

Is Land Consolidation necessary? - a Theoretical Perspective on Norwegian Land Consolidation

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Key words: Land consolidation, transaction costs, Coase theorem, Kaldor Hicks criterion, Pareto criterion

SUMMARY

The paper discusses the necessity of land consolidation in Norway and emphasizes the economic theories of Pareto efficiency, the Kaldor-Hicks criterion, and the Coase theorem to justify the need for land consolidation.

Land consolidation in Norway can be defined as measures that can change properties, physically or organizationally, to improve their utility to the owners. The concept of land consolidation involves modifying property relationships within a defined area to achieve specific goals. The paper argues that despite the possibility of voluntary transactions and agreements among property owners, land consolidation courts are essential, drawing on economic theories to support this claim.

Norway uniquely integrates land consolidation within its court system, with dedicated legislation dating back to 1821. There are 19 land consolidation courts in Norway, each handling cases that involve both technical and legal aspects. These courts play a crucial role in resolving property-related disputes and facilitating land consolidation.

The paper argues that land consolidation provides a framework for reducing uncertainty and creating stability in property transactions. Transaction costs, which encompass various expenses and efforts related to property transactions, are a significant consideration. Land consolidation helps reduce these costs, making it more feasible to achieve efficient property changes.

Institutions influence how individuals act, and in land consolidation, they provide the structure for achieving efficient property changes. The paper further delves into the theories of the Pareto criterion, emphasizing that land consolidation can lead to Pareto improvements by optimizing resource allocation. The Kaldor-Hicks criterion is discussed as a broader concept that allows for compensation of losers by winners, thereby increasing overall societal well-being. Land consolidation can align with this criterion by addressing property inefficiencies. Lastly, the Coase theorem is discussed, focusing on well-defined property rights and private

negotiations to resolve externalities. Land consolidation courts serve as negotiation platforms, helping achieve efficient resource allocation.

In conclusion, the paper argues that land consolidation is necessary due to unclear property rights, the presence of transaction costs, and the role of institutions in reducing these costs. Economic theories support the idea that land consolidation can lead to more efficient property changes and resource allocation, benefiting both individuals and society as a whole.

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1. INTRODUCTION

In Norway, as in other European countries, land consolidation was justified by the need for modernization, i.e. to do away with outdated property right structures, especially fragmentation of land and collective rights. The legally defined aims of land consolidation vary from country to country. In Norway, land consolidation can be defined as measures that can change properties, physically or organizationally, to improve their utility to the owners (Elvestad and Sky 2019:65). The definition is wider than in most countries; cf. de Vries et al. (2019:2) and Vitikainen (2004:25-26).

The Land Consolidation Court, empowered by land consolidation- and planning- and building legislation, has the authority to decide on the transformation of ownership, property, and rights structures to facilitate the implementation of plans and projects. This includes the potential creation of new property units, alterations to boundaries, etc., through formal decisions made during land consolidation, as long as these decisions fall within the framework of public planning and development control.

Land consolidation has a long tradition in Norway, primarily being used in rural areas. However, with a growing need for effective tools to facilitate sustainable urban development, land consolidation is increasingly becoming relevant in urban areas as well. Land consolidation involves intervening in existing property relationships within a geographically defined area with multiple properties and modifying these property relationships to achieve specific predetermined objectives.

In theory, these changes could have been executed by owners and rights holders through voluntary transactions such as buying and selling and agreements. One might therefore question the necessity of land consolidation. This paper will use economic theories such as Pareto optimality, the Kaldor-Hicks criterion and the Coase theorem to argue and help explain

why land consolidation courts are necessary to facilitate these transactions. Before looking closer at the necessity of land consolidation (chapter 3) there is a need to provide a brief description of the Norwegian land consolidation court (chapter 2) as it differs from all other countries. In chapter 4 the paper presents some final remarks.

2. A SHORT DESCRIPTION OF THE LAND CONSOLIDATION COURT

In the context of land consolidation activities in Norway, it is notable that these endeavors are administered through a distinct judicial framework, albeit without rigid demarcations between the judicial system and governmental bodies in the context of land consolidation matters. Norway holds a unique position in this regard, as it stands as the sole nation to have fully integrated its land consolidation activities within the court system (Sky 2015:84). The genesis of dedicated legislation governing land consolidation dates back to 1821, and the Norwegian land consolidation court has been recognized as a special court since 1882. While the institutional framework and objectives guiding land consolidation efforts vary from one country to another, it is noteworthy that the procedural aspects of the land consolidation process exhibit a remarkable degree of uniformity on an international scale (Sky 2015:81).

There are 19 land consolidation courts in Norway, located 34 places, employing 72 judges and about 250 in total. According to the Land Consolidation Act (LCA), section 2-3, every land consolidation court “shall have a senior presiding judge who also acts as a land consolidation judge, and as many land consolidation judges as stipulated at any given time”. In addition, the land consolidation court may have at least one assistant judge who can perform tasks on behalf of the land consolidation judge. The LCA section 2-3 second paragraph states that the land consolidation courts shall also “have the necessary technical staff”. They carry out technical work for the land consolidation courts, such as registration, mapping, boundary marking etc.

The land consolidation process can be characterized as a combination of a technical, cadastral, juridical, economical and planning issues. The land consolidation court and municipal authorities work in consultation with each other. This is necessary to conclude a land consolidation case and it is an important prerequisite for land consolidation. It is pursuant to section 3-17 second paragraph: “The necessary official permits shall be in place when the land consolidation court issues its final ruling.”

Rulings issued by the land consolidation court can be appealed to a court of appeal of which there are six in Norway. When reviewing land consolidation rulings, the LCA section 8-7 second paragraph states that the court of appeal must sit with one land consolidation court of appeal judge. The appeal judges in land consolidation cases, the land consolidation judges, and assistant judges “must hold a master’s degree related to land consolidation, covering the subjects stipulated by the Ministry”, cf. LCA section 2-4.

The land consolidation court's jurisdiction in Norway covers cases in the following three areas: land consolidation (chapter 3 in the Land Consolidation Act); disputes regarding property boundaries and rights of use (chapter 4 in the LCA); and court hearings concerning cases of appraisal (chapter 5 in the LCA). This article will focus on land consolidation.

The tools set out in chapter 3 of the Land Consolidation Act can be grouped into those that involve physical changes to properties and those that involve organizational changes to properties, cf. Sky and Bjerva (2018:21-22):

Physical changes:

- (1) Project-related land consolidation in conjunction with private and public projects, cf. section 3-2.
- (2) Conservation-related land consolidation as the result of the public authorities imposing constraints on the exercise of ownership rights, cf. section 3-2.
- (3) Modifications to property and perpetual easements, cf. section 3-4.
- (4) Establishing joint ownership, cf. section 3-5.
- (5) Dissolution of joint ownership and joint use, cf. section 3-6.
- (6) Division of property, cf. section 3-7.

Organizational changes:

- (7) Rules on joint use (shared use arrangements), cf. section 3-8.
- (8) Orders to carry out joint measures and joint investments, cf. section 3-9.
- (9) Creating owner associations and establishing articles of association, cf. section 3-10

In a land consolidation process, there are four cumulative conditions that must also be met: At least one “property or easement in the land consolidation area is difficult to use gainfully at the current time and under the current circumstances”, cf. section 3-2, first paragraph. Land consolidation can only be carried out “in order to make the property arrangements in the land consolidation area more advantageous”, cf. section 3-3. Protection against loss, as outlined in section 3-18, must be ensured so that the land consolidation solution does not “result in costs and other disbenefits that are greater than the benefits” for any property or easement. Finally, the land consolidation settlement must not “contravene binding zoning regulations”, and “necessary official permits shall be in place when the land consolidation court issues its final ruling”, cf. section 3-17.

3. WHY LAND CONSOLIDATION IS NECESSARY

In the following, the paper will utilize economic theories to argue for the necessity of land consolidation in Norway. However, it is essential to begin with an institutional approach to

land consolidation. As mentioned earlier, the changes achievable through land consolidation could also be accomplished through private legal agreements and transactions. According to Sevattal, institutions influence our actions and lead individuals to act differently than they would based solely on a completely free, individual, and ego-centric motivation (Sevattal et. al., 2019:43).

3.1 Institutions

Throughout history, humans have established institutions in an attempt to create order and, in doing so, reduce uncertainty. According to Ostrom (2005:3), we need to understand what institutions are, why and how they are designed and maintained, and what effects they have in different contexts. According to North (1990), the role of institutions in society is to establish a stable structure to human interactions. Institutions not only influence us through our own choices but also provide us with a framework for understanding what we can expect from others.

North views institutions as "the rules of the game in a society or, more formally, the humanly devised constraints that shape human interaction" (North 1990:3). North's portrayal of institutions is from an economic perspective. Rules governing social, economic, and political interactions are, in other words, institutions. Various laws, regulations, and other mechanisms are meant to ensure that these rules are followed. The purpose of institutions is to reduce uncertainty and create stability by defining how the game should be played (North 1990:4). The concept of an organization, as used in institutional economics, refers to actors or players. However, not all actors or players can be perceived as an organization. An actor can be an individual, but when organizations act as a group, they are considered actors. The Land Consolidation Act is part of the institutional framework for real property. The individual landowner is an actor, a property company is an organization and actor, and the land consolidation court is an organization with clear institutional boundaries (Sevattal et. al. 2019:45-46). According to Holsen (2020), private property rights under private law and public land-use planning under public law represent two different sets of institutional systems or regimes for controlling land use. Land consolidation activities are organized under a special court, but there are no sharp distinctions between the court and government administrations when it comes to land consolidation.

North argues that by combining theories of actor behavior with transaction cost theory, one can understand why institutions exist and the role they play in making a society function (North, 1990). In the following, the paper will take a closer look at transaction costs and rational actors (see chapter 3.3 for a clarification of the term actor) before using Pareto efficiency, the Kaldor-Hicks criterion, and the Coase theorem to argue why land consolidation is necessary.

3.2 Transaction costs

A transaction involves the transfer of a right from one actor to another. The activities that actors within the property regime typically engage in are often related to agreements and

include buying and selling, inheritance and division, consolidation, and exchange. Land consolidation involves conducting transactions involving property rights. Landowners and rights holders in the properties demand changes and exchange land, establish common initiatives, regulate land use, etc., by giving and receiving property rights in return. The transactions that the land consolidation court can decide upon are listed in Chapter 3 of the Land Consolidation Act (refer to the article's Chapter 2).

In connection with a discussion of transaction costs, it is relevant to mention the theoretical development put forward by Ronald Coase in "The Nature of the Firm." Coase describes that firms exist because it is costly to use the market to coordinate economic activities. By "firm," Coase refers to a system of relationships that arises when an "entrepreneur" determines how resources should be used, where "entrepreneur" denotes the person or persons who, in a competitive system, replace the price mechanism in resource allocation (Coase 1988:41–42). By replacing the market's price system with an administrative decision-making process, transaction costs can be reduced. It is costly to negotiate agreements for each transaction in a market. Even though a firm is formed, agreements are still necessary, but the need is significantly reduced since it is no longer necessary to enter into more than one agreement for the aspects concerning the collaboration within the firm. This line of thinking forms the basis for the theory of transaction costs today (Williamson and Masten 1995).

Looking further into the concept of transaction costs, these can be categorized, firstly, as "measurement costs," which refer to the costs of measuring the valuable characteristics of the goods in question. Secondly, we have "safeguard costs," which encompass the costs of securing rights, especially property rights, and the costs of monitoring and ensuring that various agreements are fulfilled (Nord 2008). North (1990) argues that these measurement and safeguard costs are the reason for the existence of social, economic, and political institutions, emerging as a necessary support system for human interaction. Eggertsson (1990:14) provides the following definition of this type of costs: "[T]ransaction costs are the costs that arise when individuals exchange ownership rights to economic assets and enforce their exclusive rights." Transaction costs arise in decisions under all institutional forms. They are inevitable and therefore necessary to consider in all economic analyses that aim to have practical relevance (de Alessi 1983). A further breakdown of what transaction costs specifically entail can mainly be done in terms of search and information costs, decision costs, as well as implementation and enforcement costs.

Essential elements of land consolidation revolve around reducing transaction costs to unlock potential benefits. Transaction costs in this context encompass all the work and expenses associated with interacting with other individuals. These costs include expenses incurred during the transfer of property rights. It encompasses not only the actual transfer but all sacrifices, whether measurable or not, related to the necessary groundwork, establishing agreements and decisions, formulating them as contracts and/or formal resolutions, and fulfilling and implementing these agreements and decisions. Transaction costs do not

necessarily have to be pure monetary expenditures; they can also involve the effort and toil associated with interacting with other individuals.

Allen (2002) begins by using property rights as a foundational concept for defining transaction costs. Transaction costs encompass the expenses associated with enforcing and upholding property rights. In this paper, the central transaction costs include those related to defining and enforcing rights, acquiring information, and negotiating and enforcing contracts. In the context of this discussion, search costs refer to expenses tied to a lack of information about legal status and a lack of information about the costs/incomes of other actors. Negotiation costs pertain to the efforts required to bring actors to the negotiating table, negotiate agreements, and reach contractual arrangements. Control/implementation costs are the expenses associated with executing the agreement and ensuring that actors adhere to their obligations, among other related tasks.

An important point to consider is how the costs are distributed among the actors and whether any external parties are willing to share a portion of these costs. This is highly relevant when it comes to land consolidation. Bjerva and Sevstad (2009:78) and Bjerva (2012) point out that part of the state's rationale for establishing and maintaining the land consolidation court is to reduce transaction costs in order to facilitate desirable property changes that might not otherwise be feasible or would be challenging to implement. Lai et al. (2022:4) points out that "in reality, the transaction costs of revising a plat or layout as a web of proprietary boundaries, formally defined by streets and lanes or informally by field bunds under customary tenure, in a place where the rule of law prevails are gigantic."

The Norwegian state covers a significant portion of the costs associated with the transactions carried out in land consolidation. Additionally, subsidies can be provided beyond this, such as for cultivation, relocation of houses, shared infrastructure, etc.

Another concept that must be mentioned is opportunity costs. In this context, it refers to "lost opportunities," meaning that alternative uses cannot be realized, and the potential income from these alternatives can be considered a kind of cost. In the context of land consolidation, this can apply, for example, to the difference between the current and potential value of a piece of land. Removing building-restricting covenants is a good example. The unrealized values can be substantial, the costs of maintaining the existing condition are likewise significant, and the benefit of having the covenant removed can be substantial for the owner.

3.3 Rational actors

In this context, actors encompass anyone holding some form of rights that can be linked to or derived from property rights, including landowners, tenants, and various types of users or lienholders.

The concept of rationality is central in theories of actor behavior. Rationality, in this context, pertains to the relationship between goals and means, a form of purposive rationality. An actor behaves rationally when seeking the simplest, fastest, best, or most efficient course of action

to achieve their preferences or goals. If actors exhibit purposive rationality, they compare different courses of action based on what aligns best with their desires.

In theories related to land consolidation, terms such as "utility" and "utility functions" are often used (Sevatdal, 1990, Bjerva and Sevatdal, 2009, Sevtadal et al., 2019). The underlying idea is that property can serve various utilities for different owners. Owners can be categorized based on these utilities, and various theories of actor behavior can be associated with these categories. The main argument is that utility maximization is always the primary motivation for individuals (Bjerva and Sevatdal, 2009). Actors must navigate the constraints they face and determine the best course of action to achieve their goals. However, individuals may recognize that the most effective way to achieve their objectives is through institutional action, and thus their behavior is influenced by institutions.

The neoclassical economic perspective focuses on individual actors engaged in maximizing behavior. These actors have stable preferences and possess complete knowledge of possible alternatives and their consequences (Scott, 2001:66). Ekbäck (2000:89) highlights the significance of transaction costs. Because gathering information incurs costs, information can never be complete. Due to limitations in available information and the cognitive capacity of actors to process that information, Ekbäck argues that actors can only be considered rational to a limited extent in the neoclassical sense.

Institutional theorists, who utilize these and related models of individual rational actors, often view institutions primarily as regulatory frameworks. Actors establish institutions to address collective action problems, intending to regulate their own and others' behavior. They respond to institutions because these regulations are supported by incentives and sanctions (Scott, 2001:66).

It's important to note that institutions are conceptualized as sets of rules that motivate individuals based on an understanding of utility-maximizing behavior. Within this framework, various theories exist, including what Peters has termed "institutions as rules" (Peters, 2012:52). This theory is based, in part, on the rational idea that individuals can gain advantages by committing to an institution, and therefore, they are willing to sacrifice some of their freedom of action to obtain these benefits. One of the significant advantages, as pointed out by Peters, is a greater ability to predict the behavior of others if everyone adheres to the institution (Peters, 2012:53). North's (1990) work focuses on this approach, highlighting that institutions are "the rules of the game." The "institutions as rules" approach conceptualizes institutions as "aggregations of rules with members of the organizations - or institutions - agreeing to follow those rules in exchange for such benefits as they are able to derive from their membership within the structure" (Peters, 2012:52).

Hall views institutions as patterns of regularized behavior that reflect Pareto-optimal equilibrium and remain stable because actors cannot improve their position by deviating from these behavioral patterns (Hall in Mahoney and Thelen, 2009:204).

Within the field of law and economics, two central questions are: How do legal rules operate, and what kinds of legal rules should be in place? (Eide and Stavang, 2018). To understand how legal rules function, law and economics also rely on theories of individual rational behavior. Legal rules can be seen as incentives to guide behavior toward efficient resource utilization. When weighing the pros and cons of a rule, efficiency criteria are employed. Two key criteria are the Pareto criterion and the Kaldor-Hicks criterion. In evaluating what kinds of legal rules should be in place, considerations of Pareto efficiency and Kaldor-Hicks efficiency are essential within the field of law and economics.

3.4 The pareto criterion and land consolidation

The Pareto criterion is an economic concept that represents a situation in which it is impossible to make any individual better off without making at least one individual worse off. This concept is a central idea in welfare economics and signifies an allocation of resources or a state of affairs in which no further improvements can be made without harming someone else's welfare. It represents the highest possible level of economic welfare given the available resources. Achieving Pareto efficiency, also called Pareto optimality often involves trade-offs between conflicting objectives. It highlights the challenge of resource allocation in a way that maximizes overall well-being. Pareto efficiency does not consider the distribution of resources or welfare among individuals. It only focuses on whether it is possible to make at least one person better off without harming others, without specifying how the improvement should be distributed. A Pareto improvement occurs when at least one person's welfare increases without reducing anyone else's welfare.

The Pareto criterion, in brief, states that an action (investment project, legal rule, etc.) that benefits at least one individual without harming anyone else should be implemented (Eide and Stavang, 2018). Such an action leads to a Pareto improvement. The requirement that no one should suffer losses, and that some should presumably be better off, as indicated in the Land Consolidation Act section 3-18 (see Chapter 2), allows us to say that land consolidation results in a Pareto improvement. However, one may argue that this is a truth with modifications. Changes do not occur on just one property; there are always multiple properties affected. If some of these properties are unwilling to accept the changes but are forced to do so, we can say that these individuals subjectively incur a loss, although not of an economic nature.

In the process of property valuation, the land consolidation court relies on a foreseeable use of the property based on objective considerations. For the solutions, the land consolidation court relies on the benefits an ordinary owner would derive from those solutions. This may not necessarily align with the actual owner's own assessments. According to the land consolidation court's assessment, the property has been no worse off than before the consolidation, and the other property has even benefited more than before. In this sense, it can be argued that a Pareto-optimal situation exists, assuming that the total utility could not have been greater. However, from the parties' perspective, the resource allocation may not be optimal, as the parties might have chosen different solutions than those selected by the land

consolidation court. From an economic perspective, though, it can still be said that the solution leads to a Pareto improvement.

3.5 The Kaldor Hicks criterion and land consolidation

Many actions or policies can be detrimental to some individuals. In such cases, where an action benefit some but harms others, the action typically doesn't lead to a Pareto improvement. However, it may satisfy the Kaldor-Hicks criterion. The Kaldor-Hicks criterion is an economic concept used to evaluate the efficiency of a policy or decision by assessing whether the potential gainers from the policy change could theoretically compensate the potential losers, resulting in a net welfare improvement. According to Callesen et al. (2022:7) the Kaldor Hicks criterion states that “a project represents a socially beneficial reallocation of resources if the losers of the project or policy can potentially be fully compensated by those benefitting from the project, or if the losers can bribe the winners of the project or policy to forgo the benefits”.

The Kaldor-Hicks criterion is broader than Pareto efficiency because it doesn't require that everyone benefits from the policy change. It allows for situations where some individuals are worse off as long as the winners could, in theory, compensate them, resulting in a net welfare gain. The Kaldor-Hicks criterion aims to maximize overall social welfare or economic efficiency. It recognizes that in practice, some policies may generate winners and losers, but as long as the winners could compensate the losers, the policy is deemed to enhance overall societal well-being. According to the Kaldor-Hicks criterion, a policy change is considered efficient and desirable if the total gains to the winners exceed the total losses to the losers, and if it's possible for the gainers to compensate the losers so that everyone is better off in the end. In other words, if the winners could, in theory, fully compensate the losers and still have some net gain left, the policy change is deemed efficient.

Kaldor-Hicks represents a cost-benefit evaluation that focuses on the overall effects of an action, rather than just the effects on individual actors, as the Pareto criterion does. Eide and Stavang (2008:110-111) illustrate that the criterion implies that a legal rule, a tool, or an action is desirable "if and only if it creates large enough gains for the winners' hands so that the losers can be compensated – and at least one party gets something more." This applies, for example, in cases of expropriation. In the context of land consolidation, one can also argue that the removal (in Norwegian *avskipping*) of covenants is based on the Kaldor-Hicks criterion. *Avskipping* is a specific form of expropriation that is only applied to easements/covenants. *Avskipping* must be considered from a damage perspective. If the right is detrimental to the owner's beneficial utilization, and the gain from removing the easement /covenant significantly outweighs the loss for the right-holder, then the easement/covenant can be removed.

Eide and Stavang (2008:112) point out that the Kaldor-Hicks criterion is criticized for not considering equity and for assuming that all relevant factors are measurable. However, the

Kaldor-Hicks criterion provides a framework for evaluating measures aimed at achieving socially desirable objectives in land use efficiently.

3.6 The Coase theorem and land consolidation

Overall, the Coase theorem (Coase 1960) highlights the importance of property rights and the potential for private negotiation to resolve externalities without the need for government intervention. The Coase theorem addresses the issue of how to efficiently allocate resources when there are externalities, which are the unintended consequences of economic activities that affect third parties.

The Coase theorem assumes that well-defined property rights exist and can be assigned to individuals or entities involved in an economic transaction. It also assumes that there are zero transaction costs, meaning that parties can negotiate and make agreements at no cost. The theorem suggests that, under these conditions, parties will negotiate with each other to reach an efficient allocation of resources, regardless of the initial assignment of property rights. In other words, the outcome will be economically efficient, and resources will flow to their highest-valued use. The actual allocation of resources depends on the bargaining power and information of the parties involved. The party with the stronger bargaining position may end up with the property right and influence the final outcome. The Coase theorem implies that government intervention may not always be necessary to resolve externalities. Instead, individuals or businesses can negotiate and reach mutually beneficial agreements to address the issue.

While the Coase theorem provides valuable insights, it simplifies the complexities of real-world situations. Its practical applicability depends on the specific circumstances and the feasibility of zero transaction costs, which are often not achievable in the real world. In practice, transaction costs, information asymmetry, and other factors can hinder efficient negotiations and lead to suboptimal outcomes. As Allen (2002) also emphasizes, such an ideal model may not be relevant for understanding how society operates. However, an analysis of transaction costs is a way to comprehend how an actor or organization behaves and how an institution function.

A weaker version of the Coase theorem assumes the existence of transaction costs. If these costs are so high that they hinder negotiations, the solution is for the authorities to prevent this by implementing various measures that remove or reduce transaction costs. Through wise rules – institutions – obstacles to agreements can be reduced or eliminated. The Coase theorems demonstrate the importance of transaction costs for the understanding of legal rules and for studies of their effects.

The first condition of the Coase theorem is that the rights must be well-defined, meaning that there is complete information about what the right entails, its extent, etc. Defining these rights is something that can be done by the land consolidation court. The rules of land consolidation are designed in a way that allows the court to ensure that property rights are well-defined. Sections 4-1 and 4-2 of the Land Consolidation Act provide the legal basis for clarifying

rights and establishing boundaries as a separate case. Thus, the requirement for well-defined rights can be met through land consolidation.

Land consolidation involves transactions with properties and rights in properties that are desired by one or more parties to address issues that make the property inefficient. This is arranged using various tools outlined in Chapter 3 of the Land Consolidation Act (see chapter 2), without the introduction of many of the significant transaction costs that would otherwise come into play. Therefore, land consolidation is an institution that reduces or minimizes transaction costs. The condition in the weak theorem is thus fulfilled: institutional frameworks have been created that reduce transaction costs.

The last condition is that the actors negotiate their way to solutions. Through negotiations the actors can arrive at solutions that provide an efficient allocation of property rights. However, negotiations require a negotiation platform. Section 6-17 of the Land Consolidation Act states that at each stage of the case, the land consolidation court shall consider whether mediation can lead to an amicable solution. Therefore, the land consolidation court serves as a meeting place for the actors and an arena for negotiations and mediation, with technical and legal assistance from judges.

According to Coase's theory, it is indeed possible to achieve efficient resource allocation through land consolidation.

3.7 The necessity of land consolidation

In many situations, involved actors can make agreements on mutual monitoring and the use of coercion. Still, Scott (2001:52) argues that in many cases, it will be necessary for a neutral third party to enforce this. North (1990:64) argues that ultimately this third party must always involve the state as a source of coercion. The Land Consolidation Court is a good example of such a neutral third party.

Ekbäck (2000) points out that the institutional framework can be designed to reduce costs, increase access to information, and steer individual behavior, but it can never completely eliminate the procedural costs of allocations. These costs affect all actors and, therefore, society as a whole. However, these costs can be limited, and land consolidation is a good example of how transaction costs can be significantly reduced. In the same way that different technologies lead to different production costs, different institutions result in different transaction costs (Ekbäck 2000:18). Because the Norwegian state covers a significant portion of the costs associated with the transactions carried out in land consolidation, land consolidation has relatively modest transaction costs.

Costs associated with acquiring information arise due to uncertainty and risk in various decision-making processes. Particularly in complex situations with many involved actors, these costs can be significant. Decisions in land use and property rights issues are often made through negotiations and agreements. In situations with many involved parties, especially representing diverse interests, decision-making costs can be high. Land consolidation cases

can sometimes involve a large number of parties, sometimes several hundred. Cases with such a large number of parties may find it challenging to reach an agreement without the assistance of the land consolidation court, at least not without significant transaction costs.

Looking further at the content of "The Problem of Social Cost" (Coase 1960), it is highlighted that when property rights to a particular resource are not well-defined and delimited, it can hinder the affected parties from efficiently allocating resources through market transactions. Coase also points out a flaw in one of the fundamental assumptions of neoclassical economics: Many rights associated with the use of land are not well-defined and delimited, increasing the costs of reaching voluntary agreements (transactions) among the parties involved. In some cases, the situation may be such that transactions are impossible. Through land consolidation, parties' transaction costs are reduced, making it easier to achieve effective allocations. This demonstrates the close connection between institutions and transaction costs.

The Coase theorems express the benefits of well-defined and easily protectable property rights, aiming to reduce transaction costs and facilitate the formation of as many desirable agreements as possible. The existence of institutions is often justified by the pursuit of minimizing transaction costs. The Land Register is a good example. To readjust land boundaries means there are known existing cadastral boundaries to realign, and this presupposes the existence of property boundaries and titles, cadastral registration and the rule of law that support the exercise (Lai et. al., 2022). Trygstad (2022) argues that using the tool of land consolidation can contribute to increased economic and social efficiency and that both real property owners and society in general can benefit from this effective tool. She points out that to obtain the many benefits from cases conducted by the land consolidation court, the results of the cases must be recorded in the cadastre. A well-functioning cadastre system provides security of property rights. Land consolidation cases shall be recorded in the cadastre system. There is, however a backlog of cadastre recording of older cases conducted by the Land Consolidation Court in Norway, but the article won't delve further into that. See Trygstad (2022) for more details.

Nord (2008) highlights a practical problem, namely the valuation and comparison of individuals' utilities. The question raised is whether this is possible at all. One approach to addressing this problem is to measure utility more indirectly. For instance, willingness to pay, used in socio-economic cost-benefit analyses, is an example in this context. However, even though this can be partially resolved, calculating the utility of each individual for various alternatives would be labor-intensive. Nord (2008) suggests that a utility calculation encompassing all forms of societal dispositions seems more or less impractical in practice. LCA paragraph 3-18 ensures that no one suffers losses, and in this way, the land consolidation court provides an overarching utility assessment for the parties involved.

Nord (2008:81) points out clear connections between institutions, transaction costs, and negotiations. Institutions are crucial for transaction costs, guiding negotiations and the fulfillment of agreements. Various negotiation situations are closely linked to institutional frameworks. Institutional frameworks influence the willingness and behavior of actors in

negotiations. Negotiations and mediation are central when it comes to influencing these costs. Negotiations take place because they are profitable in terms of resource utilization compared to alternative options. The land consolidation court is an arena for negotiations and mediation, with technical and legal assistance from judges.

4. FINAL REMARKS

In the preceding discussion, the paper have attempted to demonstrate the necessity of land consolidation through various economic theories. By employing these theories, it is possible to consider how to find a fruitful starting point for discussing and analyzing when, where, and how it is justified to intervene in property relations through land consolidation. In summary, land consolidation is necessary because:

1. Property rights are often not well-defined, making the decision-making authority of land consolidation courts crucial.
2. Transaction costs are never zero; they are often substantial. Land consolidation reduces transaction costs and can therefore be essential to facilitate solutions.

If one aims for efficiency, legal rules should be designed to reduce or ideally eliminate barriers to private agreements, such as contract law rules, standard contracts, permits, etc. Actors attempt to determine the framework within which they operate and how they can best act to achieve their goals. Rules must, therefore, be designed in a way that actors realize that the most efficient way to achieve their goals is through institutional action.

Taking a closer look at the strong connection between transaction costs and the prevailing institutional framework, and how this, in turn, influences the behavior of actors, we observe in certain contexts that these types of costs become so substantial that the involved actors refrain from taking action. In other words, the actors remain passive, even if there are clear benefits to carrying out transactions initially. However, in many cases, society has recognized that this is not practical and has established arrangements – institutions – to mitigate the problem. The Land Consolidation Court is one such institution that, with a significant degree of coercion, can implement property changes and measures. For the parties involved, the transaction costs of making such changes on their own can often be too high. From a societal perspective, it makes sense to have a system in place if some of them desire changes. In some situations, these transactions are also complex, with a high level of uncertainty. Usually, a detailed set of rules and a neutral third party with the authority to enforce measures are needed. The availability of such a third party may be sufficient for the parties to reach an agreement. The threat of land consolidation can thus lead to amicable solutions, similar to what the expropriation institution accomplishes. When parties know that expropriation is possible, it affects the negotiating atmosphere. However, the use of a third party is not without cost. The Norwegian state covers a significant portion of the costs associated with the transactions carried out in land consolidation and part of the government's justification for establishing and maintaining the land consolidation institute is precisely to reduce transaction costs to facilitate

or implement desired property changes that would not otherwise, or only with difficulty, be carried out.

Land consolidation is a way to reduce transaction costs and force transactions. This was the basis for introducing land consolidation, and it still legitimizes it today. Now, land consolidation has been well-established for 200 years in Norway and has become a factor that actors must consider. Party A can threaten that if Party B does not accept the proposed offer, Party A will demand land consolidation. In this way, land consolidation has also become a part of the framework for actors' behaviors.

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