Westfälische Wilhelms-Universität Münster

Cadena González A.L.*, Buttschardt T.

Institut für Landschaftsökologie, Applied Landscape Ecology/ Ecological Planning

AGROFORESTRY SYSTEMS AS ALTERNATIVE FOR CONSERVING NATIVE PLANT SPECIES AND IMPROVING AGRO-ECOLOGICAL KNOWLEDGE

The problems

Depletion and displacement of native plant species by exotics worldwide

Depletion of natural environments and poor agro-ecological knowledge.

Promising alternative

Apart from the manifold benefits of agroforestry systems (AFS), they may also help to conserve native plant species.

Aims of our project

To analyze local factors that determine if farmers cultivate native species in AFS or not in the tropics and temperate regions, and to find out if lack of agro-ecological knowledge is a significant factor.

Structure of the study

Literature review

Case studies in the tropics and temperate regions

Case study in the tropics: La Vega, Colombia

1. First visit to locality:Introduction/community meeting.

2. Questionnaires

3. First interviews

4. Process of first data collected and literature consultation

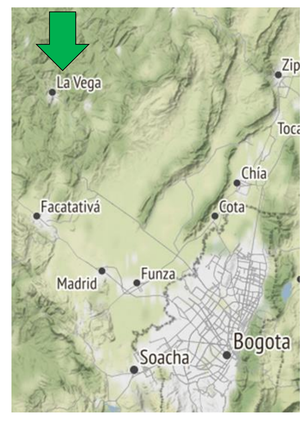
5. Second visit to locality/ community meetings, visits to farms and implementation of final interviews

6. (Current stage) Characterization of reported plant species during interviews (Agroecological requirements, Uses, Status of threat)

7. Further data analysis and writing process.

8. Visit to locality in order to submit results and to inform local authorities and responsible institutions of the final contributions of the project. .

Case Study in the tropics: La Vega municipality department of Cundinamarca, Colombia. At 5°00‘22.43“N, 74°20‘38.06“W.



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The Scenery:. 1) Wide elevational range (1100-2700 m.a.s.l.), marked climatic gradient and diverse geographical structure; 2) Poverty among farmers/ subsistence farmers; 3) Lack of research on potentials of agroforestry systems at local level; 4) Lack of information of potentials from indigenous plant species.

Preliminary results in numbers

1) 5 representative villages were visited; 71 farmers participated in the study.
2) To date, we have characterized a total of 152 species including crops and trees.
3) 103 species of this list have been identified as perennials, and 20 species belong to the group of annuals and biennials.
4) Within the previous list of species, 50 are exotic and 71 natives; 22 are nitrogen-fixers, 17 species are resistant to drought, some of them with clear limits of resistance as they can only survive droughts of maximum three months.
5) The most popular agroforestry systems in the locality are homegardens and intercropping systems represented by approximately 60 % and 10% respectively.

Further preliminary results

1) The cultivation of exotic woody species is greatly intensified (Fig. 1), and farmers are mainly depending on few crops (*Coffea arabiga* and *Thebroma cacao*). Other popular exotic species are *Persea Americana*, *Citrus nobilis* and *Citrus aurantium.*
2) In the case of herbaceous plants, the inclusion of native species in AFS is more popular than exotics species (Fig. 2).

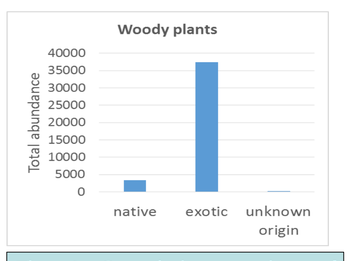

Fig. 1 Cumulative number of woody plants species on 26 farms in La Vega, Cundinamarca, Colombia, according to their place of origin.

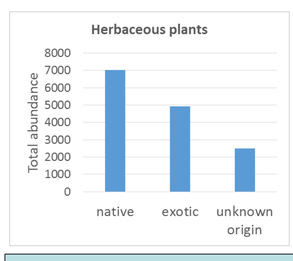

Fig. 2 Total cover (m²) of herbaceous plants species on 26 farms in La Vega, Cundinamarca, Colombia, according to their origin.

Intercropping system with Coffee arabiga and Mussa sp. Background with Inga. Naguy village, La Vega-Cundinamarca, Colombia.

Expectations

To contribute at local level to: (i) the improvement of design and structure of AFS based on the potentials of local plant species and agro-ecological, (ii) the promotion of diversification, (iii) the conservation of native plant species that will be achieved during the visits, talks and interviews with farmers, and (iv) the process of communication of results and transfer of knowledge which is expected to be achieved by the elaboration of a report and direct communication with farmers.

* Corresponding author: a_cade01@uni-muenster.de