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Land, law and exploitation of natural resources
Property rights in ancient Rome*

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Introduction

"There is nothing which so generally strikes the imagination, and engages the affections of mankind, as the right of property; or that sole and despotic dominion which one man claims and exercises over the external things of the world, in total exclusion of the right of any other individual in the universe."[1]

With this statement, William Blackstone opened his chapter 'Of things' (property rights) in the "Commentaries on the Laws of England". Although he summarized and systematized the main rules of common law, his views on property originate in civil law tradition[2] and were based on the philosophical trends of his time, most of all on the views of John Locke.[3]

Since the end of the 17th century, Enlightenment thinkers had developed sophisticated theories for a new foundation of property rights – attacking old feudal models in the distribution of resources.[4] Exploitation of land and access to natural resources were the things which really mattered – combined with the social and economic value of labour. "Liberty and equality" – personal freedom and free property, a society without status differences served as a basis for economic development.[5]

In this chapter, I start with the highly developed private law theories of the 19th century "fin de siècle". What was the main feature of ownership, according to legal scholars of the late 19th century? At that time, jurisprudence especially underlined the absolute, unlimited and

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[1] Blackstone 1765: 2.

[2] Already in the 14th century, Bartolus de Saxoferrato declared that ownership is the *ius de re corporali perfecte disponendi nisi lege prohibeatur* – see for it Roger 1972: 1.

[3] See Bromley 2007: 116-127. Jeremy Bentham commented Blackstone's work that it is a "striking example of the inability of the common law to provide adequate definitions of property"; see Sokol 1994: 287.

[4] Locke 1689.

[5] Hegel 1911 §§ 41-46; Coing 1967: 95.

exclusive character of ownership. In the civil law tradition, German Pandektists worked out a strikingly abstract definition. Probably its most typical and widely accepted expression was given by Bernhard Windscheid :

Ownership means that a (material) object belongs to someone, and more precisely belongs to him according to the law: hence more precisely instead of ownership 'right of ownership'. That something belongs to someone according to the law means that according to the law his will is decisive for it in all its relations. This becomes evident in a double way: 1) the owner can dispose of the object as he pleases; 2) another person cannot dispose of the object without the owner's will. It is possible to name several other competences that pertain to the owner in virtue of the concept of ownership, for instance the power to use the object and to exploit it, the power to exclude third persons from any way of affecting it, the power to claim it from any third person, the power to determine its legal fate (the authority to alienate). However, one cannot say that ownership consists in the sum of individual competences or that it is a compound of individual competences. Ownership is the full possession of legal title to the object, and the individual competences that can be identified are mere externalisations and manifestations of this full possession. Ownership as such is unrestricted, but it can bear restrictions. From all possible relations in which the object is subjected to the will of the rightful owner on the ground of his ownership, one or other relation can be excluded by means of a specific legal act and be withdrawn from the will of the owner. He does not cease being the owner because of this. For it remains true that he has a right that makes his will decisive for the object in the entirety of its relations and which relieves him from the need of any specific justification for any possible authority over the object. If the limitation of ownership is lifted, then the ownership immediately assumes its fullness again.[6]

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[6] Windscheid 1900: 755-758: „Eigenthum bezeichnet, dass Jemandem eine (körperliche) Sache eigen ist, und zwar nach dem Rechte eigen ist: daher genauer statt Eigenthum Eigenthumsrecht. Dass aber Jemandem eine Sache nach dem Rechte eigen ist, will sagen, dass nach dem Rechte sein Wille für sie entscheidend ist in der Gesamtheit ihrer Beziehungen. Dies zeigt sich nach einer doppelten Richtung: 1) der Eigenthümer darf über die Sache verfügen, wie er will; 2) ein anderer darf ohne seinen Willen über die Sache nicht verfügen. Es lassen sich ferner einzelne Befugnisse namhaft machen, welche dem Eigenthümer kraft des Begriffs des Eigenthums zustehen, z.B. die Befugnis die Sache zu gebrauchen und zu nützen, die Befugnis jeden Dritten von aller Einwirkung auf dieselbe auszuschließen, die Befugnis sie von jedem dritten Besitzer abzufordern, die Befugnis ihr rechtliches Schicksal zu bestimmen (Veräußerungsbefugnis). Aber man darf nicht sagen, dass das Eigenthum aus einer Summe einzelner Befugnisse bestehe, dass es eine Verbindung einzelner Befugnisse sei. Das Eigenthum ist die Fülle des Rechts an der Sache, und die einzelnen in ihm zu unterscheidenden Befugnisse sind nur Äußerungen und Manifestationen dieser

For Windscheid, ownership as such is absolute and unlimited. This was the most important premise in the on-going codification of Civil Law in Germany and other European countries. Every owner should be entitled to an exclusive and unlimited usage of his property, without interferences by other individuals or the state. The rules of the free market sufficed, or rather, they were perceived to provide the only realistic framework for increasing economic performance. Furthermore, it was widely accepted that the recognition of ownership as an absolute, unlimited and exclusive right is indispensable for an optimal allocation of resources, for an efficient distribution of income and for maximizing profit in the entire economy.[7]

Since the late 15th century, German legal thought was mainly based on the Roman law tradition, as was the work of Bernhard Windscheid, whose notion of ownership originated in classical and Justinian Roman law. This so called 'Roman' approach became the general model for bourgeois ownership, conceived as an absolute private right to enjoy one's land.[8] It was a conception of ownership which focused on the interests of individual property holders. Windscheid especially pointed out the owner's will: the main goal, the essence of ownership is that almost every possible destiny of the owned thing depends only on the will of its owner. The owner's will comprises two main elements: a) the owner can dispose of his property and possessions as he wishes; and b) nobody can dispose of the owned thing against the will of its owner.[9] The German Civil Code (BGB) established its definition of ownership in this tradition.[10] Furthermore, in an amendment, the French Code Civil as well comprised a closely related definition.[11]

Fülle. Das Eigenthum ist als solches schrankenlos; aber es verträgt Beschränkungen. Aus der Gesamtheit der Beziehungen, in welchen kraft des Eigenthums die Sache dem Willen des Berechtigten unterworfen ist, kann durch eine besondere That des Rechts eine oder andere Beziehung herausgenommen und dem Willen des Eigenthümers entzogen werden. Dadurch hört er nicht auf, Eigenthümer zu sein; denn es ist immerhin wahr, dass er ein Recht hat, welches als solches seinen Willen entscheidend macht für die Sache in der Gesamtheit ihrer Beziehungen, und welches ihn jeder besonderen Rechtfertigung für irgend eine an der Sache denkbare Befugnis überhebt. Fällt die Eigenthumsbeschränkung weg, so entfaltet das Eigenthum sofort wieder seine ganze Fülle.".

[7] North 1981: 28; Richter 2007: 211 ff.

[8] Parisi 2010: 389.

[9] Gordley 2006: 49 ff.

[10] § 903 BGB: **"**The owner of a thing may, to the extent that a statute or third-party rights do not conflict with this, deal with the thing at his discretion and exclude others from every influence."

[11] Article 544c Code civil: **"**Ownership is the right to enjoy and dispose of things in the most absolute manner, provided they are nut used in a way prohibited by statutes or regulations." The Déclaration des droits de l'homme

Even today manuals of Roman law use almost the same terminology that we observed in Windscheid's treatment. John Crook, for instance, underlined that "the Romans took a strong view about ownership," and "dominium was a 'title', abstracted from the facts of holding".[12] German legal language uses the technical term „Vollherrschaft", full unlimited power.[13]

Thus, today the superficial idea is widespread that ancient Roman law had very early developed the conception and protection of such an absolute, individualistic and exclusive ownership as modern theory suggests.[14] This view is so commonly accepted that even critical representatives of NIE have adopted it. For example Francesco Parisi stated: "As a reaction to the feudal tradition, the rationalist jurisprudence of the eighteenth century and the modern codifications of the nineteenth century revived the various important Roman rules of property, recasting them as general principles of civil law."[15]

Ownership – an unlimited right?

Barzel, however, rightly warns that "property rights are not absolute and can be changed by individual's actions."[16] In the following I shall sketch a different picture of the concept of ownership in Roman law, focusing on the exploitation of natural resources on landed property. I raise the question how legal institutions of ownership influenced (positively or negatively) the exploitation of the most important natural resource, agrarian land, in the Roman Empire. Secondly, I ask whether the above definition of ownership (which was worked out at the end of the 19th century) fits the ancient sources. Lastly, I question if in the ancient social and economic environment, ownership could have worked at all in this way. Looking at the sources, ownership seems rather a product of specific historical developments — a legal institution in motion, reacting to new challenges from its social and economic environment.

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de 1789 sated that property rights are «inviolable et sacré» and « absolu» : Art. 545: "No one may be compelled to yield his ownership, unless for public purposes and for a fair and previous indemnity."

[12] Crook 1967: 139-140.

[13] Kaser – Knütel 2005: 109: "Das Eigentum des klassischen und des justinianischen römischen Rechts, auf dem unsere moderne Auffassung beruht, ist das umfassendste private Recht, das jemand an einer Sache haben kann; die privatrechtliche Vollherrschaft, die zwar auf verschiedene Arten beschränkt werden kann, aber nicht von vornherein beschränkt ist." It sounds less strict in English civil law tradition, see e.g. Buckland 1939: 107: „Ownership (Dominium) is a *res* in the technical sense: it is the greatest of all rights over a *res* in the physical sense."

[14] See e.g. Honsell – Mayer-Maly – Selb 1987: 142.

[15] Parisi 2010: 389.

[16] Barzel 2007: 263.

Looking back at the last hundred years of legal theory, already at the end of the 19th century criticism was raised against Windscheid's strict conception of ownership. Among others, Otto von Gierke attacked the model, because in his view it was too Roman.[17] He argued that it was too individualistic and breathed 'the most rigid Romanism'. Instead he advocated adopting a less individualistic concept based on German historical roots.[18] On the other hand, Franz Wieacker underlined that ancient Roman law cannot be blamed for its impact on private law reasoning at the end of the 19th century: Roman law should not be used, abused or celebrated for the political and economic individualism that pervaded Pandektism.[19]

It is not possible in the present paper to follow the long evolution of criticism against the "classical" definition of Roman-rooted 19th century ownership theories. Rather I will restrict my analysis to a few recent studies that show that the understanding of certain property rights was not the same in ancient Roman law as it came down in the works of the Pandektists.

Already Max Kaser expressed some doubts: he wondered if early Roman law knew a unified concept of ownership at all.[20] In his view, the idea of ownership was for a long period merely a reflection embodied in the legal protection of property rights offered by state authorities (*legis actio sacramento, rei vindicatio*).[21] Furthermore, he believed that archaic property relations should not be defined as absolute, but rather as relative rights concerning things (a kind of "publicly acknowledged control over a thing").[22] In early Rome, access to land was controlled rather by sacred and political institutions, and not by law. Kaser's theory has produced vivid disputes among scholars until today. Its main contribution is probably the idea that ownership is a dynamic category, strongly influenced by its social, cultural and economic environment.

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[17] Gierke 1889: 103.

[18] Medieval German law emphasized mere the title for using a piece of land with the possibility of a new distribution by the community instead of an individual, absolute and exclusive right on it; Mitteis – Lieberich 1969: 14-15. For a detailed analysis of the so called German debate see recently Gordlay 2006: 53ff.

[19] Wieacker 1961: 220: "Am wenigsten kann das römische Recht jetzt noch gedeutet, verurteilt oder gefeiert werden als Ausdruck des politischen und wirtschaftlichen Individualismus, zu dem das Zeitalter des Pandektismus sich bekannte und den seine sozialen und sozialistischen Gegner nur kontradiktorisch bekämpften. Auch hier sah der Positivismus in der Quelle, über die er sich neigte, nur sein eigenes Spiegelbild."

[20] Kaser 1962: 19ff.; 20-29; Kaser 1956: 16 and 228.

[21] Already the Twelwe Tables granted the possibility to claim for lawful possession, *dominium*—a title, abstracted from the facts of holding.

[22] In German "publizistische Herrschaft" – criticized by Watson 1968: 91-95.

Later, Alan Rodger attacked the commonly held idea that our modern ownership conception originated in classical Roman law: "It is well known that no ancient legal text contains a Roman definition of ownership. However, the belief that owners in Roman law enjoyed virtually unlimited powers over their property, movable or immovable, has an immensely long history and can be said to have influenced all the western legal systems that owe their ultimate allegiance to Roman law."[23] Rodger showed in his book that the seemingly unlimited rights of the owner had some barriers; however, he restricted his research to neighbours' rights, especially the right to light, prospect and water.[24]

Recently, James Gordley published a comparative study on differences and similarities in the structure of property in civil law and common law, based on historical, philosophical and economic foundations.[25] His main goal was to show that servitudes and legally defined neighbours' rights set strict limits on property rights in every legal system. There was never an owner who could use his land or urban plot as he wished – there were always social, economic and legal institutions that kept individual usage within certain limits on behalf of the community.

Summing up, there are critical voices in legal history against the rigidly abstract and individualistic conception of ownership worked out mostly by the Pandektists. The idea of unlimited and exclusive ownership hardly fits the expectations society sets for its legal environment. In the following I shall study how the Romans dealt with ownership on agrarian land: does the above sketched modern definition of ownership fit the sources?

New Institutional Economics[26]

NIE offer a useful framework to explain some features and changes in the conception of ownership in Roman law. Social, political and legal institutions have an important impact on economic performance.[27] The institutional environment "constitutes the framework within which human interaction takes place. It provides the so called 'rules of the game', which, in

[23] Roger 1972: 1.

[24] Rodger 1972: 38ff., 124ff. and 14ff.

[25] Gordley 2006: 49-154.

[26] Generally see Kehoe 2010: 29 ff.

[27] Mercuro – Medema 2006: 241ff.

effect, are the institutional background constraints, under which individuals in society make choices."[28]

Without any doubt there was always a strong connection between legal rights (such as property rights) and economic rights. However, economic performance can occur also without a proper legal framework. Indeed, Barzel rightly states that "legal rights, as a rule, enhance economic rights, but the former are neither necessary nor sufficient for the existence of the latter."[29] Nevertheless, economic choices can be made with more certainty – and at lower transaction costs – in an adequate legal environment. Furthermore, economic transformations and needs often lead to changes in the legal framework: the state, as main decision maker, interferes to combat economic distress.

Property is a social fact. In every society, the definition of property rights is influenced by social, political and economic phenomena. "Property is not simply a derivative of a physical fact, it also reflects a group choice about what kinds of effort are to count in creating an image in people's minds that acknowledges a person's rights."[30]

As for the justification of using NIE as an analytical model in legal history research it should be noted that property rights are one of the main building blocks of NIE.[31] Leading economists pointed out that legal institutions (the nature and form of property rights) are dominant factors that influence the allocation of resources and the distribution of income in a given economy. Beyond this, NIE is expressly and closely connected with historical research. John Drobak and John V. C. Nye (among others) pointed out that "anyone forced to consider economic growth in the medium and long run finds it hard to take rules and institutions as fixed."[32]

` Recently, Denis Kehoe applied NIE successfully in his book on land-tenure in the Roman Empire. He summarizes his goal as follows: "My concern is thus to trace the overarching considerations – legal and economic – that guided the Roman legal authorities in dealing with issues involving land tenure, and then to discuss the likely effects of Roman policy on economic performance, primarily in terms of incentives to invest and distribution to wealth."[33] Kehoe underlined that ownership, which is generally understood as an absolute and unlimited right,

[28] Mercuro – Medema 2006: 247.

[29] Barzel 2007: 263.

[30] Schmid 2007: 83.

[31] See e.g. Furubotn – Pejovich 1972: 1137-62.

[32] Drobak – Nye 1997: p. XVII.

[33] Kehoe 2010: 193.

was in fact seriously restricted by certain types of tenancy. Such forms of tenancy started already in classical Roman law and became wide-spread and typical in late antiquity.[34] In every day legal life, economic needs lead rapidly to a new distribution of derived elements of property rights between landlords and tenants. Privileges, first granted privately, were soon acknowledged by administrative powers as well. In the view of Roman legal authorities, *coloni* were an economic resource. Step by step they received actual and perpetual possession of the land they cultivated, which meant that they enjoyed *de facto* important parts of property rights. Kehoe underlined the usefulness of NIE in such an examination: "The methodologies of the New Institutional Economics are invaluable for such a study because they help us predict the likely influence of various institutional arrangements on incentives to invest and to engage in the type of bargaining, necessary for a dynamic economy oriented towards growth, however modest that growth might be in the aggregate economy of an ancient society."[35]

Similarly, Paul Erdkamp analysed the grain market in the Roman Empire from a new perspective, applying modern economic theory.[36] He was interested especially in production, agricultural productivity and division of labour, and pointed out that the market (as demand and supply and its geographical features) should be analyzed in its social, political and legal context – with all institutions that have an impact on it: "The economy is partly a response to climate and geography; economic development can be seen as a struggle to overcome the ecological factor. This may explain many of the similarities between Mediterranean societies in Roman and later times. However, neither economy nor society is determined solely by ecological constraints. Social and political factors played an important role. Hence, an analysis of the grain market is as much a social and political study as it is an economic one."[37]

Returning to ownership, if one looks at the asset of property rights in practice, one should consider also the tension between individual decision makers and collective interests (enforced mostly by the state). My approach is an experimental application of the main ideas and methods of New Institutional Economics to the changes in legal environment of ownership in Roman law. I am primarily concerned with institutional arrangements of ownership: with the legal context of the rural economy and its connection to changing economic (and social) phenomena.

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[34] Kehoe 2010: 93 ff.

[35] Kehoe 2010: 194.

[36] Erdkamp 2005: 317-330.

[37] Erdkamp 2005: 317.

NIE offers a useful way for analysing the issues raised above, both as they pertain to the policies of the Roman state and the institutional arrangements made by private individuals. In this sense I will a) examine some typical cases of evolution of institutional environment concerning property rights: the characteristic creation and revision of legal background, of rules and constraints – as ownership in motion; and b) analyse the bundle of property rights in their complexity in classical Roman law – as ownership in its economical context.

An approach to property rights focuses on the economic rights a person might exercise over a plot of land.[38] These economic rights include the legal rights as defined by state authorities. They also include any use or advantage a person derives from a piece of property that formally belongs to another person, e. g. the use of a commodity, water to irrigate his land etc.[39] In this analysis, we should bear in mind that property rights are legal institutions shaped by social and economic demands. Hence we should analyse them as bundles of rights in their natural, social and economic environment. As Barzel defines, economic rights represent "an individual's ability, in expected terms, to directly consume the services of an asset, or indirectly consume it through exchange."[40]

Ad a) Ownership in motion

In ancient societies, the exploitation of natural resources was closely connected with property rights on land. It is well known that throughout the ancient world wealth and income – both of the state and individuals – was based on an agrarian economy.[41] For example, Pliny the Elder explains the word *locuples* (wealthy) as 'ownership of a considerable amount of land'.[42] To modern readers this etymology might seem naive but most probably it reflects the social values of the late Republic: somebody was wealthy when he possessed a great deal of *agri*, agrarian land.

What types of sources can inform us about land and its property characteristics in Italy in the late Republic? Thinking of rights on land one has to cast a glance at archaeological evidence.

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[38] Barzel 2007: 268-269.

[39] For a similar approach see Kehoe 2010: 39-43.

[40] Barzel 2007: 263.

[41] See for it Erdkamp 2005: 12; Aubert 1994: 117; for incomes and prices Rathbone 2009: 303ff. and Scheidel 2009c: 346-349.

[42] Plin. nat. 18.3.11: *hinc et locupletes dicebant loci, hoc est agri, plenos*.

Furthermore, ancient historiography, inscriptions and legal sources offer proof about distribution and allocation of the most important natural resource, agrarian land.[43]

According to modern archaeological research, 'centuriation' played an essential role in this development. In Italy and in several provinces, the landscape preserves traces resulting from the cadaster system of ancient surveyors (*agrimensores*), that is still visible from the air.[44]

The origins of centuriation are thoroughly discussed by modern scholars.[45] It seems very likely that both sacred ritual and state authority had an effect on the beginning and early practice of setting boundaries in the landscape.[46] Limiting as such can be seen as a prerequisite for the establishment of ownership on land: only a piece of land with certain boundaries can be called one's own.

In the Roman Republic, different types of surveying were used: *scamnatio* or *strigatio* and *centuriatio*.[47] *Scamnatio* was a division technique *per scamna*, crosswise, while *strigatio* divided *per strigas*, lengthwise – Frontinus spoke of a *mos antiquus*. As a result a row of rectangular plots was created, irregularly arranged, often along a road, but without connecting trails.[48]

By contrast, the typical Roman type of surveying, centuriation, formed a complex decimal module: a rectangular space with regular lateral faces, divided by an axis-cross in equal parts and further into smaller units of equal sizes.[49] For marking the coordinates there were boundary-stones (landmarks), mostly cylinder-shaped, erected on each corner of a *centuriatus*. The *locus gromae* constituted the centre, while the main axis was placed where the territory reached its greatest extension. Characteristic for this system are the cross roads *cardo* and *decumanus*, directed towards a certain cardinal point. Parallel to them, mostly in plots of 20 *actus* (120 square feet, c. 42.2 m²), the territory was divided into regular square plots like a chessboard. Each plot was surrounded by ways or trails (from 8 to 20 feet wide). The whole system was depicted in the *forma* (a kind of cadastral map) which gave information about

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[43] "It is a commonplace that in antiquity about 80 per cent of the population were engaged in agriculture, leaving only 20 per cent for all other sectors of economy" – Erdkamp 2005: 12; Attema – de Haas 2011: 132-134. For a comparison with Egypt see Bowman 2009: 179-187.

[44] See Mattingly 2011: 76ff.

[45] For connections with estimating population see Price 2011: 19ff.

[46] Cassirer 1994: 123-124.

[47] Frontin. 1.17-5.5 L = 1.3-2.15 Th.; see for it Hinrichs 1974: 23.

[48] Schubert 1996: 50.

[49] Chouquer-Favory 1987: 255-257.

possession-relations through listing the names of owners and the number of *iugera* belonging to them, and specified the position of the land to *cardo* and *decumanus*.[50]

Centuriation enabled a good overview with a high degree of certainty about landed property. Land, granted by the state to Roman citizens, was always in this strict apportionment of centuriation. Moreover, centuriation strengthened the administrative power, formed the landscape and fixed property rights both in Roman Italy and in the provinces. As Graham recently underlined, a "gradual and widespread splitting of open fields, woodland and marshes into enclosed, mapped and discrete parcels of cultivated and horticultured land profoundly changed the economy … Enclosure changed the practice that was at once cultural and natural: land use."[51]

The relationship between centuriation and expansion is spectacularly demonstrated in Gallia Cisalpina. Bradford speaks of a "turning point" and calls centuriation here an external and visible sign of a great power.[52] Subjected to Roman sovereignty, several *coloniae* were founded on the territory just occupied. For example, there are traces of a centuriation (with altogether 200 *centuriae*) of 20 x 20 *actus* to the South and to the West from Rimini, following the line of an ancient highway. Later a second centuriation followed the *via Flaminia* as axis. There is also a third centuriation visible covering 500 *centuriae*. Other sources report the law of C. Flaminius from 232 BC granting viritan assignations on the *ager Gallicus* and *ager Picenus*.[53] Similar limitation can be identified in Padua, Mutina (Modena), Cremona, Placentia etc.[54]

By this method, state interference shaped the social and political institutional environment in several places. The first centuriations focused on existing economic centres (roads, market places, towns). Later on, important highways were mostly built soon after conquest that created a new economic environment: for example the *via Aemilia, via Flaminia, via Annia* or *via Postumia* in Gallia Cisalpina.

The state invested not only in infrastructure, but interfered in every possible manner to improve the conditions for agrarian exploitation. The centuriation of Mutina (Modena) serves as a typical example: it had an unusual size of 21 x 20 *actus*, presumably as the result of an

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[50] See e.g. ILS 251; Bradford 1957: 154; Piganiol 1962: 38 ff.

[51] Graham 2011: 55.

[52] Bradford 1957: 157.

[53] Schubert 1996: 67-68.

[54] For a basic analysis of archaeological evidence and agrarian economy see Rathbone 1981: 13ff. and recently Attema – de Haas 2011: 105-114.

extension of the initial centuriation when the surrounding marshlands were reclaimed by a major draining project financed by state.[55]

There were also major resettlements organized by the state to increase the population on fertile land: for example 180 BC, after their capitulation, the people of the Apuani Cisalpini was deported to the *ager Taurasinus;* some years later, in 175 BC, three tribes were transferred from the mountains to the plains.[56] Similar centuriations and assignations can be observed on the *ager Campanus,* as well.[57]

The centuriations shaped the landscape and defined property rights on fertile land in clearly arranged structures. A *centuriatus* comprised a large territory with fixed boundaries. Most of the plots were assigned to individual owners (usually with Roman citizenship), while some could be left vacant for later. An extension of *ager compascuus*, commonly used grazing ground, completed the "measured land" – surrounded by a large area of unsurveyed land (*ager publicus*).[58]

In his book *de agrorum qualitate* Frontinus describes three different kinds of land: *ager divisus et adsignatus* (land surveyed and assigned); *ager mensura per extremitatem comprehensus* (land measured yet not centuriated) and *ager arcifinus, qui nulla mensura continetur* (unsurveyed land). Duncan-Jones distinguished six categories: *ager publicus*, imperial land, city land, temple land, land assigned by the state and other land in private possession.[59] Furthermore, this picture was shaped early by long-term tenancy on public or city land, which granted an effective bundle of "property rights" to the tenant. The land registers, for example, from Veleia (North of Italy) and Ligures Baebiani (South of Italy) show that under Trajan public land made up a quarter and city land a fifth of all cultivated and fertile agrarian land in Italy.[60]

Originally, private ownership in its full sense (with a full bundle of property rights in the hands of individuals) existed only on surveyed and assigned land according to Roman law. *Ager privatus* was defined through the boundary stones, dividing it from *ager publicus*.

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[55] Schubert 1996: 75.

[56] Schubert 1996: 79. As for the difficulties of estimating population see recently Mattingly 2009: 163-173 and Jongmann 2009: 120-123.

[57] Witcher 2011: 37-39 offers a useful overview on current studies on archeological land survey.

[58] To the impressive traces of settlement patterns and surrounding villa-cultivation on the ager Cosinus see Rathbone 1981: 16-18.

[59] Duncan-Jones 1976: 7-13.

[60] Duncan-Jones 1976: 7-8.

From the 2nd century BC on, there were more and more kinds of possible usage granted on *ager publicus,* which added a certain private feature to public land. *Ager publicus* was not a homogenous category anymore. It is striking how many kinds of privately used land are mentioned already in the *lex agraria* from BC 111: *ager occupatorius, ager compascuus*, land granted in exchange to a *vetus possessor*, land granted to colonies, land granted in exchange for road constructions etc.[61] The *lex agraria* ruled that all these should be privatized, that means legally considered as *ager privatus,* if applied for before a fixed date (15th March).[62]

Land was scarce and originally owned by the state (*populus Romanus*): nobody had open access to public land, and property rights to individuals could be granted only by the state. But a low efficiency of public exploitation and private interference (by force) generated several types of private usage which were tolerated (tacitly) by the state without a proper legal framework, therefore with lack of security. Ownership (*dominium ex iure Quiritium*) existed only on assigned plots in a centuriation; legal protection by *ius civile* was granted only for this type of property rights.[63]

The political and social context that led to such legislation (a result of a series of statutes concerning land since the Gracchan reforms) is documented in the text of the *lex agraria* from BC 111 (line 18-19):

If any of those, whose land is written down above, has been ejected from possession by violence, whatever of it (the land) the person who was ejected may have possessed, and whatever he may have possessed neither by violence nor by stealth nor as a favour from the person who ejected him from that possession by violence, [whoever shall have jurisdiction according to this statute, if he shall have gone for a pre-trial, before him, concerning that matter before the Ides of March,] which shall be next after the (successful) proposal of this statute, he is to see that the person who [has] been ejectedby violence in this way [be restored to that possession from which he has been ejected by violence.][64]

It was established in exact terms which land would be considered as private. The high level of legal uncertainty regarding land tenure before the agrarian laws of the second century

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[61] Kaser 1956: 268-270; Roselaar 2010 distinguished in chapter 3 of her book between *ager occupatorius, quaestorius* and *censorius* on public land.

[62] However, the confusing diversity of land types remained typical also in later periods of Rome: public land, city land, temple land, church land, imperial and private land formed a sometimes chaotic complex, see also Aubert 1994: 119.

[63] Crook 1967: 145.

[64] Translation of Crawford 1996: 143.

BC is demonstrated by the fact that Tiberius Gracchus initiated centuriation on the entire territory of Italy.[65] In this way earlier land occupations by individuals were legalized and further occupations prohibited. The *lex agraria* of 111 BC can be considered as a major political and legal project of privatization of land to achieve a higher level of economic efficiency and social welfare. It is striking that the law expressly refers to its motivation as *colendae causa* – for the purpose of agrarian cultivation (line 14):[66] "… if anyone after the (successful) proposal of this statute for the purpose of agriculture shall possess or have not more than 30 *iugera* of land in that land, that land is to be private."

The *lex agraria* created a new legal institutional environment for agrarian activities in Roman Italy. It set up a legally acknowledged private access to land hitherto considered *ager publicus*.[67] Its usage by individuals was legally fixed and protected. Arguably, by establishing clear legal conditions the law stimulated economic growth. It enabled a more effective allocation of natural resources to individuals and a better distribution of income.

Yet, even before these laws were carried, long-term private usage of public land was defined as a new kind of interest in land different from ownership, the so-called *possessio* (possession). The classical jurists Labeo and Paulus defined it as follows (D. 41.2.1 pr.): "Possession is so styled, as Labeo says, from 'seat', as it were 'position', because there is a natural holding, which the Greeks call *katoche* by the person who stands on holding." Labeo and Paulus underlined that possession is a mere holding, a fact of having a piece of land under physical control – notwithstanding a title for it. Festus approaches the problem from the aspect of property rights in practice:[68] *posessio* enables the extensive usage, the enjoyment of land or buildings apart of being a proprietor or not. He pointed out that *possessio* existed first of all on *ager, aedificium* and *fundus*.[69] Rural land (with obscure legal background) was the main object for developing the idea of possession in Republican times.[70] Possession was never an abstract right, but rather merely a fact: a kind of control over a thing.[71] If so, why was it to be protected?[72]

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[65] Schubert 1996: 96 and 115-116 – the main activities of the commission took place in the years BC 133 and 123-2.

[66] See Crawford 1996: 114 and 142.

[67] See Kaser 1971: 388; for legal history is of high importance the legal protection through *interdicta*.

[68] Festus 233: '*Possessio' est … usus quidam agri aut aedificii, non ipse fundus aut ager….*

[69] Kaser 1956: 259 emphasized that Festus is the earliest source for the *interdictum uti possidetis*.

[70] Kaser 1956: 241-43; Thür 1977: 293.

[71] Watson 1968: 81.

[72] For the 19th century discussion see recently Gordley 2006: 53-60.

In many cases, when a legal system considers ownership functionally – especially regarding agrarian land –, the conclusion is that enjoyment of property rights cannot be limited to its owner. In several cases there is a tension between individual right and collective interest. For instance, if an owner leaves his land idle, this decision can be reduced or withdrawn by the state because there is a higher priority that natural resources (especially if scarce) should be exploited as fully as possible.[73]

Similar considerations may have led the Romans to conclude that there could be conflicts in which the owner should not prevail. The praetor was committed to solve the problem with *interdicta* based merely on his *imperium* (without needing new legislation).[74] It suffices to quote here the *interdictum unde vi*, to claim back control (*possessio*), without proof of the title, over a piece of land that had been seized by force.[75] The state interference and its main interest are obvious: protecting the current holder in his exploitation of agrarian land.[76]

Praescriptio longi temporis

The transformation of public land into private land was a slow but irresistible process that continued under the principate.[77] A good example is the dispute about *subsiciva* agrarian lands that remained public property after a centuriation, in the 1st century AD.[78] *Subsiciva* were usually ceded to towns or individuals or remained in the hands of the state. Yet, they were often occupied by force by individuals, which led to legal insecurity. Consequently, Vespasian and Titus claimed back such public lands, but this created a chaotic situation. Domitian, therefore, decided to give them back to their *possessors*, who actually held and cultivated it.[79] Also Frontinus records the event and argues that such kind of disputes should be settled by the state. Indeed, if agrarian land is left idle for a long time it really provokes individuals to legally unauthorized decisions. They take it by force for cultivation – and if they possessed it for a

[73] See also Labruna 1971: 277-279.

[74] See especially Labruna 1971: 33-35.

[75] See Crook 1967: 146.

[76] For possible connections of the *interdicta* with Greek ownership disputes see Thür 1977: 299-305.

[77] The term prescription is used mostly in civil law, otherwise the term adverse possession has the same meaning in common law; see for it Gordley 2006: 140ff.

[78] See for it Nörr 1969: 59.

[79] Suet. Domitianus 9.

considerably long time they should keep it unpunished.[80] At that time, the land was granted by the decision of the Emperor (a privilege, a kind of donation).

Domitian's decision followed a logic that played an essential role later in the allocation of provincial land all over the Roman Empire. Domitian met the economic consideration that wasteland invites occupation. Although the *possessores* could not acquire ownership, the Emperor found their long-term, undisturbed usage a strong argument and granted them the privilege of keeping their lands.[81]

The terminology and reasoning used by Domitianus cropped up again at the end of the 2nd century AD when the economic needs of agrarian cultivation required changes in the legal framework and new kinds of access to provincial land. Especially the reasonable argument followed already by Domitianus might have played an essential role: uncultivated wasteland was a painful loss for the economy. Therefore, the possessor who put it to use should enjoy legal protection, even against the (careless) owner. It was a matter of public choice.

There was also another consideration, both of economic and political character. As mentioned above, only Italian land enjoyed the privilege of tax-free exploitation, while provincial land was generally charged with taxes.[82] Land-tax was considered to be a charge on fruits (products of exploitation)[83]; generally it should have been paid by the owner or (through special arrangement) by the tenant. However, the tax was charged on an estimated average income allocating the risk of weak harvests wholly on the tax payer. Several cases in the Digest demonstrate that it was thought to be a hard task.[84] The inability to pay often led to hasty sales below the lands' market value. In some cases, it seems even that the sale was agreed upon without fixing a real prize: the seller was satisfied with being relieved from his tax debts.[85] There were severe rules for declaring outstanding debts on taxation laid upon the seller of provincial land: "If a vendor of land makes no mention of land-tax, knowing it to be subject to such tax, he will be liable on the contract."[86] It is very likely that although there was a scarcity of land, social

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[80] Frontin 1.53.

[81] See Nörr 1969: 60.

[82] However, there are some exceptions, when certain communities of Roman citizens also in the provinces were allowed to count their land (by a legal fiction) as 'Italian soil', see for it D. 50.15.1 and 6-8, Crook 1967: 140.

[83] D. 25.1.13.

[84] D. 19.1.21.1, D. 2.14.42, D. 19.1.13.6, D. 39.4.7 pr. etc.

[85] Of such a sale seems to report – although from a later period – CPR I 19 (Hermoupolis Magna, 330 AD); see Jakab 2009: 96-97.

[86] D. 19.1.21.1; see Crook 1967: 148.

and legal institutions made its usage unattractive. Cultivation ceased, landed properties became abandoned, deserted – the income from exploitation of the most important natural resource was more and more reduced.

The concept of utility maximization regarding agrarian land had its tradition in early Roman legal and political thought. According to some sources, the state took interest in securing as high a level of land exploitation as possible already in Republican Rome. One of the most important magistrates, the censor seems to have been instructed with this task. Pliny the Elder reports of a strict rule: "Bad agrarian cultivation was judged an offence within the jurisdiction of the censors, and, as Cato tells us, to praise a man by saying he was a good farmer and a good husbandman was thought to be the highest form of commendation."[87] The same rule was reported by Aulus Gellius, too (NA 4.12.1): "If anyone had allowed his land to run to waste and was not giving it sufficient attention, if he had neither ploughed nor weeded it, or if anyone had neglected his orchard or vineyard, such conduct did not go unpunished, but it was taken up by the censors, who reduced such a man to the lowest class of citizens ... There are authorities for both these punishments, and Marcus Cato has cited frequent instances." Wolfgang Kunkel concluded that there was a censorial control on the use of agrarian land in Republican Rome.[88] But even if Pliny and Aulus Gellius had reported a mere legend, their opinion would still illustrate common opinion in 1st century AD concerning legitimate state interference in the allocation of natural resources.

Indeed, the problems pictured above in cultivating provincial land were solved by state intervention initiating changes in legal environment. The main goal was to secure a higher efficiency of exploitation. For this purpose the Emperor introduced essential changes in the social and legal institutions of land allocation.

The difficulties the government encountered in defining property rights (as a set of rights which allow access to exploitation) are particularly apparent in a series of imperial responses to petitions. I refer here only to BGU I 267 (=P.Strass. 22 and FIRA I 84) dated AD 199:[89]

The Emperor Caesar Lucius Septimius Severus Pertinax Augusutus Arabicus Adiabenicus Prthicus Maximus and the Emperor Caesar Marcus Aurelius Antoninus Augustus to Iuliana, the daughter of Sosthenianus, through her husband Sosthenes. A plea (*praescriptio*) of long

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[87] Plin. nat. 18.3.11.

[88] Kunkel 1995: 415; more generally Kaser 1956: 240.

[89] Although the wording is preserved in Greek – in BGU I 267 and P.Strass. 22 – it is very likely that originally the *rescriptum* was formulated in Latin, see Nörr 1969: 75. For more sources see Nörr 1969: 34f.

possession, made by those who have had rightful grounds (*iusta causa*) for entering thereon and remained in possession without any dispute, is established against claimants who live in a different *polis* (*civitas*, *nomos*), by the lapse of twenty years, and against those in the same *polis* (*civitas, nomos*), by the lapse of ten years. Displayed publicly in Alexandria on Tybi 3 of year 8.[90]

On a long trip through his province Egypt, the Emperor Septimius Severus held court in Alexandria.[91] A certain Iuliana, a married woman of peregrine status appealed to the Emperor in a dispute about provincial land. There is no evidence if she was accused possessing a piece of provincial agrarian land by force or she claimed her land back. One of the lawyers accompanying Septimius Severus (probably Papinianus) composed the response, focused on relevant facts and possible steps in the concrete lawsuit. Merely the wording of the Emperor's decision is preserved. The text applies a popular argument that had been used by rhetoricians since a very long time in court speeches of every type:[92] the argument of time (*temporis praescriptio*). The main idea was that if a person did not care for a legal claim he had for a certain period of time, he lost the moral ground for demanding it (*praescriptio longi temporis*). The *rescriptum* of Septimius Severus and Caracalla used it (for the first time) as a principle to reallocate access to natural resources – breaking traditional legal and social institutions.

It established that a possessor of provincial land (as opposed to Italic land, which was subject to *usucapio*[93]) who had acquired it on a lawful basis and put it to usage for a long time be protected in lawsuits against rival parties claiming their ownership on it. The principle stated that no suit on ownership could be heard from a plaintiff living in the same community as the defendant if the latter held the land for more than ten years, and that no suit could be heard from someone living elsewhere, if the defendant had occupied the land for more than twenty years. The Emperor did not establish a new type of ownership – he offered merely a helping hand (in the form of an objection in a concrete trial) to the person who actually out the land to usage.

As Dieter Nörr argues, it is likely that the imperial administration developed the *longi temporis praescriptio* as an emergency measure to restore legal order in areas of the Roman

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[90] Translation after Hunt – Edgar 1934: 91.

[91] Nörr 1969: 74-75.

[92] See Nörr 1969: 42-45.

[93] *Usucapio* as acquisition of ownership (*dominium ex iure Quiritium*) on land by undisturbed holding (possession) for two years was known already in the Twelwe Tables.

Empire ravaged by plagues, loss of population and social disorder.[94] This measure *de facto* safeguarded property rights in a period in which it might have been especially difficult to establish them in law courts. In the 3rd century AD, this one-time emergency measure became a permanent legal institution.[95]

Of course the legal measure as such was not always admired among modern civil lawyers, especially not for immovables. Some of them declared that it could be summoned as an institution that "deprives an owner of his property if another has been in possession of it long enough".[96] Henry Ballantine commented that "it sounds at first blush like title by theft or by robbery, a primitive method of acquiring land without paying for it."[97] However, Sir Oliver Holmes found a (more morally than legally based) justification: "It is in the nature of man's mind. A thing which you have enjoyed and used as your own for a long time … takes root in your being and cannot be torn away without your resenting the act trying to defend yourself … The law can ask no better justification than the deepest instincts of man."[98]

Already the Roman jurists found a similar explanation for the phenomenon of *usucapio* (acquiring ownership by use):[99] "*Usucapio* was introduced for the public good, to wit, that the ownership of certain things should not be uncertain for a long period, possibly forever, granted that the period of time prescribed should suffice for owners to inquire after their property." De Soto held that the purpose of legal institutions as *usucapio* was "the public good, that is, that ownership shall be certain, and errors shall be undone through the passage of time, and the possession of things shall be secure."[100]

Obviously, as justification for acquiring ownership by prescription it was sufficient that land should belong to the person who is cultivating it (who is putting it to a productive use) and

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[94] Nörr 1969: 74-78.

[95] Later, several responses, prepared by famous jurists, limited the application of *longi temporis praescriptio;* see Nörr 1969: 91-95.

[96] Gordley 2006: 140.

[97] Ballantine 1918: 135.

[98] Holmes 1897: 457.

[99] D. 41.3.1 Gaius; translation Crook 1967: 140.

[100] De Soto, *De iustitia et iure*, lib. IV, q. 5 – the citation follows Gordley 2006: 140. Gordley underlined that prescription is less important in a legal sytem, which has a registration system about landed property. German law (and most civil law countries) do have it, but it is lacking in common law – see Gordley 2006: 140.

not to an absentee owner who does not care about it.[101] Speaking in terms of NIE, one can state that property rights – rights that "people have over assets (including themselves and other people) are not constant; they are a function of their own direct effort at protection, of other people's capture attempts, and of government protection."[102] Property rights concern the whole institutional environment (not merely the public approach).

Ad b) Ownership in its economical context

Finally, it is worth looking at ownership as a set of property rights that create a legal environment providing incentives for maximizing the exploitation of agrarian land. As a starting point we refer to the pragmatic definition of ownership proposed by Barzel: "Property rights of individuals over assets consist of the rights, or the powers, to consume, obtain income from, and alienate these assets. Obtaining income from and alienating assets require exchange; exchange is the mutual ceding of rights."[103]

How did ownership serve as a legal environment for exploiting natural resources – focused on agrarian land? It can be supposed that the bundle of property rights, as fixed by classical Roman law, tended to offer institutional structures that enhanced the wealth-producing capacity of Roman society. These institutional structures were developed, as the following short survey tries to show, by the Roman jurists. In deciding on actual trials or formulating systematic theories, they were keen to complete the legal framework for the sake of a more efficient allocation of resources.

Posner and Parisi[104] grouped the modern principles of property law under the heading of its physical, functional and legal unity. I will arrange my arguments according to this concept. I argue that legal rules concerning ownership were partly restrictive (setting limits to the so called unlimited rights of the owner), partly extensive (ensuring him additional rights for rural exploitation).

First of all, Roman law addressed the problem of physical unity with rules restricting horizontal partitions of property. Ownership of land existed on a specific horizontally delimited

[101] this justification has an ancient foundation because it originates in the philopsophy of the stoa. For an anthropologic comparison see Gordley 2006: 144: "… when an owner does not intend to put property to productive use, he does not have ownership in its true sense. One cannot explain his rights in terms of reasons for having the institution of ownership."

[102] Barzel 2007: 263.

[103] Barzel 2007: 263.

[104] Posner 1998: 35ff.; Parisi 2010: 389.

territory, mostly with strict boundaries[105], but it was understood also vertically – from the ground up to the sky *ad infinitum*: 'whoever owns the land owns the property all the way to heaven and all the way under the ground.'[106] Furthermore, Roman law followed the principle of *superficies solo cedit* – 'that which stands on the land goes with it'. Whatever built on the land, by whomsoever, belonged to the owner of the land.[107] Generally, the vertical conception of ownership included also ownership of minerals and underground resources and the right to their exploitation[108].

These are remarkable privileges granted generally to the proprietor by the law. The holder of property rights is entitled to derive an uncompensated income based merely on his abstract ownership. In terms of NIE, this shows that the institutional framework could play an important role in economic performance.[109] Legal rules helped to reduce the uncertainty of human interaction and instituted certain rules of behaviour for all persons participating in economic activities.[110]

When considering property rights as bundles of economic rights, we can distinguish other institutions protecting the proprietors in the exploitation of their agrarian land. Suffice here to consider the principles of accession. For example, anything sown or planted on one's land became unquestionably property of its owner. Gaius speaks of a person who "put a plant into our land, provided that the roots are bound into the soil" or "corn which has been sown by someone on our land".[111] At first sight, it appears a typically scholastic problem without practical use that Roman jurists loved to discuss. However, the principle might have a practical relevance in everyday context of agrarian exploitation (D. 19.5.16.1 Pomponius):

You gave me permission to sow on your land and to remove the [resulting] crop. I sowed, but now you do not allow me to remove the crop. Aristo says that there is no action at

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[105] Ulpianus D. 8.4.133.1; Proculus-Ulpianus D. 39.2.26. There were some exceptions depending on whether the land was measured or not; see for example the rules of *alluvio* and *avulsio*, see Inst. 3.23.3.

[106] See also Parisi 2010: 391-392.

[107] Paulus D. 6.1.23.4.

[108] See e.g. D. 8.4.13.1 Ulp. or D. 24.3.7.14. However, from the 1st century AD we can observe an eager forging ahead in the politics of the emperors to secure the most important underground resources. Tacitus reports a scandalous case already under Tiberius (Tac. Ann. 6.19). Apart from this, it is well known that all gold mines belonged to the Roman state or emperor already in the 1st century AD.

[109] North 1981: 28.

[110] Richter 2007: 211.

[111] Gai. 2.73-75.

civil law, and that it can be doubted whether one *in factum* should be granted. But there will be one "for fraud".[112]

In this particular case, an earlier arrangement existed between the parties defining the rules for their collaboration. It is a well known principle in micro-economics that most contracts "govern the exchange of property rights" and, therefore, should be "central to the study of such rights".[113] Individuals interact with other individuals – in this way economic performance can always be reduced to the individual level. In my view, the same can be said about legal relationship.

In Pomponius' case, for instance, someone (A) allowed another person (B) to cultivate his farmland (maybe for one season). As part of their agreement, the owner ceded his right of usage to the cultivator (there is no information on which kind of contract, whether gratuitous or not, applied). The arrangement included also the right to harvest the agricultural products. It means that B was entitled partly to enjoy the asset of property rights. It was a private modification of the right of use, based on the contract. Actually, B sowed out, cultivated the land and took care of it. However, at harvest time the main holder of property rights A interfered and kept the crop for himself – against the terms of their arrangement. He prohibited B to carry it away.

The jurist now faced the problem: who was legally entitled to the crop. According to the main rule, A (the grantee) became owner of the fruits. Since he had the legal control of whatever kind over the land, all plants growing on it belonged to him.[114] However, in this case, there was a private arrangement between the parties governing the concrete relationship under the terms of a contract. This modified the allocation of property rights, and should be considered in deciding the case. Hence, the *praetor* gave a subsidiary action against the main holder, based on fraud (*actio de dolo*).

In terms of NIE, ownership is a tool to decide how resources may legitimately be used. However, since it is a bundle of several rights it can be changed freely by private arrangements. As a contract changes the general rules of allocation of resources, social and legal institutions must interfere to maintain the certainty of the "rules of the game". In this case the legal

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[112] Translation after Watson 1985.

[113] See for it also Barzel 2007: 267.

[114] The fruits of a land, it's organic (and usually periodic) products belong to the owner on separation, when they first acquire independent existence. Other products, like sand or lime, taken from the land, are legally on the same footing (acquisition of ownership on fruits).

environment set a limit to property rights; it prohibited to get to uncompensated income at the expense of other individuals (participants and decision-makers in the economic performance).

There are further legal institutions for the sake of property right holders concerning the exploitation of their agrarian land, for example the rule of specification that regulate the acquisition of new things produced from materials wholly or partly belonging to another person.[115] There are several decisions in the Digest on the topic. To show the legal point, I quote here only a simple one (Gai. 2.79):

Natural reason comes into play in other situations also. Thus, suppose you make wine or oil or grain from my grapes or olives or corn, there is a question whether the wine, oil or grain is mine or yours ... Some people think that one should look to the materials and substance, that is, whoever owns the materials owns what was made from them; this view was taken especially by Sabinus and Cassius. On the other hand, others think the thing belongs to the person who made it, and this appealed especially to the authorities of the other school.[116]

Even in the 2nd century AD, the Roman jurists disagreed on the question whether grain thrashed out of the ear was a *nova species*; the finally accepted view considered that it was.[117] In the background lay a basic philosophical question that may have influenced legal reasoning: whether the essence of a thing (*res*) is substance (*substantia*) or form (*forma*).[118] The basic rule followed by Roman jurists for agricultural products was that the owner of the raw materials always maintained ownership over the derived products even if their 'form' was new. This opinion may be considered as an extension of the principle of 'physical unity' in property. In this case, the legal environment (court decisions and legal theory) interfered strictly for the sake of the main property rights holder. As the fruits of a certain estate, raw agricultural products were reserved for the use of the landowner despite the invested labour of another person.[119] The principle was based on *naturalis ratio* – on natural reason. The decisive point was the lack of prior modifying arrangements between the parties. If the holder of property rights had not formally agreed to cede his right, all resources derived from his property had to be kept for him.[120]

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[115] Crook 1967: 143.

[116] Translation of Francis de Zulueta 1953.

[117] Crook 1967: 142-43.

[118] Schermaier 1992: 197 ff., 275 ff.

[119] Of course it si assumed that both parties are acting in good faith.

[120] As the text shows, there were also other premises to be considered, but the main opinion was accepted as cited above. See also Crook 1967: 143.

The 'functional unity' in property rights, on the other hand, meant that a landowner was allowed to transfer only the entire bundle of his rights.[121] Undoubtedly, Roman law tended to strictly limit the functional property fragmentation. However, when the degree of exploitation of natural resources was limited, functional partitions of property were often unavoidable (and efficient).[122] They provided an opportunity to allocate the same land for multiple privately held rights for usage, allowing an optimal level of exploitation. Generally, early societies embraced a more 'functional' conception of property, in which property rights were related to specific enjoyments of land.[123]

Here I do not want to discuss the divided views on the origin of servitudes[124] in Roman law literature.[125] As a fact, it is very likely that the concept of "serving land" was already well known in early Roman law and society. The prerequisite of servitudes can be seen in the survey and assignation of land (*ager divisus* and *adsignatus*):[126] the problem of access (to water and infrastructure as streets and trails etc.) arose as soon as plots with certain boundaries were allocated to individuals. Indeed, already the Twelve Tables constituted that "the following are rights belonging to rustic land: way, passage, drive, also driving cattle to water, or aquaeduct."[127] It is striking that these early forms of servitudes seem to have been imposed only on agrarian land.

They can be understood as limited types of property rights – or separated parts of ownership considered as a bundle of property rights[128] – for the sake of obtaining a higher level of exploitation. The tension between ownership and servitudes (rights for using land for a certain purpose without having absolute ownership on it) argues for a more flexible concept of ownership that considers agrarian land as part of a landscape with special requirements for its best possible usage. Graham analysed the relationship between landscape and land law, and stated the features of early agrarian economies: "The land laws of the peasant economy, its 'customs', were locally developed and thus were relevant and responsive to various local

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[121] Parisi 2010: 72-73.

[122] For growing population in the Empire see Wilson 2011: 176-179 and Lo Cascio 2001: 111-112.

[123] See already Kaser 1956: 238-240, recently also Gordley 2006: 61ff.

[124] On servitudes see the contribution by Christer Bruun in this volume.

[125] See first of all Capogrossi Colognesi 1969: 551 ff.; Corbino 1986: 15 ff. and Diósdi 1970: 109-116.

[126] For early forms of land survey see Schubert 1996: 43-51.

[127] Cicero de orat. 1.39.179. Otherwise, we find a slightly different listing in Cic. Pro Caecina*: aquae ductus, haustus, iter, actus* … see Watson 1968: 183.

[128] See Barzel 2007: 265.

geographic conditions. These laws were necessarily strictly enforced. This because as well as providing rights of access, use and enjoyment of land, waterways and local resources, they also provided highly specific limits or conditions to those rights. In other words, the land laws of the peasent economy were clear and rational rules of resource management."[129]

Servitudes are well known in every modern legal system, too; they represent a restriction laid upon ownership. Although in Roman law servitudes were founded mostly through private arrangements (hence they do not demonstrate any state interference in private property rights), they can be considered as legal institutions imposed by state control in a certain social and economic environment.[130]

It can be seen as a typical state policy to protect these rights, giving priority to the party who needs a usage of land, owned by others, to better cultivate his own land. In most cases servitudes are limited to rights of passage over another's land when such passage is necessary for a permanent and fruitful economic exploitation.[131]

This shows again that in several cases the land-holder's seemingly absolute and exclusive property right was limited on behalf of a more intense exploitation of natural resources for the benefit of a social environment as a whole.[132]

The main rule was that servitudes, once established, became attached to the land – any succeeding owner of the 'serving land' must for ever allow the holder of the 'dominant' land to exercise the relevant right.[133] State policy interfered in these cases to allocate resources if necessary. I quote only one case to show the preference for a higher level of resource allocation (collective interest) contrary to the strict rights of individual ownership. Paulus delivers a case study showing the careful handling with the problem in court (D. 8.3.35): [134]

… the Emperor issued a rescript in the following terms to Statilius Taurus: "The men who were accustomed to channel water from the Sutrine estate approached me and stated that they could no longer channel the water of which they had had the use for a number of years from a spring on the Sutrine estate, because the spring had dried up. They also brought it to my attention that,

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[129] Graham 2011: 53.

[130] With similar considerations see Bruun 2010: 3.

[131] Crook 1967: 149.

[132] I don't want to deal here with all kinds of servitudes as for example the right to draw water, to dig sand or lime etc., see Capogrossi Colognesi 1975: 197 ff. see also Bruun elsewhere in this volume.

[133] Crook 1967: 150.

[134] Translation after Watson 1985.

later on, water from the spring had begun to flow again. Their petition to me was that their right should be restored to them on the grounds that they had not lost it through any neglect or fault on their part, but because it had become impossible to obtain water. As their petition did not seem unjust to me, I held that they should be assisted. Accordingly, my decision is that the right which they had on the day when it first became impossible for them to obtain a supply of water should be restored to them."

The text belongs to the few cases when a rescript is preserved in its exact wording. The Emperor's decision was addressed to a certain Statilius Taurus – probably he turned directly to the emperor for legal advice. In the Digest, the fragment was put under the title "on servitudes of rustic estates" (*De servitutibus praediorum rusticorum*). The facts are the following: the Sutrine estate had a spring and the owners of the surrounding land were granted to channel its water for irrigation (as a servitude). Presumably climate and landscape required a regular irrigation for agrarian usage in the region.[135] Then, as the spring dried up, channelling became impossible for years. As the climate changed again and the dry years were over, the spring began to give water again. Despite of renewed activity, however, the owner of the Sutrine estate prohibited his neighbours to step on his land and start channelling water again. The surrounding owners suffered considerable damage and began litigation. The tension between individual ownership (in the sense of an absolute and exclusive property right) and servitudes (as some kind of collective interest) was so remarkable that the case was brought before the Emperor – and he took part for the neighbours.[136] The Emperor's decision (as state interference) might have been shaped by economical and political considerations, too.

Conclusion

The institution of ownership is nearly as old as our history. In ancient social and economic environments, ownership or other types of control over agrarian land played an essential role in achieving wealth and economic growth for individuals, communities and states. Legal institutions interacted and regulated the allocation of natural resources and the distribution of

[135] It is common that one of the main principles of servitudes was the *utilitas* – the usefulness, the relevant economic interest. It served as a legal theory foundation for allowing property rights on somone's land – see for it first of all Capogrossi Colognesi 1996: 94.

[136] See Capogrossi Colognesi 1966: 11 ff. and 1996: 91 ff. for *aqua viva* and *perennitas* in the sources.

income derived from them. It is obvious that the legal content of ownership, the definition of property rights and other types of interest in land really mattered.

19th century legal theory created the myth of absolute, exclusive and unbounded individual property. It became a sophisticated system which was supposed to have its roots and leading model in classical Roman law. In reality, however, the theoretical foundation for this abstract conception of ownership originates in the intellectual trends since the Enlightenment. It was laid down mostly in the works of John Locke, Immanuel Kant, Georg Wilhelm Friedrich Hegel and other philosophical minds. They recognized that when resources are scarce, human societies formulate property rights to allocate use and regulate production.

I started with Bernhard Windscheid and his 19th century conception of ownership. It is commonly supposed that he yielded to the sources in classical Roman law. However, his understanding of the ancient sources was rooted deeply in social, economic and legal challenges of his time. Later scholars, courts and legislatures criticized this abstract, absolute, unlimited and highly individualistic conception of ownership, and asked for new property arrangements, attuned to the modern needs of land-developers and property-owners.

In this paper I argued that, contrary to what was supposed in the 19th century, Windscheid's abstract, unlimited and exclusive ownership in its physical, functional and legal unity never existed in ancient Rome. On the contrary, ownership was a dynamic category with changing legal contents according to changing social, political and economic environments. Geographic factors, technology, economic transformation and political changes were essential factors in the formation of property rights.[137]

Ownership as such was never absolute, unlimited and exclusive in ancient Rome. It seems very likely that the ancient Roman conception of ownership on land met a broader target, and fostered conditions amenable to an optimal exploitation of the main natural resource, agrarian land, complying with collective interests in the exploitation of natural resources.

[137] Schmid 2007: 87.