



SAPIENZA
UNIVERSITÀ DI ROMA



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 its 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 (pag172 – 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. Norejga (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

Module 3: Agrobiodiversity values as market drivers

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 (NaturaSi)/(Alliance)/(IFOAM)

