

The social knowledge inherent to land maps

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Thirty years after we have started to rescue the autochthonous knowledge of soils at the Colegio de Posgraduados (specializing in soil science), we will systemize in this paper the achievements reached so far in a twofold manner: (1) Categorical knowledge, leading to the development of taxonomies, and geographic knowledge, resulting in the development of cognitive maps; however, a thorough reflection on this procedure requires philosophical analysis. (2) Land maps as a form of geographic and social knowledge, which involve farmers and academics in its generation; a topic that juxtaposes, rather than confronting the different approaches, perspectives and sociocultural environments, making a land map a social construct. While all this can be covered by a graphic sketch made by a farmer, usually not larger than the sheet of a notebook, the knowledge it conveys is much bigger.

Keywords: land maps; autochthonous knowledge; lands; social construction

1. The philosophical context

Talking about the philosophy of autochthonous knowledge of soils means to refer on four topics, which are closely related to and derived from Western thought: ontology (multiple realities), epistemology (understanding of mental processes), axiology (human values and interests) and methodology (participatory methods); (cf. Biosca et al., 2005; Garvey & Stangroom, 2012).

From the ontological point of view, autochthonous knowledge of soils should consider the existence of realities constructed socially through different perceptions, decisions and actions of the social groups that build contrasting visions of the soil they work.

Epistemology, which is also known as the theory of knowledge, is related to metaphysics, logics and the philosophy of science; it studies the origin, structure, methods and the validity of knowledge. And by extension, the epistemology of autochthonous knowledge of soils involves an understanding of the mental processes by which farmers build their perceptions of the edaphological reality they know.

The axiological dimension of a particular topic or subject considers the notion of choice of human beings for moral, ethical, aesthetic and spiritual values. In this context, what is evaluated by people is based on individual and subjective choice, product of the individual's culture. In its axiological dimension, autochthonous knowledge of soils reveals that there are both pragmatic interests (of farmers) and scientific interests, which should be made explicit when considering the edaphologic knowledge of farmers, and thus give equal importance to each group of persons interested.

Finally, the methodology can be defined as the study or choice of an appropriate method for a particular aim. When systematizing autochthonous knowledge of soils it is essential to keep in mind that there is a prevalence of interactive (participatory) methods, which necessarily includes the participation of farmers to understand the edaphological reality they perceive.

2. Autochthonous knowledge

Engaging with farmers and systematizing the knowledge generated about their lands means, firstly, to enter the realm of philosophical and, secondly, to consider the principles of postmodernism and constructivism. The first addresses the need to re-synthesize principles and elements from different backgrounds and very different ideological trends, which originate in art, and that transcends many disciplines of knowledge as a response to the inherited positivist paradigm of the enlightenment (Clifford, 1989; Frampton, 1988; Gandy 1996, 2002). The second, in the context of many new activities that have led to further thought on the work of the social sciences, originate from the ancient yet renewed idea that we interact with the environment through experiences involving co-participatory observers with observations (Arnold, 1997), for example farmers and their knowledge of the lands, respectively.

The term “postmodernism” refers on a cultural position stating that the vision of universal supremacy of knowledge, represented in the positivist paradigm (for example, official edaphological maps) faces other forms of knowledge embedded at a local level (for example, farmer maps), this is: ways that deny or clash with the idea of an exclusive domain of the Western, European culture.

The perhaps most eloquent testimony of the end of Western sovereignty was made by Paul Ricoeur (1965) mentioning that “[...] the discovery of the plurality of cultures is never a harmless experience [...] when we discover that there are several cultures instead of one and, consequently, when we acknowledge the end of a sort of cultural monopoly, be it illusory or real, we are threatened with the destruction of our own discovery. Suddenly it is possible that there are others, we ourselves are an “other” among others. No one can say what will become of our (Western) civilization when you have really known different civilizations by means other than the shock of conquest and domination [...]” (Ricoeur, 1965; p. 276-278).

Constructivism as an epistemological school of thought argues that our knowledge is not based on correspondence with something external, but is a result of constructions by an observer. The axioms of constructivism argue that knowledge is the result of an observing system, which is always unable to connect directly with its environment and, due to this, knowing is one of its fundamental operations. The constructivist proposal in the face of the observation of observations, i.e. distinguish distinctions, corresponds to the so-called specialized second-order observation.

The contribution of constructivism rests on the possibility of seeing what others do not see and the novelty is that first-order observers, while discriminating their objects, cannot see how they can see, i.e., they do not recognize that knowledge is caused by their own ideas. The quality that distinguishes second-order observation is not dealing with objects but rather with observation systems that are implementing distinctions, thus being able to continue their course (Arnold & Robles, 2000).

Within the scope of postmodernism, there is room for an autochthonous knowledge of soil from a constructivist point of view; it is clear that farmers will be first-order observers, who generate knowledge about lands, while academics will be second-order observers, who systematize this knowledge (see Figure 1).

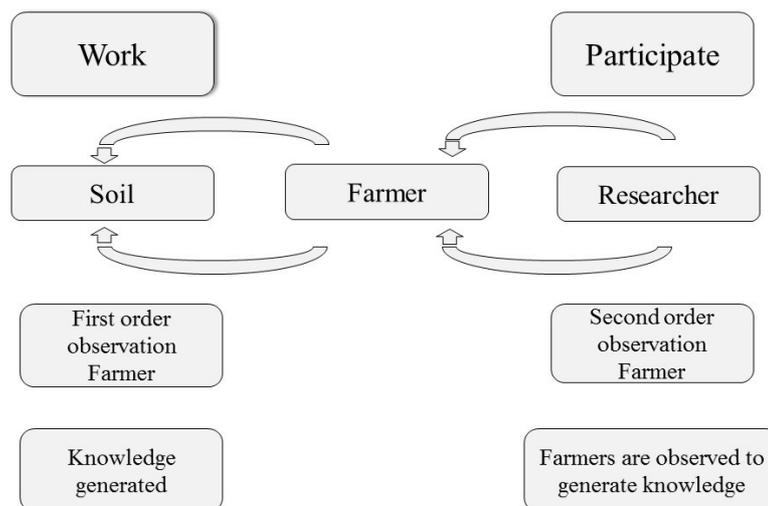


Figure 1. Participatory and constructivist approaches

3. Land maps

A land map (see figure 2) can be defined as the projection (using graphic symbols) of spatial relationships extracted from the knowledge available in cognitive maps of the environments that farmers know: parcel-headland-ejido¹ (Pájaro, 2015), rather than being the result of sophisticated techniques such as those used in soil surveys or remote sensing (Pájaro, 2010). Therefore, there are contrasting visions of the farmer's geographical environment (Pajaro, 2011).

As it has been shown by Pájaro & Tello Garcia (2014), a land map represents geographic knowledge of the farmers, which contrasts with the positivist cartographic vision (technical knowledge) and that can help to solve local problems and even lead to real public policies (Pájaro & Tello Garcia, 2012; 2013a; 2013b), (see figure 3); consequently, it is necessary to analyze its argumentative or explanatory functions, according to philosophy (Popper, 1972), and as a cartographic representation according to critical cartography (Harley, 2002), (see figure 4):

The land map as critical cartography: A land map can be discussed and analyzed as a text (according to Harley, 2002, pp. 34-35) rather than a reflection of nature, since land maps are graphic language waiting to be decoded by technicians. They are a construction of rural reality, with cognitive images full of intentions and consequences that can be studied in the local context and as a result of both individual minds of farmers and the broad cultural context of a given society.

The land map according to philosophy: Popper (1972, pp. 172 - 173 & 357) mentions that a common map has two distinctively human functions of language: descriptive and argumentative functions. Regarding its descriptive functions, a map will be a vehicle of truth, which can make a great argument because it addresses arguable problems. Both features could also be attributed to a land map.

¹ Ejido: Originally referred to the common surroundings of a village; since 1930: land granted under the land reform program and subject to a special tenure regimen (Van der Hann, 2001, p. 278)

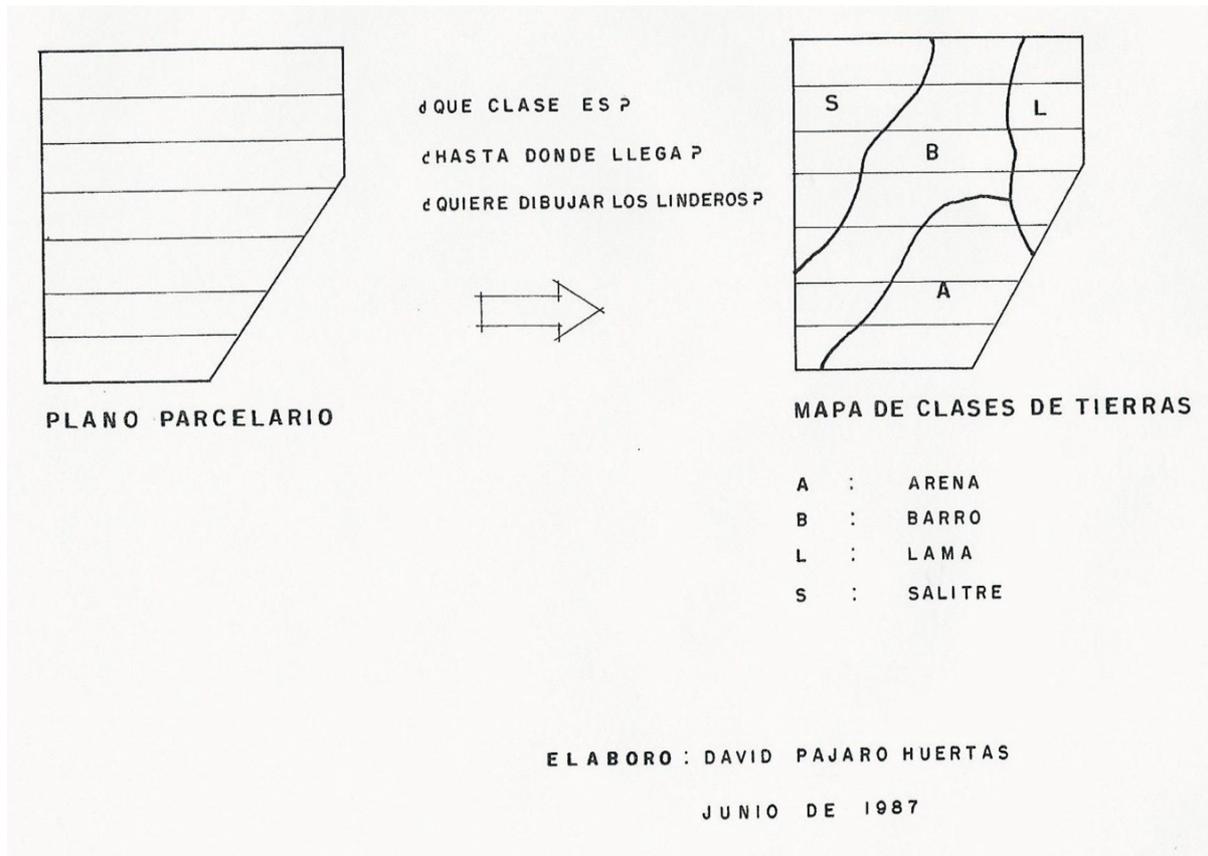


Figure 2. Mapping of farming lands types (from plot maps and interviews with informers); (Pájaro, 2015)

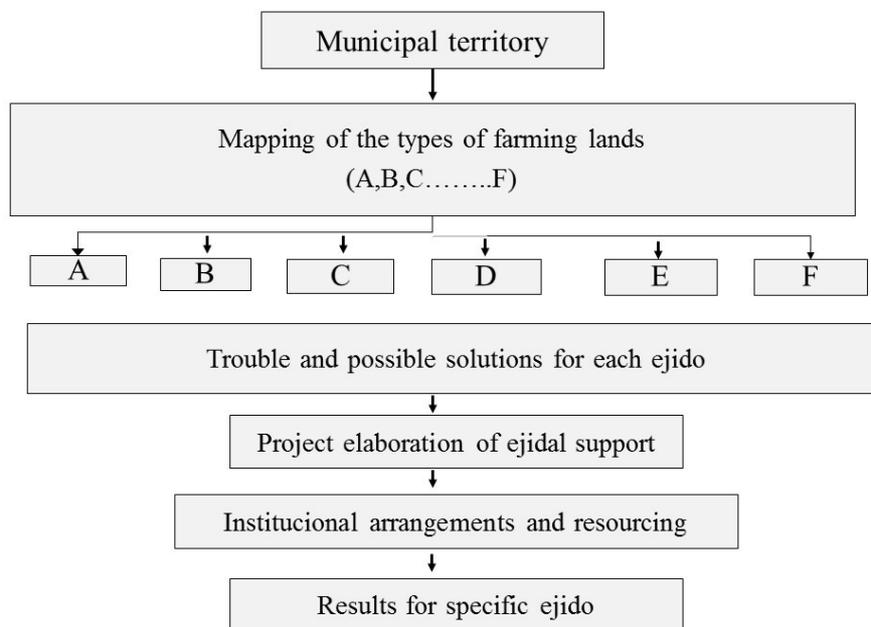


Figure 3. A proposal to elaborate projects for rural development from the land map (Source: prepared by authors)

Therefore, a land map will be descriptive because it tackles problems specific to a local environment, and it will be argumentative in so far as it is about the problems of the ejido and supports a particular way of conceiving the situation or state of affairs. In addition, a soil map will be a means to tell the truth from the rural perspective and it is a major argument, because it addresses problems that can be subject to theoretical, technical and practical arguments.

The land map according to historians: For the positivist cartographer, a map is a reflection or a graphical representation of certain aspects of the real world. However, for historians, an equally appropriate definition for a map is that of “a social construction of the world expressed through mapping”. This definition implicates not only a simple reflection of nature, but also re-describes the world, as any other document does, in terms of relations of power and cultural practices, preferences and priorities (Harley, 2002, pp. 34-35), which applies for land maps, since these always show something more than a landscape; consequently, it is possible to link the land maps with new meanings, hidden agendas and contrasting views, which are typical characteristics of the rural idiosyncrasy (see figure 4).

Concluding these reflections we can state that land maps will be only better understood, when we technicians are able to integrate into their analysis more than one academic perspective, for example social and politic topics (Pájaro & Tello García, 2012; 2013a and 2013b).

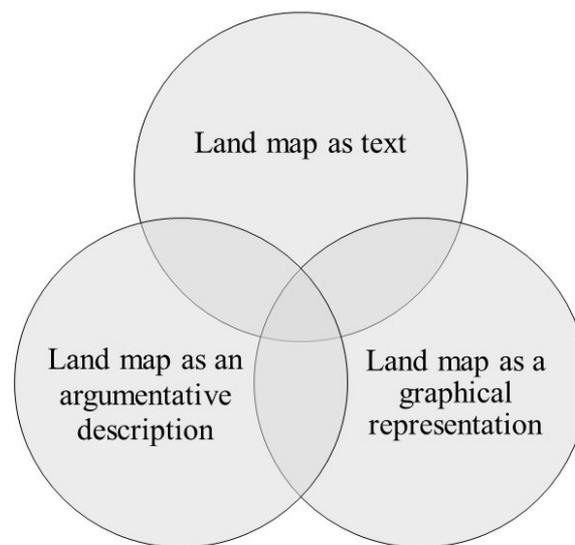


Figure 4. Land maps as a form of social knowledge.

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Article history:

Received May 2, 2016

Accepted August 30, 2016