



CLIMATE CHANGE AND NATURAL DISASTERS-  
SCOPE FOR REGIONAL COOPERATION-  
PAKISTAN'S CASE

CONSERVATION, [SUSTAINABLE] USE AND EXCHANGE  
OF  
PLANT GENETIC RESOURCES

26-27<sup>TH</sup> AUGUST 2015, KATHMANDU, NEPAL

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CEO ROOTS PAKISTAN

- A GRASS ROOT DEVELOPMENT ACTION

# CLIMATE CHANGE AND NATURAL DISASTERS- SCOPE FOR REGIONAL COOPERATION - PAKISTAN'S PERSPECTIVE

- Historic Perspective
- Changing Global, Regional & National Contexts
- PGR Interfacing Tech. Mix, multilateral trading- trans-boundary diseases climate change and natural disasters
- Risks, Opportunities & Options
- Pakistan's case
- Way Forward
- Links to Resource Institutions in Pakistan

# HISTORIC PERSPECTIVE

## i. PGR Interfacing Technological Mix

- Common Heritage- Fellow companions
- Plant Domestication & Human Manipulation- New combination of genes through plant breeding–Crop & Varietal Development

Plant Breeding - Yields, Environ. adaptation , Pest & Disease Resistance, Food Quality & Safety

- Large number of land races with substantial genetic diversity  
Few Crops- → narrow Genetic base → Genetic Impoverishment
- PGR Conservation → Ag. Production, Trade & Food Security
- Plant Genetic Diversity → Ag. Production & Food security
- Organized Preservation of PGR diversity for today & tomorrow
- Sustainable Use, Equitable Sharing of the benefits - CBD

# CHANGING GLOBAL, REGIONAL & NATIONAL CONTEXTS

## ii. PGR Interfacing Multilateral Trading, Climate Change

- Closed economies are part of history now
- Trade Liberalization- Impact of Import Surges, exotic diseases
- Looming Threat of Climate Change- CC front line states in the region, Changed disease ecology
- Natural Disasters- Erosion of GR base
- On top of it Corporate Hegemony & Rent Seeking- a day light robbery
- Border control of diseases- Agricultural Health & Food Safety
- Food Security- Changing Paradigm
- Self-sufficiency paradigms has become irrelevant
- Push & Pull of the markets
- Erosion of Indigenous Knowledge and Home grown safety nets

# RISKS, OPPORTUNITIES & OPTIONS

## Risks:

- Mono Crop culture- Loss of diversity
- Dependence
- Loss of Comparative Advantage
- Import Surges → Shrinkage of farm sector → Loss of diversity
- Threatened Livelihoods and Food Security
- Climate change & natural disasters → impoverishment

## Opportunities:

- Informed & collective actions for organized preservation and development
- Regional Inventories and integrated Conservation System
- SPS Management-Regional Framework
- CC Adaptation & Mitigation- Regional Framework
- Research- CC resilient PGRs
- Identification of Invasive Species

## Options:

- Bilateral/regional cooperation
- EU modality- PGRFA- EC PGR- *Ex Situ* Conservation- AEGIS (European Gene Bank Integrated System)

# REGIONAL COOPERATION-WAY FORWARD

- Institutional Development- National & Regional
  - National & Regional PGR Inventories
  - Harmonization of PGR data Protocols
  - Development of National & Regional Technical Standards
    - Documentation & conservation
    - Capacity Building Trainings
    - Joint Collection of Material
    - Salvage & Emergency Rescue of Threatened Diversity
    - Research & Exchange
    - Quality Standards for Conservation & Use
    - Innovative, efficient & cost effective approaches
    - Knowledge Management & Sharing
  - Development of Regional Framework (Conservation, Research & Innovation, Use and Exchange)
- Global Networking and informed participation in multilateral negotiations & Treaties

8/28/2015

# PAKISTAN'S CASE

- Pakistan follows a liberal PGR access policy in line with IT-MLS and CBD Benefit Sharing
- More than 1200 requests entertained
- Part of SAARC initiative on sharing of PGR related information
- PGRI-PARC central research & conservation facility
- New Seed Policy and Plant Breeders Rights Act on Anvil

## Limitations & Risks

- Gene Pool Erosion
- Lack of IPR Management
- National/sub-national legislation deficit
- Weak inter-institutional coordination

## Strength & Potential:

Centre of Excellence in PGRFA for the Region

# PAKISTAN'S CASE

## Way Forward:

- Needs biodiversity conservation, P RFA R&D strategy
- Inter institutional & regional Coordination & cooperation
- Added focus on indigenous & adapted varieties
- Documentation of wild races with potential for food security & CC adaptation
- CC adaptation & mitigation with added focus on PGR for F&A preservation
- Life forms Intellectual Property Management
- Border control of diseases-SPS Management
- Informed participation in bilateral/regional & multilateral negotiation with built-in PGRFA perspective (45 countries case studies)

[https://www.wto.org/english/res\\_e/booksp\\_e/casestudies\\_e/casestudies\\_e.htm](https://www.wto.org/english/res_e/booksp_e/casestudies_e/casestudies_e.htm)

## Potential PGR resources for Regional Cooperation

- Agro-ecology specific, pest & disease resistant and environ. Friendly varieties
- Maize, wheat, sorghum, Millet
- Issues around Rice
- Where is Basmati Rice coming from ? <http://ageconsearch.umn.edu/handle/51698>



# RESOURCE INSTITUTIONS

- Pakistan Agricultural Research Council

[www.parc.gov.pk](http://www.parc.gov.pk)

- **Plant & Genetic Resources Research Institute**

<http://www.parc.gov.pk/index.php/en/research-institutes-narc/101-narc/pgri/808-pgri-home-2>

- **National Institute for Biotechnology & Genetic Engineering**

<http://www.parc.gov.pk/index.php/en/research-institutes-narc/101-narc/pgri/808-pgri-home-2>

- **Agriculture Universities Network**

- **Provincial Agricultural Departments**

THANK YOU

8/28/2015