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Registration of agricultural areas towards the development of a future Turkish cadastral system

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ABSTRACT

Despite the rapidly increasing population of the world, the amount of agricultural land remains the same. For this reason, agricultural fields are gradually becoming 'collective scarce resources'. Many countries have put restrictions on property ownership in order to manage these resources. In addition, most countries are trying to implement agricultural policies by developing various systems pertaining to these areas. The existing cadastral system in Turkey is inadequately equipped to identify the location, amount and quality of agricultural land. Therefore, due to the nature of agricultural land, the restrictions on immovable property cannot be expediently applied. This study aimed to implement registration of agricultural lands under a Land Administration System (LAS). Thus, public restrictions applied to agricultural areas could be represented under the LAS. In this way, implementation of agricultural policies would be utilised even more effectively than under current land management systems. In order to realise this aim, a village in north-eastern Turkey where cadastral work had not been completed was chosen for the study. Firstly, the agricultural classifications of the subparcels in the village were determined. These were then combined into cadastral parcels. Four important findings emerging from the study showed that: 1) agricultural classification and cadastral work could be carried out together, 2) agricultural areas could be registered in the LAS, 3) public restrictions arising from agricultural land usage could be determined, and 4) the 'land type' section in the land registry was insufficient in reflecting the features of the immovable property, thus making a more precise class identity necessary. In addition to 'land type', the term 'land class' was proposed for the land registry. Although the study was conducted for an unplanned rural area, it is recommended that researchers carry out future studies in terms of more precise identity requirements for urban areas.

1. Introduction

Throughout history land has been the most significant element in the development of societies and the construction of civilizations. Today, land, representing power and wealth, has turned into a scarce resource. Practical land policies are necessary to manage this resource effectively. The first step in establishing these policies is to acquire qualified knowledge of the land. One of the most important means of accomplishing this is the cadastre (WCS-CE, 2015). According to the traditional perception, the cadastre is defined as a legal register related to land which includes both the amount and character of these relations (Yomralioglu, 2002). In another definition, the cadastre is the institution which regulates the relationship between people and land via the rights on the immovable properties (Van Oosterom et al., 2006). The right of ownership established as a result of the cadastre is considered to be the most important right on the real estate. The components of this right can change from country to country and from legal system to legal system. These rights can be restricted by various regulations (Enemark et al., 2014). Cadastral systems proposed for the future could clarify the application of such restrictions for real estate owners. In 2014, the concept of cadastre was identified as a 'legal land object' (Kaufmann and Steudler, 1998). The transformation of cadastres into Land Administrations Systems (LASs) was begun in the 1990s. Accordingly, they have supported not only ownership, but also sustainable development (Steudler et al., 2004). This new concept of a LAS is regarded as a more comprehensive and modern version of the cadastre. Traditional cadastral systems are deficient in presenting all rights, restrictions and responsibilities related to land. However, multi-purpose cadastres or LASs present data such as the ownership rights, land use rights, farming rights, restrictions and responsibilities of the users (UN-ECE, 1996, 2005; Kaufmann and Steudler, 1998; UN-FIG, 1999; Yomralioglu and Cete, 2017). The need to increase integration among these systems and to provide international standards has emerged as a result of the development process of land management systems. With

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reference to this need, the Land Administration Domain Model (LADM) was developed. The model had two goals. The first one was to avoid repetitive applications belonging to the same functions in the cadastral system and the second was to enhance the interaction amongst cadastral systems by achieving a standard unity in accordance with the fundamental ontology predicted by the model (Van Oosterom et al., 2006). This model later became the ISO standard and was adopted under the name of 'ISO 19152:2012 Geographic information Land Administration Domain Model (LADM)' ISO/CD 19152, 2012ISO/CD 19152, 2012). The LASs generally focus on three main areas which also cover three basic attributes of the land: registration of land rights, land value and land use (Dale and McLaughlin, 1999; Williamson, 2001; Steudler et al., 2004). Today, a well-functioning cadastre/LAS performs duties such as guaranteeing property rights, reducing land conflicts, supporting real estate taxation, ensuring loan security, protecting land sources, monitoring the environment and ameliorating urban planning and infrastructural development (WCS-CE, 2015). These developments in terrestrial areas in LASs are also discussed in marine areas (Baser and Biyik, 2016; Baser and Biyik, 2018)

In regard to the LAS development process, qualified land information and the standardisation of all rights, responsibilities and restrictions pertaining to the land come to the forefront. Restrictions on immovable property also constitute a very important consideration. This concept is discussed in the opening statement of the report known as Cadastre 2014 (Kaufmann and Steudler, 1998).

The general scope of restrictions on ownership of real estate (land in urban and rural, building) in the Turkish Civil Code can be summarised as including public restrictions arising from legal codes, legal procedures, servitudes, residence and construction rights, etc. (Oztan, 2002). The place of these restrictions within Turkish LAS was modeled by some studies (Alkan and Polat, 2017; Aydinoglu and Bovkir, 2017). Although real estate owners are acquainted with the restrictions recorded in the land registry based on mutual contract, they may be unaware of some restrictions which are regulated according to laws. These restrictions arising from the law are known as 'public restrictions' (also referred to as 'secret' or 'latent' restrictions). Some of these include restrictions on agricultural land due to laws, military security and restricted zones, historical and natural conservation areas, drinking water basins, coasts and planned areas (Yildiz, 2013). The current study focused on the restrictions on land of an agricultural character. In Turkey, the moment real estate is defined as agricultural land, the sale, mortgage, division and inheritance of that real estate is restricted by law. The source of these restrictions is the Soil Protection and Land Usage Law (SPLUL) (Official Gazette, 2005a).

1.1. Legal concessions derived from agricultural land usage

The SPLUL has classified agricultural lands according to their natural features and importance for national agriculture. This classification is carried out by performing detailed or semi-detailed surveys in order to prevent agricultural land from being used for other purposes, to ensure correct management and to make land usage plans. According to the Soil and Land Classification Standards Technical Instructions (SLCSTI), agricultural land is classified as:

i Absolute Agricultural land ('first-class' agricultural land),
ii Special Produce land,
iii Cultivated Agricultural land,
iv Marginal Agricultural land,
v Greenhouse Agricultural land,
vi Other land (forests, river beds, swamps, barren land, meadows, etc.) (URL-1, 2016).

The minimum size for each type of agricultural holding has been defined by the SPLUL as 2 ha for Absolute, Marginal and Special Produce Agricultural land, 0.5 ha for Cultivated Agricultural land and 0.3 ha for Greenhouse Agricultural land. These land sizes are taken into consideration whenever agricultural land is subjected to sale or mortgage. According to the SPLUL, a new concept was also created for agricultural land with economic integrity belonging to a person in the same district. This can be a parcel or multiple parcels and is designated as the 'sufficient income agricultural land size' (SIALS). In this respect, SIALS land can be likened to an agricultural enterprise. The SIALS lands are determined separately for each province of Turkey and published in the addendum of the SPLUL. Agricultural lands of less than these minimum sizes cannot be further subdivided. In cases of sales, mortgages, land division and inheritance, these sizes are taken into consideration. In addition, in compliance with the SPLUL, agricultural land which has become no longer divisible must be registered with the land registry (Official Gazette, 2005a,b; Yucer et al., 2016; Coruhlu and Yildiz, 2017). According to the data of the Ministry of Food, Agriculture and Livestock (MFAL), the total area of agricultural land in Turkey amounts to 24 million ha, which is about one-third of the total area of Turkey. Considering that the population in the agriculture sector is 22 million, it can be seen that these restrictions on land affect a very large area and population. Because the scope and content of these restrictions are generally not known by the land owners, their confidence in the land registry can be eroded (Yildiz, 2013; Coruhlu and Yildiz, 2017). In order for these restrictions to be represented in the land registry, the cadastral system must identify the location, the amount and the type of the agricultural land.

1.2. Relationship between the LAS and agricultural land usage

The cadastre at the centre of the LAS is now in the public inventory and is widely reflected in the legal status of the land. Cadastral parcels are demarcated to show the boundaries of ownership rights. A cadastral parcel may include non-agricultural areas as well as different agricultural land usages. For this reason, the extent of the LASs sufficient for the implementation of agricultural policies is a matter of dispute at the international level, and the development of LASs to carry out agricultural policies has long been debated. For example, in the context of the European Common Agricultural Policy (CAP), the primary aim is to register agricultural lands in order to carry out agricultural subsidies. Therefore, the system known as the Integrated Administration and Control System (IACS) was introduced (Krugh, 2000; Delince, 2001; Inan, 2010; Inan et al., 2010a). In addition, the 'Land Parcel Identification System' (LPIS) was developed to record agricultural lands (Delince, 2001; JRC, 2001). The parcels in the LPIS are called Reference Parcels (RPs). The RP is essentially a concept that indicates how land use is demarcated and can be basically obtained from three data sources: the cadastral parcels within the LAS, large/medium-scale topographic maps and orthoimagery products (Inan, 2010). The four different RP types in the LPIS include:

i the agricultural parcel: a parcel used by one farmer to grow one crop,
ii the farmer block: a block used by one farmer to grow more than one crop,
iii the physical block: a block used by more than one farmer to grow more than one crop,
iv the cadastre parcel: representing land ownership only (Fig. 1).

The RPs of the cadastral parcels only take into account the agricultural land usage. However, cadastral parcels can cover both agricultural and non-agricultural areas. It is legally possible to use cadastral parcels as a spatial reference in the LPIS. Thus, in the first years of the IACS/LPIS application in the EU, the use of cadastral parcels as the main RP data was on the agenda. Today, however, it is not used in many countries. The most important justification in this respect is that the boundaries of cadastral parcels and land declared for agricultural production (i.e., agricultural parcels) do not overlap (JRC, 2001). For