

Portfolio of actions

Agroecology at the Federal University of Viçosa



Agroecology at UFV

The Federal University of Viçosa (UFV) has been active in the field of Agroecology – and its multiple interfaces – for many years now. These Teaching, Research and Extension activities encompass various Departments and Science Centers, Undergraduate and Graduate Major and Programs, as well as national and international projects and agreements.

This portfolio sought to organize these actions within the major axes of the university activities (Teaching, Research and Extension), while focusing on the main areas of Agroecology: Rural Development and Family Agriculture, Education, Food and Nutritional Security and Sustainability of Agroecosystems.

Research Activities

The research carried out at the institution has resulted in projects registered in the internal systems. For the last 10 years, it is possible to find 147 projects when using the keyword 'Family Farming'; and 64, with the keyword 'Agroecology'. The keywords 'Quilombolas' (i.e., meaning communities established from past runaway slaves), 'Food Security' and 'Fair trade' were added to this search, which totaled more than 80 projects. This is certainly not an exhaustive survey, and other projects can be considered, directly or indirectly, linked to the Agroecology area.

Some examples of research projects in the area of Agroecology, associated with more specific interests of each area, are provided below..



1) Rural Development of Family Farming

Organization of farmer groups

- Organic cotton in the Brazilian semi-arid region: from production to marketing
- Creative Economy, Fair Trade and Creative Tourism as vectors of Local and Creative Development by means of Free Fairs in Viçosa, Minas Gerais, Brazil
- Creation, maintenance and expansion of technical innovations: focus on agroecology

Access to markets:

- Agroecology and localized food systems: social innovations in the construction of short marketing circuits
- Prosumid@R - Sales management and support system for agroecological cooperatives linked to Solidarity Economy

Inclusion of women and young people

- The invisible economy of agroecological women farmers in the Southeast region
- Stress and quality of life of women farmers in the Zona da Mata (region) of Minas Gerais

Traditional peoples

- The current development process in the Amazon region and the interface between mechanisms of stability and change in the Suruí indigenous community
- History and Identity among traditional communities in the Northern region of Minas Gerais

Fair trade

- Analysis of the legitimacy of the benefits proposed by the Fair Trade Labeling Organizations International (FLO) to the agents involved in obtaining the Fairtrade Seal in a Cooperative of Coffee Growers in the Zona da Mata of Minas Gerais.
- Implications of Fairtrade for the development of the hybrid dimensions of certified producer organizations



Certification/compliance verification

- Educational constraints on the implementation of participatory systems to guarantee organic compliance
- Participatory mechanisms of organic compliance and the socioeconomic reproduction of family farmers in agroecological experiences

Credit/public policies:

- Family Farming Strengthening Program: an analysis with emphasis on the Agroecology credit line (2007 - 2022).
- Analysis of the implementation of the Integrated and Sustainable Agroecological Production System (PAIS) in the Territory of Caparaó (State of Espírito Santo).

2) Education**Rural Education**

- Social Technologies and Agroecology: analysis of teaching methodological proposals.
- Rural Education and Training in Agroecology: Representations, Practices and Pedagogical Processes.

Educational practices and traditional peoples

Ethnoindicators for the environmental monitoring of agroecosystems in the Doce River

Challenges in quilombola education: Popular knowledge applied to science teaching

Education of rural youth and women

Youth at the forefront in the peasantry reframing processes

Agricultural Family School: Agroecological thoughts and practices are redesigning livelihoods

**3) Food and Nutritional Security****SAN diagnoses of family farmers**

- Food Consumption, Nutritional Status and Health Conditions of Family Farmers enrolled in the Food Acquisition Program - PAA of the Food Bank of the municipality of Ubá (State of Minas Gerais).
- Participation of production for self-consumption and Food and Nutrition Security conditions in households in the rural area of São Miguel do Anta, Minas Gerais

Good practices and food quality of farming families

- Food and nutrition education, considering the participation of the production for self-consumption in the Food and Nutritional Security condition of families in a rural community in Viçosa, Minas Gerais
- Processed organic fruit products: contaminants, quality and food security

Food culture and agrobiodiversity of farming families and traditional peoples

- Agroecosystems in the Purus National Forest (AM): alternatives for obtaining food sovereignty
- Food sovereignty, agrobiodiversity and food traditions in the north of Minas Gerais



4) Sustainability of Agroecosystems

Soil and Water Management

- Organic matter, fauna and soil microorganisms in areas cultivated with coffee, under agroecological management in the Zona da Mata Mineira
- Soil management and water quality around the Serra do Brigadeiro State Park

Agriculture and organic production

- Agronomic evaluation of intercropped vegetables in syntropic agriculture
- Intercropping of legumes in an organic corn no-tillage system

Agrobiodiversity

- Agrobiodiversity in family coffee farming in Zona da Mata of Minas Gerais
- Management and conservation of biodiversity in agricultural systems in the Brazilian semi-arid region

Plant Health

- Effects of baleeira herb (*Varronia curassavica*) on the attraction of natural enemies, damage mitigation and coffee productivity
- Use of living barriers as a potential facilitator of augmentative and conservative biological control

Nutrient Cycling

- Fractions of soil organic matter and microbial activity in soils under agroforestry systems in Zona da Mata Mineira
- Green manuring: evaluation of its use by agroecological farmers and the residual effect of in depth nitrogen

Carbon balance, GHG and climate change

- Elaboration of an Inventory of Greenhouse Gas Emissions in milk producing properties belonging to the Cooperativa Central dos Produtores Rurais de Minas Gerais Ltda (Central Cooperative of Rural Producers of Minas Gerais) – Itambé.
- Inventory of carbon emissions and storage in rural properties under agroforestry systems

Animal Production

- Cattle production integrated into agroforestry systems on family farming properties
- Potential for a fruit-sheep consortium in the municipalities of Tocantins and Rio Pomba and subsidies for the creation and marketing of beef sheep in the municipality of Viçosa – MG



Teaching Activities

1) Undergraduate Courses

CODE	NAME
EDU 190	Social Movements and Education
EDU 192	Education for Sustainability
ENA 104	Fundamentals of Natural Sciences and Agroecology
ENA 233	Agroecology Teaching Practices
ENA 320	Agroecology and Social Technologies I
ENA 321	Agroecology and Social Technologies II
ENA 418	Rural Youth and Agroecology
ENA 424	Agroecology, Health and Popular Education
ENA 427	Homeopathy and Agroecology
FIT 454	Organic Fruit Growing
FIT 490	Agroecology and Organic Agriculture
FIT 491	Agroecology II
NUR383	Sustainable Food and Nutrition Security
PRE411	Environmental Sustainability
PRE420	Production, Procurement, Processing and Market Potential of Organic Milk and Dairy Products
PRE431	Combination of Educational Knowledge and Practices
TGA 392	Agroforestry Systems and Agroecology

2) (Post)Graduate Courses

CODE	NAME
ENF 645	Agroforestry
ENF 750	Economy of Renewable Natural Resources
ENG 723	Climate Change and Impacts on Agriculture
ERU 615	Peasantry, Culture and Society
FIT 664	Homeopathy in Agriculture
FIT 691	Agroecology
SOL 647	Research Methodology in Agroecology
AGR 725	Agriculture, Environment and Sustainable Development
AGF-621	Conservation and Management of Agricultural Ecosystems
AGF-631	Earth dynamics, Soils and Nutrient Cycling
ERU 607	State and Public Policies for Rural Development

3) Lines of Research in (Post)Graduate Programs

(POST)GRADUATE PROGRAM	LINES OF RESEARCH
AGROECOLOGY	Management of tropical agroecosystems
AGROECOLOGY	Agrifood systems of family farmers
AGROECOLOGY	Physical and biogeochemical processes and resource dynamics in agroecosystems
APPLIED BIOCHEMISTRY	Physical and biogeochemical processes and resource dynamics in agroecosystems
FOREST SCIENCE	Environment and nature conservation
GEOGRAPHY	Socio-environmental issues and dimensions of nature
SOILS AND PLANT NUTRITION	Organic matter and sustainability of agroecosystems
MANAGEMENT AND CONSERVATION OF NATURAL AND AGRARIAN ECOSYSTEMS	Biodiversity Conservation
RURAL EXTENSION	Governance of Common Resources, Agrifood Systems and the Environment



Extension

Within the last 10 years, 109 events in Agroecology were held at UFV. Some of them are listed below..

1. Rural Development of Family Farming

- Solidarity Economy and Agroecology
- Cooperativism, family farming, women and Agroecology
- Seminar on Labor cooperativism - talks on collaborative organizations and Agroecology

2. Education

- Agroecology and Rural Education
- Nutrition and agroecology: alternatives to live well
- Rural Education and Agroecology Training course

3. Food and nutrition security

- Workshops on Agroecology and Sovereignty and Food Security.
- Nutrition and Agroecology: alternatives to live well

4. Sustainability of Agroecosystems

- Seminar on Animals for Agroecology
- Homeopathy and Agroecology Workshop

5. Multidisciplinary Events

- Monthly seminars named “Coffee with Agroecology”
- Agroecology, Solidarity Economy and Gender Training Course
- Annual Symposiums on Agroecology Graduate Studies at UFV – SIMPA
- Agroecology and University Extension

Also in the period of 10 years, 22 extension/outreach courses focused on Agroecology were provided, including:

1. Rural Development of Family Farming

- Course on the Planning of Prosperous Spaces - Healthy Environment and Agroecology.
- Permaculture, agroecology and homeopathy in the planning of rural property and housing.

2. Education

- Field Education and Agroecology
- Homeopathy in Agroecology: student training at Escola Família Agrícola Puris
- Environmental Education and Agroecology

3. Food and nutrition security

- Dairy Products, Food Systems and Food and Nutrition Security.
- Food security and food reuse.

4. Sustainability of Agroecosystems

- Agroecology and Organic Agriculture
- Course on Homeopathy in Agroecology
- Agroecology and Organic Agriculture
- Agroecology Course



From 2002 to 2023, 109 Extension Projects were registered in various Agroecology areas; 37 on Sustainability of Agroecosystems; 35 on Education; 26 on Rural Development; and 11 on Food and Nutritional Security, as exemplified below.

1. Rural Development of Family Farming

- Support for the construction process of the Participatory Quality Assurance System for Organic and Agroecological Production in the Zona da Mata of Minas Gerais
- Creation and development of a participatory system to guarantee the organic quality of products from family farming in the Zona da Mata of Minas Gerais.
- Family farming and the (in)visibility of black women: the solidary market acting as a resistance path.
- The impact of Fairtrade on organizations and regions where it operates: the construction of an information system for Brazilian fair trade organizations

2. Education

- Agroecology in Network: Experiences of Community Digital Multipliers of Quintal Solidário.
- Circuito Cultural de Feiras (Cultural Circuit of Fairs)(CCF) in Viçosa and surrounding region.
- Juçara Açaí - Knowledge and flavors: strengthening Rural Education, Agroecology and Family Farming at EFA-PURIS.
- The teaching and sharing of knowledge about Homeopathy, Medicinal Plants and Agroecology in Rural Education.

3. Food and nutrition security

- School Meals and Agroecology: Educational Processes to Guarantee Supply to the Institutional Market.

- Promotion of health and Food and Nutrition Security in populations affected by mining in Mariana and Ouro Preto during the COVID-19 pandemics.
- Support for Food and Nutritional Security in the School Environment: Training of School Feeding Agents in the Municipalities of the State of Minas Gerais.
- Food and Nutritional Sovereignty and Security in Rural Black and Quilombola Communities.

4. Sustainability of Agroecosystems

- Porco da mata: agroecological pig farming - a sustainable alternative for family farming.
- Rescue and potential use of non-conventional food plants (pancs) in the Zona da Mata region of Minas Gerais.
- Traceability and quality coffee training for agroecological family coffee growers in Araponga-MG.
- Soil management in agroforestry systems: practices for recovering and restoring degraded areas and supporting agricultural production in communities in the surroundings of Florestal-MG.

The **Extension Programs** encompass several projects, with continuous execution and broader scope, compared to the activities previously conducted. In the last 10 years, 9 Extension programs associated with Agroecology have been registered, including:

- Programa Cafeicultura Familiar de Montanha (Mountain Family Coffee Farming Program).
- Rural Education and Social Technologies.
- Program for the development of digital tools for the sustainable management of rural properties.
- Strengthening and Expansion of Agroecology in the Zona da Mata of Minas Gerais.



Knowledge Adaptation for Sustainable
Agriculture and Market Access

AKSAAM is a donation project from the International Fund for Agricultural Development (IFAD) executed by the UFV's Institute of Public Policies and Sustainable Development (IPPDS), which works **to improve access for family farmers in the semi-arid region** to technologies and knowledge, aiming to increase their **productivity** and improve their **market access** conditions. It targets knowledge management through the systematization, analysis, adaptation and comparison of experiences in **eradicating poverty** and promoting **local development**, by focusing on the productive inclusion of **women, young people and indigenous and quilombola communities**.

