Applying agroecology in IFAD operations

WEBINAR

3 October 2019, 11:00 - 12:30
Agenda

11:00 Introduction

11:05 Agroecology: Framework, upscaling initiative, concept, business cases and cost-benefits

11:25 Applying agroecology in IFAD operations: A stocktake

11:35 IFAD experiences with agroecology
  • ProDAF, Niger
  • ASPIRE, Cambodia

12:05 Discussion (and closure)
Opening and closing remarks

Thouraya Triki, Director, Sustainable Production (PMI), Markets and Institutions Division, IFAD

Romina Cavatassi, Lead Technical Specialist, Environment, Climate, Gender and Social Inclusion Division (ECG), IFAD
Speakers

Emma Siliprandi,
lead focal point for the Scaling up Agroecology Initiative, FAO

Sebastien Subsol,
climate change and environment specialist, IFAD

Emile A. Frison,
member of the International Panel of Experts on Sustainable Food Systems

Rikke Grand Olivera,
Senior Global Technical Specialist, Natural Resources Management, IFAD

Karan Seghal,
Renewable Energy Technologies Officer, IFAD
Applying agroecology in IFAD Operations

EMILE A. FRISON
Our current food systems are not sustainable

Triple burden of malnutrition
• Hunger, micronutrient deficiencies, obesity & NCDs

Negative impact on health
• Pesticide poisoning, antibiotic resistance, nitrates in drinking water

Environmentally unsustainable
• Biodiversity losses, water pollution, soil degradation, GHG emissions, unsustainable use of natural resources, low resilience ...

Social inequities
• Poverty, disempowerment ...

Neglect of cultural values
→ Directly associated with current food systems based on industrial agriculture
We need transformational change

IPCC report on land
IPBES report on Biodiversity loss
HLPE report on Agroecology
A different paradigm: diversified agroecological systems

- Economic
- Environmental
- Health
- Social
- Cultural

Agroecology is not just a set of agricultural practices, but is also about changing social relations, empowering farmers, adding value locally and privileging short value chains.
Economic outcomes of diversified agroecological systems

- Total productivity → =
- Income → +
- Resilience and stability → +++

→ Agroecology: to get out of poverty
Outcomes of diversified agroecological systems: productivity

The productivity of diversified grassland systems

1. Data from Pretto et al., 2015
2. Data from Cardinale et al., 2008
## Increased economic performance

<table>
<thead>
<tr>
<th>Country</th>
<th>Indicator</th>
<th>Performance A Versus Conventional</th>
</tr>
</thead>
<tbody>
<tr>
<td>Netherlands</td>
<td>Income/kg of milk</td>
<td>+ 110%</td>
</tr>
<tr>
<td>France</td>
<td>Income/family worker</td>
<td>+ 73%</td>
</tr>
<tr>
<td>Germany</td>
<td>Income/dairy cow</td>
<td>+ 60%</td>
</tr>
<tr>
<td>Italy</td>
<td>Income/hour</td>
<td>+ 15%</td>
</tr>
<tr>
<td>Ireland</td>
<td>Gross margins per hectare</td>
<td>+75-80%</td>
</tr>
<tr>
<td>Poland</td>
<td>Income/farmer</td>
<td>+ 53%</td>
</tr>
<tr>
<td>Spain</td>
<td>Gross Value Added</td>
<td>+ 35%</td>
</tr>
</tbody>
</table>

Environmental outcomes of diversified agroecological systems

- Keep/put carbon in the soil: turns agriculture into a solution rather than a problem
- Boost biodiversity
- Restore degraded land
- Improve ecosystem services:
  - Water and nutrient cycling
  - Pollination
  - Pest and disease management

“In summary, increasing the resilience of the food system through agroecology and diversification is an effective way to achieve climate change adaptation (robust evidence, high agreement).”

IPCC, 2019: Special Report on Climate Change and Land (SRCCL), Ch5 p51
Nutrition and health outcomes

- Avoids the negative health outcomes of industrial agriculture: pesticides/antibiotics/nitrates
- Diverse, healthy diets
- Increased levels of beneficial nutrients, such as omega 3 fatty acids, and antioxidants such as polyphenols...

Social and Cultural outcomes

- **Social:**
  - More employment
  - Employment throughout the year
  - Closer links with consumers

- **Cultural:**
  - Cultivation of diversity of traditional crops
  - Integration of traditional knowledge
What prevents change: 8 Lock-ins

- Export Orientation
- Expectation of Cheap Food
- Path Dependency
- Concentration of Power
- Measures of Success
- Compartmentalized Thinking
- Short-term Thinking
- Feed the World Narratives
Market concentration in multiple sectors

- 3 companies control 60% of commercial seed market.
- 7 companies control majority of fertilizer sales.
- 3 companies share 71% of agrochemical market.
- 4 firms account for 97% of private R&D in poultry.
- 4 firms control up to 90% of the global grain trade.
Changing the paradigm

1. Develop new indicators for sustainable food systems.
2. Shift public support towards diversified agroecological production systems.
4. Use public procurement to support local agroecological produce.
5. Strengthen movements that unify diverse constituencies around agroecology.
6. Mainstream agroecology and holistic food systems approach into education & research agendas.
7. Develop food planning processes and joined-up ‘food policies’ at all levels.

Webinar on the Scaling-up Agroecology Initiative, IFAD, 3 October 2019
Measuring what matters

GDP GROWTH

NET CALORIE PRODUCTION

YIELD / HECTARE

PRODUCTIVITY / WORKER

INCOME

NUTRIENT CONTENT / HECTARE

LOCAL CALORIE & NUTRIENT AVAILABILITY

TOTAL OUTPUTS / HECTARE

TOTAL BIOMASS PRODUCED

RESOURCE EFFICIENCY

ECOSYSTEM SERVICES DELIVERED

LIVELIHOOD RESILIENCE & SOCIAL EQUITY
The transition is already underway...
Different pathways, common goal

- Subsistence agriculture
- Diversified agroecological farming
- Industrial agriculture

Connect to Markets: Diversify, Mechanize, Build knowledge
Relocate: Diversify, Reduce chemical inputs, Build knowledge

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Thank you!

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Webinar

Applying Agroecology in IFAD operation

The Scaling up Agroecology Initiative
Emma Siliprandi
FAO
The Scaling up Agroecology Initiative

Launched by FAO and IFAD, WFP, CBD, UNDP, UN-Environment, WHO (April 2018).

The Initiative:

• aims to accompany and support national agroecology transition processes
• is a framework for concerted action with other UN Agencies and partners
• a funding strategy is being elaborated
• will work on target countries for implementation
• will work with several partners.
The 10 elements of Agroecology

- Responsible Governance
- Diversity
- Synergies
- Efficiency
- Circular and Solidarity Economy
- Human and Social Values
- Co-creation and Sharing of Knowledge
- Resilience
- Recycling
- Culture and Food Traditions

Agroecology contributes to leaving no one behind by addressing the agricultural sustainability challenge in an integrated, holistic way.
## Scaling up Agroecology Initiative

### Areas of work

<table>
<thead>
<tr>
<th>I. Knowledge and Innovation</th>
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<tr>
<td>II. Policy Processes</td>
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<tr>
<td>III. Building Connections</td>
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</table>

### Key actions to scale up agroecology

1. Strengthen the central role of family farmers and their organizations in safeguarding, utilizing and accessing natural resources
2. Foster experience and knowledge sharing, collaborative research and innovations
3. Promote markets for agroecological based products for health, nutrition and sustainability
4. Review institutional policy, legal and financial frameworks to promote agroecology transitions for sustainable food systems
5. Take agroecology to scale through integrated and participatory territorial processes
Global Analytical Framework for the Multi-dimensional Assessment of Agroecology

- Provide an analytical framework(s) to assess the multi-dimensional performance of agroecology
- Pilot regional case studies to test the framework + national and regional workshops
- Build a community of practice
- Global database capturing quantitative, qualitative and spatial data
The analytical framework, step by step

**STEP 0: Description of the context**
- Production system, agroecological zone, existing policies (incl. climate change), enabling environment

**STEP 1: Characterization of Agroecological Transition (CAET)**
- To describe the current status of the system
- Based on 10 elements of agroecology and a survey with descriptive scales
- Can be done as self-assessment by farmer or with extension services/scientists

**STEP 2: Core indicators of performance**
- To measure progress and quantify impact, across systems and regions
- Addressing 5 dimensions for policy makers (identified in the workshop and linked with SDGs)
- Time/cost constraints: keep it simple!.... Essentially based on a survey with farmers

> Database and consolidated analysis
Enhancing collaboration under the Scaling up Agroecology Initiative

• Poverty and climate change
• Research and generation of evidence on environmental and socio economic resilience of small holder farmers
• Training courses for staff members (seminars, webinars, etc.)
• Pilot countries for joint work and evidence building (Mexico, India, Senegal, Nicaragua, S. Tome e Principe, among others).
• Global joint advocacy on agroecology in relevant UN-Fora and global events
• Action Network on Agroecology to be organized under the UN Decade of Family Farming
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12:05 Discussion (and closure)
Analysis of IFAD interventions in agroecology

Webinar: Applying agroecology in IFAD operations

October 2019

Rikke Olivera, PMI, IFAD
IFAD's work on Agroecology (AE) – Why a stock take?

Objectives

First step in upscaling initiative
WG on Knowledge and Innovation

Framework for evaluating results
Create evidence for scaling up.

Develop KM/CB products
-guidelines for project
design and support

Objectives

Improve data for briefings and talking
points on how IFAD is investing in AE

Improve knowledge on
relevance of AE in different
contexts for rural poor
Preliminary phase – develop and pilot the framework

Level 1: AE practices in farming systems
Level 2: AE practices at landscape level
Level 3: Markets supporting AE produce
Level 4: Policies and instruments enabling AE and sustainable food systems

Contribution to crosscutting mainstreaming priorities: Climate change, nutrition, gender, youth and indigenous peoples
Preliminary phase – develop and pilot the framework

<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>Sublevel 1.1 Activities ...</td>
<td>Sublevel 2.1 Activities ...</td>
<td>Sublevel 3.1 Activities ...</td>
<td>Sublevel 4.1 Activities ...</td>
</tr>
<tr>
<td>... Sublevel 1.2 Activities ...</td>
<td>... Sublevel 2.2 Activities ...</td>
<td>... Sublevel 3.2 Activities ...</td>
<td>... Sublevel 4.2 Activities ...</td>
</tr>
</tbody>
</table>

Included all good things you can do under AE and sustainable food systems. Results of pilot on 8 projects:

1. Too many projects would check one of the many boxes – no weighting of importance between levels
2. Information value of the stock take would be low
3. Definition of AE too broad – Framework needs revision
Revision of framework – what are the basic key elements or principles that define AE?

Application of ecological principles to farming systems – Three key elements:

1. Increasing efficiency while reducing external inputs
2. Recycling water, nutrients, biomass, energy, etc.
3. Increasing diversity and integration of sectors in farming systems (various crops and animals) to achieve efficiency and recycling, spreading of risks and increase resilience.
Does the project promote one or more of the **three key elements** of AE in farming systems and landscapes (Level 1 and 2)?

- **YES**
  - Continue to analyse level 3 and 4 and crosscutting mainstreaming priorities: Climate change, nutrition, gender, youth and indigenous peoples

- **NO**
  - It is not an AE project
Level 1 inclusion of the three key elements

<table>
<thead>
<tr>
<th>AGROECOLOGY KEY DRIVERS AT FARM LEVEL (YES/NO) (Resilience)</th>
<th>LEVEL 1: FARM LEVEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>RESOURCE USE EFFICIENCY REDUCTION/SUBSTITUTION EXTERNAL INPUTS (Efficiency)</td>
<td>RECYCLING</td>
</tr>
<tr>
<td>Water management and soil erosion control</td>
<td>Soil fertility management</td>
</tr>
</tbody>
</table>
Level 2 inclusion of the three key elements

<table>
<thead>
<tr>
<th>Participatory Land use planning</th>
<th>Landscape planning, governance and learning</th>
<th>Landscape management</th>
<th>Total</th>
<th>Level 2 score</th>
<th>Comments Level 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Building/Strengthening community institutions for NR governance (Responsible Governance)</td>
<td>Community owned research and learning agenda (Co-creation and sharing)</td>
<td>Community gardens/cultivation</td>
<td>Community pasture/fodder management</td>
<td>Community forest/woodland management</td>
<td>Land and water management</td>
</tr>
</tbody>
</table>
### Level 3: Markets Supporting Agroecology

<table>
<thead>
<tr>
<th>Value addition</th>
<th>Access to market</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food processing</td>
<td>Access to differentiated markets</td>
</tr>
<tr>
<td>Safe Storage</td>
<td>Innovations organising demand and supply</td>
</tr>
<tr>
<td>Labelling, community-supported certification systems</td>
<td>Infrastructure and physical spaces for farmers markets</td>
</tr>
<tr>
<td></td>
<td>Public procurement of agroecological produce</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Total</th>
<th>Level 3 total score</th>
<th>Comments Level 3</th>
</tr>
</thead>
</table>

**IFAD**
Investing in rural people
# Level 4 and Mainstreaming Priorities

| Level 4: Policies and Instruments Enabling Agroecology and Sustainable Food Systems | The thematic elements |
|---|---|---|---|---|
| Enabling policies | Enabling regulations | Enabling instruments and services | NUTRITION RESILIENCE | GENDER | YOUTH | IPs | CLIMATE CHANGE |
| Mechanisms for policy dialogue | Institutional strengthening for formulation, implementation and M&E of AE policies and instruments | Food safety and nutrition | Agrochemicals and animal drugs | Seeds and plant genetic resources | Support to public institutions for agroecology research and extension | Credit lines, incentives and insurance products | Climate change and GHG information systems and services | Level 4 total score | Comments Level 4 |

**Level 4 and mainstreaming priorities**

**IFAD**

**Investing in rural people**
Resource use efficiency and reduction/substitution of external inputs

Recycling

Diversity and integration of sectors

LEVEL 1: FARM LEVEL

LEVEL 2: LANDSCAPE LEVEL

LEVEL 3: MARKETS SUPPORTING AE

LEVEL 4: POLICIES AND INSTRUMENTS ENABLING AE AND SUSTAINABLE FOOD SYSTEMS

RESILIENCE

EFFICIENCY

DIVERSITY

RECYCLING

SYNERGIES

HUMAN AND SOCIAL VALUES

CULTURE AND FOOD TRADITIONS

CIRCULAR AND SOLIDARITY ECONOMY

RESPONSIBLE GOVERNANCE

CO-CREATION AND SHARING OF KNOWLEDGE

CLIMATE CHANGE

NUTRITION

GENDER

YOUTH

INDIGENOUS PEOPLES

The IFAD framework and the FAO 10 elements of AE

The IFAD framework and the FAO 10 elements of AE

CULTURE AND FOOD TRADITIONS

HUMAN AND SOCIAL VALUES

CIRCULAR AND SOLIDARITY ECONOMY

RESPONSIBLE GOVERNANCE

CO-CREATION AND SHARING OF KNOWLEDGE
PROJECTS ANALYSIS AND FIRST RESULTS

- Two examples of projects among the analysed ones:

1. **CAMBODIA (APR)** Agricultural Services Programme for Innovation, Resilience and Extension (ASPIRE)
2. **BRAZIL (LAC)** Policy Coordination and Dialogue for Reducing Poverty and Inequalities in Semi-Arid North-east Brazil (PROCASE)
1. Cambodia ASPIRE

- Only one of the three AE key elements addressed at farm level - the efficiency;
- Integration of sectors related practices not in the PDR, however the Supervision Report (Aug, 2018) mention the project will “provide evidence of the benefits of integrated farming systems for the resilience of farming communities exposed to climate change and extreme events.”
- Farm level – 4 out of 6 activities (no Soil fertility management and alternative energy);
- Landscape level – 2 out of 8 activities (Community owned research and learning agenda and Land and water management);
- Market level – 1 out of 7 activities (Access to differentiated markets).
- Policy level – 1 out of 8 (policy makers and farmers formulats policies on agriculture services. However, supervision report mentions "Agroecology/IFS guidelines have been produced by the General Directorate of Agriculture"

The project gains a total of 11 points out of 34.
2. Brazil PROCASE

• All three AE key elements are being addressed at farm level;
• Farm level – 6 out of 6 activities are being implemented;
• Landscape level – 4 out of 8 activities are being implemented;
• Market level – 5 out of 7 activities are being implemented;
• Policy level – 2 out of 8 activities related to AE are being implemented.

The project gains a total of 22 points out of 34.
IFAD small working group on Agroecology

• To accompany the PMI/ECG stock take and work on AE we would like to invite interested friends and critical voices of AE to join a small WG.

• First task: After the framework has been applied to 10 projects, assess if adjustments are needed and provide inputs to the weighting within and between levels for the final score.

• Subsequently, what are potentials and needs for scaling up?

• Interested to join the WG? Please contact Rikke Olivera r.olivera@ifad.org and/or Doina Popusoi d.popusoi@ifad.org.
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Projet de développement de l’agriculture familiale au Niger (PRODAF)
- PRODAF is supported by the Adaptation for Smallholder Agriculture Programme (ASAP), a multi-donor trust fund supporting 41 IFAD projects promoting smallholder farmers’ adaptation to climate change. ASAP invests in agroecology which offers both adaptation and mitigation co-benefits.

- PRODAF is expected to reach 240,000 smallholders and aims to:
  - Link smallholders to markets in the Maradi, Zinder and Tahoua regions, with a production basin logic
  - Restore landscapes and promote sustainable agricultural techniques
  - Improve water access for agriculture
Agro-ecology at farm level

- 65,000 producers engaged in farmer field schools and ACAP (farmers advisory groups)
- Promotion and good rates of adoption of:
  - Assisted natural regeneration (RNA) of fertilizer trees within cereal fields
  - Fertilizer micro dosing
  - Bio pesticides
  - Use of manure and compost

Adoption rates:

- Improved seeds: 87%
- Alternative control: 53%
- RNA: 47%
- Microdose: 67%
- Composting: 60%
- Seeding rate: 77%
- Combining 3 plants: 80%

Adoption: green, No adoption: red
Agro-ecology at landscape level

- **Pasture restoration** on more than 11,000 hectares
- Use of a mix of native species to improve resilience and biodiversity
- **Employment creation**: women-managed tree nurseries
- Planting through a water harvesting technique: 300 half moons per hectare
- Need for guardians to keep the enclosures safe from cattle invasion during at least 3 years
- **Food security**: direct impacts on vulnerable people; cash delivery to build the half moons
Biomass regeneration on restored pasture (beyond 300 kg of dry matter per hectare)

View of pastoral land before and after restoration (in dry season)
Market Linkage

• Promotion of new products: moringa and beans pasta: high impact on child nutrition

• New business opportunities through the selling of non timber products (fodder and acacia pods)
Agro-ecology in policies

• Strong link with the I3N national food security programme: les nigériens nourrissent les nigériens
• PRODAF promotes techniques included in the NDC and fosters their scaling up
• Link with the new policy on agricultural extension, linking public and private delivery systems
Some key highlights

- Assisted natural regeneration is now applied on an additional surface of 86,000 ha and contributes to nutrient recycling while increasing millet yields (increases up to 200 kg per ha)
- Diversification at farm level improves resilience and agriculture/livestock integration
- Reduction in the use of non organic inputs for market gardening
Scaling Up Climate Resilient Agriculture (SUCRA)

Karan Sehgal
Renewable Energy Technologies Officer in IFAD
Scaling Up Climate Resilient Agriculture (SUCRA)

• **Budget:** USD 1.5M

• **Target areas:** Kampong Chhnang and Pursat Provinces, Cambodia

• **Implementing Partners:**
  - Royal University of Agriculture
  - World Overview for Conservation and Agriculture Technologies (WOCAT)
  - International Institution of Rural Reconstruction (IIRR)

• **Duration:** May 2018 to March 2022 (4 years)
Roles and Responsibilities of Implementing Partners

**RUA**
- Participatory approach for selection of farmers
- Baseline, mid-term and completion surveys
- Mainstreaming IFS into curriculum

**IIRR**
- Farmer mobilization: 917 farmers (568 females)
- Training key actors on IFS and financial literacy
- CEW training and business plan development
- Identification and construction of IFS support structure

**WOCAT**
- Analytical framework for ecological assessment
- Capacity building on ecosystem services
- Assessment at farm and landscape level i.e. carbon benefits tool
To provide evidence of the positive impacts of IFS on the resilience of communities

1. Improve household food and nutrition security
2. Increase incomes and improve livelihoods
3. Enhance ecosystem functions of the land at local and possibly landscape levels
4. Improve smallholder knowledge of climate risks and the means of achieving sustained resilience
5. Generate evidence for decision makers to inform policy on scaling up IFS.
Activities to date

• **Confirmation of target provinces and districts:**
  • Selection of sites based on targeting criteria using provincial level zoning, climate vulnerability maps, market and value chain analyses.

• **Analysis of existing Integrated Farming Systems (IFS) models:**
  • Identified existing IFS in different agroecological zones, composite packages of vegetative materials that meet food and nutrition (F&N), high value crops and support structures for access to markets (i.e. aggregation points, post-harvest processing etc.)

• **Methodology for farmer mobilisation and extension support for IFS promotion:**
  • 12 Commune Extension Workers (CEW) recruited to work directly with 1500 farmers;
  • $1000 matching grant to interested CEWs to help set up as a functioning business and service provider for farmers.
Methodology for Site Selection

**Selection of Villages**
- NCDD climate vulnerability mapping
- Guidance from local authorities
- Guidance and interview with village chiefs

**Selection of Districts**
- PDAFF zoning and vulnerability map
- PDAFF market analyses
- Digital Elevation Model (DEM) Map

**Selection of communes**
- Verification by field visit and meeting with PDAFF
### National Committee for Sub-Democratic Development (NCDD) Mapping

<table>
<thead>
<tr>
<th>Areas with LESS FAVOURABLE Market Conditions</th>
<th>Presence of Preserved Natural Resource Base</th>
<th>Potential to Promote Integrated Farming System</th>
</tr>
</thead>
<tbody>
<tr>
<td>Climate severely affected due to mono-cropping and inadequate access to markets</td>
<td>Stabilized soil quality content and water saving for irrigation to diversified crops and animals.</td>
<td>Mixed crop-livestock systems, multiple fodder trees/plants and fish pond culture for stabilized agro-ecological system to promote resilient farms and generate income</td>
</tr>
</tbody>
</table>
Activities to date (continued)

• Define transparent and accountable methodology for providing incentives to farmers:
  • $500 provided as a matching grant to farmers willing to make the transition to IFS.

• Define analytical framework, indicators, assessment methodology and M&E system for data collection:
  • Finalized the analytical framework for tracking appropriate indicators

  • Methods for on-farm monitoring, methodology for monitoring ecosystem services at landscape level and survey methodology for collecting farm-level ecological data.
Analytical Framework – Assessing the health of land resources

Which indicators to analyze?

Water
- quality
- availability/seasonal
- water levels
- reliability

Nutrients
- surplus
- deficiency

Soil
- cover
- crusting/sealing
- soil organic matter
- salinity
Challenges

Institutional
Project duration too short to clearly demonstrate the ecological benefits (which take time i.e. soil and water conservation practices, bee pollination services etc.)

Policy
Limited expertise on natural resource management and support to relevant decision-making and policy dialogue

Economic
Fiscal incentives for farmers to switch from current practices into IFS system
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Closing remarks

Romina Cavatassi, Lead Technical Specialist, Environment, Climate, Gender and Social Inclusion Division (ECG), IFAD
Applying agroecology in IFAD operations

THANK YOU!

Any queries? Contact Oliver Mundy or Maria Elena Mangiafico