

Article

# Social Aspects in Land Consolidation Processes

Walter Timo de Vries 

School of Engineering and Design, Technical University of Munich, Arcisstrasse 21, 80333 Munich, Germany; wt.de-vries@tum.de

**Abstract:** Land consolidation is an instrument that readjusts land parcel shapes and reallocates land rights in order to minimize farmland fragmentation, optimize agricultural output, and generate optimal living and working conditions in rural areas. The optimization and reallocation algorithms typically rely on monetarized values of land parcels, soil quality, and compensation amounts. Yet, land management interventions also need instruments for socio-spatial optimization, which may be in conflict with the monetary ones. Many non-monetary values are qualitative in nature. Hence, there is a research gap in how such values can be detected and incorporated, such that they can create a multi-dimensional land consolidation outcome. This study applies a situational analytical approach to investigate how, where, and when social values and belief systems play a role in land consolidation cases in three different study areas. This process enables the qualitative detection of which types of social values are central during land consolidations and which ones are most essential when evaluating outcomes of land consolidation. The synthesis derives that the incorporation of aims—such as addressing socio-spatial affinity, need for equity and fairness, human recognition, and good neighborhood—is possible through an innovation in land consolidation practices, social valuation methods, and/or socially responsive land consolidation laws.

**Keywords:** land consolidation; land management; land readjustment; social values; rural development; social valuation



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## 1. Introduction

Land consolidation is a land management instrument, which intervenes in existing land parcel and land right structures in order to improve the effectiveness of land use and de-fragmentize existing land rights. Practically, this usually involves land-adjustment and land re-allocation processes, aligning the interests of participating land right holders and optimizing parcel shapes and supporting infrastructures. There are multiple variations in how to execute such a process. Various international comparative studies [1–5] demonstrate these global variations in types of participation (legally versus voluntary involvement), types of spatial changes (farmland restructuring versus road and infrastructure construction), or types of rights re-allocation (ownership rights versus use rights). Regardless of the particular land consolidation type, both land consolidation planners and facilitators as well as different land consolidation software types employ specific optimization procedures and algorithms in order to create a land consolidation plan which is better, more advantageous, and more acceptable for all participating stakeholders than the existing situation. The back-up position is hereby that when any participant does not sufficiently benefit for these improvements, a compensation for this loss or unequal benefit is allocated. However, the optimization process requires a particular choice regarding the optimization perspectives, goals, criteria, thresholds, and comparative advantages or disadvantages. In other words, the optimization is not value-free as some, if not all, of such choices depend on how legislators and practitioners have shaped the legislation and the operationalization through their preferences, professional discretions, social agency, powering and brokering influence, and de facto social behavior. Such a practice embeds the epistemic and axiological choices of the underlying land consolidation acts and practitioners, and thus—by default—neglects or

even rules out alternative values and belief systems on what might be optimal. Given this, it is necessary to examine these choices critically and to evaluate which alternatives might have possible advantages or benefits. Therefore, the objective of this article is to investigate how, where, and when social values and belief systems play a role in land consolidation.

This investigation starts from the criticism that land consolidation is not always solving the socio-spatial problems that it was supposed to address [6]. On the one hand, various studies indeed praise the instrument because it has a clear advantage of addressing spatial and legal fragmentation as opposed to, for example, land expropriation [7], has a long-lasting effect on slowing down land abandonments, and fosters technological innovations in optimizing land [8]. However, overall, a large share of evaluative and reflective studies on land consolidation overemphasize the positive effects [9] and disregard the negative sides, which are predominantly ideological, social, societal, administrative, and political. Firstly, as a solution to a problem, the problem framing and definition may be questionable [10]. Farmland fragmentation may not be the real problem or challenge for farmers, citizens, or village society, and it may actually be a reasonable and economic solution to farmland risks, for example [11]. The agricultural efficiency gains may actually lead to loss of ecosystems and in the long run derive depletion of soils and thus significant loss of agricultural benefits [12]. The emphasis of economic narratives may contradict the interests of paradigms of the territorial emancipation, visions of land for the commons, and respect for nature [13]. Last but not least, complex administrative systems may hamper or even completely neglect interests of stakeholders [14], resulting in long, bureaucratic, and technocratic solutions. In other words, the societal problems or the view on the problems, which the land consolidation was supposed to address, may have changed during the time that land consolidators debated or executed the land consolidation plan.

Thus, there is a need to include social and societal values in land consolidation rules, processes, and outcomes. Although land consolidation projects ultimately aim to deliver social and societal benefits, the manner in which one can achieve or measure these aims remains unknown. The main aim of this paper is not to debate or deny the relevance of optimizing economic, legal, and spatial (geometric/geodetic/geographic) aspects. Yet, with the start of a discourse on how to frame, measure, and include social and human aspects into the land consolidation concourse, one can eventually boost the significance of the social values systems when starting and executing land consolidation projects. This research is a continuation of previous research on social issues in land management. Earlier publications address the need and type of social values, and they specify a number of these for land management in general and for land consolidation in particular. de Vries [15] introduces the concept of consolidation of memory and identity. de Vries and Voß [16] compare social values to economic values in land management. Maduekwe and de Vries [17] connect human recognition to land management processes. de Vries [18] derives seven human values in land consolidation processes, and de Vries [19] distinguishes between socio-organizational values in administrative duties and responsibilities, values connected to services to citizens, and socially oriented norms and beliefs. This paper extends the previous research in the specific empirical design on how to identify and interpret social values before, during, and after land consolidation processes.

The first step of this paper is to describe the prevailing optimization rationalities in land consolidation and to induce the effects thereof. This includes a first take at where which type of social values appeared. The next section describes how the study compiled, compared, and synthesized a selection of documented evidence on the role and need for social values in specific land consolidation cases. A subsequent 'Results and Discussion' section categorizes and classifies relevant and significant social values and social value measuring mechanisms. The last conclusion section derives the implications of the synthesis in terms of the significance of social values, alternative frameworks for land consolidations, and recommendations for further research.

## 2. Theoretical Rationalities of Value Optimization in Land Consolidation

Optimization rationalities strongly depend on applied epistemologies or epistemic values. Asiamu [20] describes in this regard that land consolidation projects draw on two prevailing rationalities of optimization in the re-allocation and readjustment processes. The first one is open market value optimization. Hereby, a land consolidation planner aims to set an equivalent market price for each land parcel and re-arranges the shape and distribution of land parcels in such a way that each participant obtains a land parcel of at least an equivalent market value. The logic hereby is that any land owner of the entire community of stakeholders in the land consolidation process would be primarily interested in gaining the highest economic and financial benefit from the intervention, as the monetary equivalent of the resulting land parcel should be higher than the previous situation. The second one concerns agricultural value, which can be roughly translated into the monetary opportunity costs when using the land as an economic production factor. At the same time, neither of these two types of these rationalities have equivalent social valuation schemes in order to optimize social priorities or social opportunities. There are some legislations, which partially address some of these concerns. For example, German land consolidation laws have been adapted in the last decades to incorporate the socio-spatial context when implementing land consolidation projects. The current land consolidation law specifically states that land consolidation should not only serve the agricultural optimization but also contribute to optimizing the local living and working conditions as a specific requirement within any land consolidation project. In this way, land consolidation is not just benefitting the interests of participating farmers but also helping the overall quality of living in the involved villages and the closely affected stakeholders in the vicinity of the area [21]. However, the law does not add specific criteria regarding how to measure such working and living conditions nor how to use these values in a non-monetarized manner in any trade-off or exchange mechanism.

From a legal perspective, FAO's legal guide on land consolidation [22] refers to the 'at least as well off principle'. This principle is not necessarily an optimization principle but rather an optimization constraint. It implies that any change should not lead to any worse situation as compared to the existing situation. However, the guide does speak about non-monetary values by stating that 'not only monetary aspects should be taken into account, but also other livelihood and intangible gains or losses' (p. 52). It goes further by stating that land consolidation should support sustainability, consultation, participation, transparency, and gender equality. Furthermore, the guide recognizes that legitimate land tenure rights, such as unregistered ownership rights, unregistered long-term leases, matrimonial rights, inheritance rights, and mortgages should be considered when executing land consolidation processes. Yet, the guide also argues that it is not the place of a land consolidation law to 'accord legal recognition to socially legitimate rights that do not enjoy legal recognition' (p. 69). In other words, formalization or recognition is not an optimization aim at itself. It is merely a by-product of the execution rather than a core principle of optimization.

Still, some specific social criteria, norms, and belief systems are addressed in land consolidation specific research. The dissertation of Hesse [23] specifically looks at social interaction and communication problems and solutions related to land consolidation. These interactions are often hampered by existing formal and informal power structures. Those who want to participate actively—both formally and informally—are often confronted with local, regional, as well as experience-typical social structures and personal dependencies. In such situations, the core principles of equality in contributing to the final goals of the project, and possibly in the final re-distribution plan, may be at stake. Despite existing laws and guidelines, the land consolidators find themselves battling with a social hierarchy and hidden power structure that may only be observable through corresponding assertive power. It is clear from this study that local politics, personal preferences, social relations, and networks play a role, and that these factors may also be crucial in the effectiveness of land consolidation. However, it remains unclear from these earlier studies and guidelines how and when do the variations in social, public, and human values influence the process

and the outcome, and how land consolidation procedures can incorporate specific social values in the optimization and re-allocation procedures.

### 3. Theoretical Rationalities of Social Values

From a theoretical point of view, social values, norms, and belief systems are a central subject of research in sociology, public administration, and policy sciences, yet human geography, anthropology, and cultural studies also evaluate social norms, preferences, influence, and agency. In land management, social values are often reduced to lists, classifications, or ranking schemes of interests, stakes, opinions, and preferences. However, such ethnographic and strategic classifications do not sufficiently capture the underlying norms on the one hand and the social dynamics and types of interdependencies on the other hand. For the former, de Vries [18] identifies seven human values relevant in land consolidations, which include human identity, human values, human sentiments, human recognition, human dignity, human variation, human relations, and human choices. For example, human identity is a concept from social and health sciences to describe how individuals think of themselves and how they see, perceive, interact, and respond to the broader social world [24]. These choices influence how they choose to live their life and how they see themselves in a broader social context. This identity influences social choices and preferences in all aspects of life, especially when it affects them directly. Since most land consolidation projects involve land owners and their livelihood, their choices can be directly related to this human identity. For example, human recognition is a similar yet also different concept. It is a concept to explain and measure the extent to which an individual is acknowledged by others as being a fellow human being [25]. This acknowledgement by others creates a sense of self-respect and self-esteem, and it contributes to a sense of interpersonal being. As [18] argues, all of the seven human values are interrelated yet can contribute in different ways to how land consolidation stakeholders feel they can or want to contribute and feel acknowledged and appreciated by their contributions.

To investigate social values, de Vries and Voß [16] argue that one should differentiate three types of social values:

1. Values related to administrative duties and responsibilities. These include Responsibility to the citizen in providing land-related services, Responsibility and accountability of the elected politicians to make responsible land-related decisions, Proper and efficient use of public funds to support land interventions including land readjustments, Compliance with the laws related to land readjustment, Integrity and honesty, and Facilitating the democratic will which acknowledges input and respect for all relevant stakeholders;
2. Services oriented values. These include Service to the citizen in his or her different roles (a citizen is multi-dimensional), Respect for the individual, Responsiveness, Effectiveness, Efficiency, and Transparency;
3. Socially oriented values. These include Inclusiveness, Justice, Fairness, Equality of treatment and access, Respect for the citizen, Due process, Protecting citizen privacy, Protection citizen from exploitation, Protecting citizen security, Accountability to the public, Consulting the citizen, and Impartiality.

One could argue that 'social' values exist through the generation, legitimization, and/or institutionalization through social interactions. Then, social values systems are sets of values that guide social behavior and provide agreed sets of frames for social actions.

### 4. Research Design and Methodology

The research design relied on the basic premise that finding and detecting social values first of all requires a constructivist starting point, which assumes that values are created and lived within a social context and are fluid and interpretable within that context. For this reason, the research had to rely on data acquisition and data analysis methods that would appreciate this starting point. Therefore, a combination of an interpretative analysis of documented cases was combined with situational analysis. The documented

cases were derived from articles and reports, whereas the situational analysis was used as an analytical tool to evaluate and interpret the documented cases. The intention for the study for this paper was to select and compile documented evidence within cases, which explicitly address social aspects, and then interpret the findings in a new type of framework. Such cases do exist but are not large in number. Many articles on land consolidation tend to restrict the social issues to social problems that land consolidation can solve, instead of investigating which problems are within land consolidation itself. For example, some examples on the contrary include the publication of Thapa and Niroula [26], who refer to inequitable access in the Gajuri and Kumpur Village Development Committees (VDCs) of Dhading district in Nepal, as a direct result of reluctant and socially averse peasants during the preparation of land consolidation plans. In addition, Wang, Zhang [27] refer to different attitudes in relation to participants' occupation and age, which affect the degree of participation, flexible implementation, and adequate compensation. Lastly, the documented evidence of Hoe [28] describe for the case of the Sarawakian community of Bumiputera, Malaysia how and why principles of social justice, human rights, collective responsibility, and respect for diversities are fundamental to social work, including the work completed within or connected to land consolidation projects. However, understanding such cases requires more in-depth knowledge of the cases itself and the social context in which those behavior and social values and social principles during a land consolidation process emerged. In order to overcome this research complication, this study applied the tool of situational analysis. The analytical tool of situational analysis aids in the interpretation of where and how the incorporation of social values is meaningful, realistic, and practical. The focus in this article is on cases where direct involvement and direct acquaintance was present, in order to understand and interpret both the context and the situational dilemmas.

Situational analysis is a methodological tool to understand social worlds and social dynamics. It supports investigating complex situations whereby multiple arenas, administrative levels and authorities, and sequences of events interact [29,30]. The analytical tool draws on careful descriptions of symbolic and discursive elements in a particular context or situation. Such descriptions allow connecting documented evidence in reports, gray literature, and scientific literature to direct observations and personal first-hand experiences of project managers being involved and/or connected to specific land consolidation projects on site. Situation analysis builds upon a description through situational, social arena, and positional maps. Situational maps refer to an overview and a mapping of the inter-relations between discursive, historical, cultural, and political elements to describe a situation. Social arena maps provide an overview of actors and the way they transmit their intentions and negotiate their objectives. Positional maps portray ideas, claims, norms, or objectives. For the specific case of land consolidation, one can employ situation analysis (i.e., a combination of a situational, social arena, and positional maps) to derive an insight on:

1. (Situational maps) Which metaphors or symbols do participants and stakeholders transmit to describe their problems in their daily situation, and which social values connect to describe these?
2. (Social arena map) Which social values relate to how land consolidators communicate strategies and solutions to collected problems of current situations?
3. (Positional map) How do which embedded epistemological choices in the chosen methodologies and/or technologies to solve land consolidation problems translate into (possibly conflicting) social values?

The investigated cases included the following countries and types of land consolidation projects:

Case in Bavaria, Germany. This relied on the Bachelor thesis work and associated data acquisition of Guggemos [31], the data connected to the Bavarian survey part of the collaborative study on comparative land consolidation practices under the auspices of the Working Party for Land Administration (WPLA) and the doctoral dissertation and associated data acquisition of [23]. In Bavaria, land consolidation projects follow the land consolidation act, which explicitly states and shows that land consolidation does not just

aim at defragmentation and optimization of agricultural land, but also at improvement of the living and working conditions in rural areas. Therefore, statistics on land consolidation are typically part of the rural development and village renewal statistics. The latest annual reports of the Bavarian ministry of food, agriculture, and forestry indicate that the number of state-supported land consolidation projects is gradually declining (2018:725; 2019: 720; 2020: 714), whereas the number of projects involving voluntary land exchange is increasing (2018: 195; 2019: 222; 2020: 241).

Cases in Europe. This relied on the documented results of collaborative study on comparative land consolidation practices under the auspices of the Working Party for Land Administration (WPLA), presented at conferences via [18,32,33]. This study assembled and interpreted 20 narratives, e.g., reflective stories, from experienced land consolidators on their land consolidation activities, their ideas about success and failure in land consolidation, the policy and political changes that affected land consolidation execution, and the policy windows that enabled major changes in land consolidation.

Cases in China, in particular Guangxi and Shandong provinces, were documented and interpreted via the articles [1,34] and the subsequent publications of [2,14,35]. The former refer to investigations related to the motivations and behavior of farmers during and after land consolidation and to general processes and procedures in China. The latter refer to specific projects and effects occurring after adapting the exiting land consolidation goals and ways of execution.

These three types of case study groups are relatively well documented, and details on project sizes, construction amounts, or volume of investments are given in most of these documentations. However, since the main emphasis in the paper was to detect the social values instead of the economic or agricultural ones, these details were considered less relevant for this article.

## 5. Results

### 5.1. Case Bavaria

Germany has different types of land consolidation procedures. The 'regular/standard' procedure, according to § 37 of the land consolidation law, is the most comprehensive one, as it encompasses not only an improvement of agricultural farmland optimization but usually also a considerable investment in roads, waterways, landscape, and living and working facilities. However, the statistics of land consolidation projects indicated that the rural development agencies opt increasingly less for regular land consolidation procedures. In Swabia (Schwaben), about 30% of the land consolidations are carried out as standard procedures, 35% are carried out as corporate procedures and 35% are carried out as simplified procedures. In Upper Bavaria (Oberbayern), about 50% of the procedures in the area of land consolidation are pure land, 36% are village and field procedures, and 14% are voluntary land swaps. The simplified procedures are gradually becoming the most preferred option. This is a relevant issue for the situational mapping. Simplification is a frame to opt for the faster alternative, with the perception that the objectives of such land consolidation processes are more concrete. Additionally, such projects are perceived as being more transparent, given a smaller group of participants. It is indeed true that such simplified procedural land consolidation projects cover smaller areas as compared to the past (approximately 180 ha on average as compared to the 2000/3000 ha projects of the past). However, this simplified approach does follow an equivalent procedure with equivalent optimization schemes. In other words, the value systems to optimize do not significantly differ. Instead, such procedures are preferred because of another set of social values, which is adjacency, knowledge and personal acquaintance of neighboring stakeholders, and better assessment of perceived equivalent value of land and perceived lower involvement of governmental rules. This would also explain the increase in voluntary land swaps, for example, which only involve the exchange of individual plots of land.

In terms of the social arena, in which communication plays a major role, there are both formal and informal channels. In order to inform stakeholders about an upcoming

procedure, the agencies of rural development sent an information letter before the land consolidation plan is issued. This lets stakeholders and in particular the involved municipalities and other government agencies know that a procedure is planned in a certain area and at the same time asks them to let you know if they have plans there themselves. For example, if nature conservation organizations know that there is a sensitive area, it is possible to react before the order is issued, for example by adapting the boundaries of the land consolidation area, such that certain plots may not be affected. Practically, a lot of the communication means are used, such as information letters, which are sent out when surveying work is scheduled, for example, so that the owners know what is happening on their property; additionally, some of the rural development agencies open a (data) cloud for all public agencies displaying the maps and the plans. In addition, there is always the possibility to discuss open questions in a personal conversation with an employee of the rural development agencies. In case of smaller communities of participants, information is often passed on to other participants via the board members: for example, with a telephone call or a personal conversation. Owners also receive information during a land consolidation process on the status of their rights and obligations, even before the final allocation, and there is even the possibility of having a one-on-one meeting. During the final meeting, the stakeholders discuss the land consolidation plan such that all can identify or associate with their respective new situations and new legal statuses. As all receive an extract from the land consolidation plan relevant for their own plots, they can directly react to whether they agree with the final allocation or not.

The formal regulations are supplemented by informal instruments. These include participatory methods, question and feedback opportunities, and opportunities to personally participate in land consolidation project management. Essentially, one could argue that communication and interaction opportunities are perhaps too broad in Bavaria. There is much more participation and information distribution throughout the entire process than is actually required by law. The only requirement by § 5 of the land consolidation law is having an information meeting at the beginning of the procedure. However, there are usually many more meetings during the entire procedure. Furthermore, all citizens have the opportunity to participate in site inspections, site meetings, a field workshop, and additional meetings; all citizens have the opportunity to inform themselves in detail about the procedure and to participate. In addition, the offices for rural development already extensively discuss concerns, possibilities, and limitations within the land consolidation project during the preparatory phase. The discussion partners in such projects are amongst others water management bodies, nature conservation organizations, and road nature conservation or road construction agencies. Such early discussions help to prevent and mitigate possible bottlenecks and disagreements at an early stage. This reflects on the one hand an extreme significance of transparency (i.e., working without any secrets or hidden agendas for any stakeholders) and openness (i.e., complete and accessible documentation of all steps, decisions, and responsibilities) as core values, but perhaps also an extreme prominence of risk avoidance for government agencies or strong devolution of responsibilities and accountabilities.

The positional map, on the epistemological embedding in choices, can be inferred from the type of problems for which land consolidation is considered a solution. The Bavarian narratives in the WPLA study framed various problems. A narrative excerpt was: *The starting situation was insufficient agricultural roads, uncontrolled surface water running off, characterized by a large fragmentation of land tenure, attractive meeting point for young people and no attractive village square.* This statement reflects that land consolidation is needed because of spatial development problems and hence requires integrated development solutions. Hence, land consolidation is approached with a spatial, or territorial, development epistemology which is broader than a purely economic issue. Furthermore, a second excerpt reflects a demographic issue, which influences the execution of land consolidation: *Especially many experienced employees left our office and found new occupations partly in quite another professional field. Because the relocation took place nine years we lost more than half of our*

*staff. You can imagine what that means concerning our competence and skills. We had to establish nearly a complete new staff. We have not finished yet.*

This excerpt demonstrates that organizational capacities and demographic skewness as a direct consequence of aging problems at the regional offices are inherently influencing the quality of the execution of the processes. Such demographic skewness may ultimately also influence the way certain preferences and belief systems are interpreted by land consolidators and may give rise to age inequalities or a lack of understanding for interests of youth. Consequently, also certain supporting technologies may be neglected in such processes.

## 5.2. Cases Europe

In the evaluation of narratives of senior land consolidators in 20 different European countries, there were both similarities and differences between the countries. The 20 countries included Austria, Azerbaijan, Germany, Belgium, Czech Republic, Denmark, Estonia, Finland, France, Hungary, Lithuania, Northern Macedonia, Netherlands, Norway, Romania, Slovenia, Slovak Republic, Spain, Sweden, and Ukraine. A common element among many countries was that fragmentation, and associated fragmentation indices, are still dominant in the land consolidation discourses. This is clearly visible in a statement such as *'Some farmers possessed 30–40 land plots as a result of land commerce, lease and inheritance'* or *'The fragmentation of land parcels occurred after the implementation of land restitution (reform) when the land was returned back to its former owners, their children or grandchildren'*. Most of these land consolidators also judged fragmentation as a permanent phenomenon, because inheritance combined with new investment and land interventions would continue to take place. Thus, one could even ask if the fragmentation of land is really the key problem (such as the article [11] posits) or whether socio-temporal diversification is the real problem. What also occurred in many of stories of land consolidators was the perception that the multi-dimensional aims and contradictions, in land consolidation projects (i.e., having to aim for integrated or multiple spatial, ecological, and economical objectives) have become a clear challenge for both stakeholders and consolidators. This led to a call for more simplicity in the execution of de-fragmentation and organizational set-up in the Bavarian cases but also to a certain degree of internal resistance and inertia in many eastern European countries. Obviously, in western Europe, there has been more time to adapt and adopt as compared to eastern Europe, and there may also be a dominant mindset of resistance of farmers or stakeholders to accept new rules and conditions (reflected by a statement such as *'farmers, scared of many unpleasant things that have happened to them in the past, find it hard to believe in such new processes'*). Therefore, key metaphors of problems in executing land consolidation are having to deal with a dominant social belief system of the return of the dominant State and the optimization of the State's interests. What works in such cases is to avoid using land consolidation as a term or intervention policy and focus on issues of development and development facilitation. So, social complexity and social interdependency are relevant aspects to consider, whilst the state—citizen relationship is a central issue that land consolidation touches through its execution and which land consolidators could potentially optimize or deteriorate by their actions.

Regarding the social arena map, the narratives of land consolidators discovered a large variety in which stakeholders interacted with each other. The following excerpts demonstrate this variety:

- *We realized the project in only 9 months via the so-called sketch&match method in which farmers and owners make themselves the re-allotment plan during 2–3 working sessions of each one-day.*
- *Then I was asked to give a lecture about land consolidations to farmers in the municipality*
- *We summarize the context of each farmer and farm, the preferences and the areas that the owner offers to sell and purchase. In this way, the negotiation on land consolidation performs the function of informing each farmer/owner/person of exactly what the rules of the game [are],*

*preparing the person and family for the approaching project and the life after the project, and in particular, for the expropriation event, that can be quite an intense experience.*

- *Rural Development means constant change and adaption to new challenges. But the basic principles and our core competence are still the same: Citizen participation—always the main focus; The Community of Participants (CoP)—lived subsidiarity*

What these experts reveal is that social equality, reciprocal respect, and human recognition are crucial social values that emerge especially in the execution of the land consolidation planning. One could even go as far as stating that here also an optimization process takes place, namely one of social balancing.

The positional map equally shows a variety among countries. One can see how each is seeking pragmatic and politically feasible policy windows within which land consolidators can operate, such as:

- Concurrence with similar other policy objectives, such as new (integrated) rural development, and the formation or protection of recreational areas in a municipality.
- The start and increase of ‘voluntary’ (bottom-up) activities, incl. voluntary land consolidation projects, is fostered by both a rejection to state intervention, possible changes in land relate legislations and land reforms, and the occurrence of land scandals.
- Budget limitations limit the amount of projects that land consolidators can do and thus automatically lead to a priority ranking. Hereby, societal and political priorities are leading at the expense of pure agronomical or economic ones.

The window-seeking behavior implies that political feasibility and support, societal embedding, policy concurrence, and pragmatism are important epistemic and axiological values during the execution of land consolidation.

### 5.3. Cases China

The research of [34] writes extensively about the motivations of rural farmers in land consolidation projects. It starts from the argument that so far, the research on land consolidation in China has been too much focused on obtaining economic advantages and that little is known about social dynamics occurring before and after land consolidation projects. The rationale and considerations of farmers are often simplified to a single perspective, namely whether a farmer participates or not, whereas in reality, this question is multi-dimensional for many stakeholders. This multi-dimensionality does not only include economic opportunities and benefits but also future access to social securities and social network abilities to perform after a land consolidation process.

The work of [35] refers to a specific project example as a success story, namely the Nan Zhang Lou. It is a national pilot project of land readjustment and land development after the opening of China. Contrary to other conventional Chinese land consolidation projects, it resulted in an increase in the number of inhabitants (from 3800 at beginning to 4200 as the end), a continuous growth of the per capita income, lower costs of living, and a diversification of job opportunities through accompanying qualification measures and vocational training. Furthermore, it enabled employment in (new) village-owned businesses. In other words, the projects differed by a number of complementary aims, which were not primarily economic growth and opportunities but also creating sustainable social structures and motivations. According to [14], the choice to consolidate land consolidation is motivated by three factors. It is first difficult to maintain large amounts of subsidies for investments in rural areas such as Shandong. Secondly, changing landscapes may significantly alter the rural identity in rural areas. Thirdly, there is still a lack of a real land market in rural areas. They also argue that the solution to these problems lies in protecting people’s livelihood, public facilities, farmland, and rural environmental conditions in order to improve human–land relationships instead of focusing on land as a tool to gain revenue by removing villagers without respecting their willingness and request. This implies for the situational analysis that village renewal, quality of life, integrated rural development, spatial equity (i.e., evidence of similar and equal conditions of access to land and resources regardless of the location or administrative territory), and enhancing rural identity and the

willingness or motivation to remain active in rural areas become additional optimization values for land consolidation decisions.

Regarding the social area map, Jiang et al. [2] notes that the communication and interaction related to the land consolidation in China is still quite different from that in Europe. In the planning stage, planners make a first independent inventory based on their interactions with stakeholders and local government and then define the goals, tasks, and requirements and formulate the overall layout of the project. The planners test the plans with experts and stakeholders who are invited and may adjust if considered necessary. The time to inspect the plans differs per region. For example, it is 15 days in Shandong and 30 days in Zhejiang. Superior departments, such as the municipal land department, have to ultimately approve the plan. In other words, despite the possibilities for stakeholders to provide their opinions, the overall perception is that it is still a rather hierarchical administrative process. Jiang et al. [2] note for this reason that ‘*Unlike public participation in European LC, stakeholders, especially farmers, in China are rarely involved in the entire process. The social status of Chinese farmers in LC is not as high as that of European farmers, although it is rising.*’ A notable exception to this practice is the model called “Villagers’ Construction” (cun min zi jian), whereby *rural collective economic organizations or villager committees are encouraged, with guidance, to be a responsible partner of the project construction, and villagers are encouraged to participate in project construction.* The embedded social values in these types of land consolidation processes are social cohesion, social stability, and social alignment.

As a solution for the land consolidation process, Zhang et al. [34] suggests to employ a broader spectrum of policy strategies to implement land consolidation in a more multi-dimensional way. For example, this would include enhanced education and social marketing to encourage land consolidation as an instrument and provide more legal and social security during and after land consolidation processes. Additionally, the research suggests that including a more self-organizing practice of land consolidation, whereby the process follows a more facilitating role, and whereby villagers can express and exchange their ideas and wishes through forums, to a consolidation plan is likely to lead to more effective and sustainable land consolidation projects. However, this is a fundamental change in epistemological choice, from output efficiency gains changing toward outcome efficiency gains. In view of the positional map, this change is significant.

## 6. Discussion

Table 1 presents the results following the coding and interpretation of the cases according to the dimensions of the situational analysis.

**Table 1.** Situational analysis of land consolidation cases.

Type of Map	Bavaria	Europe	China
situational	Adjacency; Knowledge and personal acquaintance of neighboring stakeholders; Perceived equivalent value of land; Lower involvement of governmental rules	(de-)Fragmentation; State–citizen relationship; social complexity; Optimization of development facilitation	Village renewal; Quality of life; Integrated rural development; Spatial equity; Enhancing rural identity
social arena	Transparency; Openness; Risk avoidance; Accountability devolution	Reciprocal respect; Human recognition; Social balancing	Social cohesion; Social stability; Social alignment
positional	Territorial development; Organizational capacity; Demographic skewness	Political feasibility and support; Societal embedding; Policy concurrence; Pragmatism	Change from output efficiency to outcome efficiency

It is clear from Table 1 that different types of social values are already part of land consolidation processes worldwide. There are several implications for the possibilities to include social values or to make social values more apparent or explicit in the optimization processes and methods:

1. Incorporate social values more explicitly in the execution, i.e., in each of the steps of the legal procedures of land consolidation. For example, one could do this in the way that land consolidators approach, address, and involve stakeholders in different stages of the land consolidation process, and in the way that a land consolidation plan is negotiated. If one takes the generic processes of land consolidation depicted in [2] as the basis (from proposal stage to planning stage, implementation stage, and post-implementation stage), one could argue that involving social values such as spatial equity, outcome efficiency, and incorporating rural identity in different parts of the processes could be possible in all of the process steps. For example, during a feasibility study, one could include social coherence and acceptability as a key indicator in the feasibility. In employing the planning team, one could include a social knowledge upgrade in the requirements. In the improvement of the landscape steps, one could discuss socially relevant elements in the landscape.
2. Explicitly create a social valuation process as part of the pre- and post-land consolidation exchange, replacement, and compensation values. In other words, one should not completely rely on monetary values but also include a system of social value exchange. This would have an impact in the procedures and regulations of the respective land consolidation rules, but it would not necessarily change the process and its objectives as such. However, it would require a valid and acceptable framework of social value measurement and re-allocation. Such a framework could be a combination of the core human values depicted by [18] and the examples derived via the situational analysis above. One could classify these values as intrinsic and extrinsic social values, depending on whether the qualities of the value are part of the nature of the subject or dependent on things that come from the outside instead of from the inside. Additionally, one could classify these according to subjective (depending on operant subjectivity) and objective (aligned to measurable, c.q. global indicators). Table 2 provides a first exploratory classification of the social values that would need to be included in a framework.
3. Completely change the legal frameworks of land consolidation such that social values and social value optimization are the core of land consolidation. Such a system could in fact be in line with the tendencies to incorporate land consolidation in broader spatial, regional territorial and land development, and renewal strategies. The justification for such a fundamental change could draw on broader social development and social justice aims, which address at its core existing inequities rather than existing fragmentations and inefficiencies.

**Table 2.** Classification of social values.

Type of Social Values	Subjective	Objective
intrinsic	human identity human sentiments human dignity socio-spatial affinity	human indicators human choices quality of life spatial equity social stability
extrinsic	human recognition human relations	demographic skewness
	human variation social complexity reciprocal respect good neighborhood fairness political feasibility rural identity social cohesion	territorial development State–citizen relationship societal embedding policy concurrence pragmatism social alignment

## 7. Conclusions

The goal of this paper was to detect and derive which social values could complement the monetary values in land consolidations and how and where such social values could be part of the land consolidation processes and outcome evaluations. Given the qualitative nature of this article, the concern was not to compare a specific number of countries or land consolidation projects but to detect social issues and social aspects of strategies in documented cases. The synthesis of cases in different parts of the world reveal a number of social values, which stakeholders and participants request and expect. For example, these include transparency and openness, reciprocal respect, societal embedding, and spatial equity. Including such values would innovate land consolidation practices, social valuation methods, and/or socially responsive land consolidation laws. However, this requires that land consolidation change both operationally and conceptually. Other than current research, which focuses on either spatial or economic benefits, this research makes a first step to extend the knowledge base on land consolidation toward socially responsive and socially enabled land consolidation.

The observed cases clearly exhibit differences. However, the aim of this article was not to derive a generic framework of social values that would be relevant for all possible institutional environments. Instead, what the differences reveal is that in all cases, the social aspects are already operational, either explicitly or implicitly. In very few of the cases, on the contrary, such aspects are included in legal regulations or rules, even though national spatial policies may in fact call for this.

Although this paper reveals the variety of social values in land consolidation, the research is not yet completed. The classification table needs further refinement, testing, and validation in an empirical setting in order to review which values are explicitly practical and significant, and which ones are more implicit. This paper has also not yet addressed a conceptual or theoretical framework, which hypothesizes on the inter-relations between certain values. This would also require a further exploration.

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