GROW
AGROBIODIVERSITY IN A CHANGING CLIMATE

15 - 25 November 2022
Online course

With the technical support of the
Food and Agriculture Organization of the United Nations
Module 1: Management of Agrobiodiversity

Tuesday, 15 November

14:00 Welcome, introductions, presentation of participants

15:00 Crop genetic diversity, domestication and traditional varieties (Chapters 1,2,3) - T. Hodgkin/ D.I. Jarvis (PAR)
   - Introduction to traditional varieties (pag 1 - 11)
   - The origins of agriculture and crops (pag 13 - 28)
   - Centres of crop diversity and centres of origin (pag 28 - 33)
   - Nature, biodiversity and genetic resources (pag 35 - 40)

15:30 The origins and centres of diversity for perennial crops (the case of Apple) - M. Turdieva (Alliance)

16:00 Diversity and evolution in crop populations (Chapter 4) - K. Naino Jika (Alliance)
   - The nature of diversity (pag 64 -66)
   - Crops, varieties, and populations (pag 67 -70)
   - Population genetic structure (pag 71 - 77)
   - Evolution in crop varieties and populations (pag 78 - 84)
   - Reproductive biology (pag 84 - 89)
   - Crop varieties in production systems (pag 91 - 92)

17:00 Measuring diversity in crops (Chapter 5) - P. Colangelo (CNR-IRET)
   - Exploring extent and distribution of diversity - Agronomic, Biochemical, Molecular (pag 92 - 107)

The lectures of the first module will be based on the textbook Crop Genetic Diversity in the Field and on the Farm - Principles and applications in Research Practices (see page numbers)
Wednesday, 16 November

14:00 Measuring diversity in crops (Chapter 5) - P. De Santis (Alliance)
  Gathering data using participatory approaches (pag 108 - 118)
  Designing and investigation (pag 119 - 123)
  Calculating on farm diversity indices: Richness, Evenness, Divergence

15:00 Measuring Diversity Practicum - P. De Santis (Alliance)

16:00 Abiotic components of agricultural ecosystem (Chapter 6/7) - M. Reverberi (Sapienza)
  Abiotic and biotic components of agroecosystems (pag 126 - 137)
  Evolution of crop varieties in stress prone environments (pag 154-157)
  Abiotic stress and crop genetic diversity (pag 157 - 163)
  Biotic stress and crop genetic diversity (pag 163 - 169)

17:00 Spatial Analysis of Plant Diversity and Distribution in a Changing Climate - F. Attorre (Sapienza)
  Reducing the dimensionality of complex data sets (pag 146 – 149)
  Ecosystem diversity and function (pag 150 – 153)
  Identifying where diversity is used to cope with environmental stress (pag 172 – 180)
Thursday, 17 November

14:00 Diversity in, and adaptation to, adverse environments on-farm (Chapter 6/7) - P. De Santis (Alliance)

Farmer characterization and classification of abiotic and biotic components (pag 137 -145)
Farmer management of crop genetic diversity to cope with environmental stress (pag 169 – 172)
Genetic diversity, damage, and genetic vulnerability (pag 181 – 190)

15:00 Who are the managers of diversity? Characterizing the social, cultural and economic environments (Chapter 8) - R. Nanyka (Alliance)

Farmers’ roles and the management of crop diversity (pag 191 - 199)
Social relationships and the distribution of diversity (pag 199 - 200)
Social capital, collective action and property rights (pag 202 -203)
Tool and methods for documenting and relating farmer characteristics to crop genetic diversity (pag 203 - 211)

16:00 Measuring the values of on-farm diversity (Chapter 9) - D. Gauchan (Alliance)

Public and private values of diversity (pag 212 - 214)
Varietal choice and diversity maintenance (pag 215 - 220)
Econometric models and value chain actors (pag 220 - 226)
Measuring non-market values of diversity (pag 226 - 231)

17:00 Policy and genetic diversity on-farm (Chapter 3,10) - I.L. Noreiga (Alliance)

The development and evolution of national programs on plant genetic resources (pag 41 - 44)
The origins of an international commitments to plant genetic resources conservation (pag 45 - 46)
Policy debates on conservation- ABS (pag 46 - 57)
The use of genetic resources for plant breeding (pag 56 - 62)
Policies and legal frameworks that have a negative impact on farmers’ capacities to use diversity on-farm (pag 232 - 242)
Policy processes: Overview on concepts and methods (pag 242 - 249)
Developing policies that support farmers’ role as generators, managers, and conservers of crop diversity (pag 249 - 254)
**Friday, 18 November**

**14:00** Genetic diversity and selection pressures at different social, spatial, and temporal scales (Chapter 11) - R. Nankya (Alliance Uganda)/ M. Turdieva (Alliance Uzbekistan)

- The crop cycle (pag 225 - 258)
- Use of harvested materials and diversity of traditional varieties (pag 259 - 263)
- Selection during crop production and seed management (pag 263 - 264)

**15:00** Patterns of seed supply: The “Seed Systems” (pag 267 - 274) - D.I. Jarvis (PAR)/ P Colangelo (CNR-IRET)

- Social, spatial and temporal dimensions of traditional varieties (pag 275 - 282)

**16:00** Assessment and testing of guidelines for economic development of community managed institutions – Eleonora De Falcis (Alliance)

**16:20** Strategies for collaboration and intervention (Chapter 12) - P. De Santis (Alliance)

- Institutional and partner diversity (pag 283 - 285)
- Building trust and equitable collaboration (pag 286 - 290)
- Actions that incorporate genetic, ecological, social and economic concerns in support of on-farm management of crop genetic diversity (pag 291 - 303)
- Farmers benefit from the use and conservation of materials (pag 303 - 311)

**17:00** Assessment with DATAR (Diversity Assessment Tool for Agrobiodiversity and Resilience) A. Fonteneau (PAR)

**17:30** Traditional varieties and agricultural productivity (Chapter 13) - D.I. Jarvis (PAR)

- Socioeconomic, policy, environmental, biological and genetic dimensions (pag 313 - 320)
- Assessment with DATAR (Diversity Assessment Tool for Agrobiodiversity and Resilience)
- The future value of traditional varieties (pag 320 - 323)
- Approaches to maintenance of traditional varieties (pag 323 325)
Module 2: Agrobiodiversity on the Ground

Monday, 21 November

14:00 The Climate-Smart Agriculture Approach (CSA) - Federica Matteoli (FAO - OCB)
   The CSA Approach
   Challenges and opportunities for agriculture in the face of climate change
   CSA concept and 5 step-process to CSA implementation
   Practices and production systems for CSA
   Tools and Methods for Evidence-based Decision Making in CSA: Brief introduction

16:00 Tools and Methods for Evidence-based Decision Making in CSA: Examples & Exercise - Aristide Ouedraogo (FAO - ESA)
   Introduction: Modelling System for Agricultural Impacts of Climate Change (MOSAICC)
   Introduction: Ex-Ante Carbon Assessment Tool (EX-ACT)

17:00 Hands-on exercises in breakout groups (based on participant’s preference):
   MOSAICC - EX-ACT

Module 2: Agrobiodiversity on the Ground

Tuesday, 22 November

14:00 Agroecology
   The 10 elements of Agroecology, Edmundo Barrios (FAO – NSP)

15:00 Agroecology as a science, practice, and social movement, Jimena Gomez (FAO – NSP)

16:00 Agroecology for resilience and climate change adaptation

17:00 Group Exercises and Discussions
Module 3: Agrobiodiversity values as market drivers

**Wednesday, 23 November**

14:00  **Fundamental principles and definitions: Organic agriculture** - Roberto Ugas (IFOAM)

Organic agriculture and its relation and contribution to other sustainable agriculture initiatives

15:00  **Organic 3.0: Towards truly sustainable food and farming systems to achieve the Agenda 2030** - Patricia Flores (IFOAM)

16:00  **An overview of organic guarantee systems** - Flavia Castro / Sara Anselmi (IFOAM)

17:00  **Focus on PGS: a locally appropriate and smallholder-friendly option for quality assurance**

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**Thursday, 24 November**

14:00  **Slow Food** - F. Mattei

Agrobiodiversity as driver for rural development and the preservation of healthy ecosystems,

Externalities, ecosystem services and common goods

15:00  **Promoting market access and generating sustainable demand paradigms**

Education and awareness raising

16:00  **NaturaSi** - C. Murer (NaturaSi)

Organic products in Italy and in the world: growing market, more responsible consumers

Effective and equitable farming techniques and distribution processes with low environmental impact

Economic and social wellbeing of producers and their communities

17:00  **How to build long lasting relationships of trust between producers, retailers and consumers**

Marketing and distribution strategies for small mountain producers

Organic farming: new approaches and research
Module 3: Agrobiodiversity values as market drivers

Friday, 25 November

14:00  Agrobiodiversity of Andean mountains – Juan Torres (Agrarian National University La Molina – UNALM)

15:00  Domestication process in mountain regions – Alejandro Casas (Autonomous National University of Mexico - UNAM).

16:00  Animal Genetic Resources in mountain regions – Eric Chavez (FAO - MPS)

17:00  Closing Remarks - G. Grussu (FAO MPS)/ F. Attorre (Sapienza)/ C. Murer (NaturaSì)/ (Alliance)/ (IFOAM)