but have been adopted by communities and become a part of the local seed systems. At the same time, germplasm from indigenous cropping systems is used to develop new crop varieties in the formal sector. Therefore, the transfer of knowledge and resources between the formal and the informal sectors is vital. The notion that seeds from the formal sector are necessarily of better quality than those from the informal sector is not supported by experience or available evidence.



The participants discussing key concepts in synergies between formal and informal seed systems

Challenges to seed system synergies

Most common challenges that hinder women and smallholder farmers' access to quality seeds are limited access to information about improved crop varieties entering the market and mechanisms through which farmers can obtain these varieties, limited capacity-development opportunities to enter certified seed production business, and financial and market access hurdles.

While large farmers are able to take risks trying new varieties, the resource-poor smallholders cannot afford to.

Some participants pointed out that very few policies specifically focus on streamlining interactions and coordination between formal and informal seed systems and any impacts they might have are often inadvertent or tangential. It was argued that in India, seed system policies neither advance nor deter synergies between formal and informal seed systems and this

Some schemes such as the Sub-Mission on Seeds & Planting Materials (SMSP) and the Krishonnati Yojana are designed to facilitate farmers' access to seeds of improved crop varieties from the formal sector. However, many women and marginalized farmers are not aware of these schemes nor know how to access them. This perpetuates the heavy dependence on the informal sector.

Strategies to enhance synergies between formal and informal seed systems

Participants deliberated extensively on potential innovations in the domain of synergies between formal and informal seed systems that could be leveraged to promote access to quality seeds and seed system equity. The following strategies and policy recommendations were proposed to enhance seed system synergies:

- There are some examples of informal but robust quality guarantee systems being followed to seeds produced by farmers or farmer producer groups to be sold in the local markets. The Participatory Guarantee System (PGS) put in place by the Centre for Sustainable Agriculture is one such effort.
- Women farmers are not a homogeneous group. Hence, segmenting them and understanding their diverse situations and needs will help develop targeted policies and interventions to improve their access to quality seeds.
- Public institutions should undertake meaningful and impactful participatory breeding approaches with a gender-responsive lens. While the private sector can also contribute to this goal, it is likely that their focus will be on profits rather than the well-being of women farmers.
- It is important to recognise the semi-formal or intermediary structures sector comprising Farmer Producer Organization (FPO), Farmer Producer Company (FPC), or other types of collectives which produce and sell certified seed.
- Fiscal and financial measures like tax benefits or soft loans should be provided to private firms that engage in joint R&D with the informal sector for variety development.
- National and State seed corporations should prioritize seed production and procurement from farmer collectives to meet state requirements.
- Digital systems that facilitate online sales of seeds produced by smallholder and women farmers and their groups should be developed and popularized.
- Value chain financing and infrastructure development such as seed production units, storage infrastructure and mini labs for quality control is critical for developing stable quality sourcing mechanisms and strengthening the seed value chain.
- Seed business incubation centers to assist informal seed producers at district-level clusters, supported by the formal sector, could provide resources, training, information and support.
- Develop a non-compulsory lock-in model. This model opens doors for multiple business collaborations beyond seeds, allowing both parties to expand their business scope. With a foundation of mutual trust, they can explore diversified products and services, creating new revenue streams and shared profits over time, while allowing both parties flexibility and autonomy in their partnership.
- Facilitating the development of a robust business plan for FPOs engaged in seed production should be a focus. This plan should take into account the current market dynamics and seek the required support from the private seed sector for taking up seed production and marketing at scale with a focus on business sustainability.



Participants discussing various strategies to promote synergies between formal and informal seed systems

Leveraging seed system synergies to promote women's and youth's engagement in seed production

- Engagement in seed production remains a highly challenging goal for women farmers owing to their limited access to capital and other necessary resources as well as their limited access to capacity development and agricultural extension services. This implies that incubating or supporting agencies need to be willing to provide comprehensive, end-to-end support to women farmers engaged in seed production.
- More youth need to be supported to enter into seed production, especially for crops from the formal sector.
- Women and the youth require extensive training and capacity building support to enter into seed production and while government-led agri-extension services play an important role in this domain, it is essential to ensure that this support is decentralized through NGOs, research institutions and farmer-managed institutions.
- The formal sector can play a key role by effectively integrating seed traceability systems in the seed supply chain, such as QR code-based traceability, to ensure transparency. This system would enable effective communication of information to farmer organizations or seed producers, allowing for targeted actions to address any gaps.
- Asset sharing including sharing high-investment assets such as seed processing units and storage godowns among FPCs ensure that these facilities operate at maximum capacity, significantly reducing operational costs for each participating FPCs.
- Common branding of seeds can help the semi-formal sector rationalize investments and reduce the entry barriers. Under this system, FPCs engaged in seed production can come together to form an apex-level federation, creating a unique brand for their products. This common branding approach reduces internal competition, reduces cost of packaging and branding and increases market share by leveraging joint marketing efforts.

Evidence generation on synergies between formal and informal seed systems

A common discussion that emerged at the workshop was that the shortage of adequate research and an evidence base on seed systems deterred the formation of adequate synergies between formal and informal seed systems. In this situation, it is essential to identify the key areas that carry the greatest potential to promote seed system equity and the corresponding data and insights that need to be gathered in order for these areas to be leveraged to create the greatest impact. Below are a few important insights that emerged through these discussions.

- Digitization of crop, varietal and seed-related data at the FPO level and at the district, state and national levels can help ensure comprehensive records of the access to seeds of various classes and for various crops within both the formal and the informal sectors.



Participants of the workshop discussing necessity for evidence generation

- Capture data on the number of women engaged in seed production at the FPO level as well as district, state and national levels to get a clear estimate of women's access to quality seeds through seed production.
- Capture data on women beneficiaries of various schemes and programmes that aim to provide them with access to quality seed, especially of improved crop varieties.
- Besides gender, capture other identity markers of caste, religion and other relevant ones to get a sense of access to quality seeds and engagement in seed production for various marginalized social groups.
- Research institutions can gather insights on policy recommendations pertaining to seed systems from various government or non-governmental institutions, consolidate and refine the same and share them with the government for action to promote seed system equity.
- Specific attention should be paid to data collection on the informal sector.
- Address issues of data reliability and authenticity.

Organize regional dialogues with farmers on access to quality seed, seed production and other related themes with farmers and document the same accurately and share it with policy makers and inform decisions on more deliberate action to promote seed system synergies for the better seed access to women and smallholder farmers.

Reflections on the seed equity metrics

The participants were introduced to the seed equity indicators that have been developed by the Seed Equal WP6 team in collaboration with The African Seed Access Index (TASAI) and invited to review and provide feedback on the same. Highlights of suggestions that emerged are as follows:

- There was disagreement among the participants about whether community seed banks (CSBs) provide access to seeds of improved crop varieties and some suggested that they are only used to access seeds of indigenous and TL classes. Some mentioned that the seed classes accessible through CSBs varied by geography and crop. Hence, it was decided to retain the indicators pertaining to access seeds from the formal sector and organizations could decide whether or not they wanted to retain this set of indicators.
- Some participants mentioned that they did not think that CSBs played a significant role in providing economic opportunities to farmers through seed access. Hence, the indicators related to marketing within CSBs might not be relevant to all stakeholders within seed systems.
- It was also suggested that the ways in which women farmers access CSBs across the South Asian region vary significantly and there is perhaps a need for the CSB section in particular to reflect the distinctive patterns of accessing CSBs among women farmers in India.
- Section B on Breeding was found to not be clearly applicable for Vegetatively Propagated Crops (VPCs) and might not be relevant to stakeholders engaged in these crops.
- Within the section titled 'Distribution/sales for inclusive access', it was suggested that there needs to be a separate domain on subsidies for access to quality seeds that are provided by civil society organizations.
- The participants observed that section D on household-level indicators are necessary and are an important tool to understand how farmers make seed choices at a personal and household level. However, it was suggested that this section be revised to capture domains and indicators in the same format as the other three domains A to C. The data collection tools corresponding to this section could be an appendage to the metrics.
- While gathering insights about women's access to seed, it was recommended that information be gathered from the women about how they make use of the money that they earn through seed production as this would provide nuanced insights about the impact of engagement in seed production.

The discussions on the seed equity metrics concluded with a reflection on the need for greater data collection and evidence generation regarding synergies within seed systems with a specific focus on informal seed systems as this is an area that suffers from a severe dearth of information. Many participants expressed an interest in piloting the metrics.

Conclusion and Reflections

The workshop furnished a range of ideas and concerns about the ways in which seed system synergies impact access to quality seed for smallholder and women farmers in India. There were several discussions about the need for policies to adopt a distinctive focus on leveraging enabling synergies and for farmers to derive the benefits of policies, schemes and programs intended to help them access better quality seeds. A common bottleneck identified was that while research and policy suggestions are formulated by various research institutions and civil society organizations working on the ground, there is a need for learnings and insights gathered from these to reach policy makers. Research institutions were thought to be suitable intermediaries for this purpose and it was suggested that policy briefs from workshops such as these be developed to be presented to policy makers and give them ideas about possible actionable insights.

The participants of the workshop found the metrics useful and provided several suggestions to improve its effectiveness and relevance. Future plans entail partnering with interested organizations to pilot the metrics and gather comparative insights from across India.

Annexure

Annexure 1: Concept Note

Workshop on Inclusive access to seed: Catalyzing sectoral synergies and tracking change

Date: 29th - 30th August, 2024

Venue: ICRISAT, Hyderabad

About CGIAR and Seed Equal

CGIAR is a global research partnership for a food-secure future dedicated to transforming food, land, and water systems in a climate crisis. Seed Equal is one of the initiatives of CGIAR that aims to promote and strengthen the delivery of seeds of improved, climate-resilient, market-preferred, and nutritious varieties of priority crops with the aim of accelerating genetic gains on farmers' fields. Work Package 6 (WP6) of Seed Equal focuses on expanding equitable access to quality seeds for women and other disadvantaged farmer groups.

Background to the workshop

India's agricultural sector relies on a complex interplay of formal and informal seed systems. The formal sector, including government agencies and private enterprises, focuses on certified seed production and distribution. It offers to rapidly translate scientific advancements of crop genetics to outcomes on farmers' fields and provide quality assurance, but often struggles to reach women and smallholder farmers. The informal seed systems, managed by farmers and local communities, are crucial for providing accessible seed sources and preserving agricultural biodiversity. Approximately 65-70% of Indian farmers, especially women, rely on farm-saved seeds or informal seed exchange networks.

Creating an effective and diverse seed sector that includes private players, public agencies, community-based systems is critical for ensuring fair access to seeds. No one actor alone cannot meet the seed needs of all the farmers. Coordination among these actors is influenced by regulatory frameworks, policies, and institutional priorities and objectives. Analyzing the opportunities and challenges in promoting coordination between formal and informal sectors to benefit the farming populations is critical.

It is difficult to manage what we do not measure. While anecdotal evidence illustrates inequitable access to seed, it is important to measure this and changes that would arise as a result of innovations in seed systems that aim to bridge the gaps in seed access. Most existing seed systems indicators do not include gender or social equity considerations. Seed Equal WP6 has developed indicators to track the reach of improved varieties to women and underserved communities. Evidence generated based on these can inform design of strategies to promote inclusive access across the public, private and community managed systems.

Objectives of the workshop

The specific objectives of the workshop are to:

- identify opportunities for synergistic collaboration between formal and informal seed systems for inclusive and equitable seed access
- reflect on current seed policies in India using an equity and inclusion lens and propose options for improvement
- introduce indicators to measure inclusive access to seed developed by the CGIAR Seed Equal initiative, and explore their potential application in India

Participants

The workshop will bring together representatives from agricultural research institutions, government agencies, private seed companies, NGOs and think tanks engaged in seed systems.

Annexure 2: Concept Note

Inclusive access to seed: Catalyzing sectoral synergies and tracking change

29th - 30th August, 2024

Great Lakes Conference Hall, ICRISAT, Patancheru

Time	Agenda	Facilitator/Participants
Day 1: 29th August, 2024		
Opening and Setting the Context		
9:00 - 9:30	Registration	Kritika/Manisha
9:30 - 10:00	Welcome and Introduction of participants	Afreen Khan
10:00 - 10:15	Overview of Seed Equal Initiative and workshop objectives	Suchaita Tenneti
10:15 - 10:45	Synergies between formal and informal seed systems: Why, What and How?	Ranjitha Puskur
10:45 - 11:15	Group photo and Tea/Coffee break	
11:15 - 11:45	Gallery Walk - Harvesting ideas	Afreen Khan
11:45 - 12:30	Panel discussion: Effective strategies for linking farmer seed producers with formal seed value chains	Panelists: Luna Panda, Kishor Behera, Md Sultan, Uday Nagubandi Moderator: Suchaita Tenneti
12:30 - 13:30	Lunch Break	
13:30 - 15:00	World Cafe	Afreen Khan Suchaita Tenneti Gyandip Pandia
15:00 - 15:30	Tea/Coffee break	
15:30 - 16:30	Flash Talks: Experiences and Perspectives from Private sector on creating synergies between formal and informal sectors	Panneerselvam Subba Rao Paresh Verma
16:30 - 17:30	Plenary discussion	Ranjitha Puskur
19:00 onwards	Networking dinner	

Time	Agenda	Facilitator/Participants
Day 2: 30th August, 2024		
9:30 - 10:00	Welcome and recap of Day 1	Gyandip Pandia
10:00 - 11:00	Panel discussion: Policies and Programs/schemes that can catalyze synergies	Panelists: Anjani Kumar, Mukund Variar, Tarun Katoch, Rengalakshmi Moderator: Ranjitha Puskur
11:00 - 11:30	Tea/Coffee break	
11:30 - 12:00	Introduction to indicators to measure inclusive access to seed	Suchaita Tenneti
12:00 - 13:00	Lunch break	
13:00 - 14:30	Break out groups - Review of indicators	Suchaita Tenneti Afreen Khan Kritika Goel
14:30 - 15:15	Feedback from breakout groups	Suchaita Tenneti
15:15 - 15:30	Tea/Coffee Break	
15:30 - 16:00	Plenary discussion on opportunities to generate data for indicators	Ranjitha Puskur
16:00 - 16:15	Vote of Thanks	Afreen Khan

Annexure 3: List of participants

S.No.	Name of Participant	Designation	Organisation
1	Dr. Manzoor Dar	ICRISAT	Global Head - Seed Systems, Principal Scientist
2	Mr Ram Kaundinya	Advanta Limited	Board Member
3	Mr Uday Nagubandi	Center for Sustainable Agriculture (CSA)	Program Coordinator
4	Dr Luna Panda	Pragati Koraput	Executive Director
5	Dr Prabhakar Adhikari	Pragati Koraput	Chief Functionary
6	Dr Anjani Kumar	IFPRI	Senior Research Fellow
7	Dr Kishor Kumar Behera	ICARDA	Senior Agricultural Officer
8	Dr Raka Saxena	ICAR-NIAP	Principal Scientist
9	Mr Gyandip Pandia	IRRI	Senior Associate Scientist and Project Coordinator
10	Mr Mohammad Sultan	IRRI	Agri Business Expert
11	Mr Bishwa Ranjan Sahoo	IRRI	Specialist Agriculture Research & Development
12	Ms Saba Afreen	ICRISAT	Consultant- Seed Systems
13	Dr. SV Bangararaju	ICAR-NIAP (part of Seed System Project)	Scientist
14	Dr Rengalakshmi Raj	MSSRF	Executive Director-Area Operations
15	Mr Panneerselvam Ganesan	Mangal Murti Seeds Pvt Ltd	Agribusiness Professional and Consultant
16	Mr Syed Mansoor Abbas Naqvi	Transform Rural India	Program Manager
17	Dr Dhanalakshmi Guduru	KVK Yagantipalle	Senior Scientist and Head
18	Mr Srinivas Petikam	IIHR	Principal Scientist (Plant Pathology)
19	Mr Subbarao Appamene	Mahyco	Senior Vice President- Corporate Communications

20	Dr Mukund Variar	IRRI	State Coordinator
21	Mr Amrita Pal	ICRISAT	Associate Manager-Seed Systems
22	Dr Paresh Verma	Shriram Bioseed	Director
23	Mr Pankaj Gaur	Dvara E-registry	Lead, Business Development
24	Dr Ranjitha Puskur	IRRI	Principal Scientist
25	Dr Suchaita Tenneti	IRRI	Associate Scientist
26	Ms Afreen Khan	IRRI	Assistant Scientist
27	Ms Kritika Goel	IRRI	Assistant Manager
28	Ms Manisha	IRRI	Consultant

CGIAR is a global research partnership for a food-secure future. CGIAR science is dedicated to transforming food, land, and water systems in a climate crisis. Its research is carried out by 13 CGIAR Centers/Alliances in close collaboration with hundreds of partners, including national and regional research institutes, civil society organizations, academia, development organizations and the private sector. www.cgiar.org

We would like to thank all funders who support this research through their contributions to the CGIAR Trust Fund: www.cgiar.org/funders.

To learn more about this Initiative, please visit [this webpage](#).

To learn more about this and other Initiatives in the CGIAR Research Portfolio, please visit www.cgiar.org/cgiar-portfolio

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