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1ST INTERNATIONAL MEETING ON Milk Vector of development

"Assesment of the sustainability of small-scale dairy systems in Central Mexico"

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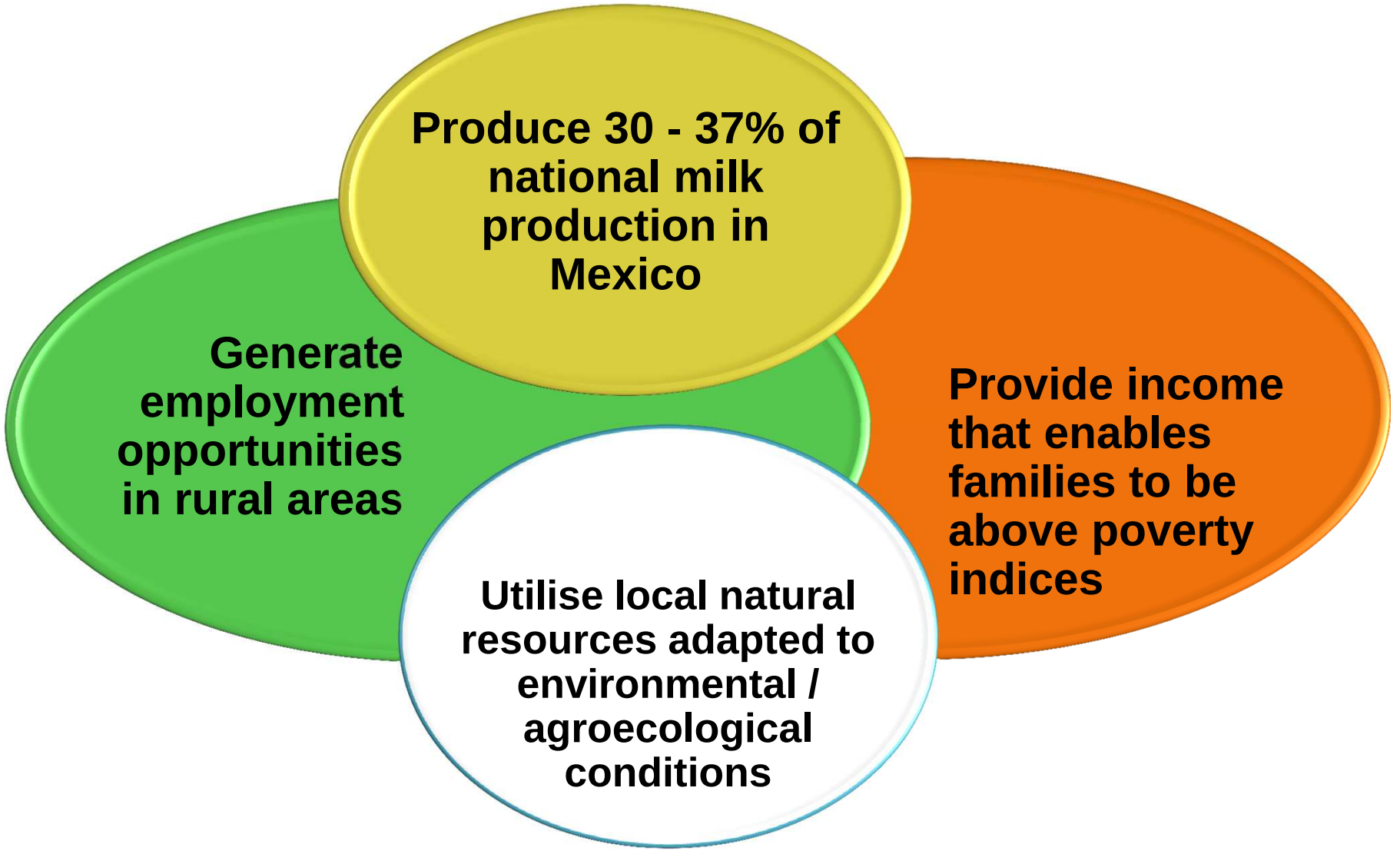
Small-scale Dairy Systems (Herds from 3 to 35 cows plus replacements)

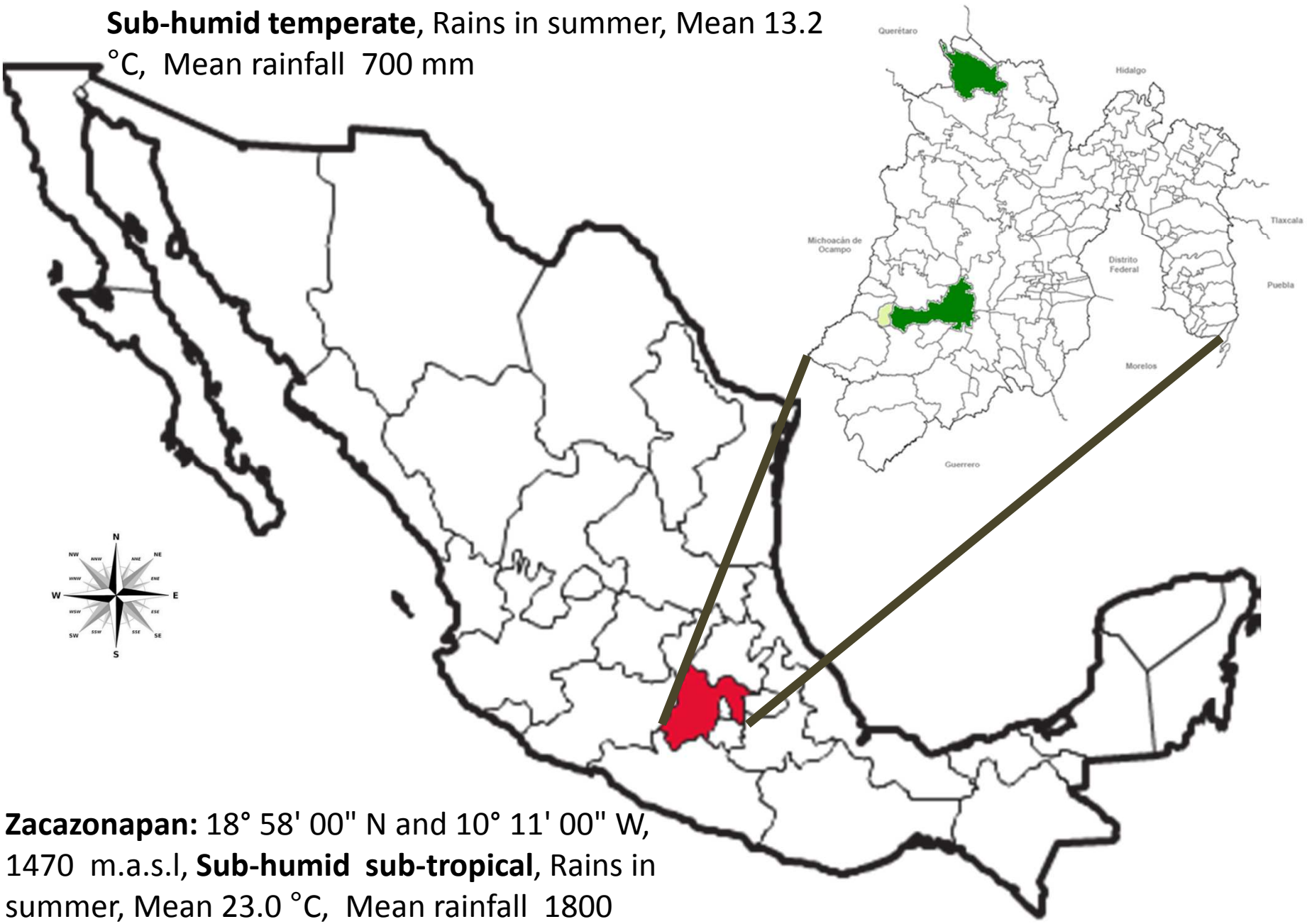
(SAGARPA, 2010)



OBJECTIVE

Assess the sustainability of small-scale dairy systems in two areas, temperate and subtropical, in central of Mexico

Aculco: 20°05'58” N and 99°49'37”W, 2440 m.a.s.l, **Sub-humid temperate**, Rains in summer, Mean 13.2 °C, Mean rainfall 700 mm



Zacazonapan: 18° 58' 00" N and 10° 11' 00" W, 1470 m.a.s.l, **Sub-humid sub-tropical**, Rains in summer, Mean 23.0 °C, Mean rainfall 1800 mm

Aculco (Temperate Zone)

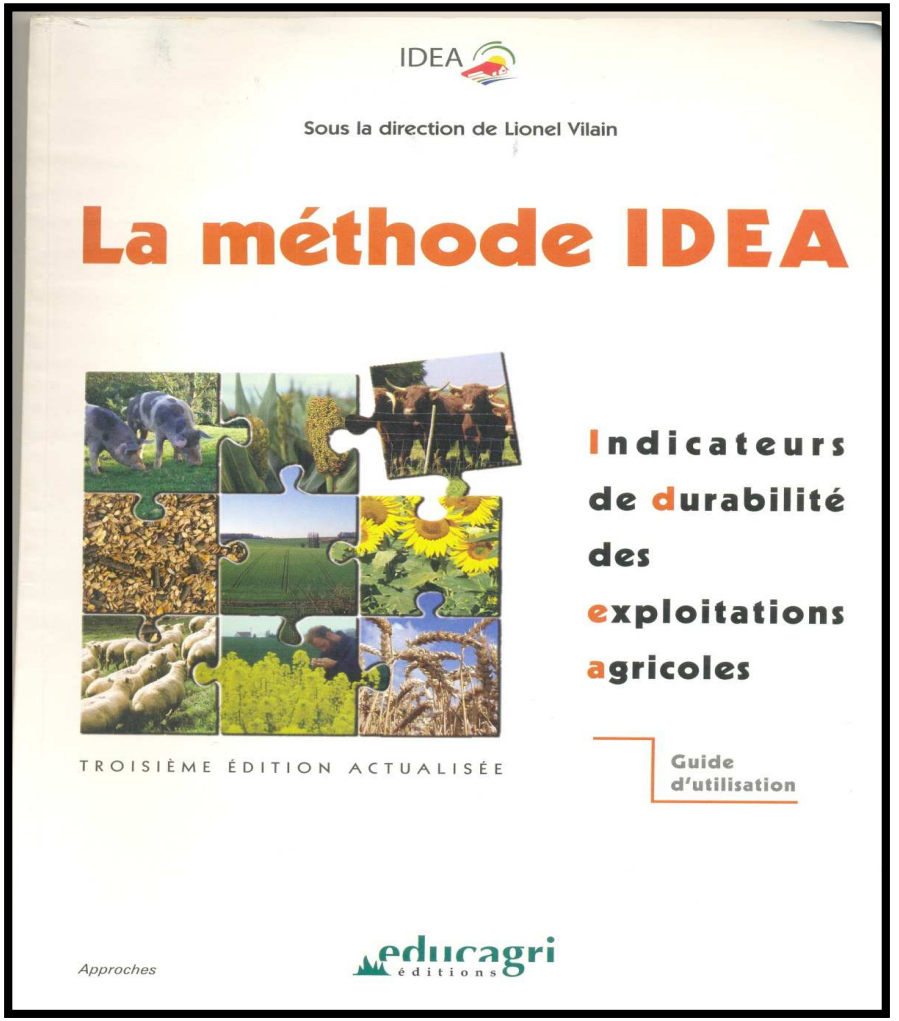
Zacazonapan
(Subtropical zone)

METHODOLOGY

IDEA

Any economic activity, in order to be sustainable, must be economically viable, ecologically sound and socially equitative" (Vilain et al., 2008).

Adaptations



17 Objectives

3 Scales (Agroecological, Socio-territorial and Economic) divided in 10 components

42 Indicators

IDEA METHOD

AGROECOLOGICAL SCALE

3 Components

- Diversity
- Organization of space
- Farming practices

33+33+34=100

SOCIO-TERRITORIAL SCALE

3 Components

- Quality of the products and land
- Employment and services
- Ethics and Human development

33+33+34=100

ECONOMIC SCALE

4 Components

- Economic viability
- Independence
- Transferability
- Efficiency

30+25+20+25= 100

INDICATORS NOT INCLUIDED

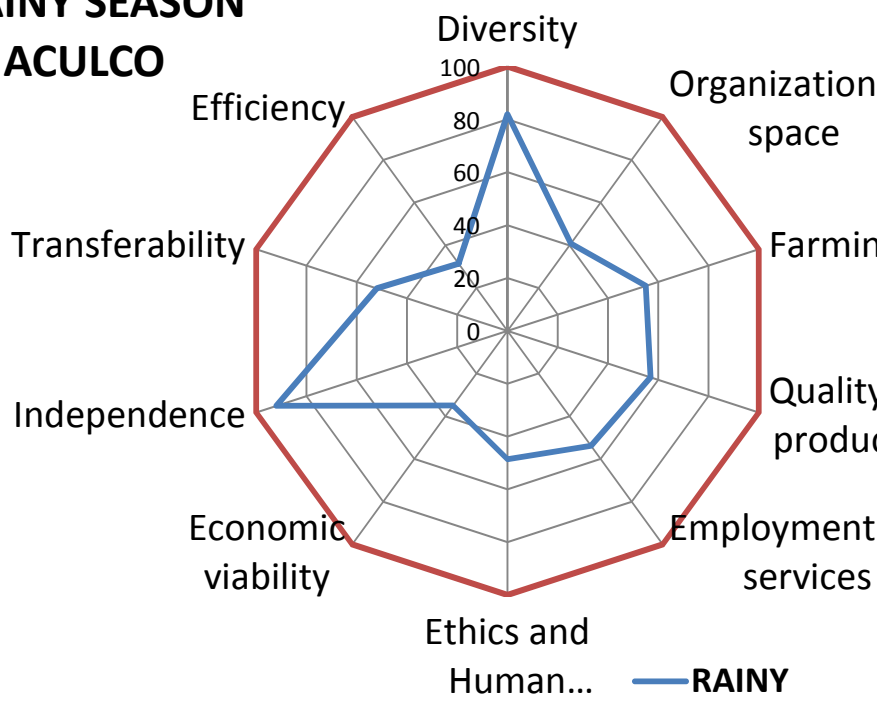
- A4 Enhancement (valorization) and conservation of genetic heritage
- A8 Ecological buffer zones
- A9 Measures to protect the natural heritage
- B 2 Enhancement of buildings and landscape heritage
- B6 Farmer – consumer relation (Direct trade)
- B8 Services, multi-activities (Agro-tourism, demonstrative farms)

RESULTS

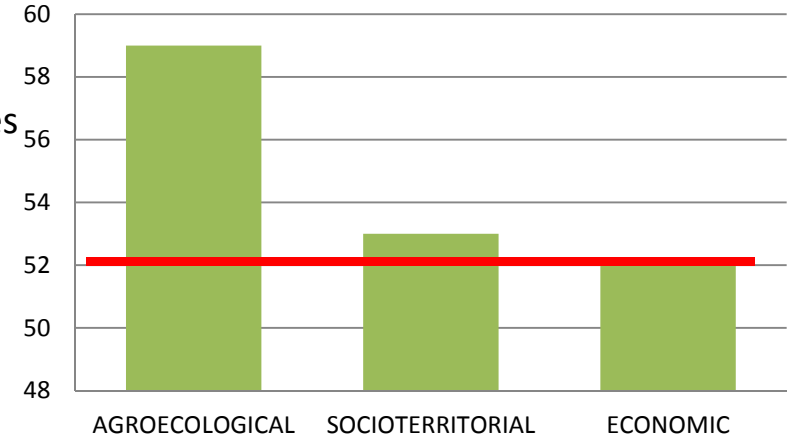
FARM CHARACTERISTICS

		TOTAL HA	HA PASTURE	COWS		MILK YIELD L/COW/ DAY	MILK (€/L)	FAMILY LABOR	MILK FAT (%)	MILK PROTEIN (%)
				MILKING	DRY					
ACULCO	MEAN	6.23	1.45	9	2	13.8	Cost 0.23 Price 0.27	2.55	3.63	3.07
ZACAZONAPAN	MEAN	68	50	13	7	6.0	Cost 0.23 Price 0.31	2.00	3.59	3.00

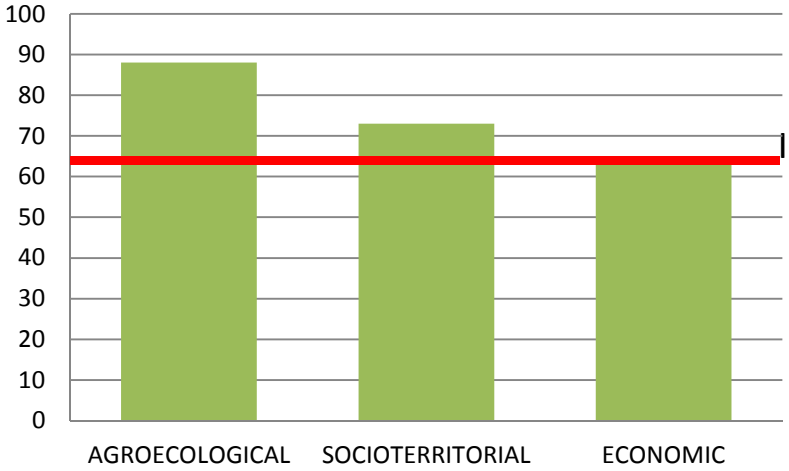
RAINY SEASON IN ACULCO

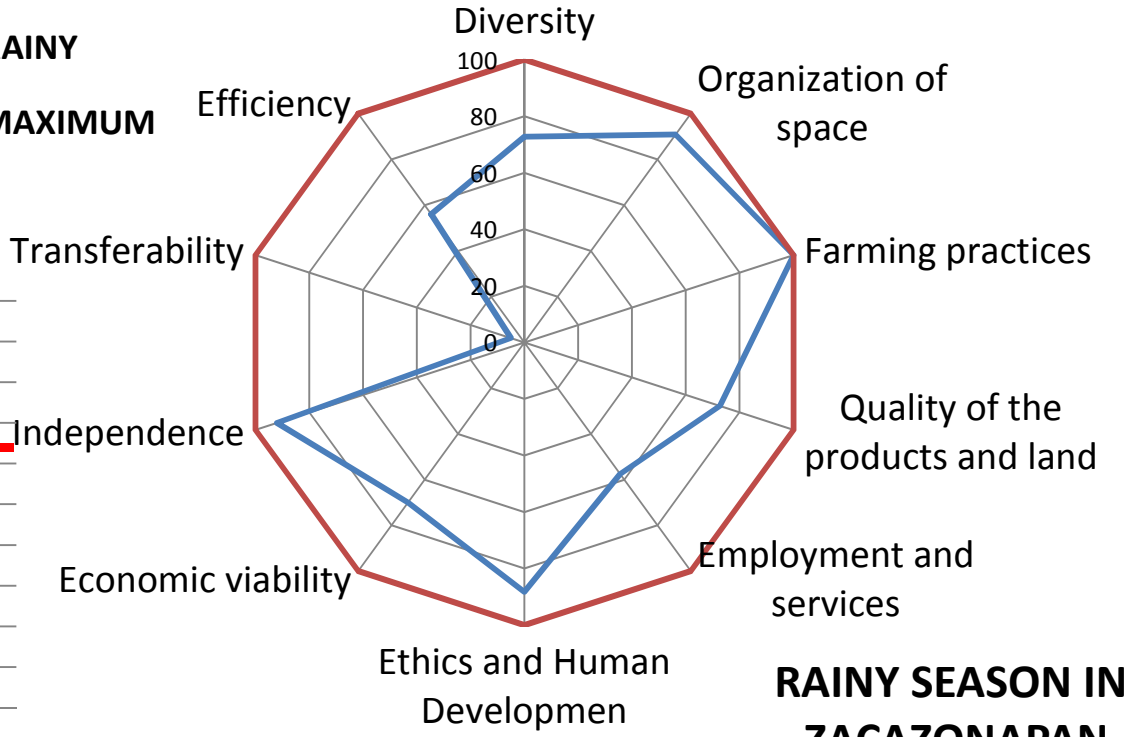


52 LEVEL OF SUSTAINABILITY IN ACULCO



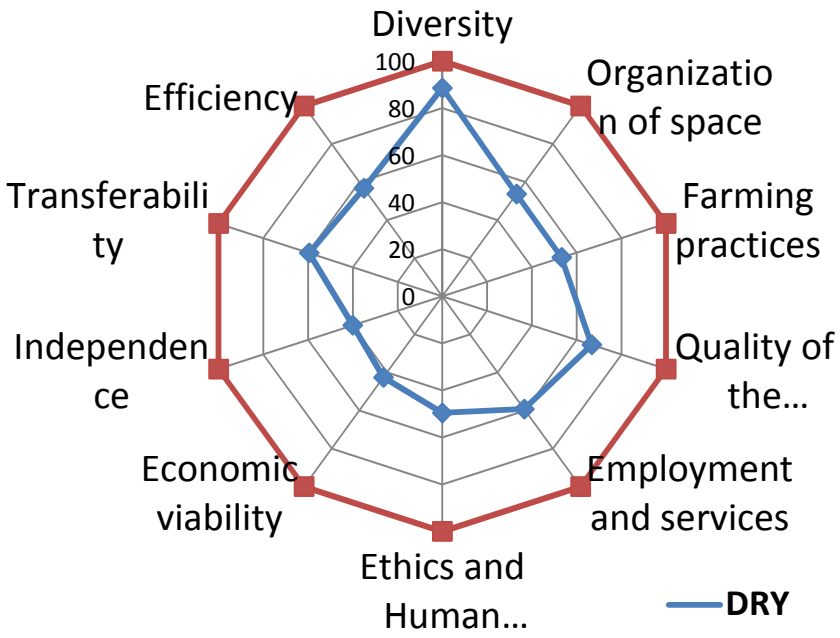
64 LEVEL OF SUSTAINABILITY IN ZACAZONAPAN



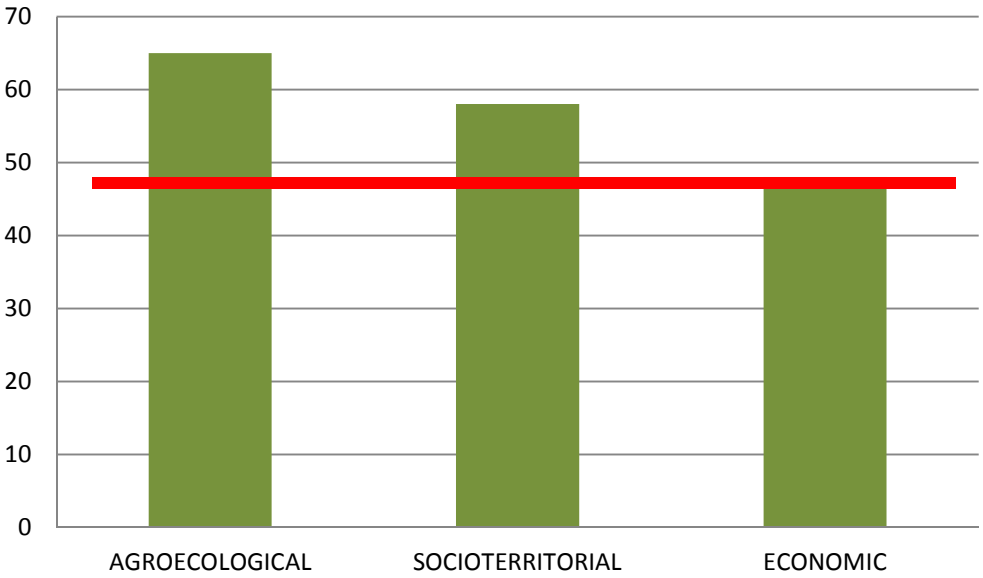


RAINY SEASON IN ZACAZONAPAN

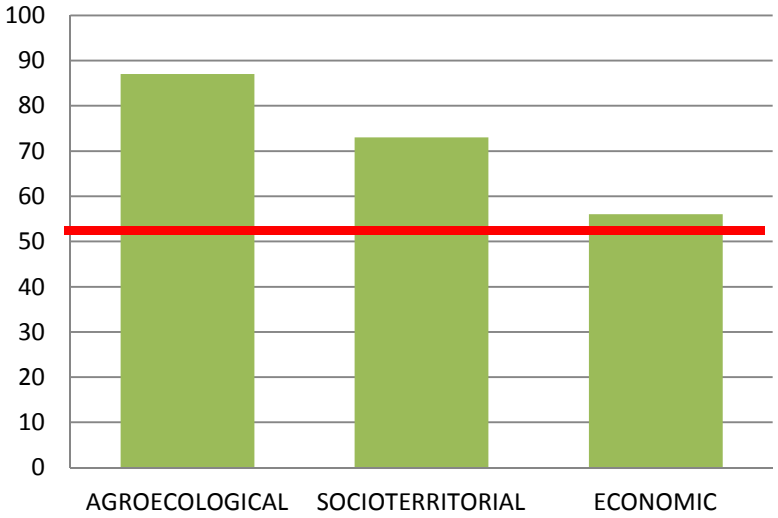
DRY SEASON IN ACULCO

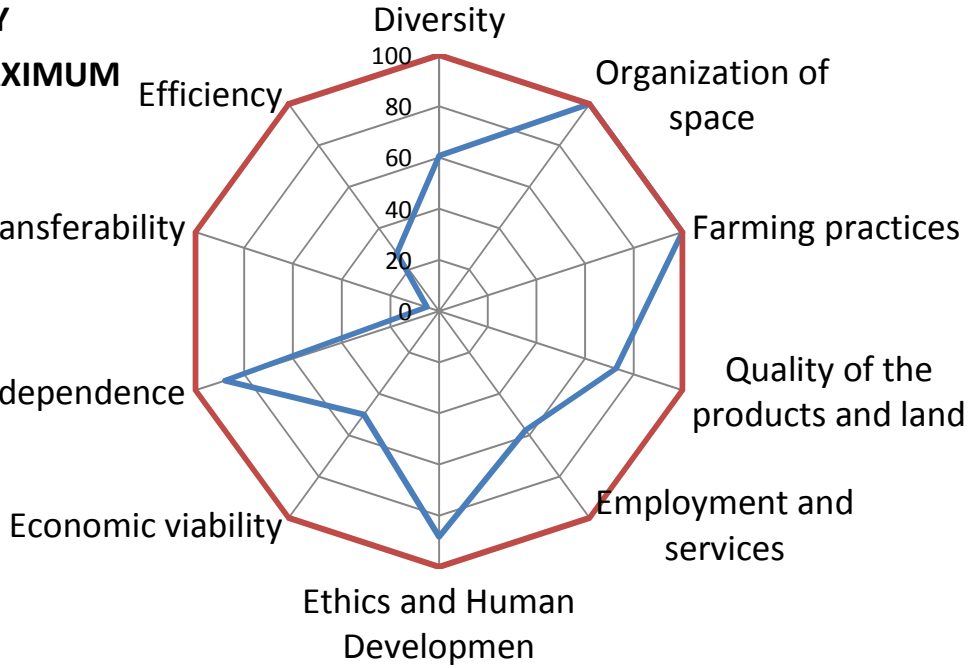


48 LEVEL OF SUSTAINABILITY IN ACULCO



56 LEVEL OF SUSTAINABILITY IN ZACAZONAPAN





DRY SEASON IN ZACAZONAPAN

CONCLUSIONS

- In both areas the highest sustainability score is in the rainy season, when there is a lower reliance of external inputs, in contrast with the dry season where lack of forages increases the reliance in external inputs (mostly concentrates).

- The agroecological scale obtained the highest scores given the diversity of species and the use of manure as organic fertiliser. Weaknesses were reliance on fossil fuels, no crop rotation and a high use of agro-chemicals in the maize crop.

CONCLUSIONS

- Strengths in the socio-territorial scale are good values in milk components, strong community linkages, good access to farms, and the generation of self-employment, and both permanent and temporary employment in the area. Weaknesses are high reliance on external inputs, work intensity and skepticism on the future of the farms.

CONCLUSIONS

- The major weakness is in the economic scale of these systems in both areas and in both seasons; due to low economic efficiency and low level of management skills of farmers to improve their systems.

- There is a high reliance on bought-in inputs in all farms, year round in the temperate area, and during the dry season in the subtropical dual purpose farms; which result in high production costs and lower scores in the economic scale.

CONCLUSIONS

- Results enable the identification of opportunity areas of intervention that may increase the sustainability of the systems, by increasing the reliance of home grown feeds, better management of the available resources – which may involve reducing the number of cows in the very small farms of the temperate area and improving the management of pastures in the subtropical area.

- The IDEA method has proven a useful tool for assessing the sustainability of these small-scale dairy systems identifying critical points and areas of opportunity to improve their sustainability.


¡¡¡GRACIAS!!!