The development of the initial system of cadastre of natural resources in the Moscow state of the XVI - XVII century

T V Ilyushina
Moscow State University of Geodesy and Cartography, 4, Gorokhovsky lane, Moscow, 105064, Russia
E-mail: ilushina@feut.ru

Abstract. The article examines the formation of the initial cadastre system in the Muscovite State of the 16th - 17th centuries. The central governing body in the state was the «Pomestny Prikaz». The «Scribe» books contained a detailed description of the lands, information about the property of the service people, the economic conditions of the fiefdoms, villages, and monasteries. The records from these books were the main documents in determining the ownership rights to land and determining the amount of land taxes. The main goal for the development of the cadastre was achieved - it was compiled and brought into the system that already had developed into a strong custom and was expressed in writing of separate laws on possessions, boundaries and natural objects in the form of a general law and the possibility of further improvement. Protected by state laws and restrictions on use, natural resources in the XVI - XVII centuries. preserved and restored, despite the development of numerous industries and industrial operation.

1. Introduction
In the XV-XVI centuries there was a strengthening of the Moscow principality. Under Ivan III, it included all the Russian lands, formerly subordinate to the Golden Horde, as well as the vast territories of Veliky Novgorod. In the reign of his grandson, Ivan the Terrible, the Kazan and Astrakhan Khanates were conquered; the middle and lower Volga region became part of the Moscow state. The colonization of Siberia began in 1586-1587. In the first half of XVII century Russian Cossacks and industrialists entrenched in Yakutsk on the Lena River and moved east in search of new lands. In 1639 an expedition to the Sea of Okhotsk was organized by I.Y. Moskvitin [1]. As a result of wars with Poland in the mid-17th century left-bank Ukraine was annexed to the Moscow state.

As the territory expanded, there was a need for a more detailed study of newly discovered and annexed lands, their classification for further use. In 1542, the first map of the Moscow state with a part of Siberia and Tataria was compiled (map of A.Vid). In 1627, it was compiled by A. Mezentsev in the Bit Order «Book of the Big Drawing», which during the XVII-XVIII centuries served as a practical guide for the public service [2]. New geographical research has stimulated interest in new lands. So, Moskvitin trip to the Okhotsk coast served as the basis for I. Kurbat compilation of the first drawings of the coast. And in the years 1640-1645 K. Ivanov made detailed drawings of the Lena, Baikal and parts of the Okhotsk coast. In 1667, according to the decree of Alexei Mikhailovich, the Tobolsk governor P.I. Godunov prepared a drawing "Drawing of the Siberian land", which was the first printed Russian map [3]. The explorers began the mapping of the Ural and West Siberian lands and the Far East. They were instructed to conduct drawings and descriptions of the land according to the inquiries of foreigners.
and observations. In 1675, N. Spafarly was sent to China with the aim of compiling land maps using astronomical instruments and a compass [4, 5]. S.U. Remezov in the «Drawing Book of Siberia» (1699-1701) performed general assessment of the area by natural resources [6, 7].

2. The system of accounting and inventory of natural resources for taxation

The «Pomestny Prikaz» was the central governing body in the Russian state of the XVI and XVII centuries. In the Prikaz it stored scribe books. The «Scribe» books contained a detailed description of the lands, information about the property of the service people, the economic conditions of the fiefdoms, villages, and monasteries. The records from these books were the main documents in determining the ownership rights to land and determining the amount of land taxes.

Distribution of land for service was one of the reasons for frequent land censuses in the XV-XVI centuries. Scribe books used in the 16th – mid-17th centuries contained legal and financial issues (property valuations, tax rates; population and land ownership statistics; land quality classification («good», «medium», «thin») data on crop yields, types of land and physical properties of soils. The large Moscow «soha» corresponding to the size of net income gradually became the evaluation form. Besides scribe books, other books were compiled.

The «votchina – unconditional inheritable estates» were awarded for special merits and were strengthened by certificates. «Rim» letters received the name from the «rim», i.e. from the boundary. The Grand Dukes granted them to their sons, other subordinate feudal lords, and some individuals in vassal cities and lands. Replacement letters were given to the owners of the lands for the loss of genuine granted letters. Investigators testified that the one who received them has the right to search for vacant land on the property held by him. Title letters put into effect some right of ownership, wrapping it into legal force. Obedient letters obliged peasants to obey the owner. Redistribution, by which redistribution was carried out, if anyone is not satisfied with the first section of the estate. Hand over letters let a relative hand over his estate to another in order to receive maintenance from him until his death. «Soshnye» letters contained the calculation of each «volost», which was supposed to pay state taxes. Redemptions according to which various «obrochnye» articles were left to the mercy. Other documents regulated fishing, «washing», i.e. transportation and mills. Monetary letters generally relieved of all duties [8].

Scribe books contained an inventory of urban and rural estates with a designation of camps and volosts, local and patrimonial lands. They were divided into two types: scribe and boundary (boundary books are the same scribe books that were written by land surveyors). The land scribe books indicated the names of the owners, their dwellings, arable land, adjacency and signs of ownership. The scribes described all wealth, even such as churches and all kinds of income. The volume books determined the amount of bypass land. The «dozorny» (controller) books contained the same as scribal ones; they were called «dozorny» books because the controllers checked the scribes and resolved disputes between the boundary lines, or forcibly taking possession of real estate by someone.

Separation and non-separation books meant the allocation of parts from a common estate, or from dachas to one common area of «zamezhevannya» (with established allocation). In the «otkaznyh» (describing last wills) books they wrote in detail who would be given estates, properties and so on. Clerics, laymen and witnesses applied their fingerprints for verification of the content. In addition to these books, there were also various other books outlining properties and business activity questions. Construction books described how much land was allocated in the city for the construction of houses. Books of land grants indicated the number of local estates given to someone for a living. The local estate books described in detail the amount of land owned by each landowner, described his family and how many people were in each yard. Amicable delimitation notes meant an amicable delimitation of borders. «Otpisnye» books listed lands, in which, for various reasons, estates from private ownership were given back to Tsar.

The search books contained proceedings on the search for local dachas, and the return books contained correspondence on the return of fugitive people and peasants to their present owners. Payment books denoted payments from merchants, levy items and generally assigned by courier letter. Boundary
disputes were sorted out and possessions were approved mainly along old boundaries and faces. A large general search was required when separating the lands of one city from other lands.

The information collected was used to manage territories, taxation and create the first state code of information on the availability of a variety of natural resources. Geographical descriptions during this period are typical landscape descriptions of land and natural resources. Another type of description that is characteristic of this period is the target one, in which the principles of selecting source information, the methods of its presentation and presentation of facts are subordinated to a specific practical goal - determining the quantity and quality of land resources for proper taxation. The accumulation of a large amount of factual material on land and natural resources, population, economy, required their systematization and understanding, which was the impetus for the development of individual geographical sciences, the land surveying system, and the general structure of the cadastre [9].

The Time of Troubles (1598-1613) had an extremely adverse effect on land affairs. Many documents died in fires (the Local Order burned down in 1626). The surviving documents did not correspond to the actual state of territories, ravaged by the wars with Sweden (1613-1617) and Poland (1632-1634). The main source of supporting the nobility was the distribution of land for military service: accordingly, the loss of boundary documents provided an easy opportunity for the illegal seizure of estates. A lot of land litigation negatively reflected in the fund of local land, necessary for the government to pay their servants. Measures taken to restore land affairs (decrees and letters in the cities of 1619, the Cathedral sentence of 1620, Decree of 1622 on the production of the «big search») contributed to the compilation of new scribe books and streamlining the distribution of land.

Peasants were «attributed» to the land, restricting their personal freedoms and property rights (Decree 1646). The Code first mentioned real easements (the right to limited use of a piece of land). Along with property, they distinguished between ownership and property rights, and security law. In the XVII century estates were formed, social status became hereditary. Those who served, for example, in the army, constituted a «service» estate. Having a land fund, the state provided them with a plot of land (estate) with peasants, subject to military or civil service. Farmers, artisans and traders - became the «draft» estate.

Written acts of the late XV - early XVI centuries confirm the wide distribution of cadastral descriptions of land. In the reign of Ivan III (1462-1505), Vasily III (1505-1533) and Ivan IV (1547-1584) the city limits of Tver, Novgorod, Belozersk, Moscow, Kostroma, Vologda were divided into the «sohi» (taxable land units that served for convenience apportionment of taxes and duties. Their value depended on the rights of estates, land quality, financial measures of the government). Almost all the lands that were part of the state, where accounted for (even in remote areas: along the shores of the White Sea, in Olonets, Vyatka, Cherdyn, Solikamsk; and also Novgorod, Polotsk, Livonia). Descriptions continued in the following reigns of Boris Godunov (1598-1605), Vasily Shuisky (1606-1610) and during the reign of Romanov’s dynasty [9–11].

Descriptions were undertaken by special order by scribes and clerks. The scribes kissed the cross in the conscientious performance of their duties, and then acted according to the «scribe's order» (they were rewarded with local salaries for work and received a special fee) [12]. Description of the terrain was made starting from the county town. The description included: fortifications, buildings, churches with lands, buildings; streets, courtyards, shops and industrial establishments. After that they described the surrounding area: (villages, wastelands, churches, courtyards, names and crafts of people, their service, composition and amount of land), special items of income from land and acts confirming the land rights of owners. At the end of the description of each estate, the total number of its villages, yards, people and lands by land was shown. The lands of estates were described according to their use (arable land, meadows, forests, etc.), which were distinguished by their quality factor («good», «medium» and «thin»). Arable land was numbered in «quarters» (sometimes tithes); hayfields were considered «mocks», forests versts or tithes and quarters [12].

Information about the condition of lands, forests, water sources and the development of fishing facilities, served the government as necessary material for the distribution of taxes and duties among residents of the area. So, the «sohi» of the local lands had different sizes with the «sohi» of monasteries
and peasants (since the possessions of the nobility, in addition to monetary duties, also bore personal
duty, from which the clergy was freed). The «sohi» of the «good land» were less than the stakes of the
«middle» and «thin» land, so that they would be taxed equally with the latter. In cities, «sohi» were
counted by yards, people, and crafts, and not by quarters of land, as was the practice in calculating the
rural population. There were rules for scribes on the calculation of cox, which were contained in the
«sheets of the courier letter», which indicated how many and what lands and people should be «put in
the plan». According to the «sheets of the courier letter», the size of Moscow sow was as follows: the
«soha» of estates and estates had 800 quarters of good, 1000 quarters of medium and 1200 quarters of
thin land; the «sohi» of monastic lands were estimated at 600, 700 and 800 quarters, the «sohi» of
peasant black volosts at 500, 600 and 700 quarters, depending on the good quality of the lands [9]. In
Sudebnik in 1497 there were several articles (61-63) on the procedures for surveying possessions and
regulating issues of feudal land relations.

In Article 63 «On Lands of the Court» - the statute of limitations for land claims is defined as the
basis for securing the right to land. The Pskov Judicial Charter established a term of 4-5 years, other
documents speak of a three-year term. Based on practice, this period was determined using land in crop
rotation (three years) [13].

In the Judicial Codex of 1550, Articles 84-88-th dealt with land litigation and court issues. Article 84, which preserves the established statutes of limitations on land claims, changes the procedure for the
proceedings of them. Article 85 («A court in the estates») refers to the rules for the purchase and sale of
estates. Thus, the article regulated the procedure of patrimonial redemption of “votchiny”, the circle of
persons who have the right to repurchase; the right of repayment (within 40 years) and restrictions were
determined [14–16].

In the XV and XVI centuries evidence in controversial cases was presented by written documents -
deeds of purchase, inset, mortgages, traveling and other letters, boundary books, testimonies of
witnesses (old-timers), old boundaries and boundary signs, cross kissing, removal of land from the
image or judicial duel. The court of land was conducted by scribes, governors and judges [9, 17]. Land
surveying procedures were determined by land surveyors, and decrees on land relations, rights and
obligations of owners [12].

By the Council Code of 1649, a system of land surveying was systematized and “sazhen” was
determined, boundary laws were set up, which determined the procedure for land surveying; penalties
for damage to boundary signs were envisaged [18, 19]. The reasons for the change in laws were:

• imperfection of previous land surveys that gave rise to land disputes;
• the increased value of land in the central parts of the state, where there was no free land left for
distribution to the service people;
• insufficient previous regulations for regulating land relations;
• development of agricultural production and industries;
• expeditionary research, development and assessment of new lands.

These reasons prompted the government to arrange land holdings accounting for natural resources
(included in the holdings), distributing estates, taxation, and preserving the interests of landowners
(precise establishment of inter-division of shared ownership, resolution of disputes and strengthening of
tenure rights) [9].

Since 1672, a systematic detailed survey and description of land began again, and inventories of
rivers and forests were compiled to account for natural resources [20]. Land tenure plans were important
legal documents if used in litigation. When land was allotted, a certain area of the forest and the closest
water supply were allowed for construction and heating. Thus, when endowing land, the law stipulated
the use of several natural resources at once. The main task was the creation of boundary books with a
description of the boundaries of counties (1673). In 1673 the creation of boundary books with a
description of district borders had begun.
3. Conclusion
Along with the strengthening of Muscovite Russia, the unification of management orders in vassal
principalities began. Boundary laws, court forms, orders and methods of financial descriptions, were
established throughout the state according to the Moscow model. In order to streamline taxation, land
and natural resources were classified according to quantitative and qualitative indicators.

During this period of development of land relations, the reasons for the formation of «strip
ownership» appear, in which the land of one owner was scattered in different places among other
possessions and did not represent the whole economy. They were rooted in state, economic, natural
(soil) conditions of land tenure, and in the law of succession for the division and fragmentation of land.
According to the scribe's order of 1681, the land of each landowner was seized, without leaving several
people in common ownership. In scribal orders of 1683 and 1684 a retreat was allowed: the landowners,
who owned the land through tithing without any quarrels, were allowed to keep existing borders: their
land was separated only from other landowners.

Thus, the government consolidated the ownership of the strip. The number of stray lands increased
due to the cultural and economic conditions of that time and the three-field system of agriculture, due
to the abandonment of hayfields, meadows, forests among private estates. Subsequently, many of the
lands were classified as «obrozhenymi» in government articles and given to private owners. With the
development of land ownership and the destruction of local property (under Peter I), as well as thanks
to sales and inheritance transfers, land and forest lands were again fragmented, increasing through-strip
ownership in the state.

In scribe books and drawings not only the characteristics of land, hayfields and pastures (according
to the soil and geobotanical state for agricultural lands) were given, but also the characteristics of the
fisheries. In the future, the areas of agricultural waste of the middle chernozem strip and the southwest
were determined by type of craft. Agriculture was the main occupation of the population. During this
period, the main goal was achieved - to collect and bring into the system what had already developed
into a strong custom. It was expressed in combining of separate laws on lands and boundaries in the
form of a general law, which made it possible to further improve it. An urgent need to reform land
relations was due to the following main problems:
- lack of accurate registration of lands of the noble estates;
- illegal transactions in which the state lost its land and could not establish accurate taxation due
to inequality of land allotments;
- self-seizure of state land by nobles, peasants, etc.;
- uncertainty of the position of roads and waterways.

Thus, scribal land surveying is the first system of cadastral of natural resources, associated with the
formation of the Russian state. One of the main events of this period is the gross surveying of 1680-86,
which was of great importance in the history of Russian land ownership. It provided creation of many
boundary documents; secured the rights of owners on the borders, composition and ownership of estates;
resolved many land disputes and troubles; brought public land to the notice and gave the government
the basis for the further establishment of land holdings and proper taxation. The «self-seizure» of land
ceased, the land surveying satisfied the demands of the state in terms of accuracy, time and production
methods. Protected by state laws and restrictions of use, natural resources in the XVI - XVII centuries
were preserved and restored, despite the development of numerous industries.

References
[1] Aristov N Y 1866 Industry of ancient Russia (St. Petersburg: type. Queen and Company) p 334
[2] Lappo-Danilevsky A S 1890 The organization of direct taxation in the Moscow state from the time
of the Troubles to the era of transformation (St. Petersburg: type I.N. Skorokhodova) p 568
[3] Khrenov L S 1987 Chronology of domestic geodesy from ancient times to the present day: Geodesy,
astrometry, gravimetry, photogeodesy and cartography (Leningrad: GAO) p 288
[4] Kordt V A 1906 Materials on the history of Russian cartography (Kiev: Ed. Comp. V.A. Kordt Issue
1: Maps of all of Russia, its northern regions and Siberia) p 34
[5] Kordt V A 1910 *Materials on the history of Russian cartography* (Kiev: Ed. V.A. Kordt Issue. 2: Maps of all of Russia and its Western regions until the end of the 17th century) p 31
[6] Postnikov A V 1990 *The use of old maps as a source for studying the natural environment: state of research and methodological approaches* (Moscow: IIET) p 41
[7] Postnikov A V 1985 *The development of cartography and issues of using old maps* (Moscow: Nauka) p 224
[8] Milov L V 1986 *Trends in the agrarian development of Russia in the first half of the 17th century: Historiography, computer and research methods* (Moscow: Publishing house of Moscow State University) p 303
[9] German I E 1914 *History of Russian land surveying*, 3rd edition (Moscow: Tipolithography V. Richter) p 291
[10] Veselovsky S B 1915-1916 *Soshny letter. A study on the history of the cadastre and land taxation of the Moscow state* (Moscow: B.I. Vol. 2) p 26
[11] Schapov Y N 1976 *Ancient Russian princely charters of the XI-XV centuries* (Moscow: Nauka) p 240
[12] German I E 1910 *History of Russian land surveying* (Moscow: Tipolithography V. Richter) p 302
[13] Kazakov R P 2000 *Judicial Code of 1497 Questions of History 3* 175, 139-145
[14] 1986 *Legislative acts of the Russian state of the second half of the XVI - first half of the XVII century* (Leningrad: Nauka) p 262
[15] 1936 *Legislative acts of the Grand Duchy of Lithuania XV - XVI centuries. Documents and materials on the history of the peoples of the USSR* (University named after A.S. Bubnova. Faculty of History. Leningrad: Sotskegiz) p 156
[16] 2012 *Legislation of Tsar Fedor Alekseevich 1676-1682 Legislation of tsars John Alekseevich and Peter Alekseevich. 1682-1696* (Moscow: Zertsalo) p 288
[17] 1894 *Surveying. How to measure the earth, and what you need to know for this?* (Moscow: Type. I.E. Ermakova. No. 133) p 48
[18] Sofronenko K A 1959 *The Cathedral Code of 1649 - the code of Russian feudal law* (Moscow: Moscow State University named after M.V. Lomonosov) p 58
[19] 1990 *Acts of clerical work 60-80-ies of the XVII century* (USSR Academy of Sciences. Moscow: Nauka) p 474
[20] Kusov V S 1993 *Drawings of the Russian Land XVI-XVII centuries* (Moscow: Russian World) p 380