

# Pakistan

## Country Report 2012 (Based on the PCGIAP-Cadastral Template 2003)

Country/state for which the indications are valid:	Pakistan
Name of contact person	Johum Fatimah Mirza [1], Muhmmad Adeel [2]
Affiliation, Organization:	[2] Institute of Geographical Information Systems (IGIS), National University of Sciences and Technology (NUST), Islamabad, Pakistan. [1] Department of Urban Studies, University of Hong Kong (HKU), Hong Kong.
Function, Position:	[1] MS Research Student [2] Phd Candidate
Address:	----
Email address:	fatimah10@igis.nust.edu.pk

## I. Country Report

### A. Country Context

#### *Geographical Context*

Pakistan officially the Islamic Republic of Pakistan is a sovereign country in South Asia covering an area of 796,095 sqkm (307,374 sq mi). With a population exceeding 180 million people, it is the sixth most populous country in the world. Located at the crossroads of the strategically important regions of South Asia, Central Asia and Western Asia, Pakistan has a 1,046-kilometre (650 mi) coastline along the Arabian Sea and the Gulf of Oman in the south and is bordered by India to the east, Afghanistan to the west and north, Iran to the southwest and China in the far northeast. It is separated from Tajikistan by Afghanistan's narrow Wakhan Corridor in the north, and also shares a marine border with Oman [1]. According to Ministry of Environment, Government of Pakistan land use classification, Pakistan consists of 26.9% of range land, 24.5% of exposed rocks, 19.9% of agriculture land, 10% of open land, 9.7% of deserts, 5.4% of forests, 2.2% of snow/glaciers, 0.5% of water bodies, water logged and saline bodies [2]. Pakistan is divided into three major geographic areas: the northern highlands, the Indus River plain and the Balochistan Plateau. Ranging from the coastal areas of the south to the glaciated mountains of the north, country's landscapes vary from plains to deserts, forests, hills and plateaus.

#### *Historical Context*

The territory of modern Pakistan was home to several ancient cultures, including the Neolithic Mehrgarh and the Bronze Age Indus Valley Civilisation, and has undergone invasions or settlements by Hindu, Persian, Indo-Greek, Islamic, Turco-Mongol, Afghan and Sikh cultures. The area has been ruled by numerous empires and dynasties, including the Indian Mauryan Empire, the Persian Achaemenid Empire, the Arab Umayyad Caliphate, the Mongol Empire, the Mughal Empire, the Durrani Empire, the Sikh Empire and the British Empire. As a result of the Pakistan Movement led by Muhammad Ali Jinnah and India's struggle for independence, Pakistan was created in 1947 as an independent nation for Muslims from the regions in the east

and west of India where there was a Muslim majority. Initially a dominion, Pakistan adopted a new constitution in 1956, becoming an Islamic republic. Pakistan is a federal parliamentary republic consisting of four provinces and four federal territories. It is an ethnically and linguistically diverse country [1].

### ***Current Political and Administrative Structures***

Pakistan is a federation of four provinces: Punjab, Sindh, Khyber Pakhtunkhwa and Balochistan, as well as the Islamabad Capital Territory and the Federally Administered Tribal Areas in the northwest, which include the Frontier Regions. The government of Pakistan exercises de facto jurisdiction over the western parts of the disputed Kashmir region, organized into the separate political entities Azad Kashmir and Gilgit–Baltistan (formerly Northern Areas). Local government follows a three-tier system of districts, tehsils and union councils, with an elected body at each tier. There are about 130 districts altogether. The Tribal Areas comprise seven tribal agencies and six small frontier regions detached from neighboring districts [1].

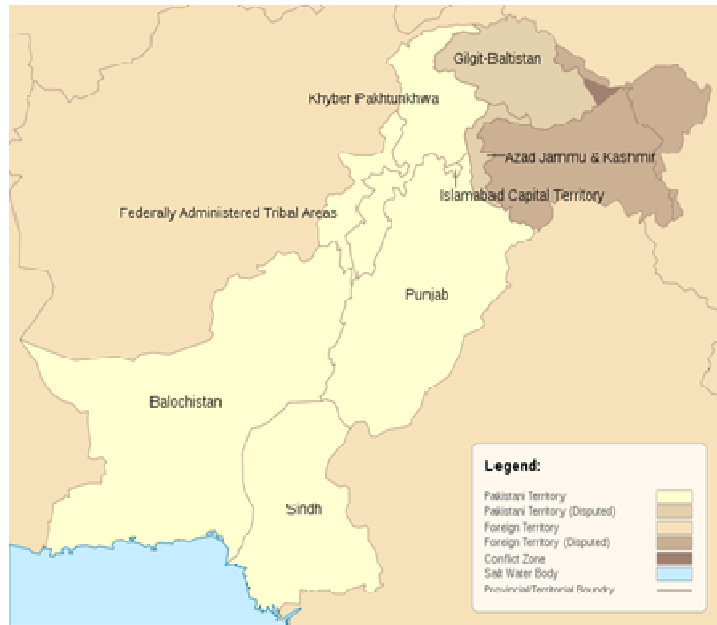


Figure 1: Four Provinces and Federal Territories of Pakistan (source: <http://en.wikipedia.org/wiki/Pakistan>)

### ***Historical Outline of Cadastre***

The Process of Land Records Management in Indo-Pak sub-continent is very old. The Arthsastra is supposed to be the first Indian work to mention of the village officers known as “gopa” that are responsible for preparation of various registers for the village fields, transfers, due taxes, etc. but that was in a very rudimentary level. Attempt to reform the system was first made by Sher Shah Soori (ruled from 1534-1545) whereby land was categorized, measured and a schedule of crop rates fixed. The system was reformed during Mughal King Akbar regime (ruled. 1556-1605). “Todar Mal” as an adviser to “King Akbar”, initiated the regularization of land records management for the first time and devised elaborate method for agricultural tax assessment on rational basis. The subsequent colonial rule by the British implemented the system on scientific lines whereby large scale cadastral surveys were conducted to demarcate the boundaries and extent of each individual landholding. Soil fertility was also classified to formulate and rationalize the levy and collection of land revenue from landholders of each and every village. The British set up a proper administrative hierarchy [3] [4].

In Pakistan’s cadastral system was mainly developed for built for taxation [4] [5] [6] [7]. The levy of tax is more than four centuries old. The cadaster allows determining the surface of the parcel and based on that, a certain crop production is expected and complicated tax rate is finally applied. The tax rate is still mainly based on crop revenue as the country is still widely rural. The process of cadastral survey in Pakistan has not yet taken full advantage of modern technology available in surveying and mapping.

## **B. Institutional Framework**

### ***Government Organizations***

In Pakistan no agency at national level is responsible for land administration. Land administration policies and legislation such as land act are made at federal level and local governments are required to implement these policies. Consequently, this top-down approach

creates many ambiguities among national and local governments those results in failure of successful implementation of land related policies. More over land related data is possessed and maintained at national level by different organizations due to mandate constraints and the data is not shared and made available to fellow organizations as well as to users due to lack of comprehensive national spatial data policy. Empirical study carried out in September 2007 in Pakistan shows that many public sector organizations working under different ministries are producing and maintaining spatial data at various administrative levels. A variety of data sources dealing with different data types including topographic maps, land information, social and economic data, statistical records, satellite data/ aerial photographs and revenue records operate in the country with specific tasks. For example, Survey of Pakistan (SoP) is responsible for preparing, archiving, updating and maintaining all kinds of topographic maps at varying scales. The provincial, divisional, district and taluka boundaries are also available with SoP. The land and revenue records are maintained by the local administration of provincial departments [9]. Table 1 displays those organizations that are responsible for land registration and for cadastral surveying and tax collection in Pakistan.

Data Type	Responsible organization	Responsible Ministry	Analogue Data	Digital Data	Use of web for Data dissemination	Level
Topographic	Survey of Pakistan (SoP)	Defense	Yes	Yes	No	Federal
Landuse/Land Cover	Pakistan Agriculture Research Council	Federal Ministry of National Food Security and Research	No	Yes	No	
Rural Cadastral Data and Taxation	Board of Revenue (Separate for each Province)	Respective Provincial Governments	yes	No* (Work to convert analogue data into digital form is in progress)	No	Provincial
Urban Cadastral, Property Data and Urban Landuse	Development Authorities (DA-in Metropolitan Areas), Town Municipal Administrations (TMA- In small urban settlements), Private and Semi Government Housing Authorities, Cantonments (In Army regulated Housing Areas)	Planning and Development authority at Provincial level for DAs and TMAs, while Private and Semi Government Housing Authorities, Cantonments work and collect information independently about properties and Houses.	Yes	Yes* (Very Limited and Sporadic)	No	City/ Town/ Tehsil
Urban Property/ Real State Taxation	Provincial Excise and Taxation Department	Excise and Taxation	Yes	Not known	No	Provincial

Table1: Public Sector Organizations Producing Spatial Data in Pakistan  
Source: Adapted from Asmat, 2009[5]

In Rural areas records of lands are maintained by Provincial board of revenue .Records of land in urban areas and those owned by the military and granted to housing and development authorities are maintained by those separate institutions, and the registrations are not lodged with the registrar or revenue departments [8]. In urban areas, if a property is situated in a housing society such as Defense Housing Authority Karachi or Model Town Lahore, then the land records pertaining to that property will be in the custody of that society. However, in other cases, authority and maintenance of land records falls under the general purview of the Board of Revenue (BOR) [10]. The number of institutions with responsibility over land registration has created no. of problems [9].

### ***Private Sector Involvement***

All most all of the cadastral surveys and registration in Pakistan are undertaken by the state government departments such as Board of Revenue (BoR) (at provincial level) in rural areas and Government Development authorities (DAs) in urban areas. Private sector involvement is only in limited number of urban areas where land/property falls under the jurisdiction of private housing authorities. In such case only then land registration and survey is carried out by responsible private body. In some cases private sectors are now being involved for generating GIS and LIS for better management of land resources.

### ***Professional Organization or Association***

There are two main professional organizations in Pakistan that are involved in surveying and mapping. First is Survey of Pakistan (SoP) which is responsible for preparation and maintenance of all sorts of topographic land surveys of areas of entire country on the scales of 1:50000, 1:250,000 and 1:1,000,000. SoP carries out survey activity using latest digital equipment and surveyors but no. of surveyors are not reported. Other than that, second professional organization is Board of Revenue (BoR) which is the the controlling authority in all matters connected with the administration of land, land taxation, preparation, updating and maintenance of cadastral records. They are not only responsible for land record issues, but also for many social, political, and administrative tasks, including keeping weather records, collecting crop harvest information, reporting of village crimes, and updating registers of voters. Cadastral surveys are carried by Board of Revenue through its specially hired surveyors known as "Patwari or Tapedar" in local language. Beside carrying out survey Patwari is also responsible for 1) The maintenance of record of the crop grown at every harvest. 2) The keeping of the record of rights up to date by the punctual record of mutations. 3) The account of preparation of statistical returns embodying the information derived from the harvest inspections, register of mutation and record of rights. According to an estimate there are 14000 patwaris in Pakistan responsible for approximately 190 million land records which contain data of 50 million land owners [9][11].

### ***Licensing***

There is no concept of licensing and registration of cadastral surveyors in Pakistan. All the cadastral survey work is carried out by the government surveyors of state. Surveyors hired by survey of Pakistan are Diploma holders in Civil Surveying or Civil Engineering. While Board of Revenue has its own system and proper syllabus in place to select, train and take examination of surveyors/Patwaris.

### ***Education***

There are no specific institutes that are responsible for granting separate and specific degrees in surveying. Although surveying related subjects are offered at all engineering universities in Pakistan under four years bachelor degree of civil engineering and there are postgraduate level study in geoinformation in few selected universities. Besides that, Survey of Pakistan and Board of Revenue do offer some short/ refresher courses in surveying and mapping for the departmental officers and staff, government sponsored candidate and private students. Board of Revenue has its syllabus to select, train and take examination of surveyors/Patwaris. This syllabus consists of 18 different topics such as land measures, map making, harvest inspection etc.

### C. Cadastral System

#### *Purpose of Cadastral System*

Cadastral system of Pakistan has been inherited colonial period of British rule in the sub-continent which lasted till the middle of 20th century. Proof of land registration system goes back to 16th century when King Sher Shah Soori first introduced land reforms by first mapping the Indian subcontinent and then introduced land revenue system by conducting proper land survey. A later reform was done by king Akbar who brought regularization and standardization to agriculture tax assessment. Then British introduced scientific and large scale cadastral system aimed at ownership delineation and tax collection. The system was designed to maintain, transfer and access of land and to collect revenue and other levies from the land holders. Current manual cadastral system of Pakistan is approximately 500 years old so it does not provide sufficient base for an efficient land record management. The system has never been adapted or reformed according to new needs and challenges [12]. So although the existing system has a legal and fiscal role (i.e. it is being used for land transfer and to levy taxes) but not a multipurpose role (i.e. existing manual cadastral maps are not being used for planning and control).

#### *Types of Cadastral Systems*

Land administration in Pakistan is not comprehensive for whole country rather it is separate for urban and rural areas and privately owned land with in urban area. Moreover in tribal areas, people regulate their own affairs in accordance with customary law of land rights, and the government functions through local tribal intermediaries [9]. According to USAID 2008 report squatting and land-grabbing are common in (urban areas of) Pakistan. The lack of land available for housing development and lease by individuals in growing urban areas has forced migrants into informal settlements and squatting on vacant land. Pakistan is also home to individuals and groups known as the Land Mafia who illegally take possession of land or claim ownership of land and dispossess true owners through legal or extra-legal means.

The institutional set-up of the land recording system (especially in urban areas) is of opaque nature, involving many different agencies (refer to figure 2). The main ones are the Board of Revenue (BOR), the Excise and Taxation Department (ETD), and the development authorities (DAs). However, there is no single agency maintaining updated land records for all of all the provinces, and the coordination in record keeping functions being carried out by the various agencies is limited. Within this complicated institutional structure, the Board of Revenue (BoR) is the most important agency for land administration. Nevertheless, it is important to note that the BOR essentially is a body geared to collect land revenue for the Government and custodian of rights as well. On the Other hand in rural areas the BOR's land record maintenance takes place through an intricate system, which involves several levels of administration; the district, Tehsil, Kanungo circle, and Patwar circle. At the lowest administrative level of the records system (refer to figure 3 below).

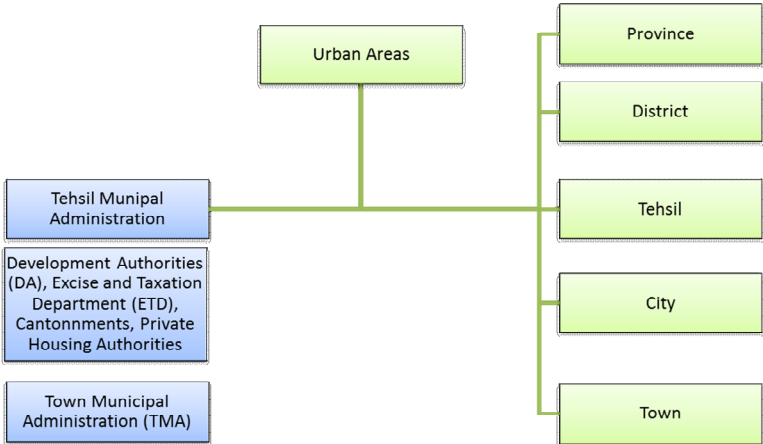


Figure 2: Administrative hierarchy for land administration in urban areas

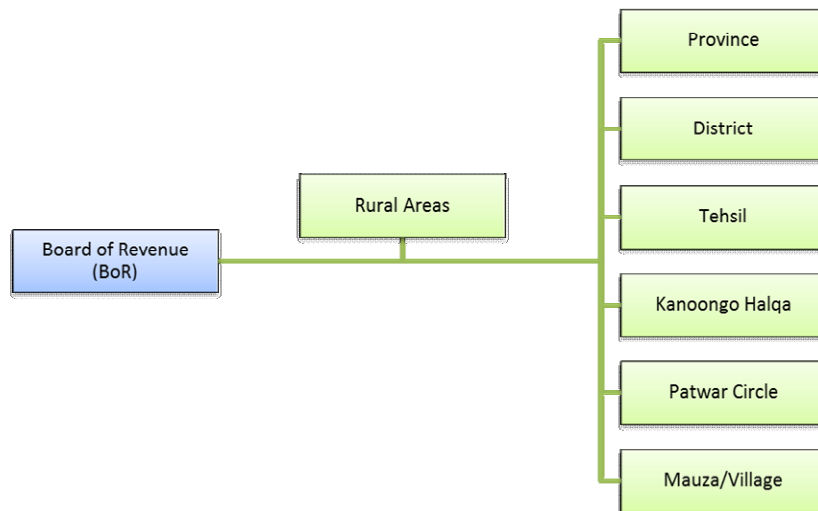


Figure 3: Administrative hierarchy for land administration in rural areas

### ***Cadastral Concept***

'Parcel' is the basic unit of cadastral system in Pakistan that are surveyed and registered at state level. Regarding the survey of parcels and registration of legal documents pertaining to parcels, all documents transferring interests in land (including leases and conveyances) must be registered with the Provincial Land Registrar, the Provincial Board of Revenue, or certain private housing and development authorities (depending upon the case) – parallel systems that have overlapping authority and do not coordinate information. Provinces that have not adopted the central legislation can adopt their own registration requirements, and in any province, local authorities can adopt regulations that are contrary to the requirements of the central legislation. Urban land granted to the Army or housing development authorities is surveyed and registered under separate systems maintained by those bodies, with no record maintained by the Provincial Registrar or revenue department [9]. In rural areas only land parcels are mapped, buildings, houses are not part of the map, while in urban areas buildings are sometimes marked and sometimes not. Definitions of some common terms frequently used within the system are given below:

**Parcel:** According to Land Record Manual, Parcel means a portion of land lying in one spot, in occupation of one person, or of several persons holding jointly, and held under one title, should be considered as a parcel. It is the portion of land for which the area is separately entered under an indicative no. in record of rights of relevant government authority. Every parcel has a unique survey no. known as khasra no. in local language.

**Property and Real Estate/Real Property:** According to Transfer of Property Act 1882 Property means (i) the thing itself, or (II) some or all the rights in a thing. Real Estate means land and anything permanently affixed to the land, such as buildings, fences, and those things attached to the buildings, such as light fixtures, plumbing and heating fixtures, or other such items which would be personal property if not attached. The term is generally synonymous with real property.

**Estate:** Any area for which a separate record-of-rights has been made; or which has been separately assessed to land-revenue; or which the Board of Revenue, declare to be an estate.

**Plot:** A plot means any size of land capable of being described with such definiteness that its locations and boundaries may be established, which is designated by its owner or developer as land to be used or developed as a unit, or which has been used or developed as a unit.

**Holding:** A share or portion of an estate held by one land-owner or jointly by two or more land-owners.

**Sale Deed and Title:** Most properties in Pakistan are sold or purchased through a Sale Deed (also commonly referred to as a 'Registry', or 'Bay Nama'). A Sale Deed must be registered with

the relevant office of the sub-registrar and it must be affixed with required stamp duty. Sale Deed is a written document which executes property transaction between buyer and seller. In addition to this, title transfer to the buyer should also be reflected in the relevant official record, for example with relevant revenue authorities in most cases; local office of the housing authority if the property is located within the jurisdiction of a Development Authority or some private housing authority (for example societies of Lahore Development Authority or Defense Housing Authority); or city district government in some cases. In modern housing societies in Pakistan, there is no need to execute the Sale Deed and property transaction is recorded simply through an allotment letter which is final and conclusive proof that property is legally transferred from seller to the buy. This process is relatively quick and fraud proof in major societies [13].

### Content of Cadastral System

Pakistan has an archaic, paper based cadastral system consisting of cadastral map and associated registers in which various types of information related to particular piece of land is recorded and preserved [12]. Following is the list of registers and documents that are operated and maintained by existing system along with their classification type:

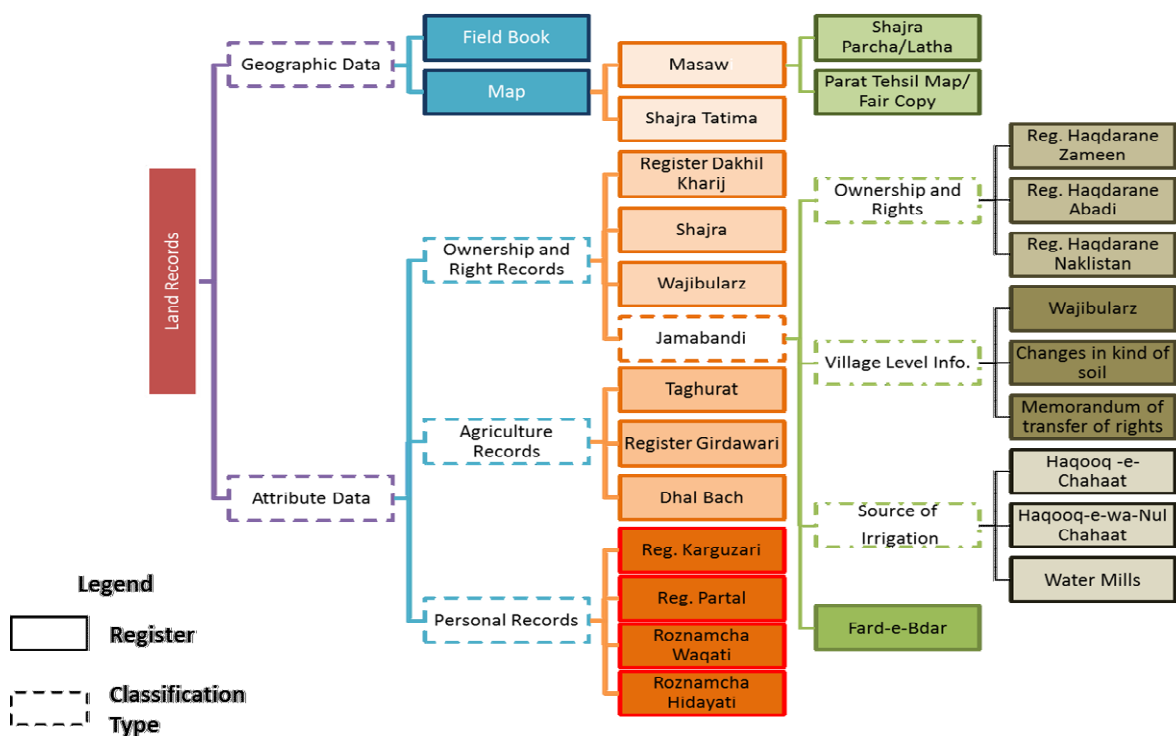


Figure 4: Types of Land Records and there Classification

## D. Cadastral Mapping

### Cadastral Map

Pakistan's cadastre map is paper based graphical representation of land parcels which are drawn at large scale [14]. A cadastral map of a village is called 'Mussavi' in local language. It shows all the fields, duly measured and numbered in a village. This is basically a surveyed paper map at different scales depending upon village area, normally at a scale of 1"=40 Karam= 200'-220' (about 1:2500 scale or so according to parcelsizes in the village). The yard-stick of measuring a field is called Karam which is 5.5 feet in length. Land parcels are labeled with their Khasra Number (parcel identification number) and dimension of each side. Each Khasra Number is owned by an owner/s. Subdivision lines breakup an irregular land parcel in different regular geometrical shapes. The subdivision lines are generally represented with dotted line and defined for the area calculation on the map [6]. Depending upon an area, a whole village can be

covered in a single map or there may be several maps of a single village covering specific portions of it.

There are basically two variants of cadastral maps (refer to figure below), Masawi and Shajra Tatima. First “Masawi” is a type of map which shows all the parcels that are within a particular village along with unique identification no. (called survey no./Khasra no.) and dimensions. Masawi has further two types called Shajra Parcha/ Latha and Tehsil map/Fair copy of map. Shajra Parcha/ Latha is mosaic reflection of all the Masawis (maps) of a village. This map is primarily kept by the Surveyor/Village administrator (called Patwari) who makes temporal changes like splitting and merging of land parcels, usually with red pencil. On the other hand another copy of the same map is kept in government office which is known as Fair copy of map/ Tehsil map. Second type of cadastral map is called Shajra Tatima which is basically map prepared for a parcel or a portion of a parcel under the sole possession which is transferred from one party to second party.

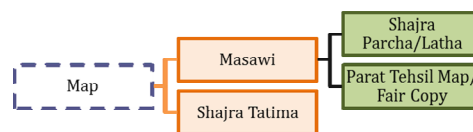


Figure 5: Variants of cadastral maps

Other prominent features of cadastral map are as follows [14]:

- Maps are prepared in local language so they are easily understood by the natives.
- Point Positioning is identified through permanent features like Tri junction pillars or plat forms, stone slabs, masonry and mud pillars or through natural features such as trees, water bodies thus the system do contain an initial level of scientific mapping.
- Village boundaries are demarcated through tri junction pillars which are erected at every point where boundaries of more than two estate meet and are also shown on map by using red polygon like shape at the boundary.
- Mainly these maps consist of parcel polygons only. Sometimes natural and manmade features are also shown on map for referencing purpose like prominent road, river, stream etc. but they are not always part of the map. More over built up area like houses and buildings are never shown on these hand drawn village maps.
- Every map has a proper title (consisting of village name and village identification number, tehsil and district name of which it is part, along with the date when it was made) and legend which explains the symbology presented in the map.

## Example of a Cadastral Map



Figure 6: Cadastre map of two different areas in Pakistan (1) Islamabad rural area (2) Attock (Punjab province area) and their zoom in view (Source:Adeel,2010 [14])

### ***Role of Cadastral Layer in SDI***

Currently in Pakistan the use of cadastral information is only limited within the fields of land administration and taxation and currently it is not being used for other purposes such as utility mapping, e-government and civic empowerment. One reason for that is the manual nature of existing cadastres which are difficult to comprehend, update and thus difficult to integrate in other types of spatial information.

In Pakistan land records management information system as e-government initiative is being implemented since 2005 to computerize land records. The dilemma is that each province has its own model. For instance, at the federal level land record project has different model than the land record model in the Punjab province as identified by World Bank in 2007. Moreover, there is also duplication in data collection as well according to the report. These can be seen as consequences of developing information systems such a land information system outside of SDI domain. As, SDI includes standardization to overcome interoperability issues from which information system development in Pakistan is suffering at the moment, therefore, there is a need to bring all the organizations engaged in computerization of land records together and to develop a standard model which is not being realized since 2005 [5].

## E. Reform Issues

### *Cadastral Issues*

The major issues of existing cadastral system are as follows:

**1) Policy Related Issues:** Lack of a comprehensive legal framework governing land rights, absence of standardized documentation and registries of land rights, ineffective formal dispute-resolution systems, and the strength of multiple customary laws create insecurity of land tenure for owners and potential purchasers.

**2) Obsolete and Opaque Cadastral System:** The existing manual system of recording and maintenance, consisting of paper maps and registers has become obsolete and opaque with the ever increasing user - interactions and dimension of land rights. More over Land records do not provide either conclusive proof of ownership nor are they linked to spatial data to perfectly identify the plot [4] which gives rise to many land related disputes, cause delays in resolving pending cases and access to land related records.

**3) Land administration from number of sources:** In Pakistan, there is more than one organizations related with the land administration activities, which lead to the non-uniformity in the land administration. As policies pertaining to land are mostly crafted at national level in the country, there is no single organization to help implementing these policies at local level.

**4) Reliability of cadastral information:** Cadastral Maps are prepared in indigenous language using local obsolete surveying techniques and bearings and measurements; therefore, each map sheet has its orientation and accuracy. Consequently sometimes the edges of the map do not match with that of adjacent sheets. Cadastral maps are not integrated with national datum so that the land parcels cannot be integrated in other developmental activities launched by the government.

### *Current Initiatives*

A few efforts has been made in Pakistan to change existing system into digital form with the aim to make system simple that is efficient and transparent. The first project, named as Participatory Information System (PIS) was initiated in the Balochistan province and aimed at demonstrating a technologically superior option for land record management with the hope that it will be adopted by the relevant stakeholders. The PIS worked through specially hired staff from the market with a casual interaction with the revenue officials who are managing the paper-based land records at the moment [4]. Second initiative is with support from the World Bank, the government of Pakistan undertook a five-year (2007–2013) US \$51 million Punjab Land Records Management and Information Systems Project to improve the land records service delivery of the Province of Punjab. The project's goals are to contribute to long-lasting tenure security and more efficient operation of land markets by upgrading the land records management system for Punjab Province. The project includes revising current business processes and associated legislation and regulations, establishing Service Centers where land records will be maintained and available to the public in digital form, and establishing linkages between the land records system and the system for registration of deeds (World Bank 2007c) [9].

## References

- [1] Wikipedia. Pakistan. [Online] Available at: <<http://en.wikipedia.org/wiki/Pakistan>> [Accessed September 2012].
- [2] NEIMS. Land Use Atlas of Pakistan. [Online] Available at: <<http://webcache.googleusercontent.com/search?q=cache:YAqK9qAA4J:www.neims.com.pk/downloads/Land%2520Use%2520Atlas%2520of%2520Pakistan.pdf+&cd=3&hl=en&ct=clnk&gl=pk>> [Accessed September 2012].
- [3] Docstoc. Land Record System of Pakistan. [Online] Available at: <<http://www.docstoc.com/docs/46619727/Land-Records-System-of-Pakistan>> [Accessed September 2012].

- [4] Qazi.M.U.,2006. Computerization of land records in Pakistan: A comparative analysis of two projects from a human Security Perspective. [Online] Japan: United Nations Centre for Regional Development. Available at:  
<<http://direct.bl.uk/bld/PlaceOrder.do?UIN=214997616&ETOC=RN&from=searchengine>>
- [5] Ali.A.,2009. Spatial Data Infrastructure for Land Administration in Pakistan. 7thFIG Regional Conference Spatial Data Serving People: Land Governance and the Environment – Building the Capacity Hanoi, Vietnam.
- [6] Ali.Z. and Nasir.A.,2010. Land Administration System in Pakistan – current Situation and stakeholders’ perception. FIG Congress 2010 Facing the Challenges – Building the Capacity Sydney, Australia.
- [7] LRMIS. Project Management Unit, Board of Revenue. [Online] Available at:  
<<http://www.punjab-zameen.gov.pk/>> [Accessed September 2012].
- [8] Ali.Z. and Adeel.M., Research Gate. [Online] Available at:  
[http://www.researchgate.net/publication/215766558\\_Implementing\\_a\\_GISbased\\_cadastral\\_system\\_in\\_Pakista](http://www.researchgate.net/publication/215766558_Implementing_a_GISbased_cadastral_system_in_Pakista) [Accessed September 2012].
- [9] USAID Country Profile. Property Rights and Resource Governance-Pakistan. [Online] Available at: <[usaidlandtenure.net/.../country-profiles/...reports/USAID\\_Land](http://usaidlandtenure.net/.../country-profiles/...reports/USAID_Land)> [Accessed September 2012].
- [10] ‘Land Record System in Pakistan’, Blue Chip Magazine, Islamabad, August 2004, Vol. 1, Issue 3. [Accessed September 2012].
- [11] Panchaud.N., 2010. Cadastral System in Pakistan Present Situation and Future Challenges, Cadastral Systems-Essay. [Online] Available at:  
<<http://www.geo21.ch/ethz/2010/lectures/P5-Pakistan.pdf>> [Accessed September 2012].
- [12] Raza, Fawad, Almas, Muhammad and Ahmed, Kamran. (2005) "Land Records Information Management System". 25th Annual ESRI International User Conference. San Diego, California
- [13] Real estate and Property Law in Pakistan.[Online] available at:  
<<http://www.hg.org/article.asp?id=22765>>
- [14] Adeel,M.(2010).Evaluating the Role of Cadastre Maps in Pakistan’s Land Administration: a GIS Perspective. FIG Congress,Sydney,Australia 11-16 April.

## II. Questionnaire

### 1. Cadastral Principles

#### *Deed or title registration*

- 1.1 Is your cadastral system based on deeds registration or on title registration ?
- deeds registration\*
  - title registration
  - other: .....

\*The present land legislation - which is constituted mainly of the Land Revenue Act (1967) and the Registration Act (1908) - does not profess to provide for a State certificate of title to land under the aegis of a public authority (Source: World Bank Project Appraisal Report,2006 [Online] Available at: <<http://punjab-zameen.gov.pk/details.php?menuid=1&submenuid=31#3>>)

#### *Registration of land ownership*

- 1.2 By law, is registration of land ownership compulsory or optional ?
- compulsory
  - optional
  - other: .....
- 1.3 If felt necessary, please, comment on the actual practice and the legal consequences.

According to Report USA 2008 country profile, despite the existence of formal laws mandating registration, incentives for registering land are weak or nonexistent, procedures complicated, and loopholes numerous. Registering a land transaction in Pakistan involves six procedures, requires an average of 50 days, and costs 5.3% of the total property value. The number of institutions with responsibility over land registration has created an environment ripe for rent-seeking by officials and others involved in the land registration process (Ali.Z. and Nasir.A.,2010. Land Administration System in Pakistan – current Situation and stakeholders' perception. FIG Congress 2010 Facing the Challenges – Building the Capacity Sydney, Australia).

#### *Approach for the establishment of the cadastral records*

- 1.4 Are landowners required to register their properties systematically during the initial establishment of the cadastre or is registration sporadic, i.e. triggered only by specific actions (such as for example sale) ?
- systematic
  - sporadic
  - both
  - all properties are already registered
  - other: .....

## 2. Cadastral Statistics

### Population

2.1 What is the population of your country?

\*According to 2011 estimates

176.7 million*
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2.2 Please, estimate the population distribution between urban and rural areas.

\*According to 2010 estimates

urban:	36*%
rural:	64*%
<hr/>	
total:	...100... %

### Number and distribution of land parcels

2.3 Please, estimate the approximate **total number of the smallest uniquely identified land units**, often called "land parcels" in your country, including urban and rural areas ?

*The total number would include all freehold and state owned land, regardless of registered, non-registered or informal holding.*

190 million *
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\*Usman,2006

2.4 What is the approximate **total number of registered strata or condominium units** ? This number would be in addition to the number of land parcels indicated in 2.3 ?

N/A
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2.5 For **URBAN areas**, please, estimate the **distribution between the smallest uniquely identified land units, often called "land parcels"** (i) that are legally registered and surveyed, (ii) that are legally occupied but not registered or surveyed, and (iii) that are informally occupied without any legal title (this may include illegal occupation or squatting).

*If the estimation is too difficult or complex using land parcels, you may base your estimation alternatively on the number of people occupying these forms of land parcels.*

legally registered and surveyed:	...N/A... %
legally occupied, but not registered or surveyed:	...N/A... %
informally occupied without legal title:	...N/A... %
<hr/>	
total:	...100... %

2.6 For **RURAL areas**, please, estimate the **distribution between the smallest uniquely identified land units, often called "land parcels"** (i) that are legally registered and surveyed, (ii) that are legally occupied but not registered or surveyed, and (iii) that are informally occupied without any legal title (this may include illegal occupation or squatting).

*If the estimation is too difficult or complex using land parcels, you may base your estimation alternatively on the number of people occupying these forms of land parcels.*

legally registered and surveyed:	...100... %
legally occupied, but not registered or surveyed:	...0... %
informally occupied without legal title:	...0... %
<hr/>	
total:	...100... %

**Number of professionals**

Please estimate the total number of *academic professionals* that are active within the cadastral system and the proportion of the time that they actually commit for cadastral matters (as opposed to work outside of the cadastral system) ?

2.7	Total number of <b>professional land surveyors</b> , such as licensed surveyors active within the cadastral system:	14,000
2.8	Proportion of the time that these land surveyors commit for cadastral matters:	...full time, 100...%
2.9	Total number of <b>lawyers/solicitors</b> or equivalent active within the cadastral system or land market:	N/A
2.10	Proportion of time that these lawyers/solicitors commit for cadastral matters or land market:	...N/A...%

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**Remarks and Comments**

Please, identify the best aspect of this questionnaire ?

All the questions were comprehensive covering all the major common aspects of cadastral system.

Please, suggest the area in the questionnaire that could be improved ?

What are the existing survey techniques that are employed to carry out survey of parcels in your area?