



Improving agricultural productivity in the Dry Corridor of Nicaragua

An initiative to promote agricultural diversification and the efficient water use in Nicaragua.



United States / Argentina / Costa Rica / Mexico / Bolivia / Chile / Colombia / Dominican Republic / Honduras / Nicaragua / Panama / Paraguay / Peru / Spain / Uruguay / Venezuela

Evaluating production models.

The implemented initiative

FLAR and CIAT developed a successful experience in water harvesting systems in the Dry Corridor of Nicaragua. The experience was presented to a competition on successful innovations for the adaptation of family agriculture to climate change, organized by FONTAGRO, the GEF and the IDB. The

case was a winner and showed great potential for large-scale use. Consequently, the Nicaraguan authorities asked FONTAGRO and the GEF for support to conduct a pre-feasibility study to guide a process of diversification, increase of agricultural productivity and improvement of value chains, based on water harvesting.

Analyzing the feasibility of productive diversification.

The technological solution

Qualitative and quantitative methods were used to analyze information collected by various institutions, comprising 145,333 family farms in 108 municipalities of the Dry Corridor. Results were used to characterize agricultural production systems and make recommendations for the selection of farmers for future interventions. A technical-economic-financial analysis of different productive and water management models was carried out, considering the type of family agriculture (subsistence, transitional and commercial). The

feasibility of implementing the different models was determined by evaluating their economic returns. Value chains for different products were also analyzed. The risks associated with their implementation were evaluated. Finally, a participatory workshop with 42 representatives of various organizations working in the Dry Corridor was held, to determine strengths, weaknesses, opportunities and threats of the various models.

Summary of indicators of an economic-financial analysis for an Integrated Water Management System (GIRH, for its Spanish acronym) for identified diversified production models

| Type | Model | Costs (USD) | Income (USD) | Benefits (USD) | NPV (USD) | Benefit-cost | Profitability | IIR | Payback period (years) |
|--------------------------|---------|-------------|--------------|----------------|-----------|--------------|---------------|-------|------------------------|
| Subsistence family farm | Model 1 | 1088 | 3945 | 2857 | 83485 | 2.9 | 227 % | 470 % | 1 |
| | Model 3 | 1781 | 7276 | 5496 | 169726 | 3.6 | 283 % | 920 % | 1 |
| | Model 7 | 3727 | 11277 | 7550 | 230627 | 2.7 | 189 % | 640 % | 1 |
| Transitional family farm | Model 3 | 12405 | 60019 | 47614 | 1447678 | 4.1 | 330 % | 360 % | 1 |
| | Model 5 | 6835 | 22414 | 15579 | 410970 | 2.6 | 228 % | 120 % | 1 |
| | Model 7 | 26334 | 78728 | 52394 | 1606747 | 2.8 | 199 % | 380 % | 1 |
| Commercial family farm | Model 1 | 42196 | 151672 | 109476 | 3120134 | 3 | 259 % | 180 % | 1 |
| | Model 3 | 56105 | 263098 | 206992 | 6307630 | 4 | 369 % | 350 % | 1 |
| | Model 5 | 30592 | 110499 | 79908 | 2153636 | 2.8 | 261 % | 130 % | 1 |

NPV= Net Present Value | IIR = Internal Rate of return

Flourish data visualisation



2500

+ farmers potentially benefited



8

Models of diversified agricultural systems assessed for three types of family farms



2

Almost twice more benefits in subsistence and commercial farms with diversified agricultural systems

Results

- 27 municipalities with severe effects of drought were identified, 33 with high, and 48 with low.
- 5% of family farmers have access to irrigation.
- 59% of the farms are based on maize and beans, 27% also raise cattle, and 11% include cucurbitaceae.
- There is greater adoption of good agricultural practices among farmers with irrigation than those without irrigation.
- The productive and water harvesting models for

transitional and commercial family farmers showed high returns, and short payback periods.

- The recommended model for subsistence farmers is based on an increase in soil organic matter.
- The use of drought tolerant varieties was recommended.
- It is feasible to implement diversified production models with high value crops and livestock production and their integration with water management systems.

MÁS INFO



Main donors



Participating Organizations

