Regenerative Agriculture Landscape

In the year 2020, a handful of PRADAN executives began studying the emerging topic of organic farming. Ever since its inception, the organisation has been involved in various livelihood activities, primarily chemical based farming to ensure food security through cultivation of vegetables, pulses, oilseeds etc. Selected executives were experimenting with organic farming during this time, with few bio inputs vermicompost and Farm Yard Manure. However, production was low and not appreciated by the team members.

Just before Covid Lockdown, pilot plots with 27 families were established in Hazaribagh district with deep monitoring and continuous support of the local team with the objective of making a prototype case for natural farming methods. Positive results were received as a part of this experiment, comparable to chemical farming. Certain preconceived notions associated with natural farming were also changed in this process, like the common perception that hybrid seeds do not work in organic farming. The Lockdown period gave the same team a good opportunity to delve deeper into research on Organic farming, Sustainable Agriculture, Regenerative Agriculture, Zero-Budget Farming etc. Covid also gave ample time to do this online research and study of similar initiatives from across the country and the world. What suited the organisation the best was the Regenerative Agriculture (RA) Pathway.

Regenerative Agriculture (RA) is the natural choice for PRADAN, given the holistic approach in implementation. With all the global agendas focusing and transitioning towards RA and sustainability, PRADAN's pilot projects were also able to capture farmer's realisations and positive feedback towards RA. Till date, more than 250 Professionals have been trained on the RA pathway within the organisation. Within this, individuals also specialise in further segments of the thematic area. A case was drawn for a new pathway and a radical one. PRADAN's focus begins from Farmer level intervention.

Vision with RA: To bring about a sustained transformation in rural areas by making agriculture climate resilient, economically rewarding while producing safe and nutritious food.
PRADAN is focused on making it economically rewarding so that farmers don't face the lash.

Mission: Empower small holder farmers sustainably earn more, rejuvenate their farm and consume healthy food with regenerative agriculture

The Centre of Excellence (CoE) on RA has curated 4 components to fit a suitable approach to PRADAN's ecosystem:

Economic Prosperity: • Significant income gain • Inclusive – marginal farmer, landless, women, etc. • Sustained and reliable income • Fostering local area economy	**Farm Resilience:** • Overcome prolonged dry-spells • Resist heavy showers and storms • Endure excessive heat and cold waves • Promote both rainfed & irrigated farming
Healthy Food • Food sufficiency • Free from toxicity • Nutritional dense food • Diverse food	**Resource Rejuvenation** • Healthy soil • Sufficient and clean water • Carbon sequestration • Vegetation & clean air

Goal- 2030:

- Cover 1 million farmers and 1 million hectare land under RA
- Groom 1000 professional experts and 1 lakh champion-farmers to spread the idea
- 10000 complete RA adoption villages and 1 lakh high performing RA model farms
- Safe and nutritious food to 100 million people

The Guiding Strategy for PRADAN's RA Adoption and Goals of Centre for Excellence(CoE) for Agriculture:

- There is an emphasis on building an organizational stance and mandate on RA.
- The organisation prioritises goal setting on RA.
- Establishing a core group with passionate professionals and building their expertise.
- Generating evidence by establishing RA pilot panchayats.

- Strengthening ecosystem by nurturing multi-stakeholder network
- Having force multipliers like experts, champion farmers, model BRCs

Current Gaps

- A gap in formal documentation of field level prototype models, the techniques, evidence and variations.
- Lack of knowledge indexing of the existing resources on RA.

Collaborations

- **National Coalition for Natural Farming**: The NCNF has over 50+ collaborations with NGOs across Jharkhand. The coordination for these partnerships is driven from PRADAN office at Ranchi, through the Jharkhand state chapter.
- **Convergence with Government Departments:** PRADAN implements the Agri-Smart Village Scheme in collaboration with the Agriculture, Animal Husbandry and Cooperatives Department. Till date, 101 village level collaborations have been initiated, where RA Pathway is being rolled out. This scheme is specific to Jharkhand.

PRADAN's Integrated Pathway in RA

1. Rejuvenating soil biology

- **Selection of good quality seeds and treatment**

  While PRADAN suggests opting for Open Pollinated and local varieties is an option, the NF framework works well in hybrid seeds also. However, the chemical treated seeds are promoted to be cleaned by cow urine. All the seeds are to be sorted and treated with ***Beejamrit,*** a bio-resource input and selected bio-cultures.

  Implementation on field:

  - **Master trainers reach out to farmers through RA field training - seed treatment.**
  - **BRC entrepreneurs prepare and provide the treated seeds to farmers. However, it expires in 2-3 days and therefore, farmers are encouraged to prepare their own treated seeds.**
  - **The aim is to promote 80% through training to farmers and 20% through BRC.**

- **Addition of good quantity organic matter:**

  Care is taken to improve the quality of **Farm Yard Manure (FYM)** and adding sufficient biomass through green manuring, incorporating crop residue to enrich the organic matter.

  Implementation on field:

  - **FYM is promoted to treat the soil after years of chemical use.**
  - **Farmers are suggested to include the FYM one day prior to the ploughing in the form of reminders and to spread organic matter on field. This goes against the popular practice amongst the farmers where they spread FYM 10-20 days before the sowing. Which reaps the manure of all its microbial constituents.**
  - **Farmers are advised to add a mixture of Goumutra and gud besan to to be mixed with the FYM - this is to enhance quality of the input. This is conveyed directly to the farmers during training.**

- **Inoculation of diverse microbes to the soil**

  Application of local inoculants is promoted like J*eewamrit* or *Ghanjeewamrit* and other selected microbes like **trichoderma, pseudomonas, rhizobium, NPK consortia, mycorrhiza** etc. at least for 3-4 times during initial few seasons.

  Implementation on field:

  - **There are two ways:**
  - **Supercompost is prepared at the BRC - this ensures that both microbes and organic content is added through selected preparation. These are promoted to be procured from the BRC, as the composition is very important for this input.**
  - **Moreover, farmers are trained to create these, especially local inoculants like Jeevamrit etc.**

- **Ensuring proper nutrition of plants**

  Foliar application of **multi seed extract** and other bio-stimulants. This is important in the initial few seasons of transition to ensure production at par with conventional farming.

  Implementation on field:

  - **BRC entrepreneurs are trained to produce and sell multi seed extract and other bio-stimulants. Till now, 90% of the requirement is promoted through BRC.**
  - **CRPs train a few farmers on the production as well. This is based on interest and will to learn. Information about such sessions is spread through institutions like SHGs and VOs. Interested participants follow up with the CRPs and adopt the practice.**

- **Precautionary and protective measures**

  Prevention against disease and pests is promoted by spraying *neemastra, agneyastra, brahmastra, mathastra* etc.and using different traps etc.

Implementation on field:

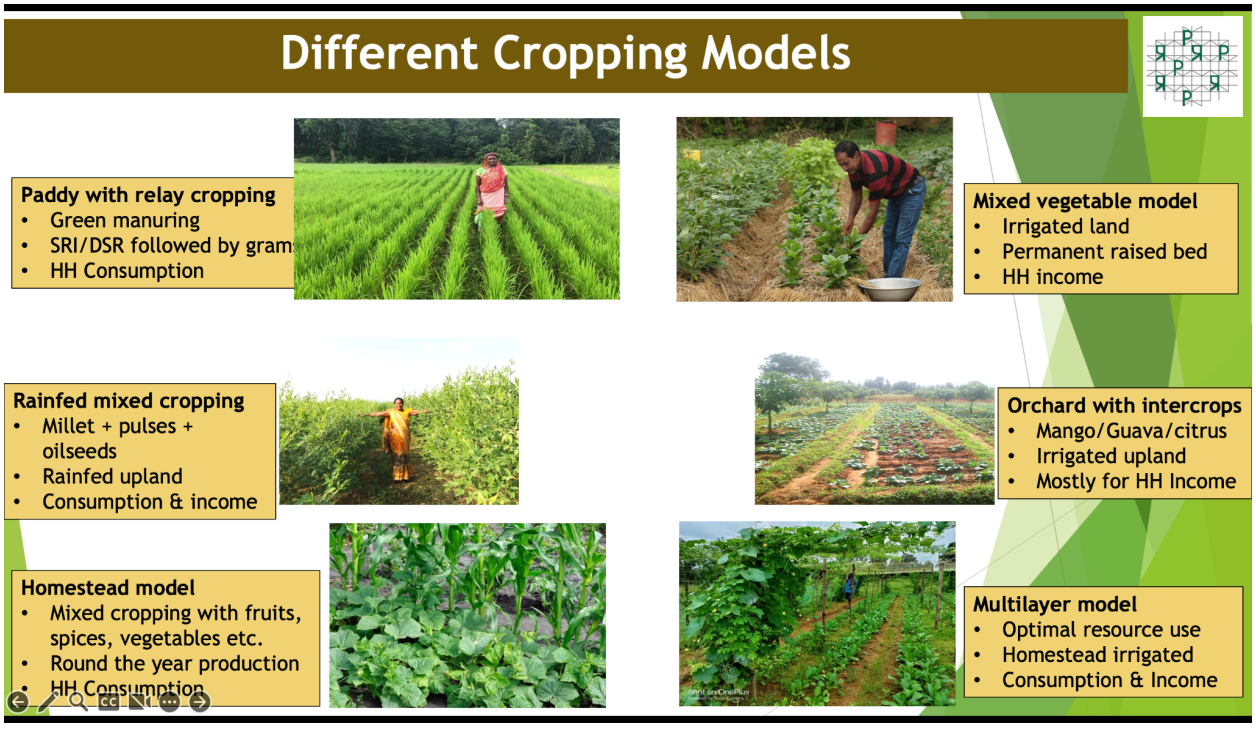
- **Farmers are given collective training for the production of these bio-inputs/**
- **Focus is both 60-70% through BRC production and supply of bio-inputs and 30-35% through collective production by farmers and guided by Master Trainers and CRPs.**

- **Promoting alternate cropping practices**

  Mixed cropping, mulching, proper moisture management, spacing for root and canopy growth etc.

  Implementation on field:

  - These are demonstrated to CRPs by field professionals practically through demo plots on field.
  - The progress is observed and the process is later recorded by the professionals.
  - CRPs transfer this knowledge to the farmers.
  - CRPs are encouraged to establish demo plot at their own field and make observations, and give exposure to the fellow farmers



2. Enhancing agroecology

Natural Resource Management		Livestock Integration	
Objective	**Intervention**	**Objective**	**Intervention**
Controlling Soil Erosion	INRM Planning - through PRA and mapping Patches are identified within the village. For example, for slope - orchard and mixed plantation methods are adopted. Convergence with government departments is adopted for incorporating these plans with funds This also tackles water harvesting - water storage List of INRM activities - which is suitable for the village - terrain, land type, other NR available there - farm bunding, seepage tank, lowland-upland bunding etc.	**Raw Material for Bio-Input**	Promotion of FYM Cow urine and dung Procuring from farmers doing cow rearing
Harvesting Water	No direct project on this implementation. INRM planning tackles	**Draft Power and Farm Yard Manure supply**	Ploughing and bullock cart - to avoid use of heavy machinery

	water harvesting. Planning part - promoting through GPDP.		
Wasteland Development	Focus is on both Individual and Collective lands Identification of Gair Majarua Land - which is neither in possession of any individual, not under forest land. Unused revenue land. Pasture land, convert into forest land, fruit orchard - depends on the GP	**Feed & Fodder to Livestock**	Cultivation of fodder crops
Forest Rejuvenation	Through FRA, both Individual and Collective claims are addressed in intervention areas. Awareness generation is done about the Act and rights under it. Field team assists people in the documentation aspects, conducting Gram Sabha, joint verification etc. Community Forest Rights Management planning (CFRMP) - Management plan is prepared with the community.	**Additional Income Source**	Procurement of cow dung and urine and ensure purchase from the BRC - diversification

	"Seed Ball" - preparation was done last year, and spread across forest barren area. 30-40% germination is predicted at the end Ownership tracing and maintenance		

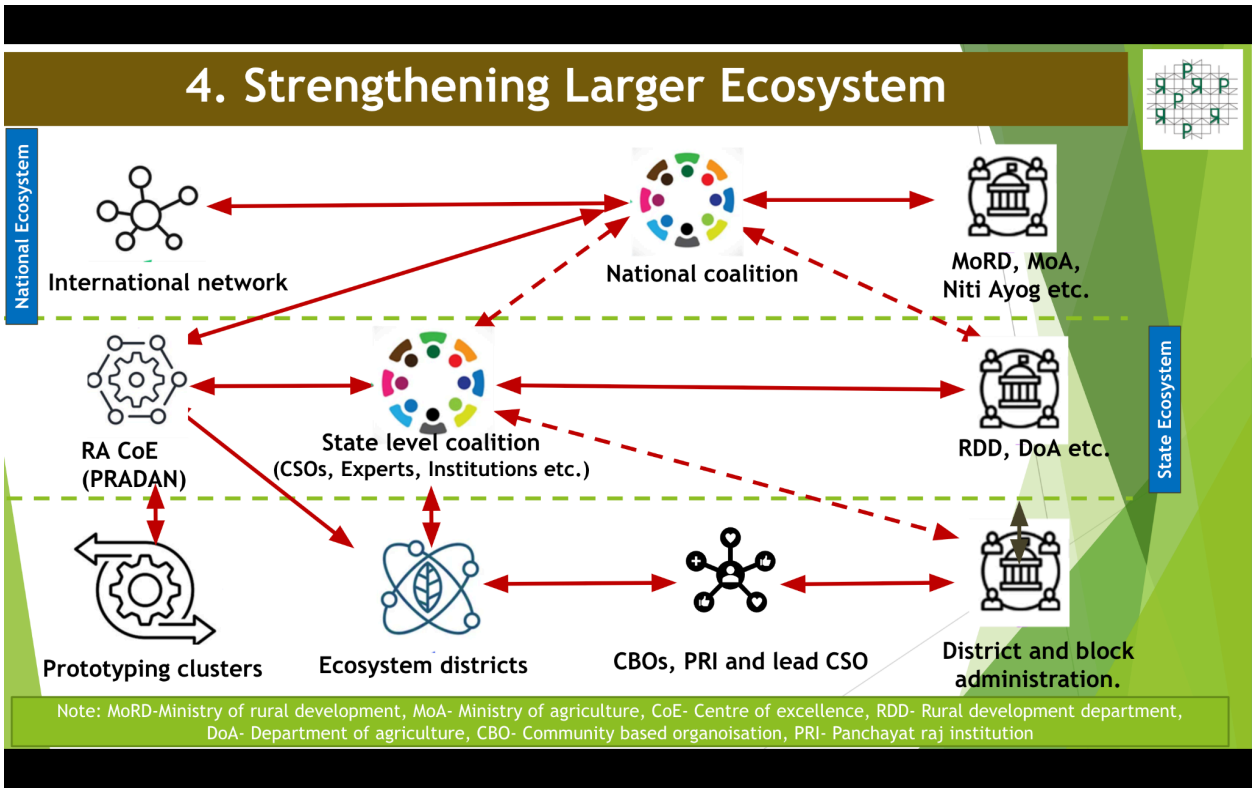
3. Establishing local service system

Community Resource Person: Identifying and Supplying Bio-inputs Handholding Support to Farmers Model Demonstration and Farmer Field Schools Monitoring interventions Link the Farmer to BRC - either individually or through FPC **Link the Farmers to the market by tagging them to agricultural entrepreneurs for components of Nursery, Compost, Seed etc.**
Village Organisations and CLFs: Awareness generation through collective approach Collective Planning process, input preparation Mobilisation for further project participation Carry forward the planning to the Gram Panchayat and Block level - Convergence of PRI and CBO
Farmer Producer Organisations: Awareness generation to shareholders BRC-FPO linkage - inputs to shareholders is ensured Marketing of organic produce through the FPOs Branding and Packaging of produce

Producer Groups: Similar to VO Collective Indenting - demand analysis Collective Crop Planning
Farmer Field School: Type of demo plot for teaching cropping techniques and models Patchwise practical training to the farmers
Agricultural Entrepreneurs: BRC functioning , Nursery, Compost, Seed Identify entrepreneurs and they supply to farmers as per demand
Other CSOs: Support during training sessions field level

4. Strengthening larger eco-system

PRADAN's ultimate goal is also to influence the larger ecosystem and be a part of the global movement for a sustainable future.



Prototyping Clusters - everything starts from here. Once this is established and evidences are gathered, it acts as a catalyst for influence in the neighbouring districts and clusters.

The team ensures that this prototype model is exposed to other CBOs, PRIs, and lead CSO and eventually district block administration. The

The RA CoE of PRADAN makes the case for the state level coalition. PRADAN is part of more than 10 such coalitions. State level consortiums and coalitions, with CSOs, Experts and Institutions from the thematic area.

Collaboration with government departments and ministry level knowledge exchange also exposes the team to the larger international agenda on sustainable development.