



# Practices and spaces by gender: landscapes and rural tasks of livestock producers of the Sierras Chicas from Córdoba, Argentina

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## ABSTRACT

The present contributions shows as the gender role and the economic way of life of people have influence among landscape perception and classification. Data were obtained by the use of semi-structured surveys aimed at *criollo* cattle ranchers in the mountains of Córdoba and index of cultural significance, economic value and statistical differences by gender were calculated. It is observed the domestic role of women as a cultural guide of these population, which determines their action in the different perceived units of landscape. Also was verified that the domestic units have greater degrees of classification, and that such classification is related to their practice of generalist breeding. Likewise, vegetation management practices related to their occupation are also revealed.

**Keywords:** Ethnobiology; Roles by Gender; Landscape Units; Traditional Livestock.

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## INTRODUCTION

The landscape, from its primary definition, is already understood as a cultural interface. In this way, it is defined as a part of the territory as it is perceived by the population, whose character results from the action of natural and / or human factors and of their interrelationships (European Landscape Commission, 2000; Farina, 1998). The landscape, therefore, should not be understood as a synonym of territory, but rather as its face perceived by those who

live and visit it. The landscape is also the morphological and visible expression of the permanent human construction of nature, the individual and collective image of the forms of the territory (Fernández Muñoz 2008).

So, as it is described by Caparelli et al. (2011), the constitution of landscapes answers to processes such as the particular cosmivision of each town, which converts landscapes into vital and multipurpose spaces of food, medicine, recreation, etc. But at the same time, it is said that

landscapes contribute to the formation of the cultures themselves (European Landscape Commission 2000).

At the same time, the landscapes and their experience are not static, but they can be understood as ecological-cultural systems in continuous change (Ladio, 2011) and subjected to the modeling effect of the human being through, for example, processes of domestication *ex* and *in situ* (Toledo & Bassols, 2010), successional management, use of environmental heterogeneity, transformation and multiple resource management (Davidson-Hunt & Berkes, 2003).

This dynamic of interaction between residents and landscapes results from the use of the resources the last offers, such as medicine (Arias Toledo, 2006; Arias Toledo and Trillo 2014; Barboza et al. 2006; Martínez and Planchuelo 2003), vegetal food (Arias Toledo 2007a; Arias Toledo et al. 2007b) and animal food (Trillo et al. 2016) and firewood (Rodríguez and López et al. 2015), among other uses that are maintained and transformed over time (Trillo et al. al. 2010). For this reason, in the rural areas of Latin America it is usual to find landscapes that include fragments of apparently wild vegetation, fallow fields of different ages and cultivated fields, as well as spaces for animals (Vandermeer et al. 1998). Nevertheless, it is important to emphasize that the concept of “wild area” is discussed because have been demonstrated (Junqueira et al. 2011; Clements et al. 2015) cloacades and long-lasting relationship among local communities and environment that results in secondary forest with high diversity of useful species.

There are several works in Argentina dedicated to the transformations that landscapes have experienced along time. The publication of Morello et al. (2013) is

particularly interesting because it performs a recollection that covers 100 years of use of the Argentine Chaco, categorizing it by ecological/economic stages and reviewing the existing bibliography about the subject.

In the central area of Argentina, the continued occupation of the landscape is documented since pre-Hispanic times (Pastor et al. 2012), during the colonial period (Celton 1993) and even during the first decades of industrialization and economic organization of our country (Rio & Achával 1905). Regarding the current time, are very scarce studies about the relationship among *criollos* and landscape: Trillo (2016) has studied the practices of vegetable management in landscape units of the western zone of Córdoba, while Torrico and Trillo (2015) focus specifically on the management of cacti.

However, that studies are centered on the use of vegetables, but *criollos* settlers of the rural areas of Córdoba are preferentially cattle ranchers (Cáceres et al., 2006a), and animals are central in their natural perception. It is even possible to say that livestock breeding is one (probably the most important) of the variables that defines them as *criollos* (Trillo et al., 2013). According Rio & Achával (1905) historically “peasant from Argentina never was a farmer (...) considering that activity as secondary and entrust it to child and women. (...) Men concentrate on the care of the cattle while women are devoted to orchard and poultry”.

In that regard, there are previous records (Arango Caro, 2004; Arias Toledo et al. 2007ab; Figueiredo et al. 1993) that point out differences in the way in which men and women transit and appropriate the environments. Women tend to be responsible for the maintenance of family health through the knowledge and application of wild medicines (Arias Toledo et

al. 2007ab), while men know significantly more about woody species (Rodríguez-López et al. al. 2015). However, we do not have information regarding the existence of such differences in domestic animal handling practices.

For this reason, we consider that to study the classification and use of landscape units made by small livestock farmers in the Province of Córdoba, focalizing on the animal dimension along with the vegetable, and going into details about the existence of differences by gender in the work with domestic animals and vegetables could render an interesting contribution to the subject.

So, the principal objectives of the present contribution there are:

- to delve into gender differences related to rural tasks,
- to describe the cattle perception among "criollo" ranchers from central Argentina,
- to reveal the landscape units perceived and the classification criteria associated.

### **Human group involved**

The population with which we worked define themselves as *criollos*. The *criollos* are described as small livestock producers and occasional employees ("changas"). In addition, they have an attachment to traditional hunting, or in many cases, both. Their productive units can be understood as a multiple production field (Cáceres 2006b), being the workforce almost exclusively family.

The *criollos* come from a historical construction around the idea of "what should be". According to this concept, the first Spanish immigrants - who gave birth to the "*criollos*" - established themselves as cattle ranchers having as their fundamental presupposition "anything but the farmer" – in

Spanish, "labriego", person that cultivates with many physical efforts- (Corcuera 2006), seeking to get away from their European history. They are currently undergoing rapid changes from a system of productive and auto diversification subsistence towards an orientation with a mercantile aspect and with food dependence (Cáceres et al. 2006b).

## **MATERIALS AND METHODS**

### **Study site**

The interviewed subjects live and own their establishments in small towns belonging to the Distrito Chaqueño Serrano, which occupies the sierras area of the province of Córdoba, Argentina (Figure 1). This district presents precipitations between 600 and 800 mm / year, and the vegetation conforms a forest that combines open and semi-enclosed areas, with low trees (between 7 and 9 m), shrub and herbaceous stratum (Cabido & Zak, 1999). The dominant tree species are *Lithraea molleoides* (molle), *Schinopsis marginata* (orco quebracho), *Zanthoxylum coco* (coco) and *Ruprechtia apetala* (manzano del campo) (Cabrera, 1976). The original vegetation has been greatly reduced by deforestation and fires, and has been replaced by agricultural land and secondary forest that combine native and introduced species, with great capacity for regrowth after fires (Cabido & Zak 1999; Gavier& Bucher 2004).

The inhabitants with whom is has been worked are located in two areas:

- In the area of Paravachasca, in the southern area of the mountain area. More specifically in a corridor that surrounds low hills born in the towns of José de la Quintana and San Isidro, traveling a rural road to reach Villa Ciudad de América and from there descending until La Serranita, La

Bolsa y Los Aromos (figure 1, oval).

- In the northern zone of the mountain system, with its center in the locality of Cerro Colorado and including the rural areas that surround it. This area is differentiated from the rest of the system by the appearance of palms in the valleys and the existence of subtropical elements such as the "mato" (*Myrcianthes cisplatensis*), which finds there the austral limit of its distribution. In relictual sites with tall trees there is a great profusion of epiphytic plants and vines, which give to this unit an almost jungle appearance (Cabido & Zak 1999) (figure 1, circle).

In this environments that currently have almost exclusively secondary, hydrophilic forests, publications as Scarpa (2000; 2004) make think that exist a cultural continuity in

people of the entire semi-arid Chaco territory. That is observed in multiple aspects like the management of the mount for the obtaining of forage, the healing with medicinal plants and veterinary, among others.

## METHODOLOGY

The information was gathered through interviews with all the family production units, available in the areas described, where cattle breeding were the principal economic income. This totaled 13 family groups (9 from Paravachasca area and 4 from Cerro Colorado). Even 13 family production units may seem a few, it is important to emphasize that is a way of life in strong reduction or reconversion in the

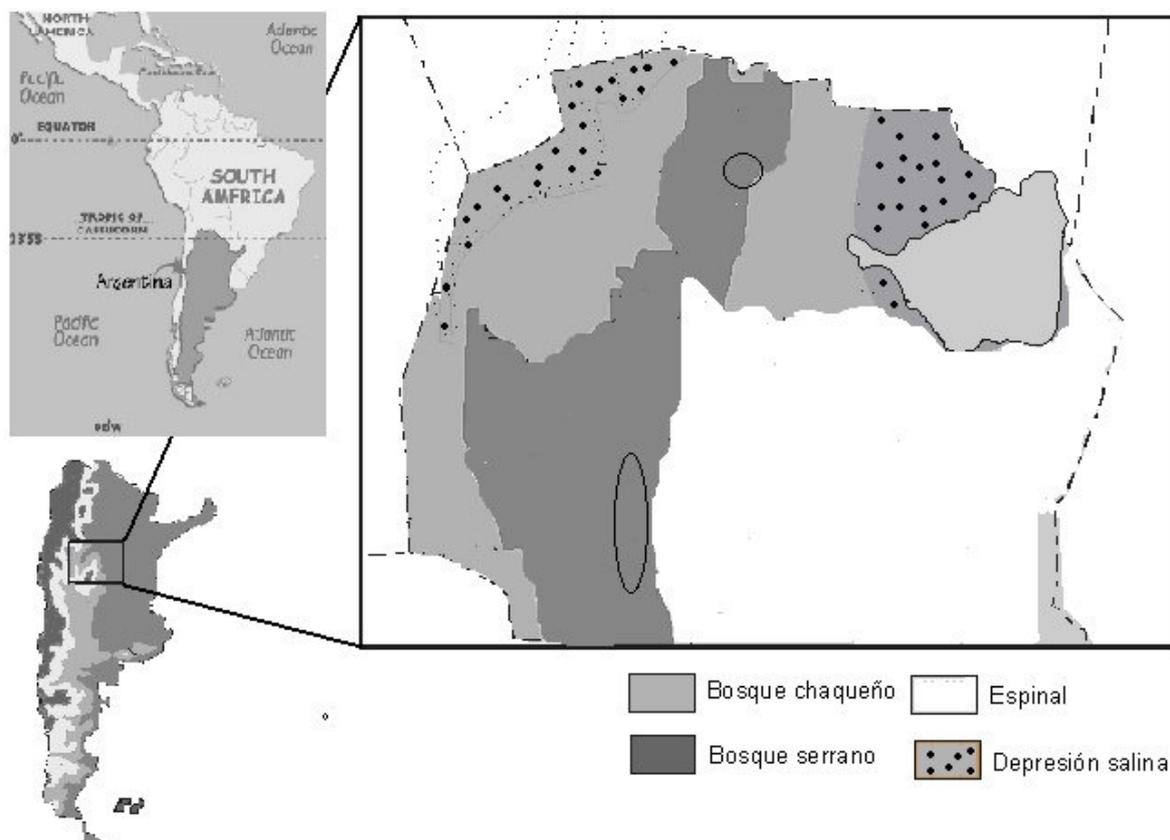


Figure 1. Study area

studied area, and that number constitutes more than a representative sample. To each informant consulted was made explicit the institutional belonging of the researchers and the objectives of the study; interviews are applied only those who gave their informed consent. At first time the objectives of the interviews were explicated to the people that receive us. That person can reject to respond, can select other person of the family group for answer our questions, or to respond by itself. In any case, once interview was finished, other family member from other gender, was invited to participate. In the case of more than one family member decided to collaborate at the same time, each authors to conduce the interview to persons of one gender, separately. Understanding that there is interference in group interviews, authors made an effort to minimize that risk. In this way, 12 men and 10 women were interviewed.

The surveys combined open and closed questions (Bernard 1995; Aldrige & Levine 2003) seeking to achieve a multi-methods approach as it is described in Albuquerque et al. (2014). In this way, we aimed to determinate the different landscape units perceived and the enhanced management practices. Also, differences in activities by gender, depending on the domain (plant or animal) involved are evaluated.

Along with the interviews, visits were made with the villagers in which they indicated different aspects of the recognized units and the practices associated with them.

Exploring differences by gender, data were classified according each animal or vegetable domain (orchard, garden, horse, pig, cow, goat, poultry) as dummy data -presence or absence of management practices- and as two resume variable (vegetal or animal) resultant of the addition of each individual category. That data was

utilized by perform a non parametric analysis from variance (Kruskal-Wallis analysis) to determine the existence of previously mentioned differences.

Looking for a quantitative measurement of the cultural value of each breeding specie an adaptation of the index of cultural significance by Turner (1988) that we understand as the most appropriate to our data. Index of cultural significance by Turner can be represented as:  $ICS = \sum (q+i+e)_u$  and consist in the addition of individual "use" value for each registered use. For each use given, q=quality value, i=intensity value, e=exclusivity value. The use categories considered in the present proposal are: food, work force, symbolic value. For each category was obtained a cultural significance, the addition of the cultural value of each category make the Index of cultural significance of any individual specie. The cultural value assigned to each category was discussed and approved by two key informants.

The economic value of each specie, represented by the current price of the most common sell form (calf, piglet, kid and chicken). Prices are presented in American dollars. Horses are not sell by weight, so, they are not included.

For the classification of practices, the guidelines proposed by Casas (2001) are followed: *harvesting* -harvest of useful products of the weeds and wild populations, *tolerance*- maintenance within anthropogenic environments of useful wild plants-, encouragement or induction -strategies aimed at increasing the population density of useful species in a plant community-, *protection* -care actions such as the elimination of competitors and predators, application of fertilizers, pruning, protection against frost, etc., in order to safeguard some wild plants and weeds of special value

- and *cultivation* - referring to the care provided to the plants to raise them. In this study, the landscape units were defined by the settlers according to the land use and later they were mapped.

Frequencies of any practice were obtained.

To define the names of the landscape units, the villagers were asked about the name they receive, the priority uses that each unit satisfies and the practices necessary to generate and maintain them.

## RESULTS

The *criollos*, small traditional cattle ranchers, make a multiple and heterogeneous use of their productive units, that can include differential role by gender about the use of landscape units and work in productive units.

Regarding the differences by gender, table 1 allows us to observe that there are significant differences between the management practices on different landscape or cattle carefull and the gender of the interviewee.

This result suggests that there are differential roles in the management of productive units.

Deepening into those differences, table 2 shows that the garden and the orchard correspond to female domains, while the cares of the animals (except poultry and,

partially, goats) are predominantly male activities. It is important to make clear that, even each gender show diverse management practices related to the landscape units perceived, both gender knows and describes the same units.

As can see in the previous table, the *criollos*, independently of the gender, do not concentrate on a single livestock species but usually own horses, cows, pigs, goats or sheep, chickens and other poultry. Even so, perception of any animal is particular. Thereby, the horses are used for daily work because no vehicle can travel the mountainous fields with the efficiency offered by this animal. But horses for the *criollos* settler are not merely a work tool but also a symbol of status and a reason for pride to which they dedicate special care and attention. The importance that *criollos* give to horses is visualized in diverse situations: e.g. the most agreeable coats and morphologies are reason for endless discussions; even the most humble of the settlers has tools and ornaments in braided leather and worked metals to wear at parades and "fiestas gauchas"; among other.

For its part, cows are used for the production of calves, and depending on the amount of livestock that is possessed, it is the main income of money or serves as a "savings box" for when it is necessary to make a significant expense. To possess a great number of cow also represent a high symbolic value. Also, cows possess the higher economic value.

Pigs, goats and sheep are used for meat production as well. Those who have larger productive units eventually use the sale of piglets, lambs and kids to cover the several expenses implicit in production, as well as for family consumption, leaving much of the sale of calves as profit. In smaller units, on the other hand, the sale of smaller livestock

**Table 1.** Kruskal Wallis analysis

	Gender	H	p
Vegetal	Men	13.39	0.0001
	Women		
Animal	Men	9.81	0.0011
	Women		

**Table 2.** Resume measurement about management practices or landscapes units by gender.

		Media	Mediana	D.E.
Men	Orchard	0.15	0	0.38
	Garden	0.08	0	0.28
	Horse	0.92	1	0.28
	Pig	0.92	1	0.28
	Cow	0.92	1	0.28
	Goat	0.38	0	0.51
	Poultry	0.15	0	0.38
	VEGETAL	0.23	0	0.6
	ANIMAL	3.31	3	0.95
Women	Orchard	0.9	1	0.32
	Garden	1	1	0
	Horse	0	0	0
	Pig	0	0	0
	Cow	0.2	0	0.42
	Goat	0.5	0	0.53
	Poultry	1	1	0
	VEGETAL	1.9	2	0.3
	ANIMAL	1.7	1.5	0.82

is the main income. From the poultry both the eggs and the meat are consumed.

To present a quantitative approach to the cultural value, an Index of cultural significance were performed and the results are resumed in table 3.

As the symbolic value exceed the cultural significance but included the economic value that each animal contributes to the cattle

ranchers, that value is also reflected in table 1.

The orchard, which not all *criollos* possess, is exclusively held for self-consumption, except in the case of one interviewed, who produced are marketed the vegetables among the residents of the place.

The main management of livestock revolves around fed and safety. About that,

**Table 3.** Index of cultural significance and Economic value of livestock by criollo.

	ICS	EV (u\$s by kg/entire)
Horse	19	...
Cow	15	1,75/350
Pig	10	6/60
Goat	9	5/50
Poultry	7	2/5

animals are fed mainly "to the field", that is, they are left free in peri-domestic or non-domestic areas ("monte") to feed themselves. This does not mean that there is no careful management of livestock. On the contrary, to select food areas quantity and quality of available pasture are considered, and rotation is used to conserve pasture. When it is necessary, their alimentation is supplemented with ground grain and / or alfalfa.

Another particular care that is provided for equine and bovine cattle refers to the toxic plant species: when an animal is moved from one place to another, and in the place that receives it there are toxic species that were not present in the field of origin, the animal is enclosed in a corral and its nose is rubbed with the selected toxic vegetables. This causes an inflammatory reaction from which the cattle identify the plant that caused it by smell and do not consume it during the pasture. The species most mentioned as toxic in the study area were *Baccharis cordifolia* (mio-mio) and *Cestrum parqui* (black duraznillo).

The pigs, on the contrary of the rest of the domestic cattle, are fed basically with the remains of the family kitchen and other wastes. Just a small number of interviewers use ground grain to feed pigs.

Regarding the classification of the perceived landscape, the first level observed among the interviewed inhabitants is the division between domestic and non-domestic.

Non-domestic space is what remains outside the housing area and where the family life goes by. It does not constitute a "wild" space but it is also anthropized and is the site where medicinal plants, firewood, wild fruits and dye species are collected, and where the breeding animals are taken to graze.

Also, it does not constitute a homogeneous space but its physiognomy leads to particular identifications: the flat areas are called "campo" and the mountainous "sierra". In turn, the particular physiognomic and vegetation aspects of each unit allow greater detail in the classification, arriving at units like "campo de los chañares" and "cerro de la línea". It is worth mentioning that the flat areas to which we refer are only small plains that do not exceed 5 hectares, and that they should not be confused in size or productivity with plains of the Pampean type. The producers usually manage the pasture areas, moving the animals from one place to another. Thus, they expressed that, during the summer, where the amount of grass available is sufficient in all the sites, the animals are taken to graze in the mountainous terrain. In this way, the pasture of the fields is reserved for the winter and times of scarcity. These areas with better pasture are also usually reserved for females with young while they are nursing.

On the other hand, the domestic units perceived present more detail regarding the classification. This also includes the vegetal species present in each unit as well as the handling of the plants in relation to the animals.

Defined mainly by the vegetables that compose it, the following units are distinguished as follows (figures 2 to 12):

**Jardín** (garden - figure 2): it is the space where ornamental and medicinal species meet, both herbaceous and shrubby and arboreal. It is located next to the house, usually on the front of the house and can be fenced to restrict the access of animals.

**Huerta** (orchard - figure 3): site where the vegetables consumed by the family are grown. It can also include medicinal and aromatic plants of habitual use. The orchard,

although also close to the family home, is located somewhat further away from the garden and is usually fenced, either to effectively prevent the entry of animals or just to generate a visual separation between spaces.

Sometimes both the garden and the orchard are to one side of the house. When this happens there is a kind of continuity between both units of landscape, placing the garden to the front, the orchard at the back and in the center a combination of species that are used as food but that at the same time are considered showy, pleasant or appreciated for their shade, generating a garden / orchard interface

**Chacra:** area of cultivation of corn, squash and fodder for animals. They occupy spaces larger than the previous units and are further away from the house.

**Quinta:** wooded area with fruit species, usually exotic and predominantly of the *Prunus* genus; can be located on the opposite side of the house where the garden is located, next to it or next to the orchard.

Garden, orchard and *quinta* usually occupy contiguous spaces and simulate a landscape continuity. In this way although the limits are not absolute, each unit incorporates in its classification diverse species and differential uses and constitute particular spaces for the inhabitants.

**Tunal:** cultivation of tunas (*Opuntia* spp.) that is usually located on one side of the house, often forming a natural fence and demarcating spaces.

Moreover, depending on the practices related to domestic animals can be distinguished:

**Sitio** (figure 7): fenced space, generally in the most distal area of the domestic area, where animals are worked - shoed, healed, fed and butchered- and where the horse or horses used for daily work remain –one per

day, alternating between the ones owned.

On the other hand, the part of the site that is closest to the home -also called **patio** (figures 4 to 6) when it is smaller - is the unit where most of the daily life of the *criollos* takes place. This unit is constituted by the social space around the house. It is clean and wooded and there visitors are received, people drink mate, eat roasts, etc. In this space dogs, cats and poultry circulate freely and the horses in use are usually tied there.

**Corrales** (figures 8 to 12): places where the cattle spend the night – at the day they are in the "field" -. Corrales can be classified into paddocks, pigsty, chicken coops, etc.

Given the spatial distribution, and retaking the results shows in table 2, it is clear that female action is more anchored to the domestic sphere while men move more in the non-domestic. Even in the domestic units, men are concentrated in the areas furthest away from housing. As an example, the care of goats reflects this divergence in the use of space: while women are engaged in the tasks that are carried out in the corrals, it is the men who move the flock to more distant pasture sites.

Besides, within the framework of the productive units of the small criollo cattle farmers of the sierras of Córdoba, diverse strategies of management of the wild species are carried out, many of them tending to conserve or improve their cattle. Thus, the induction of "wet pastures" for livestock was verified through the elimination of non-palatable species (*chilca* (*Baccharis* spp.), *abrojo* (*Xanthium* spp.).

Tolerance, protection and induction of native trees or shrubs was also registered (Figures 4, 5 and 6) for the purpose of obtaining shade or food for livestock, as well as for ornamental purposes. The native species on which these practices were compared are *Vachellia* spp. (aromo,

espinillo), *Celtis ehrenbergiana* (Klotzsch) Liebm (tala), *Zanthoxylum coco* Gillies ex Hook.f. & Arn. (coco), *Lithraea molleoides* (Vell.) Engl (molle de beber), *Ruprechtia*

**Table 4.** Frequencies of registration of any strategy of management of wild vegetation.

Practice	Frequency
Tolerance	1
Protection	0,7
Induction	0,5
Cultivation	0,3

*apetala* Wedd (manzano del campo), *Kageneckia lanceolata* Ruiz et Pavon (duraznito de la sierra), *Condalia microphylla* Cav.(piquillín), *Prosopis* spp. (algarrobo) and *Aspidosperma quebracho-blanco* Schltld (quebracho blanco).

On the other hand, it was possible to recognize the tolerance, induction and protection of herbs and shrubs for medicinal use and for mate. These practices were verified with *Sphaeralcea cordobensis* Kuntz (malva), *Aloysia gratissima* (Gillies & Hook, ex Hook.) Tronc (palo amarillo), *Lippia turbinata* Griseb. (poleo), *Urtica urens* L. (ortiga), *Plantago* spp. (llantén), *Passiflora caerulea* L. (pasionaria), *Aloysia polystachya* (Griseb .) Moldenke (té de burro) and *Minthostachis verticillata* (Griseb.) Epling (peperina).

Table 4 shows frequency of registration of any practice.

## DISCUSSION

The *criollos* of the Sierras of Córdoba respond to the model of peasant society proposed by Cáceres et al (2003). This allows us to understand the domestic unit as a unit of production-housing-consumption.

The heterogeneity in livestock production among them has been analyzed by Cáceres et al. (2006b) as responding to a logic based on daily experience in a framework of high environmental and socio-economic uncertainty. In this way, they seek to minimize risk and achieve a certain status. So, the diversity of livestock we have relieved coincides with the multiplicity of strategies proposed by these authors, as well as the effort devoted to the maintenance of cattle and the particular relationship they have with horses in particular and their pride in defining themselves as breeders in general. From the perspective of biopolitics (Foucault, 2004), domestic organization and the appropriation of spaces is neither neutral nor hazardous, but responds to the logic of the prevailing power structures. Thus, the domestic structure observed among *criollos* follow a classic patriarchal model. However, capitalism is currently the prevailing form of economic government, which incorporates labor and generates "clients" continuously. Thus, paradoxically, *criollos* manage to "escape" this logic in a certain way, as they produce their own food, exchange products outside the formal markets and do not usually constitute stable labor. The *criollos*, belonging to a capitalist society, manage to navigate their margins and preserve their traditional practices in a rapidly changing world.

According the difference of gender roles observed in the present work is possibly related to the fact that women perform in a privileged way in the domestic sphere (Grimaldi 2013; Arias Toledo 2009; Scarpa 2012) - for example, been the woman in charge of family health (Arias Toledo 2009) - while men develop tasks away from home –as obtaining firewood (Rodríguez y López et al 2015)-.Therefore, we propose that women take charge of the vegetable

universe - garden and vegetable garden in particular - and farm birds, which rarely leave the house; while men take care of livestock that require moving to "non-domestic" spaces for their care. Same authors, like Jost et al (2016) and Torrez-Aviles & Albuquerque (2017) encourage moving from a simplistic approach that understand gender as homogeneous in access, decisions and perceptions. Torrez-Aviles & Albuquerque (2017) specifically proposes that studies gender-based have to consider not only the differences in the number of knowledge plants but in a biosocial, complex system; in that way, our previous studies among "*criollos*" (Arias Toledo et al 2009) show that while both men and women knows similar number of medicinal plants, they knows different species and species that grown in different areas. The present proposal follows the same line showing that while landscape units are equal recognized and classified by men and women, that units are "living" in different ways, showing diverse management practices. So, our results are in agreement with the proposal of Torrez-Aviles & Albuquerque (2017): just the difference on the number of knowledge plant (or animal, or landscape unit, we consider) is not enough to measure gender differences.

In reference to the perception of landscape, the absence of "wild" areas is in accord with the proposal of Junqueira et al. (2011) and Clements et al. (2015) whom show that environment in general is anthropized and even in apparently conserved forest, the richness of useful species is increased. Even so, domestic landscapes can be understood as "cultural landscapes" according the proposal of Farina (1998), being a "cultural landscapes" the landscape that has been changed by a long-term human disturbance regime by

which a unique assemblage of patterns, species and processes has been created and requires a continuous human stewardship to be maintained.

According the classification of landscape units, garden and orchard are the spaces for which more bibliographical references are found. About this matter, all the authors emphasize that these sites present a high potential for the conservation of biodiversity (eg Grimaldi 2013; Trillo 2016; Pochettino et al 2012). *Chacra* and *quinta* have been reviewed with similar descriptions to those presented here by Grimaldi (2013) and Furlan et al. (2015). Nevertheless, the incorporation of animals into the domestic space, the existence of allowed, appropriate and not appropriate spaces, the role of domestic livestock in the definition of spaces, are scarcely considered in the literature, which has focused much more on the plants and their use as landscape determining. We note that, in these livestock populations, the animals model the landscape - including the "non-domestic space" because it is a grazing site - decreasing the frequency of appearance of some species by trampling, dispersing others through their feces and modifying the structure of the strata, among other actions (Mendarte et al. 2003, Morici et al. 2009), so it is interesting to incorporate them into the discussion. Along the same lines, and as described above, settlers carry out vegetation management practices in order to conserve livestock, which can also modulate landscapes, such as the induction of more edible pastures and the protection and induction of native trees -to feed the cattle with their fruits. Thus, directly or indirectly, domestic livestock modulates the way in which the landscape units are recognized, classified and modified by *criollos*.

In reference to the mentioned vegetation

management practices, which are very significant because they imply changes in the richness of the involved species, they have been described by Trillo (2016) as ancient practices, transmitted within the family. According to the author, they play an important role in the conservation of the own lifestyle of the arid land livestock producers.

## CONCLUSIONS

The results obtained in this work clearly show that the use and classification of landscapes is never neutral or randomly, but depends, among other things, on social roles, historical developments and the regional economies.

In relation to this, we observe an association between the feminine, vegetable world and a domestic role; and the masculine, the animal world in terms of productive practices and the extra domestic role assigned to men.

Also, the results obtained show that there are no "wild" spaces in nature according to the conception of the livestock *criollos* of the Sierras de Córdoba: all the landscape is anthropized, domestic as well as non-domestic units. However, the domestic units show greater variety and depth in the classification. As a novelty, the importance of livestock in how they perceive, classify and modulate recognized landscape units is verified.

It was possible to record the existence of management practices of wildlife species, prior to the domestication, but important in the life of the peasant and potentially shapers of the landscape.

## ACKNOWLEDGE

To the *criollos* of the mountains of Córdoba, who open the doors of their homes and their present and past experiences.

To the anonymous reviewers; their suggestions significantly improved the quality of our presentation.

This work was partially funded by SECyT - UNC (Ministry of Science and Technology of the National University of Córdoba).

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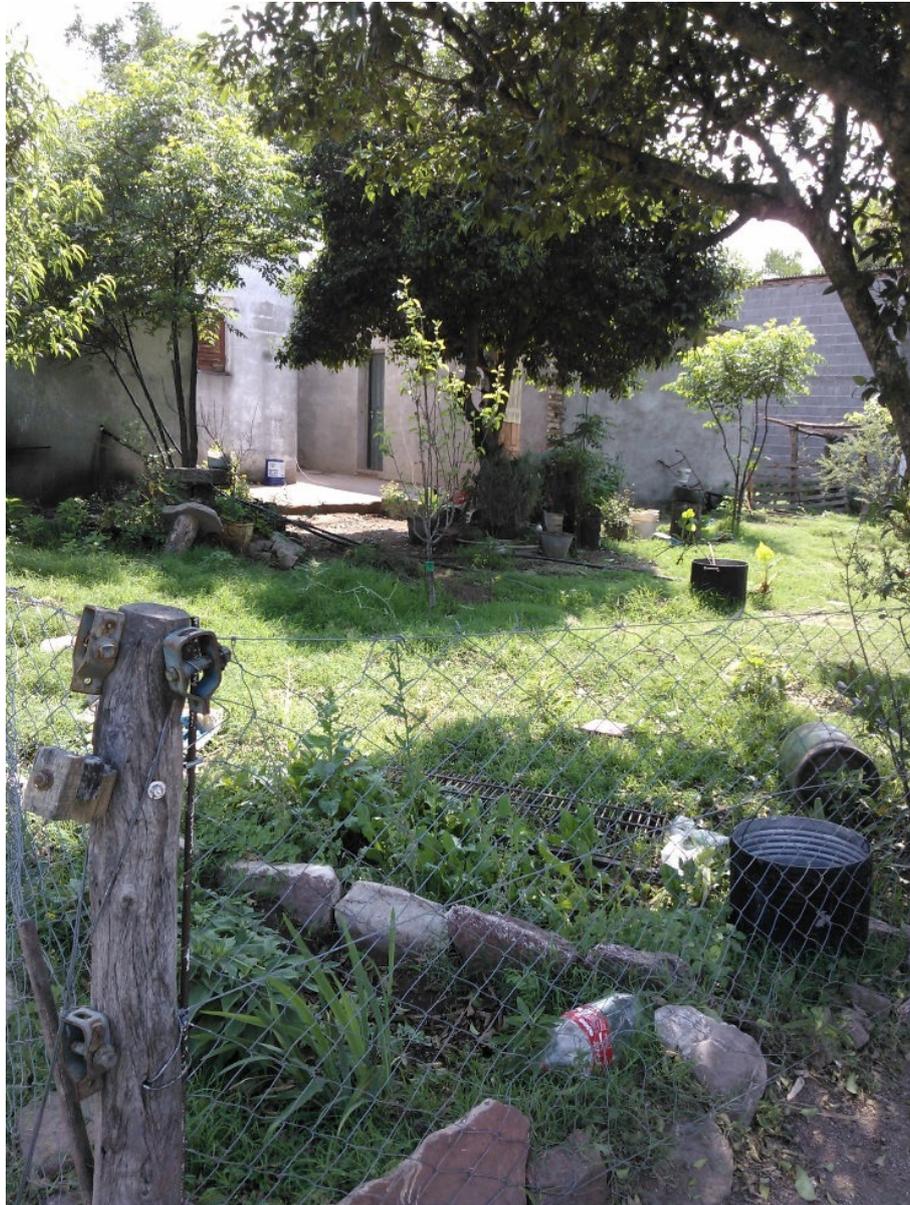
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**Received:** 04 March 2018

**Accepted:** 13 April 2018

**Published:** 20 April 2018

## Electronic supplementary 1



**Figure 2.** Garden



**Figure 3.** Orchard



**Figure 4.** *Patio*. Protection of several *Prosopis* sp.



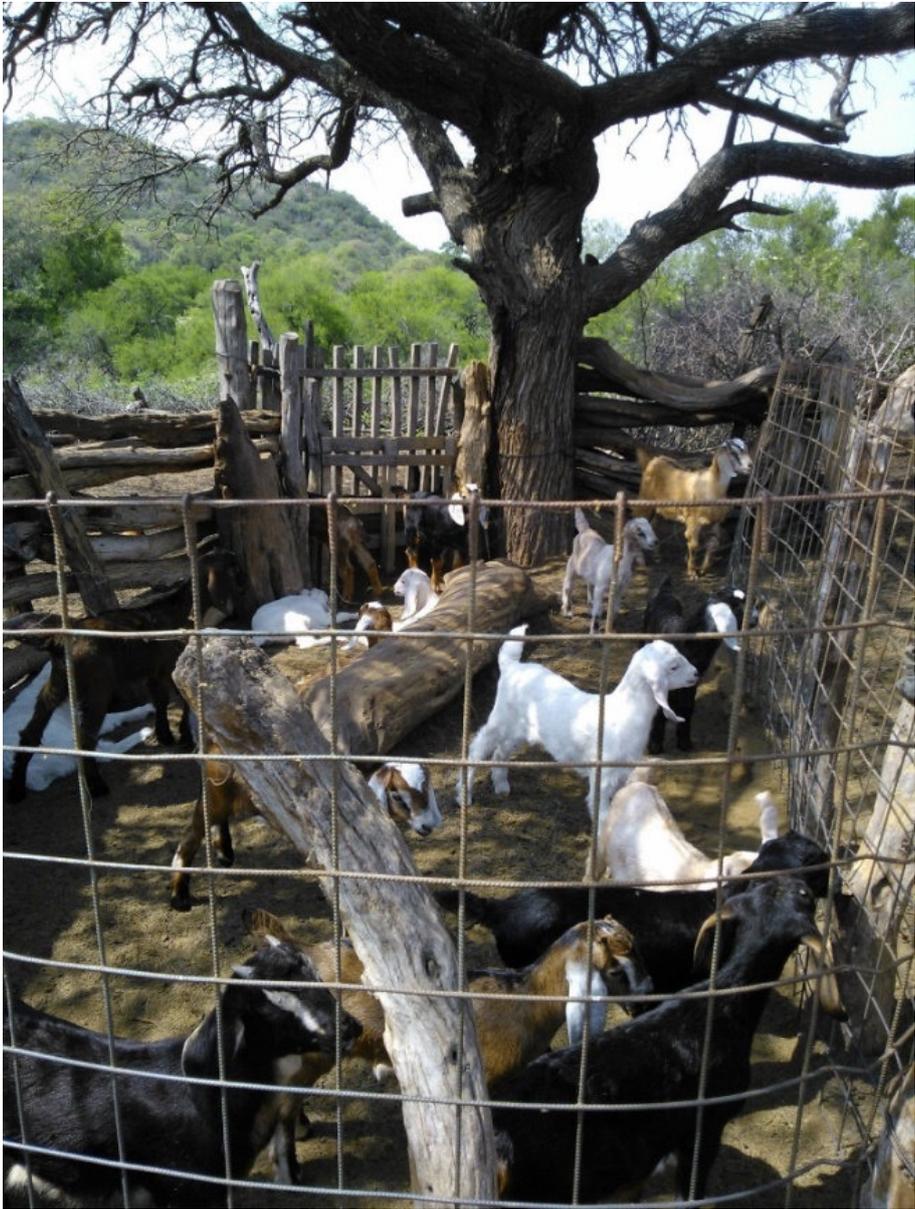
**Figure 5.** *Patio*. Tolerance of *Sphaeralcea cordobensis*



**Figure 6.** *Patio*. Protection of several *Prosopis* sp.



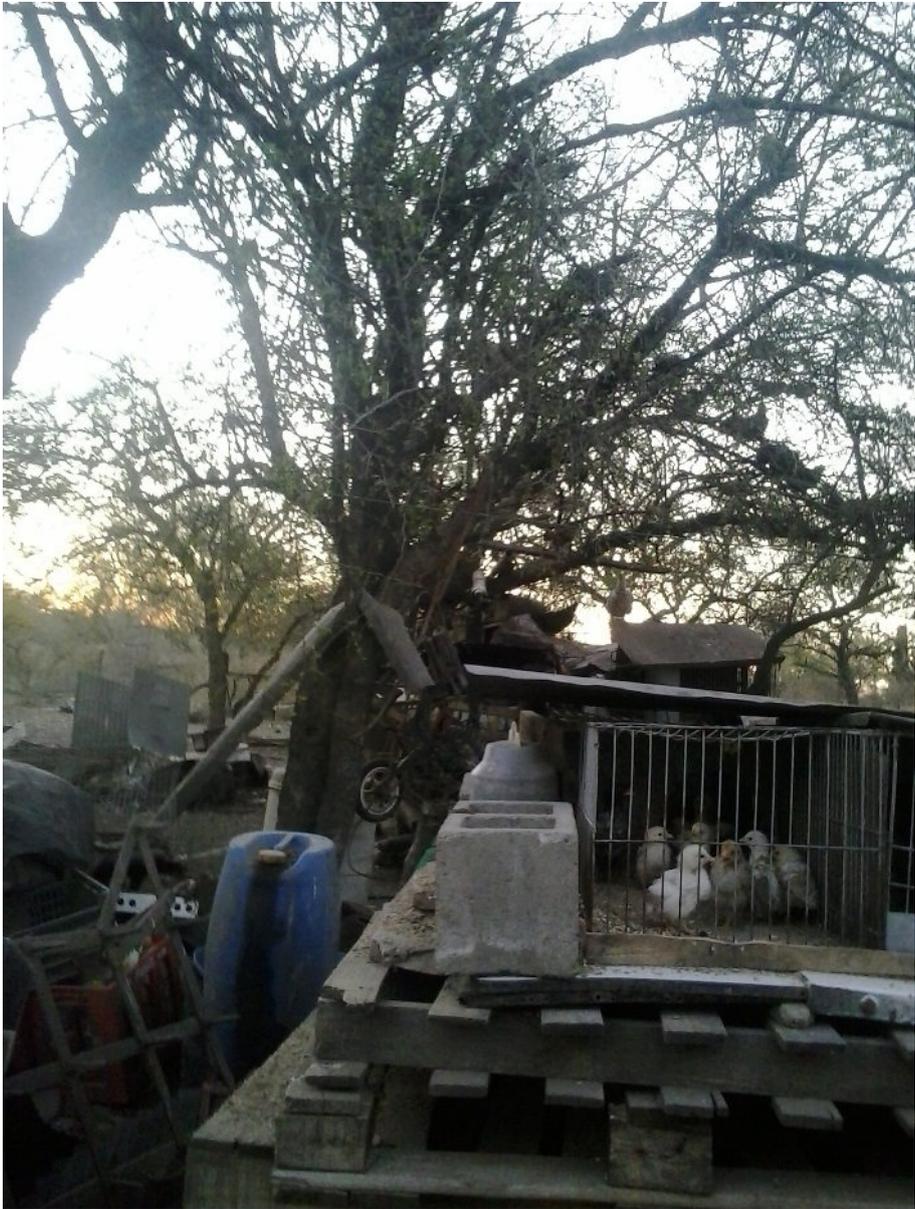
**Figure 8.** Corrales



**Figure 9.** Corrales



**Figure 10.** Corrales



**Figure 11.** Corrales



**Figure 12.** Corrales