



Appropriate Seed Systems for Climate Resilient Agriculture - Stimulate Growth in Rainfed Areas

Initiatives of the Working Group on
Seed Systems for Rainfed Areas
(WGoSS)



Working Group on Seeds Systems (WGoSS) for Rainfed Areas of Revitalising Rainfed Agriculture Network (RRA Network)

CONTACT US

Ms. Bhagyalaxmi

Convenor, WGoSS

Email: bhagya@wassan.org

Mr. Uday Nagubandi

RRA Young Professional - RRA network

Email: uday@wassan.org

EDITED BY

Mr. Kanna K Siripurapu

Researcher - RRA Network

PHOTO COURTESY

WASSAN and Partners of RRA Network

VISIT US FOR MORE DETAILS

www.rainfedindia.org

Appropriate Seed Systems for Climate Resilient Agriculture – Stimulate Growth in Rainfed Areas

Initiatives of the Working Group on Seed Systems for Rainfed Areas (WGoSS) of RRA Network (RRA N)

WORKING GROUP ON SEED SYSTEMS FOR RAINFED AREAS (WGoSS)

Rainfed area in the country is **86 Million Ha** contributing **40%** of the total grain requirement of India - providing base for Indian nutritional security. This is dependent on farm-saved seed. Farmers are cultivating more than **500 crops** in the country; more than **50 crops** are grown in mixed cropping in rainfed areas. More than **600 public institutions** and **400 private seed companies'** together serve seed needs of only **12+ field crops** and **11+ vegetable crops** in the country. Informal seed system is mostly out of public investments and R&D. These farmers managed, local specific seed systems have an important role in the seed securing of local landraces, both at farmer and community level and are critical for utilizing the potential of rainfed areas unfortunately, enough focus is not there to strengthen these informal seed systems by addressing the tech-legal issues along with institutional mechanism.

This report explains the efforts in the discussion by Working Group on Seeds Systems (WGoSS) for Rainfed Areas.



OBJECTIVES OF THE WGoSS

Design and promote a seed system appropriate in rainfed areas that includes landraces and farmers' varieties to support a diversified, productive and climate resilient agriculture; such a seed system is intended to be managed by farmers' organizations in collaboration with the Department of Agriculture.

STEERING COMMITTEE MEMBERS OF THE WGoSS

- Dr. KS Varaprasad, former Director ICAR-IIOR; Chairperson of the WGoSS
- Dr. S Rajendra Prasad, Vice Chancellor, UAS, Bengaluru

- Dr. RB Deshmukh, Former VC, MPKV
- Ms. Kavitha Kuruganti, Founder, Alliance for Sustainable and Holistic Agriculture (ASHA)
- Dr. GV Ramanjaneyulu, Executive Director, Centre for Sustainable Agriculture (CSA)
- Mr. Chakradhar Panda, Odisha State Seeds Corporation Ltd, Dept of Agri & Farmers' Welfare
- Dr. SR Dhua, Principal Scientist (Retd.), ICAR-CRRI
- Mr. Krishna Prasad, Director, Sahaja Samrudha
- Ms. Bhagya Lakshmi, Associate Director, WASSAN (Convenor of the WGoSS)



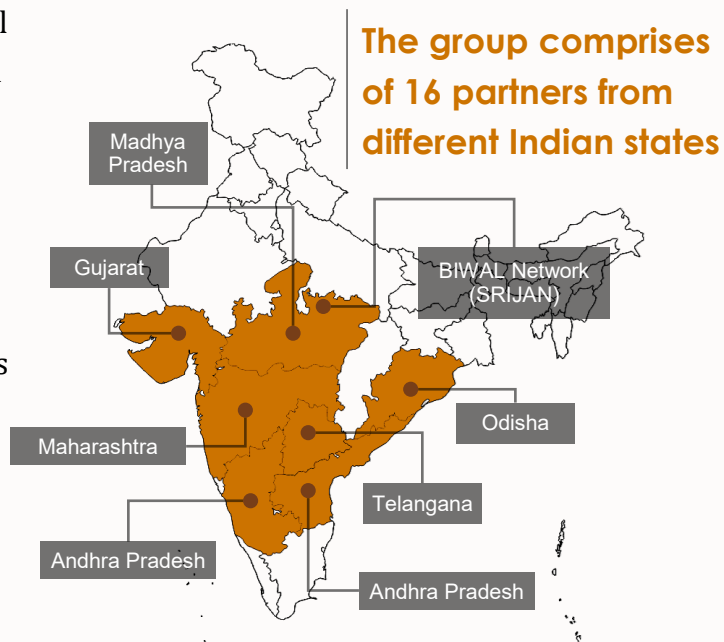
THE EVOLUTION OF WGoSS

Two National level workshops were organized in the year 2019 on *“Decentralized Seed Systems for Climate Resilient Agriculture in Rainfed Areas”* and *“Mainstreaming of Informal Seed Systems for Rainfed Areas”* in collaboration with MANAGE, Hyderabad. They were followed up by a National level consultation on Decentralized Seed System for Rainfed Areas on 15th Feb, 2019, at New Delhi, India. It was during the National Consultation that the need for a dedicated and focused working group on seeds was identified. The idea precipitated into the formation of “the working group on seed systems for rainfed areas (WGoSS)” on 3rd December 2019.

As per the plan, working group has to meet once in four months to review the progress and plan the way forward. The group had meetings with partners virtually and the YP – RRAN follows up on the action points emerging with the WGoSS and updates the Chairperson and the Convener on a regular basis.

ORGANIZATION / STRUCTURE AND COMPOSITION

The WGoSS is headed by the Chairperson and coordinated by the Convener with support from an Young Professional of the – Revitalizing Rainfed Agriculture Network (YP – RRAN).



A FEW MAJOR INITIATIVES TAKEN UP BY THE WGoSS

- Repatriation of crop germplasm from National Gene-banks (ICAR-NBPGR) to the local communities
- Strengthening the network of organizations / individuals working on seed systems of rainfed areas in different states - Andhra Pradesh, Odisha, Telangana, Maharashtra and Gujarat
- Identifying and addressing the challenges in the implementation of the Protection of the Plant Varieties and Farmers Rights Authority (PPV & FRA), 2001
- Initiation of partnership/collaboration with at least three institutes (MoA/ICAR/SAU/PPVFRA) working on the seeds
- Offering short-term scholarships for researchers interested in studies related to indigenous seed systems and cropping patterns in India
- Documenting the model case studies to use as advocacy material and
- Designing a framework and establishment of local seed enterprises (with physical and online outlets) for popularizing and mainstreaming of local landraces.





MAJOR ACHIEVEMENTS

● Development of Advocacy Material

WGoSS documented case studies in six states viz., Odisha, West Bengal, Madhya Pradesh, Gujarat, Tamil Nadu and Andhra Pradesh which can be used as an advocacy material for other states. Ms Kavitha Kuruganti, member of WGoSS has volunteered to facilitate the process. The case studies signifies large scale experiences in the states where local landraces are promoted by the governments or in collaboration with it, and other civil society initiatives on the subject.

● Capacity Building Programmes on Seed Systems for Rainfed Areas

WGoSS has organized two webinars titled *“Building Community Seed Enterprises to Enhance Access in Rainfed Areas: Policies and Legal Framework”* and *“Enhancing Access to the Traditional Varieties and Their Use in Rainfed Areas: Policies and Legal Framework”*, for NGOs/CSOs/Young Professionals/ Department Officials/Private sectors with total of 135 participants.

● **Piloting with the ICAR-NBPGR (National Bureau of Plant Genetic Resources) to Revive the Locally Extinct Promising Landraces**

The ICAR-NBPGR has 4.5 lakhs germplasm that includes many landraces collected from across the country preserved in its gene-banks. Many of these accessions are about 20-30 years old. So far this germplasm/ landraces in the gene-banks are not made available to farmers for their revival/ cultivation. Several of these landraces have gone out of normal cultivation in their own areas. On the other hand, there is still a good amount of germplasm of many valuable landraces available with farmers that are not yet documented.

One of the objectives of the WGoSS engagement with NBPGR is to facilitate exchange of the germplasm between NBPGR and farmers' organisations to bridge the gap between farmers / seed saviours network and the National gene bank (NGB).

WGoSS partners sent a requisition in given proforma for sourcing of the germplasm of Bengal gram, Black gram, Eggplant/Brinjal, Lathyrus sativus, Linseed, Paddy and Finger millets for multiplication in the states of Maharashtra, Karnataka and Andhra Pradesh. The Director, NBPGR has agreed to exchange the germplasm between NGB and farmers network. At time of reporting, WGoSS has sourced the germplasm of 52 landraces belonging to 3 crops for multiplication and restoring these in their locations.

● **Development of Crop Specific Seed Standards / Protocols for a few selected landraces**

WGoSS in collaboration with the ICAR- Indian Institute of Seed Science (ICAR-IISS), Uttar Pradesh, has initiated the dialogue to develop crop-wise seed standards/protocols for a few selected local landraces; these are essential for introducing the landraces into the formal seed

chain of the government and for marketing – This will also help in improve quality and purity of the landraces to be made available for farmers to cultivate.

As per the suggestions of the ICAR-IISS, the WGoSS has collected germplasm of 23 landraces and submitted to IISS for this purpose;- IISS agreed to initiate the work in Kharif 2021.

● **Research Study on the Co-Existence of Seeds and Crop Diversity and Institutions**

WGoSS has commissioned a research study to examine the changes that occurred in the local seed/seed systems and on-farm crop diversity in different rainfed regions of India. The study was initiated in 2019, in five states - Andhra Pradesh, Maharashtra, Himachal Pradesh, Madhya Pradesh and Rajasthan. The results of the study is likely to be published in the month of April 2021. A zero draft of the study has been shared by the researchers.

● **Enhancing the Outreach of Farmers' Varieties and Indigenous Seed Systems**

WGoSS in collaboration with the *Biodiversity International* has initiated a project proposal on establishing and strengthening of Community Seed Banks across the country with an objective of mainstreaming farmer's varieties and indigenous seed systems to enable smallholder farmers of rainfed areas to adapt to climate change, improve their nutrition and livelihoods. In this context, WGoSS has collected data of about 728 crop varieties/landraces from 95 NGOs across the country with *Biodiversity International*.

google.com/maps/d/u/0/viewer?mid=1VNnQktTQ-nWu0nhz0nt84PDJiZplsqAe&ll=22.72363550482205%2C81.18876665624998&z=5

Apps finance supply chain Innovation and Ne... How can the mana... research hypothesis... wixlogo - Google S... report writing telugu typing Dus Guidelines pdf converter

Untitled map

49 views
SHARE

ANDHRA PRADESH
All items

NGOs_AP
AASRA (1)
APPLES (2)
APPLES (2)
FORD (3)
... 16 more

MAHARASTRA
All items

NGOs_Maharashtra
Sourabh Gram vikas Bshuddeshiya prat...
Gramin Yuva Pragatik Mandal
Gramin Yuva Pragatik Mandal

Map data ©2021 Google, SK telecom Imagery ©2021 TerraMetrics Terms 100 km

<https://www.google.com/maps/d/viewer?mid=1VNnQktTQ-nWu0nhz0nt84PDJiZplsqAe&ll=22.72363550482205%2C81.18876665624998&z=5>

● Digital Repository of Indigenous Seeds

As a part of Community Managed Seed System for Natural farming (CMSS-NF), Andhra Pradesh, Watershed Support Services and Activities Network (WASSAN) has developed a web based application (for more details: <http://digitalseed.wassan.org>) with an objective to make available - the data on local landraces available and accessible to the public. The parameters for characterisation were simplified collating the useful ones from the DUS / Varietal notification characters; these were developed for 38 crops. The digital database also provides for storing images and algorithms to find landraces accessions having similar traits.

Data of 364 landraces of 38 crops has been generated and digitized during the year 2019-20. Data pertaining to the morphological and genetic characteristics of 341 landraces belonging to 34 crops has been added to the existing data during 2020-21. Digitalization of the data pertaining to 230 landraces is in the process and likely to be added to the existing data by the end of February 2021. With WGoSS initiative, landraces data of 2020-21 has been shared by the partners organizations which is also integrated with it.

● Bringing the PPV and FRA Registered Varieties into the Open Source System

The role of PPV&FRA is mostly restricted to granting protection to farmers' varieties beyond that not much has been visualised. It is important to make these farmers' varieties into open source and make them largely available for use and inclusion in seed chains.

WGoSS has submitted a concept note for mapping the germplasm in Bio-diversity hotspots area – exploration will help in sourcing the germplasm which is not in National Gene Bank.

● Engagement with Joint Secretary (Seeds), Ministry of Agriculture & Farmers' Welfare, Government of India

The Working Group (WG) had a virtual meeting with JS, Seeds of MoA&FW. The need for designing appropriate seed systems for rainfed areas, bringing the farmers varieties registered with PPV&FRA and landraces into Seed Village Program (SVP) and instituting enabling policies and programs at both central and state level for enabling local production and use of open source seed were discussed.

As a response to the WG group presentation, JS Seeds suggested to submit a proposal to pilot such seed systems along with state department of agriculture / State Agricultural Universities. WGoSS is submitting a proposal soon.

● Developing the Unique DUS Characterisation formats for all the crops

There are 4 types of formats available for characterisation which are in use. i.e.

- NBPGR – Minimal descriptors formats
- PPV&FRA formats used for registering farmers' varieties
- DUS formats – used by breeders
- Bioversity International and Union for the protection of new varieties Plant (UPOV).

WGoSS is interested in standardizing the DUS characterization formats suitable for both conservation of diversity and varietal release of land races. The formats of paddy, finger millet have been approved by the ICRI-CRRI, Cuttack, and ICAR-IIMR.

WGoSS is planning to approach ICAR-IIPR, for developing a format for standardization of DUS characterization of pulses.

● Engagement with Natural Farming

WGoSS played a vital role in the initiation of “Community Managed Seed Systems for Natural Farming” (CMSS-NF) program promoted by the Department of Agriculture & Raithu Saadikara Samstha (RySS), Andhra Pradesh. The working group is actively involved in DUS characterization of landraces. A total of 230 landraces belonging to 45 crops are characterized, out of which 12 high potential landraces have been selected for multiplication during Kharif 2021. The objective is to make available the seeds preferred by farmers.

● Establishing Community Managed Seed Systems for Landraces in Odisha

Odisha Millets Mission (OMM) has been involved in identifying, testing and popularising local land races of millets. Over 300 landraces were screened and tested for their performance by OMM. At the initiative of the OMM team Department of Agriculture has constituted a formal Working Committee to develop a detailed framework for popularising well performing land races into formal seed chain.

WGoSS anchored the work of this Working Committee to develop a framework for Landraces Seed Systems for Odisha. This is being reviewed at present. At the request of the Government of Odisha, a proposal submitted by the WGoSS is presently under consideration – this intends to implement the recommendations on the Seed System in few districts of Odisha.

● Formation and Strengthening of Organic Seed Producer Systems

Seed is the basis for organic farming and the organic seed supply is problematic though there is a great demand for organic seeds. In this regard Sahaja Samrudha and WGoSS, RRA Network have initiated Organic Seed Producers Network. 25 organizations, farmer groups and individual seed producers are part of this network.

An Online Seed Production Workshop has planned to build capacities of the network members on various aspects of organic seed production, agronomy, business skills, and marketing – the key to successful seed enterprise.

COLLABORATIVE PROPOSALS SUBMITTED BY WGoSS SO FAR

- Submitted a proposal to National Agricultural Science Fund (NASF) in collaboration with NBPGR on “Networking of Farmers Growing Traditional Varieties/Landraces and Developing a Database, Enriching NGB and Registration with PPV & FRA”.
- SWISSAID, India has submitted a proposal on “Consumption of Resilient Orphan Crop Products for Healthier Diets (CROPS4HD)” in which RRA Network is a partner to facilitate the policy processes (Proposal got approved).
- Bioversity International has submitted a consortium proposal on “Mainstreaming Farmers’ Varieties and their Seed Systems – Enabling Smallholder Farmers to adapt to Climate Change, improved Nutrition and livelihoods”. Where RRA Network is also a partner.
- A draft proposal on “Community Managed Seed System for Landraces (CMSS-LR)” for Odisha state and shared with Odisha Millet Mission (OMM) team to pursue.
- Submitted a proposal to HCL on “Conservation of indigenous agro bio-diversity and enhancing food and nutritional security through community seed system in fragile ecosystem” in collaboration with NBPGR, RO, Hyderabad.



“Seeds – the Lives Embedded”

Mainstreaming of landraces and
farm saved seeds into public seed systems

Working Group on Seed Systems (WGoSS) for Rainfed Areas has made considerable headway in analysing the current seed systems; identifying the specific policy, institutional and programmatic requirements for rainfed areas; bringing several CSOs and ICAR & Government institutions related to seeds into a dialogue and networking, and leveraged this network strength in opening up several action programs at multiple institutional nodes. A wider basis for engagement with the issue and a general consensus on the need for seed systems for rainfed areas has been achieved. The next step is to get this larger consensus arrived at and the field work into specific larger initiatives of several state governments like the one starting off in Odisha.