Farmers as Custodians of Crop Diversity

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Terms - Perceptions

Farmers

Economic and/or livelihood activity of growing crops; Conserves and preserves wild species or traditional varieties; buying and selling, exporting, or importing seed

150 million farmers in India

Custodian Roles

User, Conserver, Innovator and promoter; Most relevant in diversity hotspots; Farmers need to lead and scientists should play only a supportive role (systematic monitoring, measuring transitions and documenting drivers).

Community-based Biodiversity Management leading to continuous creation of novel and unique diversity

Crop Diversity

Cultivars variability; 117 species originated (Vavilonian)-rice, millets and legumes- 25 crop species domesticated; 160 major and minor crops cultivated + 325 wild relatives; 145 roots and tubers + 521 leafy + 101buds and flowers + 647 fruits + 118 seeds and nuts

Few Examples- Custodians





Mr. N. K. Unnin

Dwarf coconut **Tender on demand**





Mr. Aberdeen Blair

"Achin and Paltu"
CTCRI and CIARI

Good cooking quality Staple

Nicobari Aloo/ Water Yam





Shri.Chintaharan

Neil Mango **Ascorbic acid & Flavanoids**





Rev. Saw Saytha

Black Burma **Halwa & Burma Ladoo**

R.K.Gautam, M.Sankaran, S.K.Zamir Ahmed, Jai Sunder, Nagesh Ram and S.Dam Roy(2014). Custodian Farmers and Communities of Biodiversity Conversation and Utilization in Andaman & Nicobar Islands, India. Central Island Agricultural Research Institute, Port Blair

Crop Diversity Conservation and Custodians

In Situ

On farm - Traditional Vars - Custodians

National Parks - Wild Relatives - Forest Officials

Gene Sanctuaries - Landraces - Communities & FOs

Biosphere Reserves - Wild Species - Communities & FOs

Ex Situ

Field Genebanks - Horticulture Officials

Aroboratums - Officials

Herbal Gardens - Communities and Officials

Botanical Gardens - Communities and Officials

Seed Repositories- Communities and Scientists

In-vitro banks - Scientists

Cryo - Scientists

DNA or Genomic -Scientists

Genetic Information banks - Scientists

Examples



In Situ Forest- Kokum

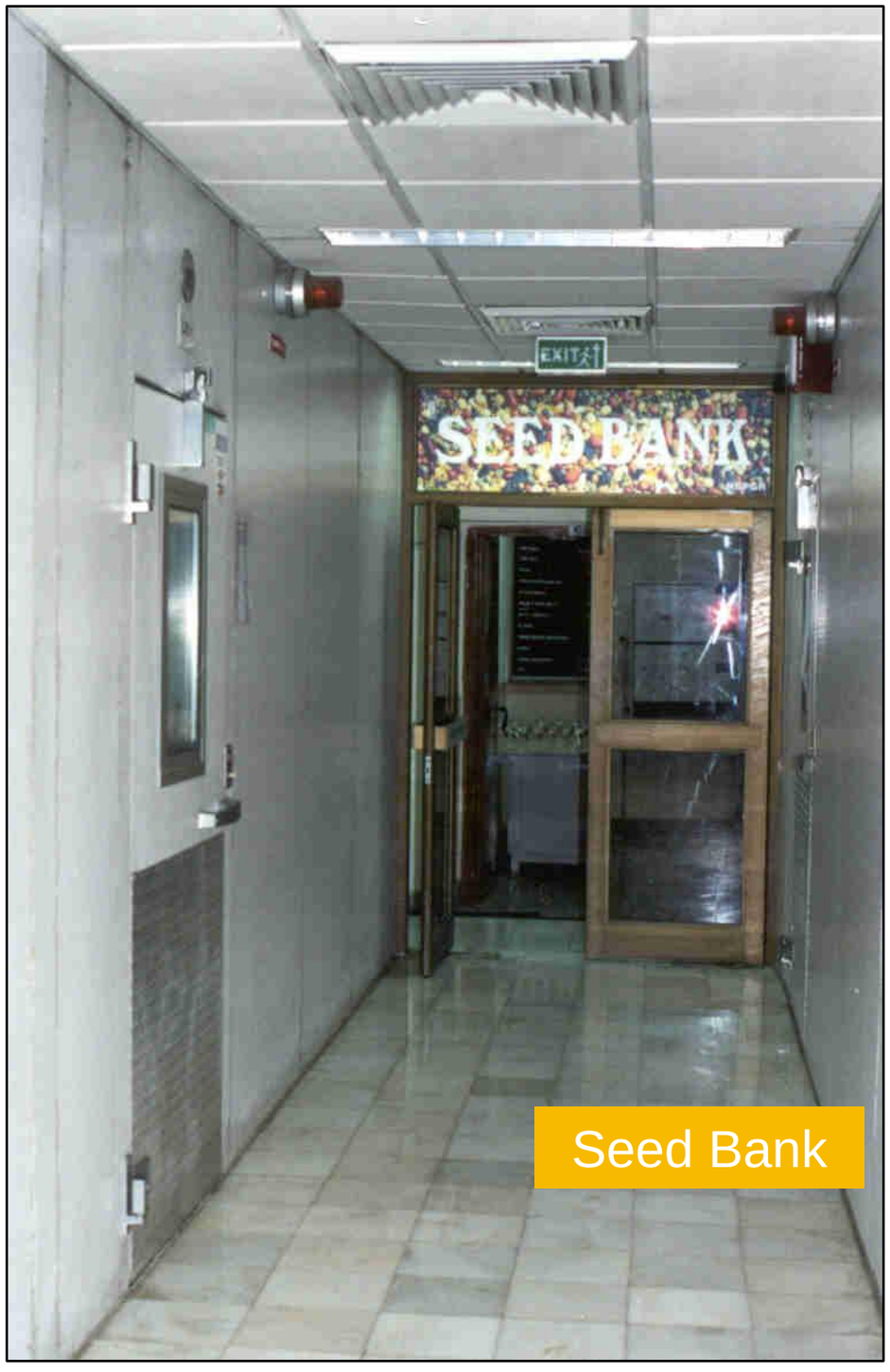


On farm - Sama -Samvat

Field Genebank - Jack fruit



EX Situ Conservation



Seed Bank



Cryo preservation



In-vitro conservation

Legal and Policy Framework

BDA (CBD) - NBA, SBBs(29) - Landraces, Folk varieties (?) - BMCs (2,43,499) - PBRs (95,252) - Community Ownership - Recognised Seed Repositories

PPVFRA (UPOV)- PVPA - (New, Farmer, EDV, Extant) - Ownership on registration- Individual farmers, Associations and Private and Public

Seed Act 1966 (Seed Bill 2020)- CVRC/ SVRC Notified State Sale Registration - Pedigree declaration and Benefit Sharing (Desi Cotton - Gujarat) -

Patent Act- CGPDTM (Varieties can not be patented)

GI - CGPDTM Only associations - exclusive rights for commercialisation

ABS Guidelines 2014 (2020?) Nagoya Protocol 2010

Registered varieties, Notified Varieties, GIs, Registered germplasm, Seed sales registration, Farmer variety commercialisation

Farmer Rights - PPVFRA

- Farmer entitled as breeder

- Access to seed, Benefit Sharing, Compensation, Reasonable seed price, Recognition and reward for conservation, Registration, Prior authorisation for commercialisation, Exemption from registration fee, protection from accidental infringement

- Access can be denied once registered by individual or few groups - Contest for rights through followup and deadlines - Community ownership at jeopardy; Compensation - implementation issues, Recognition and reward - no institutionalisation; Registration & Prior authorisation - restricts access exclusive institutional support is lacking

- Communities loose the right otherwise available in open access once registered; No support provision to conserve or support seed systems for farmers; Balance is tilted towards breeders and provisions or institutional support to farmers or their varieties because of dependence on breeder based institutions

PPVFRA- Farmer Rights Issues

Examples

Fieldpea; **Pant Pea-13;** 106 of 2009; ICAR
Rice; **Pratikshya;** 110 of 2009; OUAT
Pearl Millet; **Nandi-52;** 112 of 2009; Nandi Seeds Pvt. Ltd.
Rice; **Tilak Chandan;** 120 of 2009; Mr. Dev Nath Verma
Rice: CHENNELLU; 56 of 2013; Seed Care- An Association of Indigenous and Traditional Crop conservers of Malabar

Issues

- Farmer equated with breeder
- Registration Process (DUS?)
- Multiple Ownership, Open source
- IP rights given on a first come first basis
- Agrobiodiversity hotspots - Database of Traditional Varieties - 8.2(c) documentation, indexing and cataloguing of farmers' varieties
- Not getting registered- Eg. 30 to 40K in rice Vs few hundreds registered Legal position of not registered varieties ? 28 (1) Government shall be deemed to be the owner of such right
- Seed systems for farmer Varieties ?

Institutional Framework

- PPVFRA - No provision for institutional support for conservation or seed systems of farmer varieties - Mainly restricted to grant of rights and protecting rights

- BDA - SBBs and BMCs starving for technical and financial resources

- Seed Laws - Not oriented to farmer varieties- Notified varieties mainly

- Community Seed Banks Vs Seed Repositories (BSI, NBPGR, NBRI, ICFRE) - Posterity Vs weak linkage with farmers for immediate use

- CSR - Very limited and not focussed

- Mainstreaming of biodiversity - a distant vision

Public Investments

- Farmer Varieties Conservation- PPVFRA, NGB, NBRI, ICFRE- CG genebanks (11),Svalbard Global Seed Vault, Global Crop Diversity Trust - Huge investments for establishment and Millions of dollars for annual maintenance- Negligible investment for conservation through use (of farmers, by the farmers and for the farmers)

- Conservation through use (on farm) is the key to changing climate, pest and nutritional scenario allowing continuous exposure to the changing climate and crossing with naturally occurring wild relatives.

- Formal breeding programmes focus on higher yields ignoring the above changing scenarios and is a risk to food security

- Utilisation of farmer varieties, landraces and primitive cultivars has become very low in public and private breeding programmes for commercial reasons ignoring longterm benefits of ecological and health benefits

WGoSS RRAN
(Working Group on Seed Systems in Revitalising Rainfed Agriculture-Network

- PPVFRA: Open Source; Seed Systems
- NBPGR: Exchange of landraces with farmer networks
- OMM: Alternative Seed System, CMSS, Pulses and Oilseeds
- NASF: Characterisation or traits of value (climate resilience, nutrition, pest resistance, low input culture) - Bringing NGB and farmer networks together
- DAC: Seed Village Programme inclusion of landraces; Declaration of farmer varieties as notified varieties
- Database or documentation of Farmer Varieties or Landraces
- ICAR institutes and SAUs: Seed and field standards and bringing farmer varieties and landraces in to main stream
- Inclusive institutional framework for farmer varieties and landraces including the respect for traditional knowledge

Conclusion

Legal and policy framework, investments and institutional framework need to undergo a radical change to promote conservation of farmer varieties through use both in farmer fields and in formal breeding programmes by involving famers/ custodians to sustain public health, protecting ecological assets and environment

Thank you

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