Contribution of woody species in pasture production in small farms in Tenantitla, Benito Juarez, Veracruz, Mexico

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Introduction

In Mexico, livestock is one of the most widespread economic activities in rural areas and many communities base their livelihoods in this agricultural activity (Guevara and Moreno-Casola 2008). Veracruz is one of the leading states nationwide, with the largest number of livestock for meat and milk are held, which is distributed to state and national levels (INEGI 2013). However, in indigenous areas of the state, there is no information on ranchers livelihoods and tree management in their paddocks.

Objective

Identify the contribution of woody species in active paddocks to livelihoods and livestock system Tenantitla community, Benito Juarez, Veracruz, Mexico.

Materials and methods

Study area

Tenantitla community is a community that belongs to the Nahua ethnicity and they speak the Nahuatl language. It is part of the Benito Juarez municipality, located in northern part of Veracruz State (Figure 1), between 260-400 masl, with an average temperature of 23 ° C. Among the main economic activities are agriculture and livestock.

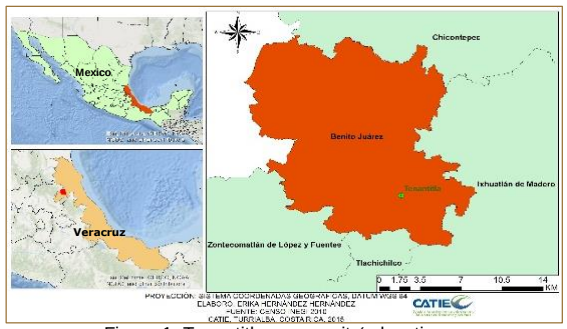

Figure 1. Tenantitla community´s location

Methodology

Semi-structured surveys were applied to ranchers (n= 30) representing 49% of the ranchers population for resources (capital) community (Flora and Thiboumery 2005) and the livestock component, the purpose of identify what are the resources related to livestock activity and woody component with which the community has Tenantitla.

Workshops with focus groups with families of ranchers surveyed were conducted to identify livelihoods (Imbach 2012) that perform for their livelihoods and the importance of each of these activities.

For identification of woody species in pastures, paddocks (n = 30) of the total registered farms surveyed presence of silvopastoral systems (scattered trees and live fences) were selected. All trees present counts were performed with dap≥10 cm in scattered trees and live fences transects 100 linear meters were defined.

Results

Community's resources

From livestock, many other activities are triggered (Figure 2).

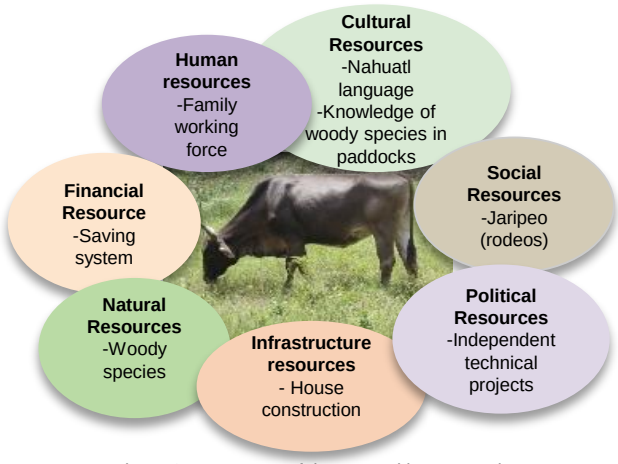

Figure 2. Resources of the Tenantitla community

Livelihoods

Livelihoods activities performed by producers in the community for subsistence are presented (Table 1).

Table 1. Livelihoods community Tenantitla

Main livelihoods	Livestock activity	Agriculture	Wood production in paddocks	Firewood production in paddocks
It satisfies the necessity to:	•Save money •Build a house •Disease treatment •Payment to pawns •Distraction for youth (Rodeos)	•Human feed •Animal feed •Sale and purchase of other foods	•For furniture elaboration •Sale and purchase of other foods •Purchase of medicines •Payment to pawns	•Money saving by not buying •For cooking

Livestock activity

Two systems of livestock production, whose management is handled with family workforce were identified, feeding livestock is under extensive grazing (Table 2).

Table 2. Livestock subsistence system of the Tenantitla community

Production system	n=30	Stocking (AU/has)	MC	PAA (has)	TA	FP	PH
Livestock breeding	47%	1.1	0%	2.5	0%	47%	47%
Livestock breeding with agriculture	53%	0.7	13%	2.2	0%	53%	53%

MC= Milk consumption, **PAA**= Paddock average area
TA= Technical assistance, **FP**=Family participation, **PH**= People hired

Arboreal component

1752 individuals scattered trees, distributed in 51 species, and 21 families were recorded. In live fences 114 individuals corresponding to 23 species, and 16 families were recorded.

Tree density in livestock breeding, and livestock breeding more agriculture (Table 3).

Table 3. Tree density in scattered trees and live fences

Production system	n	Scattered trees (N° trees/has)	Live fences (N° trees/100m)
Livestock farming	15	32	16
Livestock farming and agriculture	15	23	14

Benefits of trees

Ranchers (n=30) benefit from different ecosystem provisioning services generated by scattered trees and live fences present in the paddocks, 100% of them benefits for shade livestock, forage and firewood, 83% fruit, 70% wood, 37% of medicinal products and 27% of edible flowers.

Conclusions

The livestock management is family working force without technical assistance. Livestock is an important means of life seen for 49% of the livestock population of the community Tenantitla, it represents savings system. Scattered trees and live fences are important elements in the livestock community system for provisioning ecosystem services that the population gets.

Bibliografía

Flora, C; Thiboumery, A. 2005. Community capitals: poverty reduction and rural development in dry areas. Annals of Arid Zone 45(3&4):239-253.

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