



# Land ownership and mineral exploration and extraction in Sweden

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## Abstract

The protection of the ownership of land and extraction of natural resources has been much in focus in Sweden in recent years. Government inquiries into the forestry sector and protection of the environment have succeeded each other. The sustainable supply of innovation-critical metals and minerals and its impact on agriculture and forestry have also been the subject of such inquiries. This article aims to problematize and discuss land ownership and mineral exploration and extraction in Sweden in relation to private and public interests. The emphasis is on private property and the landowner perspective vis-à-vis the use of mineral resources. The concept of property is only dealt with on a general level. The ownership of land and various legal restrictions are discussed on the basis of a theoretical model. The article includes a brief overview of ownership and the control of minerals in Norway and Finland. In addition, an overview comparison between minerals and forests in Sweden is done based on parameters that include legislation, public and private interests as well as rights related to the ownership of land, forestry and exploration and extraction of minerals. Changes in land use give rise to both negative and positive effects which should be regularly debated in conjunction with the system of compensation. The general acceptance of the fact that individual companies may prospect and extract minerals without the consent of the landowners is perhaps somewhat lower than when the state is a player. The state as an owner of mines and forests must set a good example as regards attitudes to restrictions and taking consideration of the environment and other stakeholders.

**Keywords** Land ownership · Mineral exploration · Mineral extraction · Public and private interests

## Background

Ownership institutions may be categorized into four regimes under which property rights are determined: open access, common property, state property, and private property.<sup>1</sup> The latter is the focus of this article with an emphasis on the Swedish landowners' perspective and the real property in relation to mineral exploration and extraction.

Land ownership may theoretically assume absolute title, but in practice, absolute ownership rarely exists due to restrictions of various kinds. All types of land rights nearly always include obligations and restrictions.<sup>2</sup> Ownership

rights are just one type of relationship to land. Another is through rights and obligations such as mineral rights (exploration permits and mining concessions). Mineral rights are more limited than ownership to land since the holder is entitled to use them for the purposes for which they have been granted, namely to explore and extract minerals.<sup>3</sup> Different users may or may not be able to use the land simultaneously depending on the activity. This is because an area of land often has one or more rights attached to it (bundle of rights). As concerns natural resources, a bundle of rights can be associated with the position of different right holders and their different rights to access, withdrawal, exclusion, and alienation.<sup>4</sup> It is thus the rights connected to the use of the land which are of importance and not the piece of land itself.<sup>5</sup> It is typical for mining and mineral rights regulated in specific legislation to be held separately from the rights to the rest of the land. A distinctive feature of mineral resources

<sup>1</sup> Sinding et al. *n.d.*

<sup>2</sup> Mattsson (2004).

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<sup>3</sup> Bastida (2004).

<sup>4</sup> Schlager and Ostom (1992).

<sup>5</sup> Liedholm Johnson et al. (2015).

is that as long as they remain undiscovered, the benefits of having ownership rights to the mineral resources are fewer as opposed to when a discovery has been made. At that stage, efficiency considerations point to a precisely defined and exclusive right to extract the resource under a private ownership regime (in favour of the mineral right holder).<sup>6</sup>

In many countries, the right to mineral assets is governed by special legislation such as mining legislation. In countries with systems resembling the Swedish system, one may distinguish between three different systems on which the legislation is based, the land ownership system (also known as the accession system), the concession system, and the claims system. The basic principle of land ownership system is that minerals belong to the owner of the land where deposits are found. In the two other systems, the State either grants or confers the rights to mineral resources (concession), or the right is “taken” through occupation by the discoverer (claim). The claims system can be related to two different theories. According to the Regalian theory, the State grants mineral rights to the claimant. According to the *res nullius* theory, the minerals belong to no one until they have been found which can be categorized as a kind of right of occupation.<sup>7</sup>

The protection of land ownership rights has been debated in Sweden in recent years, not least in relation to the exploitation of natural resources such as minerals and forests. Land ownership rights, including issues of compensation in the event of encroachment, have an impact on current considerations and proposals in the area of mineral policy. The increased interest in prospecting for alum shale in Sweden with innovation-critical minerals, which entail environmental concerns, led to a government inquiry<sup>8</sup> presented in 2020.<sup>9</sup> Among several suggestions, one proposal pertained to the issue of investigating the impact of agriculture and forestry separately in a concession application for the mining of alum shale after a notification from the Chief Mining Inspector. Currently, there is no ongoing mining of innovation-critical metals and minerals in alum shale. In the spring of 2021, another government inquiry was set up with the aim of reviewing permit processes and regulations for a sustainable supply of innovation-critical metals and minerals.<sup>10</sup> A task for the inquiry was to analyze and propose changes to permit processes and regulations so that better consideration can be given to both the local environmental impact of a project as well as its social benefits. The inquiry

presented several proposals aimed towards improved dialogue with landowners and other stakeholders together with the permit authority in the early stages of the permit process of a mine.<sup>11</sup> Solutions that in various ways may curb a development where the local acceptance of various forms of exploitation decreases. According to the inquiry, the Swedish Minerals Act tends to be perceived as pure exploitation legislation that puts the exploration and processing of minerals before other interests.<sup>12</sup> This is not strange or unusual in a global context. The right to explore may be strongly worded in mining legislation, while other acts may also contain provisions that circumvent or conflict with the apparent right granted in the mining legislation.<sup>13</sup>

The article aims to problematize and discuss land ownership and mineral exploration and extraction in Sweden in relation to private and public interests. The emphasis is on private property and the landowner perspective vis-à-vis the use of mineral resources. How priorities can be made between different public interests such as conservation and extraction is not specifically addressed. The concept of property is only dealt with on a general level. The ownership of land and various legal restrictions are discussed on the basis of a theoretical model. In order to place the relation of land ownership and mineral rights in somewhat broader context, a brief overview of our neighboring Nordic countries, Finland and Norway, is included. The choice of these countries is relevant since both Sweden, Finland, and Norway belong to the same legal system, the Nordic system.<sup>14</sup> In addition, an overview comparison between minerals and forests in Sweden is done based on parameters that include legislation, public and private interests as well as rights related to the ownership of land, forestry, and exploration and extraction of minerals.

The article is based on both primary and secondary sources of law. As for primary sources, the focus has been on legislation. Legislative bills and government inquiries have been studied as well since the ideas underlying proposed legislation often are discussed in more detail in these preparatory works. For secondary sources, document studies have been carried including academic research, textbooks, journals, and reports.

## Ownership of land and its scope

The dominant land use in Sweden is forestland with nearly 70% covering the land area. Nearly 30% of forestland is owned by the state, public institutions, and municipalities,

<sup>6</sup> Sinding et al. n.d..

<sup>7</sup> Liedholm Johnson 2010.

<sup>8</sup> Terms of Reference 2020:26.

<sup>9</sup> Government Inquiry 2020:71.

<sup>10</sup> Terms of Reference 2021:16.

<sup>11</sup> Government Inquiry 2022:56.

<sup>12</sup> Ibid.

<sup>13</sup> Otto and Cordes (2002).

<sup>14</sup> Zweigert and Kötz (1998).

but there are major regional differences. Half of Sweden's forestland is owned by private individuals.<sup>15</sup> Forestland which is formally protected comprises 8.7% of all forestland in Sweden.<sup>16</sup> Areas used for mining and mining activities cover 1.5% of the country's total surface area.<sup>17</sup> In 2020, there were 12 metal mines and 82 licensed pits for industrial minerals and dimension stone in production.<sup>18</sup> The state-owned company LKAB owns the largest iron ore mine. Private individuals own 44% of the land area in Sweden and the main part comprises agricultural and forestland.

More or less, all land in Sweden, apart from the biggest lakes, is divided into property units, and these form the basis for ownership. Each property has a unique designation number which is called *fastighet* (real property) and is normally delimited in the x and y directions.<sup>19</sup> An alternative description relating to ownership and land property rights is that all land is divided into rights and someone is the right holder.<sup>20</sup> A description of ownership is in principle the same as a description of a real property since land ownership is linked to the delimitation of real property.<sup>21</sup> To put it another way, land rights have at least three dimensions: what is included in a right, who is the holder of this right, and the physical delimitation of that right.<sup>22</sup>

Swedish law does not have an explicit definition of a property unit (*fastighet*). According to the Land Code, "Real property is land. This is divided into property units. A property is delimited either horizontally or both horizontally and vertically." Information about property units, approximately 3.4 million in number, is kept in the national Real Property Register. The properties do not only include the land, but buildings, plants, and rooted trees are also fixtures of different kinds. Ownership of real property in Sweden is indivisible, rendering it impossible for one person to own property fixtures while another person owns the land.<sup>23</sup>

There are no statutory provisions indicating how far such a property extends upwards and downwards on a vertical axis. With regard to the ownership of the bedrock and the right to its mineral resources, it is important to make a

distinction between the right to use different *volumes* below ground and the right to use the *concrete content* that the minerals constitute. There are no statutory provisions indicating how far a property unit delimited horizontally extends upwards and downwards on a vertical axis. Theoretically, a property could extend to the center of the earth according to Roman property theory. Although a specification of the boundaries seems difficult, the upward and downward extent is not regarded as unrestricted according to the legislative bill of the Land Code. An accepted view is that the extent of a property underground relates to how far the landowner is able to use the land. During the construction of tunnels, property owners are considered affected and are thus entitled to compensation for the encroachment.<sup>24</sup>

There is no comprehensive description in Swedish legislation of what the ownership of land entails for the rights and obligations of the individual landowner. An overall picture of the right to use, which is an established part of the right of ownership, is missing.<sup>25</sup> However, ownership is often described as negatively defined, which means that a landowner has the right to do what is not prohibited. It also means that ownership and what it entails is not static but changes over time as the legislation develops. Simplified, however, certain powers or rights are often regarded as being included such as the right to use the property, the right to exclude others from using the property, the right to mortgage the property, the right to transfer the property, and the right to return or value the property.<sup>26</sup>

The right of ownership of land enjoys constitutional protection.<sup>27</sup> The protection means that the right of ownership may only be affected if there is an urgent public interest. The landowner must be compensated for his loss if there is a compulsory acquisition of the land or if restrictions are introduced so that ongoing land use may not continue. Compensation shall correspond to the market value of the property (or loss of market value when only a part of the property is affected) +25% increment with regard to the individual value.<sup>28</sup> The standard surcharge of 25% was introduced in 2010 on the grounds that a compulsory acquisition cannot be compared to a market settlement. The change entailed a significant strengthening of ownership in relation to real property. The new compensation rules came to apply in the twenty or so laws that regulate compulsory acquisitions and restrictions on disposal of various kinds, including the Minerals Act.

<sup>15</sup> <https://www.skogssverige.se/skog/fakta-om-skog/vem-ager-sveriges-skogar>.

<sup>16</sup> Statistics of Sweden (SCB) 2021.

<sup>17</sup> Ibid. 2019.

<sup>18</sup> Geological Survey of Sweden (Sveriges Geologiska Undersökning) (SGU) 2020.

<sup>19</sup> Since 2004, a three-dimensional property unit can be created which can be delimited both horizontally and vertically. In this way the property constitutes a volume, e.g., a certain storey of a building or a tunnel.

<sup>20</sup> Mattsson and Mansberger (2017).

<sup>21</sup> Julstad (2018).

<sup>22</sup> Larsson (2010).

<sup>23</sup> Julstad (2003).

<sup>24</sup> Julstad (1994).

<sup>25</sup> Blomdahl (2023).

<sup>26</sup> See for instance Snare (1972).

<sup>27</sup> The Instrument of Government (*Regeringsformen*) Chapter 2 Section 15 paragraph 1-2.

<sup>28</sup> Expropriation Act, Chapter 4 Section 1.

It is important to stress that ownership entails not only economic but also non-economic benefits and values not recognized by the legislation such as sentimental values associated with a specific place or piece of land. This also affects the view on how land property rights may be perceived by the landowners. What for instance private forest landowners perceive and feel about their private forest ownership and how it manifests itself in how they relate to the public use of their forest has been the specific focus of an article by Bergstén et al.<sup>29</sup>

From a mineral policy perspective, the Swedish bedrock is divided into two types of minerals, landowner minerals and concession minerals. Landowner minerals make up more than 99% of the bedrock and are relatively easy to find. Examples of landowner minerals are limestone, quartz, dolomite, granite, gneiss, gravel, and sand. The minerals in the soil form a component of the property at least in terms of the minerals not covered by specific legislation such as the Minerals Act (1991:45).<sup>30</sup> The right to minerals that is considered “landowner minerals” (not regulated in the Minerals Act) can be leased out by the landowner to another legal or private person. In order to extract those minerals termed landowner minerals for commercial purposes, permits are, however, required according to the Environmental Code. The most common way of gaining access to landowner minerals is by purchasing the land concerned (being the landowner) or by signing an agreement with the landowner, i.e., without state intervention.

Minerals that are considered particularly necessary for society and that are difficult to find in minable quantities are called concession minerals and the provisions of the Minerals Act apply to these. Most metals fall into this category. With regard to concession minerals regulated in the Minerals Act, the landowner has certain powers or authorities, but the landowner’s right to the statutory minerals is not stronger than anyone else’s right. The Minerals Act merely indicates who, under certain circumstances, has the right of disposal. The Minerals Act does not provide any indication of the ownership of concession minerals, nor does the Constitution say anything about whether the mineral deposits concerned belong to the nation or the people. The question has been discussed by many legal scholars and has been a subject with differing opinions.<sup>31</sup> According to Bäckström, minerals in the ground are to be considered to be part of the property, and the landowner is therefore in principle the owner. His view is that the function of the Minerals Act is that of a legal constraint.<sup>32</sup> It is however obvious that the landowner’s

powers are circumscribed where the right of disposal over concession minerals is concerned.<sup>33</sup>

Since 2005, the mining company must pay mineral compensation (*mineralersättning*) to the landowner and a minor part to the state according to the Minerals Act. The compensation equals 2/1000 of the estimated value of the quantity of the concession minerals that are being extracted and brought to the surface during the course of one year.<sup>34</sup> The reason for reintroducing mineral compensation paid to the landowner was to achieve a broader acceptance of certain properties being utilized for mining operations, and also as a means of improving conditions for mining operations in Sweden.<sup>35</sup> No mineral compensation is paid to other right holders such as lessees of agricultural land or reindeer herding right holders.

## Land ownership and restrictions due to mineral development

Ownership of land may be affected both positively and negatively through restrictions of various kinds. The determination of whether a restriction of ownership rights is permissible is made in a proportionality assessment where the public interest benefit is put in relation to the disadvantage to the individual. What may constitute a public interest in the context of land use may both be the exploitation of natural resources and the protection of the environment.

Restrictions that have existed for a long time regarding land ownership are what we in Sweden call the right of public access (*allemansrätten*), meaning that others other than the landowner have the right to walk on or access the land and pick natural resources such as berries and mushrooms.<sup>36</sup> This is of importance for forest ownership (intrusion that the landowner has to endure) but also for a prospector having the possibility to conduct minor exploration work without an exploration permit.

Different types of legislation such as the Minerals Act, the Forestry Act, or the Environmental Code may limit the scope of landownership or the scope and physical extension of a certain right. Changes to the legislation may affect landownership as well. For instance, landowner minerals may be made claimable or vice versa by adding or excluding

<sup>29</sup> Bergstén et al. (2018).

<sup>30</sup> Liedholm Johnson (2001).

<sup>31</sup> Liedholm Johnson (2001).

<sup>32</sup> Bäckström (2015).

<sup>33</sup> Liedholm Johnson (2001).

<sup>34</sup> In 2020, around SEK 12.4 million was paid to the landowners and SEK 4.1 million to the state (Geological Survey of Sweden (Sveriges Geologiska Undersökning) (SGU) 2020).

<sup>35</sup> Legislative Bill 2005/05:40. Last year, mineral compensation amounted to 12 million to landowners and 4 million to the state (Geological Survey of Sweden, Sveriges Geologiska Undersökning (SGU) 2020).

<sup>36</sup> The Instrument of Government (*Regeringsformen*) Chapter 2 Section 15 paragraph 4.

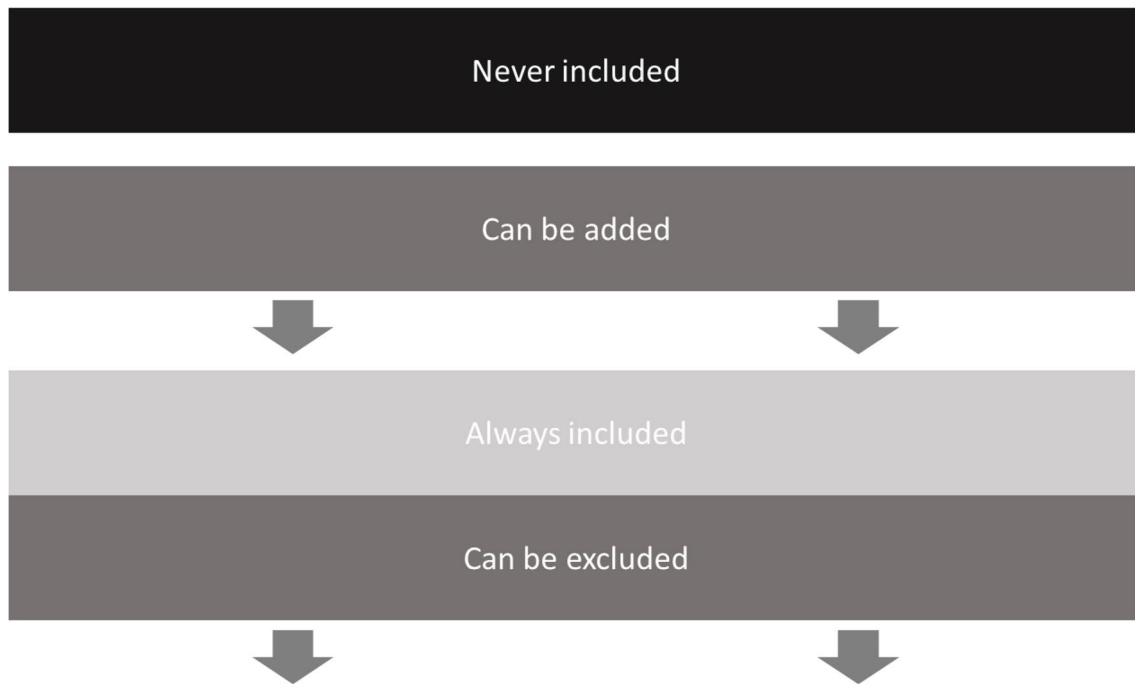


Fig. 1 Model of the real property's ownership structure based on Julstad 1994

certain minerals to or from the Minerals Act. Tree felling in certain areas may require a permit which means restrictions to the ownership rights for the forestry owner. Depending on the extent to which a right and connected activity affect current land use, a certain right may exclude other types of activities and connected rights if the entire piece of land has been claimed. If this is not the case, other rights may exist as well. The latter is normally the case as regards exploration permits and the landowners being able to continue with the ongoing land use.

A model developed by Julstad (see Fig. 1 below) is used to facilitate the description of land ownership linked to the real property. According to the model (based on Swedish conditions), the scope of property rights is divided into four different components. The main components are as follows: rights that according to current regulations are never included in the property owner's usability, rights that may be added, rights that are always included, and rights that may be removed from the property. Rights that are never included consist of the legal restrictions. If a legal restriction ceases as a result of a change in the law, the rights covered by the restriction will instead be transferred to one of the other three main components. In this way, the model takes into account a flexible dimension of ownership, which in itself is not static.

Rights that normally accompany the ownership of a real property may be transferred to another property, to a natural or legal person. A lease agreement for the extraction of landowner minerals concluded with a company is an example of a right that can be transferred by the landowner.

Rights may also be curtailed by limiting and restricting the property owner's right to use the property, such as the Mining Inspectorate (*Bergsstaten*) giving someone else the right to explore for concession minerals on the property or the County Administrative Board (*länsstyrelsen*) creating a nature reserve that restricts certain activities for the real property owner.

A basic principle of the Minerals Act is that the right of prospecting and extracting concession minerals may be granted to a person other than the landowner through a resolution issued by a national authority.<sup>37</sup> The purpose of the Minerals Act is hereby to define the preconditions for the exploration and extraction of concession minerals regardless of ownership.<sup>38</sup> The Minerals Act is primarily an instrument of industrial policy, designed to promote the extraction of minerals regarded by the government and parliament as industrially usable and economically important, where prospecting and extraction are complicated and resource intensive.<sup>39</sup> It is thus a matter of promoting an interest in extraction and related investments. The importance of concession minerals to society cannot be deduced directly from the Act but follows from the preparatory works.<sup>40</sup> A portal paragraph that explains the purpose of the law and puts it in

<sup>37</sup> Legislative Bill 1989/89:92.

<sup>38</sup> Legislative Bill 1989/89:92.

<sup>39</sup> Legislative Bill 2005/05:40.

<sup>40</sup> Ibid.



a societal context is missing, which a government investigation has recently pointed out.<sup>41</sup>

Mineral rights are allocated through an administrative process, in which the Mining Inspectorate is the official body for granting permits according to the Minerals Act. If more than one party has applied for an exploration permit in the same area, the party applying first has precedence according to the first-come, first-served principle found in the claims system. An exploration permit holder acquires priority over others for an exploitation concession when and if certain basic requirements under both the Minerals Act and environmental legislation are met. However, the Minerals Act is based on a mixture of the claims and concession systems. The reason for this is to combine the simplicity of the claims system with the unconditional rights and the possibilities of the concession system concerning social influence where conditions that are to be met are common in order to balance different interests.<sup>42</sup>

An exploration permit is normally valid for 3 years from the decision date. An exploitation concession may be granted for 25 years. In comparison with other types of extraction of natural resources, the location of ore resources is particularly time-consuming and capital intensive. Even if a legal distinction is made between exploration and mining due to practical operating conditions, no mining can take place without exploration. The holder of an exploration permit or an exploitation concession may after the consent of the Mining Inspectorate, transfer these rights.<sup>43</sup> In Sweden, mineral rights may be characterized as movable property instead of real property.<sup>44</sup>

The scope of mineral rights or more specifically the mineral title does not alone confer rights in addition to the important exclusiveness. Since 2005, the main document for exploration is the plan of operation. The plan must include an account of the planned exploration work, a timetable for the work and an assessment of the extent to which the work will presumably affect public interests and private rights.<sup>45</sup> It is very important to inform the landowners about the rights and obligations that follow from an exploration permit which also has a time limit. The landowner is entitled to compensation for possible damage that occurs during the exploration work. No exploration fees are payable to the landowner, only

to the state in relation to the area and type of minerals being searched for. An exploitation concession decides who has the right to extract the minerals found in an area. However, the concession does not give just anyone the right to start activities, because, among other things, a permit is required according to the Environmental Code. Land must also be designated in order to access land above the ground which is needed for exploitation. This is done in special land designation proceedings (*markanvisning*) where agreements with and compensation paid to different right holders are decided, and which are presided over by the Chief Mining Inspector.

If mining eventually takes place, it might be that other types of activities may continue in the surrounding area near the mine such as forestry and agriculture, but this is not always possible. The possible co-existence of different rights holders depends on how great the impact of a mine is on opposing interests. If a property is affected in such a way that the current land use cannot continue, the concession holder is obliged to purchase the entire property or parts thereof if so requested by the property owner. It is also possible for the property owners to request redemption of their properties after 10 years from when the exploitation concession was granted even if no mining has taken place. The purpose of the provision is to compensate property owners further for the uncertainties that exist with regard to the commencement of mining operations and their impact on the value of the property.<sup>46</sup>

## Nordic outlook

### Finland

Just as in Sweden, all land area in Finland is divided into real properties with unique designations and specific owners. Nearly 60% of Finland's land area is owned by private individuals. The state owns about 30%, mostly forestland in the north of Finland. Basically, natural resources on a real property such as timber, stones/rocks, and gravel belong to the property owner.<sup>47</sup>

Also like in Sweden, extractable minerals falling under the Finnish Mining Act may be claimed by others than the property owner. This means that the landowner's right to these deposits may be limited by the provisions in the Act. The Mining Act from 2011 does not address the ownership of extractable minerals, nor are there any constitutional provisions making the mineral assets in question the property of the nation or people.<sup>48</sup> The Act is based on the claims system

<sup>41</sup> Government Inquiry (2022).

<sup>42</sup> Liedholm Johnson (2010). Under the former Swedish 1974 Mining Act (*gruvlagen*), which was based on the claims system, it was not possible to combine any claims with conditions (Delin 1996).

<sup>43</sup> In 2020, there were 550 valid exploration permits compared to 853 in 2019. In 2020, there were 168 valid exploitation concessions. (Geological Survey of Sweden (Sveriges Geologiska Undersökning) (SGU) 2020).

<sup>44</sup> Delin (1996).

<sup>45</sup> Minerals Act Chapter 3 section 5.

<sup>46</sup> Legislative Bill 2005/05:40.

<sup>47</sup> <https://stat.luke.fi/en/ownership-forest-land> retrieved 13-09-2021

<sup>48</sup> The Mining Act (621/2011) (*Gruvlagen*).

where the person who finds a mineral deposit has a preferential right to the extraction of it instead of the property owner. In Finland, ownership and its scope are not exhaustively defined.<sup>49</sup> The minerals regulated in the Mining Act are regarded as a special type of property that is difficult to extract and where the conditions for exploration and mining must be secured as they require special knowledge and significant resources.<sup>50</sup> The Finnish Mining Act has long covered industrial minerals (including limestone, phosphate, and soapstone) for industrial policy reasons.

The holder of an exploration permit in Finland has to pay an annual fee (*malmletningsersättning*) to the landowners within the exploration area. No fee is to be paid to the state, which was the case according to the previous legislation. As for mining, the mining permit holder has to pay annual compensation in the shape of an excavation fee (*brytningsersättning*) to the landowners included in the mining area. The mining fee consists of a hectare-based part and a part based on the value of the ore extracted. The compulsory acquisition of a mining area during the course of a mining permit process is not possible in Finland as it is in Sweden. The Government (*Statsrådet*) may issue an expropriation permit (*gruvområdesinlösningstillstånd*) after an application has been submitted if the mining project fulfils a public need.<sup>51</sup> The environmental permit application process along with the permits required according to the Mining Act involves a hearing process where several parties are included, such as landowners, the general public, and local, regional, and national authorities.

Everyone's property is protected in accordance with the Finnish Constitution, which stipulates that everyone also bears a responsibility for the natural environment and its diversity, as well as for the environment and cultural heritage. The environment is thus one of the fundamental rights in the Constitution besides property protection.<sup>52</sup>

The issue of clearer rules on property rights has been discussed in Finland for a long time with a view to gaining a more uniform approach with regard to different natural resources such as forests and minerals. This is not least with regard to the social significance of natural resources and their increased economic value.<sup>53</sup> Interestingly, different sectors could also learn

from each other. Good practices in the mining industry such as those detailed by the Finnish forest industry might include, as proposed in a study, recognizing stakeholders to a greater extent and improving communication with them.<sup>54</sup>

## Norway

As in Sweden and Finland, a traditional real property unit extends both upwards and downwards. The Norwegian Minerals Act from 2010 regulates the exploration, deposit investigation and extraction of mineral resources, and the acquisition of mining rights.<sup>55</sup> The Act differentiates between state-owned and landowner minerals. The state owns metals with a specific gravity of 5 g/cm or greater and the ores of these metals (iron, nickel, copper, zinc, silver, gold, platinum, etc.). All other minerals are according to the Act owned by the landowner categorized as natural stone, construction raw materials, and industrial minerals.<sup>56</sup> According to Herler, it is remarkable that the Norwegian Minerals Act defines the minerals that are not categorized as landowner minerals as state minerals.<sup>57</sup>

Regardless of whether minerals are owned by the state or by the landowner, any party may search for mineral deposits on another party's land according to the Act. This limited prospecting does not require a permit and the searching party shall notify the landowner and the user of the land 1 week before a search begins at the latest. However, in order to explore and extract deposits of minerals owned by a landowner, any party must enter into an agreement with the landowner. If no agreement is reached, an application may be made for compulsory acquisition.<sup>58</sup>

A party that wishes to secure a right to explore deposits of minerals owned by the state shall apply to the Directorate of Mining for an exploration permit.<sup>59</sup> An exploration permit also gives priority to an extraction permit later on. The exploration permit grants such access to the land that is necessary to undertake exploration.<sup>60</sup> An exploring party may also apply for a permit for a compulsory acquisition of the land and rights needed to be able to undertake exploration.

<sup>49</sup> Ekonomiutskottets betänkande (EkUB) 2010 (EkUB 49/2010 rd) A Commerce Committee Report.

<sup>50</sup> Ibid.

<sup>51</sup> Legislative Bill 2009.

<sup>52</sup> Sections 15 and 20 in the Finnish Constitution, 731/1999.

<sup>53</sup> Ekonomiutskottets betänkande 2010 (EkUB 47/2010 rd) A Commerce Committee Report. Ministry of Employment and the Economy (2010).

<sup>54</sup> Technical Research Centre of Finland LTD 2015).

<sup>55</sup> Act of 19 June 2009 No. 101 relating to the acquisition and extraction of mineral resources (the Minerals Act). (*Lov 19.juni 2009 nr 101 om erverv og utvinning av mineralressurser* (mineralloven).

<sup>56</sup> Minerals Act, Section 7. Norwegian Ministry of Trade and Industry (2013).

<sup>57</sup> Herler (2014).

<sup>58</sup> Minerals Act Section 11 and Section 37.

<sup>59</sup> Minerals Act Section 13.

<sup>60</sup> Minerals Act Section 19.

For minerals belonging to the state, the permit holder has to pay an annual fee to the state for their exploration and extraction permits. The Minerals Act gives the Ministry of Trade and Industry the legal authority to issue regulations on the payment of an annual fee to the state for the extraction of minerals owned by the state.<sup>61</sup>

The exploring party with the highest priority may apply to the Directorate of Mining for an extraction permit. A party that is extracting a deposit of minerals owned by the state shall also pay an annual fee to the landowner of 0.5% of the sale value of that which is extracted. If there are several landowners in the extraction area, the fee shall be divided among them in proportion to the land owned by each of them in the extraction area.<sup>62</sup>

## Discussion

The Minerals Act promotes the search for minerals by restricting a right that otherwise belongs to the landowner.<sup>63</sup> In the event of negatively determined property protection, the meaning of a strengthened property right is to reduce or weaken the legal rules that affect the owner's right to use his property in the way he wishes.<sup>64</sup> Making minerals less claimable according to the Minerals Act is one way of strengthening the right of disposal of the landowner since those minerals then become landowner minerals. The opposite situation occurs when more minerals are made claimable.

The Minerals Act is as mentioned a business policy instrument for facilitating and stimulating interest in private investments in the mining sector in Sweden. Historically, the state had the right to co-ownership in mines as well as to conduct its own exploration activities, which both ceased during the 1990s. There are several reasons why the right to certain minerals, as in Sweden, is granted by the state to the first qualified applicant (the claims system). The risks involved in finding new resources are high (discoveries are often hidden from the surface) requiring advanced technology.<sup>65</sup> The material value occurs late in the mineral development cycle. It has therefore also been regarded as important for the legislator that permitted land use such as mining is dealt with in the process of an exploitation concession and not later when the environmental permit is applied for.<sup>66</sup>

Landowners have never been impeded by mining legislation from prospecting on their own land or for applying for an extraction permit. Another aspect is that the technical and financial

resources needed today to search for and exploit minerals and identify deeper deposits in principle exclude an "ordinary landowner" from the role of prospector in its broader sense. Historically in Sweden, landowners have been shareholders in mines and dues and charges for landowners as well as compensation for mining encroachment have also varied.<sup>67</sup> In 1938, the landowner share was replaced by a Crown share and the landowner received a landowner share instead. In 1974, the landowner charge was eliminated from the legislation. At the beginning of the twentieth century, the minerals legislation had come to be seen as unbalanced and unfair from the landowners' point of view which among other things resulted in the reintroduction of a special mineral compensation (*mineralersättning*) mentioned earlier in this article. At the same time, improved information was also proposed to stakeholders in connection with an application for an exploration permit.<sup>68</sup> This led to provisions for an obligatory plan of operation in 2005. Further reviews of the legislation in later years have aimed at proposing changes to the regulatory framework so that it supports good dialogue between companies, landowners, and interested parties as well as municipalities.<sup>69</sup>

With regard to the flexible or dynamic dimension of land ownership, an approved permit for exploiting landowner minerals according to the Swedish Environmental Code will add scope to the ownership rights of the landowner. Normally, compensation is not payable for a denied permit when a permit is needed for commercial purposes. A permit usually has a certain period of validity and conditions that need to be met. An application for an extension of a permit that has been rejected may have consequences for the operator not least if the permit holder had a legitimate expectation of being granted such an extension. A denied permit for the extension of a lime quarry on the island of Gotland for the cement manufacturer and landowner Cementa received much attention in the Swedish press in the summer of 2021. This was because a feared reduced supply of cement was seen by many as having negative consequences for the construction of houses and infrastructure. In September of the same year, the Swedish Government proposed a legislative bill aimed at enabling a rapid government review of an application for a time-limited permit for limestone mining.<sup>70</sup> Enacting this type of legislation in this way, as a way to circumvent a court decision, has been called into question by certain groups and is a new way of dealing with things from a Swedish perspective with our independent courts.<sup>71</sup>

<sup>61</sup> Minerals Act Section 56. Norwegian Ministry of Trade and Industry (2013).

<sup>62</sup> Minerals Act Section 57.

<sup>63</sup> Liedholm Johnson 2001.

<sup>64</sup> Government Inquiry 2021:51.

<sup>65</sup> The consequences of instead awarding "hard-rock" minerals through a tender procedure as for oil and gas deposits has been discussed in an article by Haddow 2014.

<sup>66</sup> Legislative Bill 1998/98:90.

<sup>67</sup> Liedholm Johnson (2001).

<sup>68</sup> Legislative Bill 2005/05:40.

<sup>69</sup> Government Inquiry 2012:73.

<sup>70</sup> <https://www.regeringen.se/pressmeddelanden/2021/09/regeringen-beslutar-om-propositionen-regeringsprovning-av-kalkstenstakter-i-undantagsfall/>

<sup>71</sup> On 18<sup>th</sup> November, the Swedish Government decided to issue a prolonged permit for Cementa until the 31<sup>st</sup> of December 2022.



The vital function of the Minerals Acts is to regulate land access and the right to explore and exploit concession minerals. It is therefore interesting to see the solution in Norway where landowner minerals are also regulated in the Norwegian Minerals Act together with state-owned minerals. In Finland, the commercial use of landowner minerals is regulated in the Land Extraction Act (*marktäktslagen*).

There are many similarities between minerals and forest linked to both ownership of land and private and public interests, see Table 1 below. As regards landowner minerals and forests, ownership rights follow from the ownership of land and may be leased out to another person or company. As regards concessions or claimable minerals, the state may grant these rights to another person other than the landowner. In some countries, forest concessions are important instruments for the allocation of public forests to a private entity, but this is not the case in Sweden. The mining industry has historically been strongly dependent on forestry at the local level. Firewood was used for mining, and timber was converted into charcoal in the production of iron. The state (Crown) has also historically claimed its regalian rights to both minerals and forests. Both industries have been and still are an important export for Sweden.

Table 1 A comparison of minerals and forest related to land ownership in Sweden, simplified

Minerals	Forest
Special legislation — the Minerals Act applies in parallel to the Environmental Code	Special legislation — the Forestry Act applies in parallel to the Environmental Code
Certain deposits may constitute national interests ( <i>riksintresse</i> ) in accordance with the Environmental Code. Such deposits must be preserved to enable future exploitation	The forest is a national asset according to the Forestry Act and forestry is of national importance according to the Environmental Code
Important export value	Important export value
National Mineral Policy	National Forestry Policy
The EU's Critical Raw Materials Act (CRMA) due to enter force in early 2024	EU Forest Strategy for 2030 (no common EU policy)
State ownership of major mining companies, e.g., LKAB	State ownership of major forest companies, e.g., Sveaskog AB
Ownership or control of "landowner" minerals follows from ownership of land but may be leased out to another person or company by the landowner	Ownership of forests follows from ownership of land (title of the land). Real property including forestland may be leased out by the landowner to another person or company
Ownership or control of minerals that are claimable may be granted by the state to a permit holder through an exploration permit and following an exploitation concession	There is no equivalent to the granting of permits of concession minerals for forestland

Minerals	Forest
An exploration permit and a mining permit may be transferred to another person or company with the consent of the Chief Mining Inspector	The right to fell and take care of timber may be transferred to another person or company by the landowner
The use of minerals may conflict with environmental interests, the protection of endangered species, reindeer husbandry, etc.	The use of forest may conflict with environmental interests, the protection of endangered species, reindeer husbandry, etc.
The right of public access enables minor exploration work without an exploration permit	The right of public access entails certain encroachments that the landowner must endure such as berry and mushroom picking
Several state authorities are involved in a permit process related to mining operations for commercial purposes.	Several state authorities are involved when it comes to forestry and environmental considerations and conservation.

## Conclusions

This article aimed to problematize and discuss land ownership and mineral exploration and extraction in Sweden in relation to private and public interests. Changes in land use give rise to both negative and positive effects with regard to ownership of land and other limited rights which should be regularly debated in conjunction with the system of compensation. In order to safeguard ownership rights and limited rights to land, legal certainty is of importance as well as legal systems and processes that are predictable. This holds true for land ownership but also for other right holders having rights to explore or exploit minerals. Compensation in case of restrictions is of vital importance for landowners as well as the freedom to act concerning your own property. The compensation system in a country has to strike a balance between two conflicting interests: on the one hand, the property owner's insistence on individual liberty and the protection of ownership, and on the other, the public interest in achieving what in total terms is the efficient use of land resources with regard to the environment and public infrastructure, etc. This balancing of interests connected to the compensation system should be regularly debated due to the fact that times change.<sup>72</sup>

The Minerals Act in Sweden does not contain independent protection regulation, but rather integrative provisions from primarily environmental and planning legislation. It is therefore not strange, as earlier mentioned that the act is sometimes perceived as unreasonable by landowners and other actors because the extraction interest becomes so prominent in the law. Therefore, as in many other mining countries, it is not enough to study mining legislation only

<sup>72</sup> Kalbro (2001).

in order to find out about the scope of mineral rights (rights, obligations/responsibilities, and restrictions).<sup>73</sup> How different types of land legislation are related is therefore an important issue to communicate.

Ownership of land and minerals can be seen as a dynamic system where the legislator must find a balance between private and public interests. In recent decades, increasing demands have been placed on improving rules on information and dialogue between the mining operator and affected landowners and the licensing authority into the Swedish Minerals Act. This trend is also obvious globally. There is clearly a demand for more and continuing research in the broader field of creating institutional systems capable of generating minerals legislation which can strike a judicious balance between the rights of landowners, “discoverers,” or miners and the state and other stakeholders, while at the same time putting sustainability in focus.

The general acceptance of the fact that individual companies may prospect and extract minerals without the consent of the landowners is perhaps somewhat lower than when the state is an actor. The state as an owner of mines and forests must set a good example as regards attitudes to restrictions and taking consideration of the environment. Part of the mineral compensation that today is paid to the state could instead be paid to an increased extent to the local community, something that the mining industry has proposed in a reform package.<sup>74</sup> Similar solutions with benefit sharing and transferring central government funds to local governments in mining areas have also been suggested by a government inquiry in 2022.<sup>75</sup>

In November 2020, a meteorite weighing 14 kilos landed outside the city of Enköping in Sweden. The fall caused a strong flash of light. Several specimen hunter searched the area, and after several weeks, two geologists found the stone. A dispute is now pending in upper court. Both the finders and the landowner believe that the find belongs to them. The court of first instance, the district court, concluded that the meteorite could be considered moveable property and that the discoverers would be entitled to ownership by virtue of a right of occupation. The judgment was appealed to Svea Court of Appeal. The issue of the ownership of natural resources below and above ground seems to have spread to space which may not be unusual in the future.<sup>76</sup>

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<sup>75</sup> Government Inquiry 2022:56.

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