

# Regional Consultation on Sustainable Crop Production Intensification

NISM and THE STATE OF PLANT GENETIC  
RESOURCES FOR FOOD AND AGRICULTURE -  
GUYANA REPORT

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# The National Information Sharing Mechanism

- \* Background
  - \* NISM: Network of Guyanese institutions
    - \* Conservation and Sustainability of PGRFA
  - \* Strategic objective
    - \* Document precursors to implementation of GPA
- \* Overall goal
  - \* Share information to facilitate the implementation of the GPA in Guyana.

# The National Information Sharing Mechanism

- \* Contributors
- \* NAREI, GUYSUCO, GRDB, and IICA (Guyana)
  - \* Documented projects and references
- \* Resource personnel:
  - \* Marketing, community development, PGRFA networking, agro-project management, education, farming, agro-commodity vending, homestead management, etc.

# The National Information Sharing Mechanism

- \* Result: NISM data base
  - \* 1200 research and community dev. projects
  - \* >450 references
- \* Elaborated through
  - \* >2800 table row entries
  - \* >201 individual questions and comments
- \* A common framework for country level analysis and presentation of data and information.

# GUYANA REPORT

## THE STATE OF PGRFA

- \* This Second Report
- \* Strategic analysis of eight macro-action areas
  - \* Conservation management
  - \* Sustainable use and improvement
  - \* Status of PGRFA in Guyana
- \* Updates the first Guyana Country Report
- \* FAO Commission on Genetic Resources for Food and Agriculture as an official GOG document

# 1. Security in diversity

- \* The agriculture sector is the pulse of Guyana's economy
  - \* 20% livelihood, 21 % GDP & 40% export earnings
- \* Response to disasters
  - \* Threat to national food security (Plan)
- \* Population density & plant-based agricultural industries.
  - \* Coastal strip 434 km long and 12 km wide
- \* Stability of the industry
  - \* Economic and social stability of the country.

# Topography of Guyana

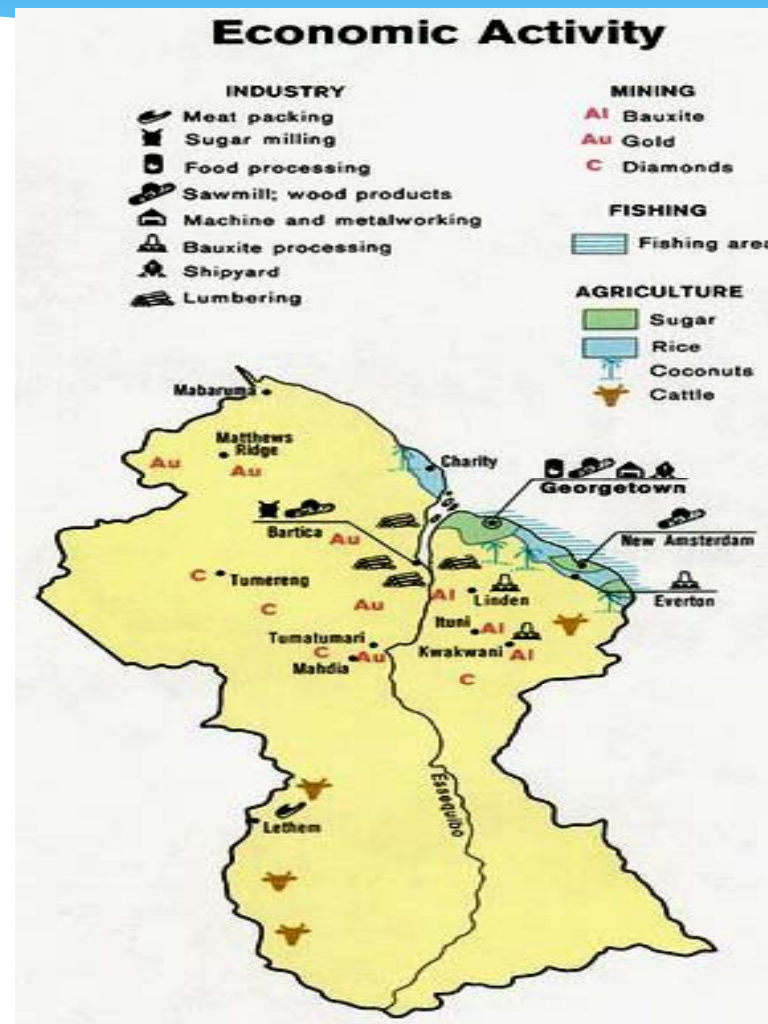


## 2. Status of diversity

- \* The agriculture economy 161874 hectares of irrigated land
- \* Major crops - sugarcane and rice
  - \* Guaranteeing our food self-sufficiency needs
- \* Diverse non-traditional crops
  - \* coconut, cassava, orchard species, green vegetable
  - \* foraged botanicals, diversity of herbals
  - \* 19 forested ecologies
- \* Complementary role for food security assurance.
- \* Exceptional cassava



# Socio-Economy of Coastal Strip



## 3. Status of *in-situ* diversity

- \* Manifested in homestead cultivations and subsistence farming
- \* Accounts > 80% of the plant species diversity for FA
  - \* Government policies supports
  - \* Economic benefits to lower-income households
- \* Research Option
  - \* Diversity in homestead/foraging grounds
- \* NTCSD commercial, social and food security perspective

## 4. Management of *ex situ* diversity

- \* NAREI Tissue Culture (in vitro conservation)
  - \* Depository for seed-regenerated crop species (70)
  - \* Protocols for local accessions
    - \* Plantain, banana, pineapple, yams, and sweet potato
  - \* Local accessions maintained on a seasonal basis
    - \* Tomato, bora, pepper, eggplant, and poi
  - \* *Ex situ* field gene banks
    - \* Pineapple, avocado, cassava, yams, mango, etc.
- \* Trans-boundary transfer of exotic crop species

# 5. Management of *ex situ* diversity

- \* Burma Rice Research Station (BRRS)
  - \* Maintains 43 parental lines used in pedigree breeding
  - \* 23/43 rice breeding research network IRRI, CIAT, FLAR, India
  - \* Seasonal evaluation of several thousands of pedigree line
  - \* Collection duplicated in regional and int. PGRFA networks
- \* GUYSSUCO Agriculture Research Centre (GARC)
  - \* Maintains 12/43 commercial sugarcane varieties
  - \* 2\*yearly production/variety evaluation/rankings
  - \* Eight sugar estates

# 6.The state of use

- \* Rice and Sugar
  - \* Conventional plant breeding programmes for varietal diversity
- \* 7-year basis combined average of 5- modern varieties in commercial production
- \* Collaborative shuttle-breeding programme exchange networks,
  - \* WICSBS and WISBEN for sugarcane
  - \* FLAR, IRRI, CIAT and India for rice,
- \* Rigorous evaluations (local and overseas)
- \* Guarantee stable field performance of commercial varieties.

# 6.The state of use

- \* The non-traditional sector
  - \* Diversification of cropping systems (5P's)
  - \* Promoting increased exports of non-traditional crops
- \* Marketing limitations
  - \* Uncontrollable admixture of varietal diversity in crop harvests
    - \* Foraged and homestead harvests
- \* Contradiction
  - \* Crave very wide genetic diversity
  - \* Obstacle to the economic benefits for farmers.
- \* Commercialization: - relegated to crop improvement efforts.

# 7. Underlying factor driving the state of diversity

- \* International agreements
- \* GARC/BRRS strengthened PGRFA networking capacities
  - \* BRRS benefitted from training
  - \* Sustainable research foot-hold.
- \* Non-traditional crop germaplasm pools
  - \* Absence of necessary and adequate information on diversity
  - \* Inability to utilize plant genetic resources effectively
- \* NAREI's technical limitations in conservation, documentation, characterization and evaluation.

# 8. The International Treaty on PGRFA

- \* Implementation: NISM for SM of PGRFA
- \* Submission: 2nd Guyana Country Report - Status of PGRFA
  - \* Access/exchange of local and external sources of PGRFA
- \* 2008 Guyana ratified the Cartagena Protocol on Biosafety
- \* Legislation: National Plant Quarantine Act of 2011
- \* National Seeds Act of 2011
  - \* Support National Policy Access to Plant Genetic Resources
- \* Guyana to ratify the International Treaty on PGRFA?