



Central Asia performance review in land governance indices and assessment frameworks

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Abstract

Academic scholarship captures different land governance dimensions while focusing mainly on agrarian, legal, and economic aspects. However, little to no attention is paid to land governance consideration through public policy lenses. In particular, this holds for Central Asian (CA) countries where there is a noticeable lack of academic works on land governance effectiveness and anti-corruption strategies in the land sector. This review paper analyzes the question of how Central Asian countries are presented in land governance indices and assessment frameworks such as the World Bank's Land Governance Assessment Framework (LGAF), Global Property Rights Index (Prindex), Global Land Governance Index (LANDex), and The Open Data Barometer. The paper uses the integrative review of academic works and the author's empirical data on Central Asian performance in land governance indices and assessment programs. The findings revealed that while the Prindex results for the region are promising, the underperformance and lack of active engagement of Central Asian countries in the Open Data Barometer, LANDex, and LGAF are still visible. This fact could be explained by various reasons, including the lack of institutional and legal capacities in CA countries and the limitation in methodology and data collection techniques observed in present land indices. Considering that the subject is understudied, it is anticipated that this review paper will give both scholars and practitioners from the region and abroad the impetus to improve Central Asian performance in global land governance indices and assessment programs.

Keywords: Central Asia, land corruption, LANDex, Prindex

Paper type: Research article.

1. Introduction

The Sustainable Development Goals (SDGs), Goal 2 “Zero Hunger” calls to promote sustainable agriculture while Goal 15 “Life on Land” appeals to protect, restore and promote sustainable use of terrestrial ecosystems. (United Nations, 2015). However, the expert community shares their concerns that land corruption and opaque and non-transparent land governance systems can seriously hinder progress towards SDGs.

The international organizations report that land is one of the sectors where the prevalence of corruption is higher than in other governance sectors, while land ownership data is reported to be least open and often of poor quality. (Transparency International, 2013 as cited in De Maria & Howai, 2021; The Open Data Barometer, 2017 as cited in World Wide Web Foundation, 2017). The formation of such opaque governance systems can lead to elite land grabbing and land inequality. (Jaitner et al. 2020; International Land Coalition, 2020).

Considering the situation in Central Asia, international NGOs such as Transparency International Kazakhstan emphasize that land relations authorities are among the most corrupt state bodies according to their study. (Transparency Kazakhstan, 2021). Media periodically report different cases related to land corruption in other Central Asian countries. For instance, in Tajikistan, an investigation by the Tajik service of Radio Free Europe/Radio Liberty (RFE/RL) revealed corrupt practices in the distribution of land in Rudaki. (Lee-Jones, 2021). The Central Asian countries are also facing the problem of growing land inequality and ineffective land use. High-ranking officials, for instance, the First President of Kazakhstan President Nazarbayev in 2018 and President Tokayev in the State of the Nation Address for 2019, emphasized these problems: “A whole layer of so-called “latifundistas” has developed in the country...without a solution to this issue, it is already impossible to have a qualitative development of domestic agro-business.” (State of the Nation Address by the President of the Republic of Kazakhstan Kassym-Jomart Tokayev, September 2, 2019 — Akorda, 2021b.)

Considering such a deplorable situation in the region and growing land inequality, much emphasis should be paid to analyzing the role of open data in land governance.

Central Asian countries have started being presented in land governance indices, measuring different aspects of land governance comparatively to other regions of the world recently, for instance, in The Open Data Barometer from 2013, LANDex, and Prindex since 2020. (Prindex, 2021; Landex, 2021a.). These indices measure different aspects of land governance, including transparent and accessible information, the level of tenure in/security, strong small-scale farming systems, inclusive decision making in land governance, and many other indicators.

The present review paper is structured in the following way: Sections 2 & 3 explore how academic scholarship defines land, land governance, various typologies of land corruption, and the role of open data in curbing land corruption. Section 4 of the review analyzes Central Asian performance in global land governance indices and assessment programs. The discussion and concluding remark section present integrative review results.

2. Defining land and land governance

Before dwelling on the Central Asian performance review in global land governance indices and assessment programs, the review examines how the academic scholarship defines land, land governance, and land corruption and identifies the role of open data as an anti-corruption tool in land governance. Considering the lack of academic works capturing the problem of informal constraints (e.g., clientism, land corruption) in the context of Central Asian countries as well as on accountability studies in land governance, studying the works of international experts in this field gains crucial importance.

There is no clear definition in the academic scholarship of notions of land, land governance, and land corruption. According to Hall (2013), the land possesses particular characteristics that make land different from other natural resources. Firstly, the land is immovable and cannot be exported; Secondly, it is highly heterogeneous (due to the availability of resources such as water, mineral resources, the environment); Thirdly, control over land is often almost indispensable to all human activities, meaning the access to renewable and non-renewable resources. Finally, the land: "differs from other resources as a result of the depth of the attachments people feel to it." (Hall, 2013, p. 5). The definition of the notion of Land Governance sounds comprehensive: "Land governance involves a procedure, policies, processes, and institutions by which land, property, and other natural resources are managed." (Enemark et al., 2010, p.5)

This definition encompasses many aspects as the land itself, natural resources, property rights and captures not only institutions but also policies and processes. One disadvantage in this comprehensive definition is the difficulty in the operationalization of such ambiguous notions. In particular, this is hard in public policy studies as in the different regional contexts, researchers have to identify country/region-specific peculiarities, such as formal and informal institutional practices, various administrative and legal frameworks. In this case, more precise and explicit sounds the notion of *democratic land governance*, which researchers define as: "a political process that is contested by multiple state and societal actors to control the nature, pace, extent, and direction of access to, control over, and use of land." (Borras Jr & Franco, 2010, p.23). The dynamics of state-society interactions in land governance could serve as a particular litmus test defining the structure of power relations in different regional /national local contexts. Therefore, land governance encompassing various economic, legal, cultural aspects is a complex and vague notion. This multifaceted nature and ambiguity open different "holes" for land corruption.

For this review paper, I applied the integrative review method, which the researcher Broome (1993) defines as: "a review method that summarizes past empirical or theoretical literature to provide a more comprehensive understanding of a particular phenomenon." (Broome 1993). Since both land and corruption are ambiguous notions present review paper captures different typologies of land corruption. For a more nuanced understanding of scholarly debates related to notions of land, land governance, and land corruption, the amount of more than 50 academic works published from 2000 to 2020, was selected for this review. To analyze CA countries' performance in land governance indices, three land governance indices (The

Open Data Barometer – the indicator on land ownership, Prindex, and LANDex) and one assessment framework (LGAF) were selected for this review. The rationale for selecting these three indices (The Open Data Barometer, Prindex, and LANDex) and one assessment framework (LGAF) is the presence of at least one Central Asian country in the index or assessment program. It is essential to mention here that the narrow notion of Central Asia as five Central Asian countries (Kazakhstan, Kyrgyzstan, Uzbekistan, Tajikistan, and Turkmenistan) is applied in this paper. Considering that indices have launched in recent decades, the topic of the performance of particular countries or regions in global land governance indices is unexplored. Therefore, this review is a pioneering work that captures five Central Asian countries' performance in global land governance indices and assessment programs. However, it is crucial to mention that this work is a review paper. Hence, this study does not apply any theoretical framework on good governance or institutional change studies. The analysis of open data in land governance in Central Asian countries requires more in-depth academic research in each case country.

3. The academic scholarship on typologies of land corruption and the role of open data in land governance

The academic scholarship distinguishes various typologies of land corruption, such as *large-scale or grand corruption*, sometimes referred to as *political corruption*, *bureaucratic/administrative corruption*, and *petty corruption*. (Mutondoro, et al., 2016, You, 2014, López-Valcárcel et al, 2017, Wren-Lewis, et al., 2013). Land corruption is seen in a considerable amount of academic sources as a form of *political corruption*, where the distribution of land links with concepts of power and players in power. (Chioldelli & Moroni, 2015), (Trapnell et al., 2017). Therefore, researchers assume that it is possible to distinguish both *winners*, for instance, state/local authorities, large agricultural corporations, landlords, and *losers* of corrupt practices in the land sector as small-scale farmer households. (Kakai, 2012). Contrary to Kakai (2012), researchers Brankov & Tanjević (2013) assume that it is possible to identify at least three dimensions in land corruption: individual, business, and political corruption.

In the post-Soviet countries context, academic scholarship portrays land governance as prone to corruption and power asymmetries. Due to the involvement of powerful actors, the cases of land corruption are hard to document. As write researchers Visser et al. (2012): "the precise motivations of outside investors/oligarchs to acquire land are not easy to discover since the whole process is highly non-transparent." (Hemmercout 2010, p. 3 as cited in Visser et al., 2012, p. 910).

The academic scholarship distinguishes administrative/bureaucratic corruption as a separate form of land corruption. As the researcher, Wren-Lewis (2013) emphasizes: "land administration is one of the most corrupt government activities." (Wren-Lewis, 2013, p. 1). The forms of administrative corruption in the land sector can be different, for instance: "fraud and production of false and claim documentation."(Brankov & Tanjević, 2013, p. 369), "providing information for land use plans or in preparing plans to third parties" (Dodson et al. 2005, p. 14.). Contrary, Carr & Jago (2014), Mutondoro (2016) view land corruption as a form of *petty*

corruption or a form of payment of bribes by individuals, for instance, local farmers in order to register property or process cadastral surveys.

Since *political, administrative, and petty land corruption* are closely associated with the abuse of “power” and “authority,” the boundaries distinguishing one form of land corruption from another (e.g., political from administrative or administrative from petty corruption) are blurring and instead conditional.

It is observable the lack of scholarly pieces investigating land corruption in the Central Asian context. There are dozens of works covering issues of land governance in the CA region, e.g., Almagambetov (2005), Visser & Spoor (2011), Kurmanova (2014), Spoor (2018), but almost none (except media reports and reports of international organizations) academic works found covering the problem of land corruption in the region. Therefore, studying the best international practices and analytical results on fighting land corruption gains particular importance. The academic scholarship on the role of open data as an anti-corruption tool is experiencing a boost in its development in recent years, e.g. Davies & Chattapadhyay (2019), Jaitner et al. (2020). The number of informative and innovative research in this field makes it possible to distinguish the De Maria & Howai work (2021). While using a mixed research method (in-depth semi-structured elite interviews and desk-based research), the authors identified both aspects of consensus and disagreement on open data application as an anti-corruption tool in land governance. The authors defined impasses of applying open data to land governance (such as the trade-off between transparency vs. private concerns, availability vs. accessibility of land data, the disconnect between the global vs. the local dimensions, the gap between the official and unofficial land data) as well as ways to address those dilemmas. (De Maria & Howai, 2021). One minor suggestion to De Maria and Howai's work - the report defines land corruption as: "a sectoral form of corruption, the boundaries of which reflect those of land governance." (Ibid., 2021, p. 9). This definition is debatable, as there are different forms of land corruption, administrative but also, e.g., grand political corruption. In this case, identifying concrete "boundaries" of land corruption turns into a difficult task. Inspired by De Maria & Howai's work, this paper intends to analyze how Central Asian countries present in global land governance indices and assessment frameworks.

4. Measuring Land Governance Effectiveness in Central Asia

There are several indices and programs measuring land governance effectiveness worldwide, for instance: The Open Data Barometer, which provides information on land ownership data; Prindex, which measures perceptions of the population on land tenure security; Global Land Governance Index (LANDex) that “measures progress towards people-centred land governance (PCLG) on three levels, namely the legal framework, implementation and outcome or impact.” (LANDex, 2021). Moreover, there are several various assessment frameworks and programs such as the *World Bank's The Land Governance Assessment Framework (LGAF)*, *The FAOs Voluntary Guidelines on the Responsible Governance of Tenure*, *UN – HABITAT's The Legal and Institutional Framework Index (LIFI)*, *The Fit for Purpose Land Administration (FFP-LA)* and also developed recently in 2019 by the United

Nations Committee of Experts on Global Geospatial Information Management (GGIM), the *Framework for Effective Land Administration (FELA)*.(The World Bank, 2019; FAO, 2012; Deininger et al., 2012; Enemark, McLaren & Lemmen, 2016; UN-GGIM, 2019)

The data on Central Asian countries are presented not in all of them. In some cases, data for Central Asia are grouped with Eastern European countries or broadly presented in the section as Europe & Central Asia. For this review paper, the author selected three indices: The Open Data Barometer (the indicator on land ownership), Prindex, LANDex, and one assessment framework: the World Bank's LGAF.

a. The Open Data Barometer is an initiative developed due to cooperation between the Open Data Institute and the World Wide Web Foundation. Since 2013 it was published 4 Open Data Barometer Editions. The data comes from different sources a peer-review expert survey, detailed dataset assessment, and secondary data. (The Open Data Barometer Report, 2013). The Central Asian region in the Index is present by three CA countries: Kazakhstan, Kyrgyzstan, and Tajikistan. Uzbekistan is not present in the Open Data Barometer. It is essential to mention that Uzbekistan has shown steps forward in open data development in recent years. In particular, in January 2021, The Government of Uzbekistan adopted the Open Data Charter; and, in 2020, developed at the national level the Concept of Open Data Development for 2021-2025. While the data for Turkmenistan are missing, the country is not covered in any of the four editions of the Open Data Barometer reports.

The Open Data Barometer measures the openness of data in *fifteen categories*: except land ownership data, also indicators on detailed census data, government budget, data on government spending, health sector performance, international trade data, crime statistics, and others (The Open Data Barometer, 2013). All fifteen indicators groups into three main clusters: innovation cluster, social policy cluster, and accountability cluster (The Open Data Barometer, 2013). The land ownership indicator belongs to the social policy cluster.

Therefore, the Index measures whether data for all fifteen indicators are available in each case country and shows the openness of these data to the population.

The 4th edition of the Data Barometer (2016), it is visible that in all three presented in the report CA countries (Kazakhstan, Kyrgyzstan, and Tajikistan), indicators on land ownership data are among the lowest one (scored 5 out of 100).

by De Maria and Howai (2021) here too, which means that the problem consists not in the availability of land data but rather in finding an answer to such questions as who can get access to land ownership information, and how to make land data more open, transparent, and accessible to the population.

Kazakhstan was the first country among Central Asian countries covered in The Open Data Barometer Global report Edition and later in follow-up editions. In the first edition of the Global Report, the experts draw attention to the lack of civil society engagement in open government projects in Kazakhstan. The authors mention that open data policy transfer occurs at the elite level via e-government portals rather than as part of broader-based open government initiatives involving different actors such as the private sector and civil society. (The Open Data Barometer, 2013).

Therefore, Kazakhstan, like other countries of the region, in the future should draw attention not just to the formal availability of online portals but rather on making these data accessible to a broader audience of users who can potentially benefit from these data, for instance, academia for their research, the business community for opening the business, state, and non-profit organizations for problematic areas identification requiring further improvement.

The Open Data Barometer results show that it is hard to find the information on land ownership, and the land data information is not present in the machine-readable and reusable formats in all three Central Asian countries. The performance of Kyrgyzstan and Tajikistan shows that present countries experience the same problems as Kazakhstan. These CA countries also rank 5 out of 100 in the land ownership indicator, and although land ownership data are available and kept updated but are hardly accessible to the population. The Open Data Barometer 2013 indicated that although Central Asia has a reasonably solid technical capacity, the people still cannot benefit much from open data. (The Open Data Barometer, 2013).

A. Land Ownership Data for Kyrgyzstan (2016.)

Land ownership data												
DATASET SCORED												
Kyrgyzstan	5	5	80	15	5	15	15	5	15	15	15	15
Does the data exist?	●	●	●	●	●	●	●	●	●	●	●	●
Is it available online from government in any form?	●	●	●	●	●	●	●	●	●	●	●	●
Is the dataset provided in machine-readable and reusable formats?	●	●	●	●	●	●	●	●	●	●	●	●
Is the machine-readable and reusable data available as a whole?	●	●	●	●	●	●	●	●	●	●	●	●
Is the dataset available free of charge?	●	●	●	●	●	●	●	●	●	●	●	●
Is the data openly licensed?	●	●	●	●	●	●	●	●	●	●	●	●
Is the dataset up to date?	●	●	●	●	●	●	●	●	●	●	●	●
Is the dataset being kept regularly updated?	●	●	●	●	●	●	●	●	●	●	●	●
Was it easy to find information about this dataset?	●	●	●	●	●	●	●	●	●	●	●	●
Are data identifiers provided for key elements in the dataset?	●	●	●	●	●	●	●	●	●	●	●	●

B. Land Ownership Data for Tajikistan (2016).

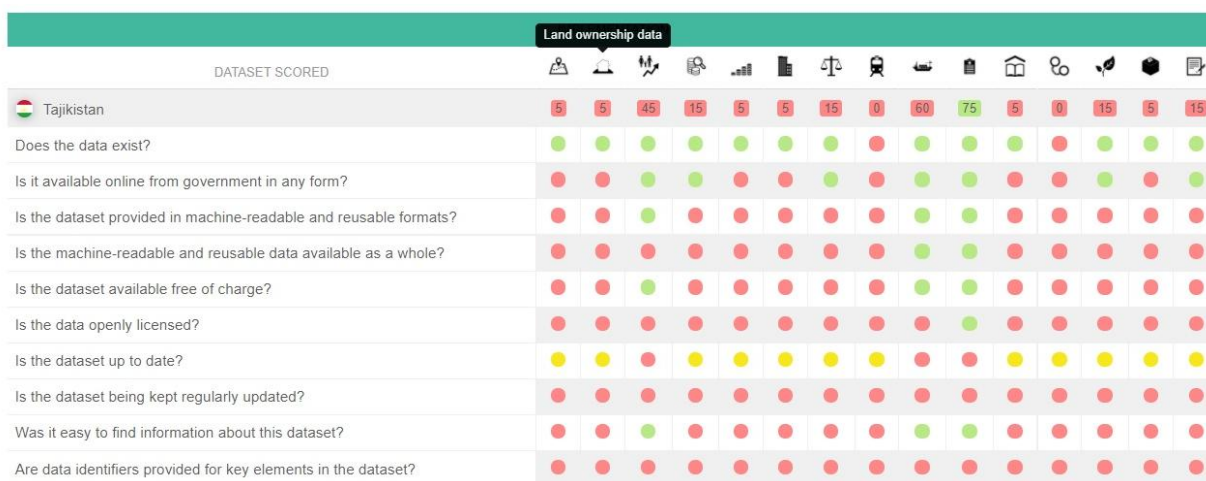


Figure 2 (A, B). Land Ownership Data for Tajikistan and Kyrgyzstan. The Open Data Barometer (2016b, 2016c).

One of the Open Data Barometer's limitations consists of the generalization and absence of the in-depth analysis of the Index results. For instance, all three Central Asian state's performance in all ten questions in the Land Ownership indicator is almost identical for the year 2016. Though there are many commonalities in open data development in all three countries, there are some peculiarities in land ownership data in each case country because of differences in technical capacities, budget constraints, organizational and institutional structures, levels of civil society engagement. Therefore, this neglect of regional/national specifics and nuances reveals the Index methodological and the results interpretation limitations. While pointing out weak civil society engagement, the experts generalize the situation in Central Asian countries, giving three CA countries the same land ownership indicator score. Thus, for further Index improvement, in-depth studies of the country-specific peculiarities are highly advisable.

b. The World Bank's Land Governance Assessment Framework (LGAF).

“The Land Governance Assessment Framework (LGAF) is a diagnostic tool that is designed by the World Bank (2009) to assess the status of land governance at a country or sub-national level.” (The World Bank, 2019).

This framework encompasses evaluation criteria in five different areas, recognition of land tenure rights (in urban and rural areas); registration of land rights (in rural and urban areas), recognition of long term land possessions; clarity of institutional mandates; equity, and non-discrimination in the decision – making process. (Deininger et al., 2012)

Thus, land legal experts and the academic community use the LGAF to assess different aspects related to land governance. In particular, this assessment tool is helpful for comparative research when the analysis is conducted based on a given set of LGAF evaluation criteria. For instance, the work of Deininger et al. (2012) provides a detailed explanation of how researchers applied LGAF in assessing land governance in four case countries, among them one Central

Asian country: Kyrgyzstan, as well as such countries as Peru, Ethiopia, and Tanzania. Researchers used 21 evaluation indicators to compare the commonalities and differences in land governance in given countries.

Most importantly, they identified the weaknesses in the land governance systems in these four states. The study findings show some minor differences in all five LGAF areas countries experiencing problems, such as weaknesses in institutional capacities, unclear land rights recognition and allocation mechanisms, and high costs for land ownership registration. There are certainly also evident differences in land tenure regimes among these countries. Except this, also there are differences in the land conflict resolution process in different cultural contexts. For instance, in Kyrgyzstan, the land disputes are sometimes solved by village elders in rural areas, while in Tanzania, by intervening of political parties and religious and traditional leaders as mediators. The LGAF as an assessment framework was applied in several post-Soviet countries such as Ukraine and Georgia, while in Central Asia, as mentioned above, only in Kyrgyzstan, plus Afghanistan.

One of the LGAF's strengths is that it stimulates other frameworks assessing land governance effectiveness. For instance, *Prindex* or *Land Market Assessment Framework* and other indices and programs applying partially LGAF methodology. If we switch our attention from strengths to LGAF weaknesses, we can identify several of them: firstly, in data collection and data techniques. The panel of experts and a panel committee, which involves government officials, NGOs, and civil society, conducts LGAF data collection and assessment in each case country. However, in many developing countries, so-called quasi-NGOs could depend either on the government or sponsor organizations. Secondly, considering the definition of civil society is ambiguous, the mechanism of expert panel selection is somewhat unclear. Finally, LGAF's weakness consists in the consultative nature of evaluation reports. Despite all these nuances, LGAF is a well-elaborated assessment tool allowing to diagnose the main problems in land governance in different countries and regions of the world. It is possible to suggest researching land governance effectiveness in Central Asian countries with the LGAF application further in all five CA countries.

c. Global Property Rights Index (Prindex)

Prindex is: “the first comparable, global dataset on perceived tenure security” (Prindex, 2021). Though the index originated in 2015, the Central Asian region, namely all five Central Asian countries: Kazakhstan, Kyrgyzstan, Uzbekistan, Tajikistan, and Turkmenistan, were included in the index recently (in July 2020), when the global Prindex report, covering all 140 countries, was officially presented to the public.

In terms of data collection, Prindex: “selects independent survey agencies to run the surveys” (Prindex, 2020). The sampling methods applied are simple random sampling and cluster sampling. Prindex uses both face-to-face interviews/surveys as well as telephone surveys. The scores show the level of both tenure security and tenure insecurity in each of 140 participating countries. The figure 3 below shows the global map, where countries with a low level of tenure insecurity are presented in blue color while countries with a high level of tenure insecurity are in red.

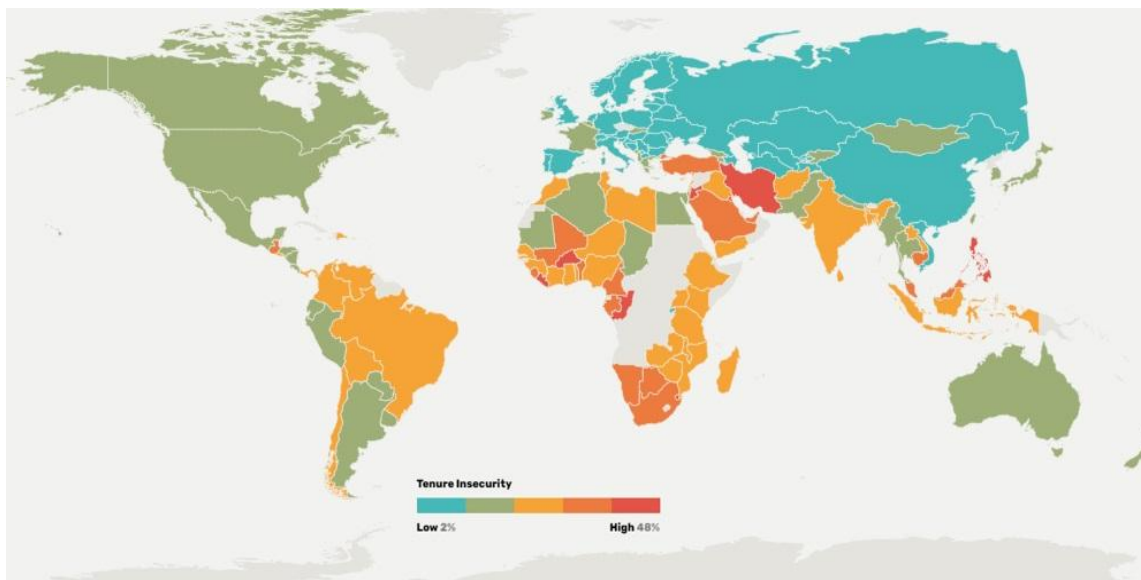


Figure 3. Prindex Map on Tenure Insecurity (for 2020). Prindex (2021).

Surprisingly, all five Central Asian countries reported having low levels of tenure insecurity.

Table I (A, B). Tenure Insecurity and Tenure Security for different countries of the world, scores for 2020. Prindex (2020; 2021).

Country	Tenure Insecurity	Tenure Security	Formal Documents	Informal Documents Only	No documents
A. Five Central Asian countries					
Kazakhstan	11%	79%	91%	4%	4%
Kyrgyzstan	17%	76%	84%	9%	7%
Tajikistan	11%	74%	92%	5%	3%
Turkmenistan	2%	90%	99%	0%	1%
Uzbekistan	6%	91%	93%	4%	2%
B. Different countries of the world					
Canada	14%	85%	89%	6%	6%
France	18%	80%	93%	4%	3%
Germany	10%	87%	93%	3%	3%
Japan	19%	78%	78%	15%	7%
Netherlands	10%	90%	91%	6%	3%
Turkey	31%	63%	85%	5%	10%

If to analyze the given Prindex scores, comparatively, low tenure insecurity levels have all CA countries: Kyrgyzstan 17%, Kazakhstan and Tajikistan 11%, Uzbekistan 6%, while: “Turkmenistan has the lowest reported level of tenure insecurity in the world (2%)” (Prindex, 2020, p. 14). This means that respondents in countries with a low level of tenure insecurity feel safe and less worried about losing their tenure in, e.g., the next five years. The results for Central Asian countries seem surprising if compared with scores of other countries of the world, including developed countries where respondents reported relatively high tenure insecurity despite the well-developed system of tenure rights protection.

Analyzing Prindex scores for developed countries, it is visible that respondents in, for instance, France, Netherlands, Turkey, Japan, and Canada (these countries are just randomly selected for this table) feel more *insecure* regarding their tenure than respondents in Central Asia.

Considering some demographic data of Central Asian countries respondents, some discrepancy in the data results is visible, partially explained by such reasons as low levels of citizen participation in given surveys. (Prindex, 2020, p. 16). The Prindex Data Explorer (2021) shows demographic information of Prindex respondents for all five Central Asian countries. (Prindex, 2021; Prindex, 2020). The data reveal that most CA countries' respondents are young people with only part-time employment and who are renters but are not tenure owners; besides, they possess mainly informal documents on indicated tenure. There is also a visible discrepancy in Prindex data when more than 80-90% of respondents declare the possession of formal documents on tenure, but in the Prindex Data Explorer charts, most CA respondents report having only informal documents or having no documents on tenure at all. (Prindex, 2020, Prindex, 2021). Also, in all four countries (except Turkmenistan), respondents said that they find life financially difficult. Taking all these factors into account, surprisingly, the CA region respondents feel more secure than respondents in the EU, Canada, Japan, and other developed countries of the world regarding their tenure. The Prindex report for 2020 suggests: "more than half of renters located in many Central Asian countries, including Kazakhstan or Georgia, feel insecure. However, this has less of an impact on overall levels of tenure insecurity because rental markets are comparatively small." (Prindex, 2020, p. 16).

The size of rental markets might exert influence on tenure security perceptions in given countries, however, reported in recent years by international NGOs and media the increase in the number of protests in Central Asia related to land and property, contrary signalize that people's perceptions towards tenure security are not that optimistic as it is presented in land indices. According to the Oxus Society for Central Asian Affairs, since 2018, over half of the 74 recorded protests in Uzbekistan have been related to land and property. (Jardine, Khashimov, Lemon & Uran Kyzy, 2020). While in neighboring Kazakhstan, during the land protests in the major cities of Kazakhstan in 2016, protestors raised, among many other problems, their grave concerns over the concentration of land in the hands of the rich and powerful and corruption in the land sector. (Abdurasulov, 2016). Another shortcoming is related to the notion of "land tenure security," which is quite vague, where tenure means an apartment/or a house and land and other properties. The problem in the operationalization of the notion of "tenure security" is that it could include de jure and de facto land rights, for instance, land rights of local

communities (Masuda et al., 2020). Overall, Prindex measures people's perceptions, which could be highly subjective and affected by various factors.

Moreover, considering the topic's political sensitivity related to tenure/land rights, respondents in particular, in countries with authoritarian regimes, could experience problems responding openly and freely to telephone surveys (for instance, fear of surveillance and subsequent prosecution). Therefore, Prindex requires more in-depth consideration of all these nuances related to tenure insecurity measurements. Despite mentioned here shortcomings it is crucial to note that Prindex is the only Index where all five CA countries are present to this point in time

d. Global Land Governance Index (LANDex)

There are several features that make the Global Land Governance Index (Landex) different from other assessment tools and indices: firstly, the focus on people-centered land monitoring when land data comes not only from the official data, expert-based evaluation but also through individual assessments, meaning that any unaffiliated individual can take part in the index formation. That makes the Landex less dependent on official data provided by the state authorities or the opinion of a limited number of experts but ensures multi-stakeholder engagement. Secondly, the Landex is organized around ILC's 10 Commitments and evaluates on a 0-100 scale in ten indicators the countries' actions in such areas that are missing in other land indices as effective actions against land grabbing, protection of land defenders, strong small-scale farming systems and others. Thirdly, countries are not ranked, and scores show the country's performance in each of the ten indicators. That, in particular, is important for both practitioners and academia to observe the patterns in countries' development and see the problem areas at a national, regional, and global scale.

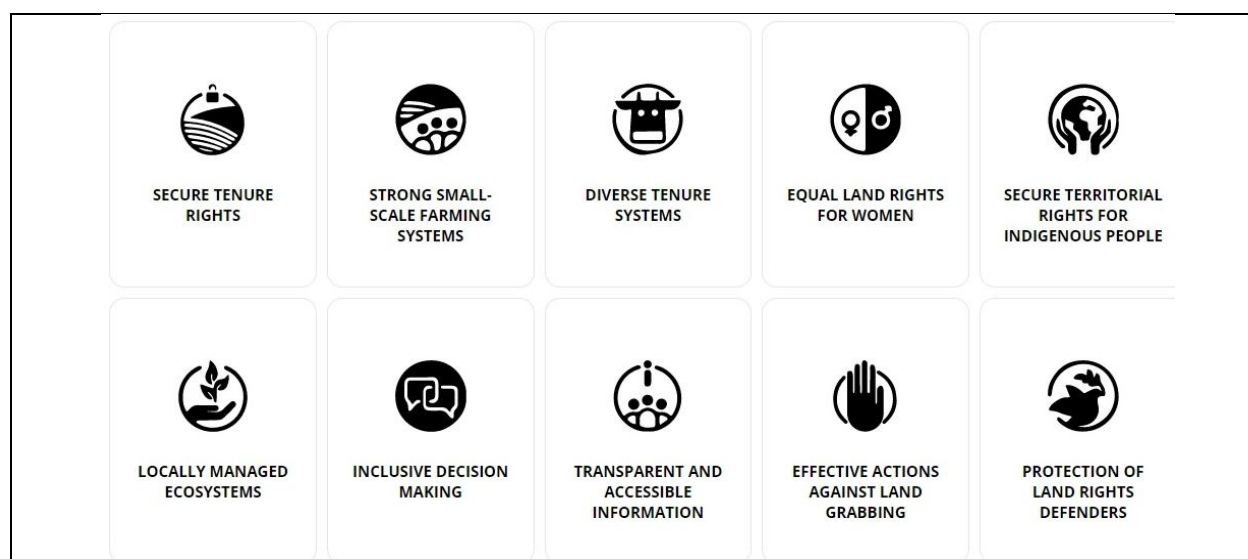
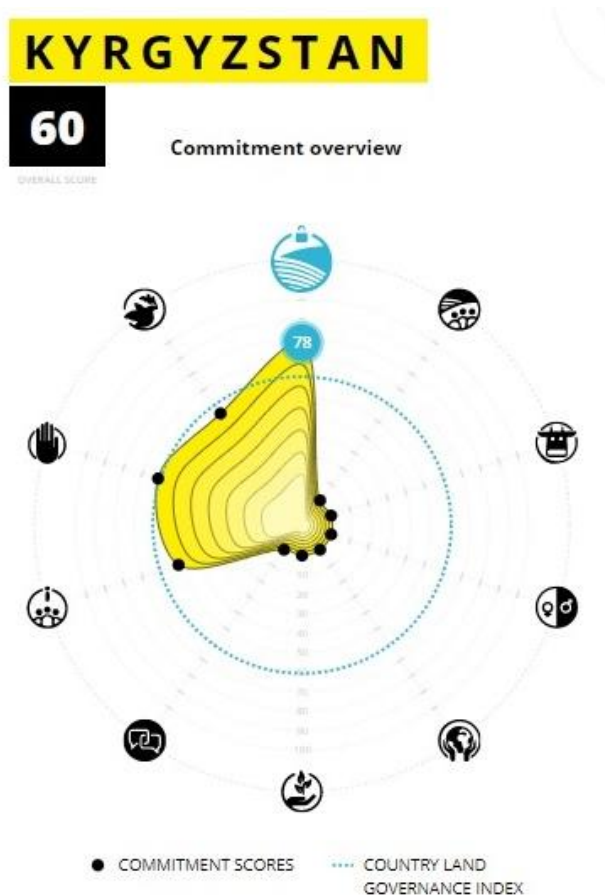


Figure 4. LANDex Indicators. (LANDex, 2021a).

Each of ten LANDex indicators has three levels (a, b, c), where: “a) legal indicators measuring the strength of the legal and institutional framework; b): implementation indicators that measure to what degree policies or programs had implemented, and c) outcome, impact or perception indicators that measure the results of interventions.” (LANDex, 2021a). Finally, the surveys are well-formulated, precise, and clear, making them easy to follow and fill. For instance, such questions include: “Is there a constitutionally recognized, private right to own land? Are principles of no tolerance to corruption embedded in national legislation explicitly related to land or otherwise? Does your country have any specific, national-level provisions to protect defenders of the land and the environment?; and others. (LANDex, 2021a.). From five Central Asian countries, only data for Kyrgyzstan are present in LANDex (from 2020).

In Figure 5A, it is visible that for Kyrgyzstan, from ten indicators, the scores for only four indicators are available, presented as the yellow area of the circle. These four indicators are secure tenure rights (with a score of 78 out of 100), protection of land rights defenders (55), effective actions against land grabbing (62), and transparent and accessible information (51). By clicking on each commitment icon, the score per each indicator appears on the interactive LANDex figure. (LANDex, 2021b).

A. Kyrgyzstan LANDex commitment overview (LANDex, 2021b).



B. LANDex Indicator Score Table for Kyrgyzstan for 2021 (LANDex, 2021b).

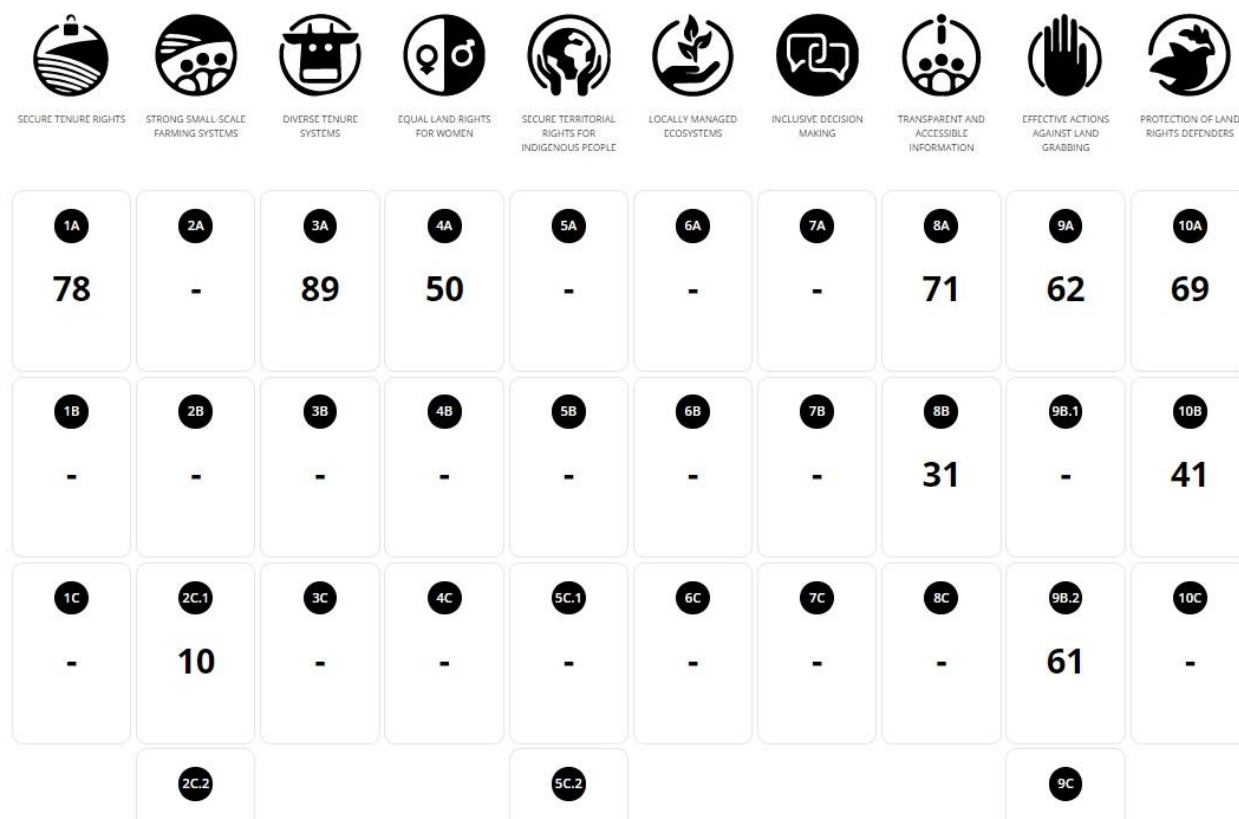


Figure 5 (A, B). Kyrgyzstan LANDex performance, for 2021. LANDex (2021b).

As it is visible in Figure 5 B, each commitment consists of three sub-indicators (A, B, and C.1./C.2). For instance, the first commitment - Secure tenure rights consist of three sub-indicators: 1A. The legal and institutional framework for securing tenure rights, 1B. Women and men with legally recognized documentation or secure land rights, and 1C. Women and men who perceive their land rights are protected against dispossession or eviction. Kyrgyzstan has only scored for the first sub-indicator (1A), where the country's score is higher than in other commitments, 78 out of 100.

The same picture is observable in other commitments where the scores for some sub-indicators (either A, B, or C1/C2) are missing. For instance, for commitment eight, which is Transparent and accessible information, the scores only for 8A. and 8 B. are available. The sub-indicator 8A indicates the Legal and institutional framework calling for timely, reliable, and accessible data on land. The score of Kyrgyzstan in this sub-indicator is 71 out of 100. The sub-indicator 8B stands for National information on public land deals, where the score of Kyrgyzstan is relatively low, only 31 out of 100. While the data for the sub-indicator 8C. - Corruption in the land sector, the country's scores are absent. This partially could be explained by the fact that land corruption cases are hard to document. Another indicator where data and scores for Kyrgyzstan are available is indicator nine on Effective actions against land grabbing,

showing the progress of Kyrgyzstan in establishing the legal and institutional framework in place at the national level to prevent land grabbing in private and public investments. Here the score of Kyrgyzstan is 62, while for 9B. Free Prior and Informed Consent (FPIC) and other safeguards are implemented in large-scale land transactions; the country has 61 out of 100. (LANDex, 2021b). Since Landex had recently commenced in 2018, it is hard to evaluate the index limitations as countries are now at the data formation and compilation stage. Some discrepancies in LANDex data presentation are visible. For instance, comparing Figure 5 A with Figure 5B (taken for this review from LANDex official website), it is possible to notice that in Figure 5A, only four indicators for Kyrgyzstan are available, in contrast in Figure 5B, scores of some other sub-indicators appear. This fact signalizes that Index figures are not regularly updated; therefore, some inconsistency of data presented in LANDex figures is noticeable. To summarize, Landex is a comprehensive and well-elaborated diagnostic tool that might be useful for both practitioners and academia. It covers different land governance dimensions, including equal land rights, inclusive decision-making, and other important commitments. Considering that LANDex captures different land governance dimensions, the Central Asian countries' participation in the index compilation might help identify areas in the land governance that require further improvement.

5. Discussion and Concluding Remarks.

Using the integrative review method, this paper assessed academic works written in recent decades (2000 - 2020) on land corruption and the role of open data in land governance and examined Central Asian countries' performance in four selected global land governance indices and assessment programs. The academic scholarship provides different notions of land, land governance, and different typologies of land corruption. For this review, scholarly works covering land corruption in different countries, e.g., Australia, Spain, Serbia, Philippines, China, Taiwan, Korea, Benin, Zimbabwe, and other countries, were studied. Based on the analyses of academic works, it is possible to notice some commonalities in typologies of land corruption: the researchers mainly distinguish three typologies in land corruption such as large scale or grand corruption, sometimes also referred to as political corruption, bureaucratic/ or administrative corruption, and small-scale or petty corruption. Describing the forms of land corruption, researchers very briefly cover land corruption issues in local administrations (Cai et al. 2013, Song et al., 2016, López-Valcárcel et al., 2017).

Taking into account the acuteness of the problem of land corruption in Central Asia and the lack of scholarly works capturing the issue of informal constraints (e.g., clientism, land corruption) and on accountability in land governance in Central Asia, analyzing the works of international scholarship on these topics might help better understand the problem and ways to address it. Therefore, academia should more profoundly explore the interlinkage between open data, land governance, and (anti)corruption in the following years. (De Maria and Howai, 2021). In this case, studying the potential of newly launched indices and assessment programs that measure land governance effectiveness gains paramount importance and could serve as a guiding tool for developing countries in their land governance systems transformation.

The international land expert community is making the first steps in developing land governance indices and assessment frameworks by launching in the last decades LGAF (1999), The Open Data Barometer (2013), Prindex (2016), and LANDex (2018). To the moment, each land index and the assessment tool are still at the development and data compilation stage. However, some initial primary results are visible even at this stage that Central Asia countries can explore to identify areas in land governance requiring special attention. Our analysis revealed the underperformance of Central Asia in the Open Data Barometer, LANDex, and the lack of engagement in using The World Bank's LGAF to evaluate land governance effectiveness. The Open Data Barometer results for Central Asian countries show that countries have made significant progress in recent decades in developing open data portals, where land ownership data are also available and updated, however hardly accessible to the population. The governments should pay attention to solving those dilemmas to make access to land data easier.

For instance, it is essential to transfer the land ownership information from paper to machine-readable data, as this process might further transparency in land governance. Considering that there could be obstacles preventing this process, more active civil society engagement is required. Due to these measures, it will be possible, to some extent, to cope with land corruption. Prindex results for Central Asia look the most positive comparatively to others covered in the review indices, showing low levels of tenure insecurity in the region. Though, Prindex researchers admit still the results for Central Asia should be interpreted with caution due to low response rate in CA countries. Again, it is essential to underline that the Index shows the level of people's perception of in/security concerning different property types, not land only, but, e.g., the apartment/ a house, people own or rent. This nuance makes the index results challenging to interpret, particularly for those scholars or practitioners explicitly interested in land issues. The following assessment framework covered in the review, LGAF, is a comprehensive tool capturing institutional and legal, and other dimensions of land governance. Despite the richness of academic scholarship on LGAF application to different regional contexts, the dimension of inclusive decision-making in land governance in Central Asian context is still understudied. At the same time, LANDex which comparatively rich in terms of the scope of the thematic areas the index is covering, including protection of land rights defenders, inclusive decision making, effective actions against land grabbing, equal women's land rights, and others, but still is not widely known and applied both by academia and practitioners.

It is crucial to mention that the studies on the intersection between land governance, land corruption, and the role of open data as an anti-corruption tool require more in-depth analysis. Considering that the topic of CA countries' performance in global land governance indices is relatively new, it is possible to encourage the Central Asian academic community to explore such studies' potential. Analyzing Central Asian countries' performance in global land governance indices and assessment programs might help scholars and practitioners identify those problematic areas, which hinder the progress towards a more inclusive, transparent, and accountable land governance in Central Asia.

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References

- Abdurasulov, A. (2016, April 28). *Kazakhstan's land reform protests explained*. BBC News. Retrieved from <https://www.bbc.com/news/world-asia-36163103>.
- Almagambetov, N. (2005). *The Impact of Land Reform on Economic Development of Kazakhstan*. Open Society Institute. Retrieved from <http://pdc.ceu.hu/archive/00002545/01/almaganbetov.pdf>.
- Borras Jr, S. M., & Franco, J. C. (2010). Contemporary Discourses and Contestations around Pro-Poor Land Policies and Land Governance. *Journal of Agrarian Change*, 10(1), 1–32. <https://doi.org/10.1111/j.1471-0366.2009.00243.x>.
- Brankov, T. P., & Tanjević, N. (2013). *Corruption in Land Sector*. Economics of Agriculture. Vol. 60.(2) 2013. Retrieved from <http://www.ea.bg.ac.rs/index.php/EA/article/view/468/421>.
- Broome, M.E. (1993). *Integrative literature reviews for the development of concepts*. Concept Development in Nursing, 2nd edn (Rodgers B.L. & Knafel K.A., eds), W.B. Saunders Co., Philadelphia, PA., 231–250.
- Cai, H., Henderson, J., & Zhang, Q. (2013). China's land market auctions: Evidence of corruption? *The RAND Journal of Economics*, 44(3), 488-521. Retrieved from <http://www.jstor.org/stable/43186429>.
- Carr, I., & Jago, R. (2014). *Petty Corruption, Development and Information Technology as an Antidote*. The Round Table, 103(5), 465–482. <https://doi.org/10.1080/00358533.2014.966495>.
- Ceddia, M., Bardsley, N., Gomez-y-Paloma, S., & Sedlacek, S. (2014). *Governance, agricultural intensification, and land sparing in tropical South America*. Proceedings of the National Academy of Sciences of the United States of America, 111(20), 7242- 7247. Retrieved from www.jstor.org/stable/23774161.
- Childress, D. (2004). *Agrarian Research Institutes and Civil Society in Kazakhstan and Kyrgyzstan in Search for Linkages*. United Nations Institute for Social Development. Geneva. Retrieved from <https://www.unrisd.org/80256B3C005BCCF9/httpNetITFramePDF?ReadForm&parentunid=E1>

DB939809ADDE7CC1256FCD004BF15E&parentdoctype=paper&netitpath=80256B3C005BCCF9/(httpAuxPages)/E1DB939809ADDE7CC1256FCD004BF15E/\$file/childres.pdf.

Chiodelli, F., & Moroni, S. (2015). Corruption in land-use issues: A crucial challenge for planning theory and practice. *Town Planning Review*, 86(4), 437–455. <https://doi.org/10.3828/tpr.2015.27>.

Davies, T. & Chattapadhyay, S. (2019). *Open Data and Land Ownership*, in Davies, T. et al. (eds) *The State of Open Data: Histories and Horizons*. Cape Town and Ottawa: African Minds and International Development Research Centre, 181–195. Doi: 10.5281/ZENODO.2677839.

De Maria, M. & Howai, N. (2021). *The Role of Open Data in Fighting Land Corruption*. Bonn and Eschborn. Retrieved from <https://landportal.org/library/resources/role-open-data-fighting-land-corruption-0>.

Deininger, K., Selod, H., & Burns, A. (2012). *The Land Governance Assessment Framework: Identifying and Monitoring Good Practice in the Land Sector*. The World Bank. Retrieved from <https://doi.org/10.1596/978-0-8213-8758-0>.

Deininger, K. Hilhorst, T. and Songwe, V. (2014). *Identifying and addressing land governance constraints to support intensification and land market operation: Evidence from 10 African countries*. *Food Policy*, 2014, vol. 48, issue C, 76-87. <https://doi.org/10.1016/j.foodpol.2014.03.003>.

Dodson, J., Coiacetto, E. & Ellway, C. (2005). *Corruption in the Australian Land Development Process: Identifying a research agenda*. Urban Research Program, Griffith Governance. Retrieved from <https://apo.org.au/sites/default/files/resource-files/2005-12/apo-nid60375.pdf>.

Enemark, S., McLaren, R., & Molen, P. (2010). Land governance in support of the millennium development goals: A new agenda for land professionals: FIG, World Bank conference, 9-10 March 2009, Washington D.C., USA. International Federation of Surveyors (FIG). Retrieved from <https://www.fig.net/resources/publications/figpub/pub45/figpub45.pdf>.

Enemark, S., McLaren, R. & C. Lemmen. (2016). *Fit-for-purpose land administration. Guiding Principles for Country Implementation*. United Nations Human Settlements Programme UN-Habitat. Retrieved from https://www.fig.net/news/news_2016/2016_07_gltnguide/fit-for-purpose-land-adm-guiding-principles-for-country-implementation.pdf.

FAO. (2012). *The overarching goals of the Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries and Forests in the Context of National Food Security*. Food and Agriculture Organization of the United Nations. Rome. Retrieved from <http://www.fao.org/3/i2801e/i2801e.pdf>.

Hall, D. (2013). *Land*. Cambridge: Polity Press.

Ho, P. (2001). Who Owns China's Land? Policies, Property Rights and Deliberate Institutional Ambiguity. *The China Quarterly*, (166), 394-421. Retrieved from <http://www.jstor.org/stable/3451163>.

Jaitner, A., Schilling, F.& Matthaei, E. (2020). *Open Data as a means to promote*

transparency in land governance- what it takes. Paper prepared for presentation at the^[11]“2020 World Bank Conference on Land and Poverty. The World Bank - Washington DC, March 16-20, 2020. Retrieved from <https://landportal.org/library/resources/open-data-means-promote-transparency-land-governance>.

Jardine, B., Khashimov, S., Lemon, E., & Uran Kyzy, A. (2020, September 28). *Mapping Patterns of Dissent in Eurasia: Introducing the Central Asia Protest Tracker*. The Oxus Society for Central Asian Affairs. Retrieved from <https://oxussociety.org/mapping-patterns-of-dissent-in-eurasia-introducing-the-central-asia-protest-tracker/>.

Jones, K. D. (2003). Land Privatization and Conflict in Central Asia: is Kyrgyzstan a model? In eds. D. Burghart and T. Sabonis-Helf. *In the Tracks of Tamerlane: Central Asia's Paths to the 21st Century*. Washington DC. Center for Technology and National Security Policy, pp. 259-273. Deference Technical Information Center. Retrieved from <http://www.unece.org/fileadmin/DAM/hlm/prgm/cph/experts/kyrgyzstan/documents/Chapter12.land.privatization.pdf>.

International Land Coalition. (2020). *Uneven Ground. Land Inequality in the Heart of Unequal Societies. Research Findings from The Land Inequality Initiative*. Synthesis Report. United For Land Rights. Retrieved from https://d3o3cb4w253x5q.cloudfront.net/media/documents/2020_11_land_inequality_synthesis_report_uneven_ground_final_en_spread_low_res_2.pdf.

Kakai, S. (2012). *Government and land corruption in Benin*. The Land Deal Politics Initiative. LDPI Working Paper. ISS. Retrieved from <https://assets.publishing.service.gov.uk/media/57a08a96ed915d622c0007e9/LDPI12-Kakai.pdf>.

Kurmanova, G. (2014). *Regulation of Land Attitudes in Kazakhstan*. Conferences series: Earth Environmental Science. Retrieved from <https://iopscience.iop.org/article/10.1088/1755-1315/20/1/012028/pdf>.

Land Portal. (2021). *Securing land rights through open data*. Retrieved from <https://landportal.org/>.

LANDex. (2021a). *Global Land Governance Index*. Retrieved from <https://www.landexglobal.org/en/>.

LANDex. (2021b). *Kyrgyzstan. Commitment Overview*. Retrieved from <https://www.landexglobal.org/en/country/417/>.

Lee-Jones, K. (2021). *Overview of corruption and anti - corruption in Central Asia: Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan*. Transparency International Anti-Corruption Helpdesk Answer. Transparency International. Retrieved from https://knowledgehub.transparency.org/assets/uploads/helpdesk/Regional-Overview-of-corruption-and-anti-corruption-in-Central-Asia_2021_PR.pdf

López-Valcárcel, B. G. & Jiménez, J. L. & Perdiguero, J. (2017). Danger: Local corruption is contagious! *Journal of Policy Modeling*, Elsevier, vol. 39(5), 790-808. Retrieved from <https://archivo.alde.es/encuentros.alde.es/anteriores/xviieea/trabajos/g/pdf/179.pdf>.

Masuda, Y. J., Kelly, A. C., Robinson, B. E., Holland, M. B., Bedford, C., Childress, M., Game, E. T., Ginsburg, C., Hilhorst, T., Lawry, S. W., Miteva, D. A., Musengezi, J.,

Naughton-Treves, L., Sunderlin, W. D., & Veit, P. (2020). *How do practitioners characterize land tenure security? Conservation Science and Practice*, 2(5). <https://doi.org/10.1111/csp2.186>.

Messerli, P., Peeters, A., Schoenweger, O., Nanthavong, V., and Heinemann, A. (2015). Marginal Lands or Marginal People? Analysing Key Processes Determining the Outcomes of Large-Scale Land Acquisitions in Lao PDR and Cambodia, *International Development Policy | Revue internationale de politique de développement*. Retrieved from <://journals.openedition.org/poldev/2037>; DOI: <https://doi.org/10.4000/poldev.2037>.

Miller, D. L. C. & Pope, A. (2000). South African Land Reform. *Journal of African Law*, 44(2), 167-194. Retrieved from www.jstor.org/stable/1587455.

Moore, M. (2015). *A political theory of territory*. Oxford University Press.

Mutondoro, F. Ncube and Addah, M. (2016). *An Analysis of the Impact of Land Related Corruption on Women: Case Studies from Ghana and Zimbabwe*. Transparency International Zimbabwe and Ghana Integrity Initiative. Paper prepared for presentation at the “2016 World Bank Conference on Land and Poverty. The World Bank - Washington DC, March 14-18, 2016. Retrieved from <http://iffodatabase.trustafrica.org/iff/AN%20ANALYSIS%20OF%20THE%20IMPACT%20OF%20LAND%20RELATED%20CORRUPTION%20ON.pdf>.

Orjuela, C. (2014). Corruption and identity politics in divided societies, *Third World Quarterly*, 35:5, 753-769. doi: 10.1080/01436597.2014.921426

Prindex. (2020). *Global report. A global assessment of perceived tenure security from 140 countries*. Retrieved from <https://www.prindex.net/reports/prindex-comparative-report-july-2020/>.

Prindex. (2021). *Data Explorer*. Retrieved from <https://www.prindex.net/data/>.

Richani, N. (2012). The Agrarian Rentier Political Economy: Land Concentration and Food Insecurity in Colombia. *Latin American Research Review*, 47, 51 - 78. Retrieved from www.jstor.org/stable/23322170.

Song, Y., Wang, M. Y., and Lei, X. (2016). Following the Money: Corruption, Conflict, and the Winners and Losers of Suburban Land Acquisition in China. *Geographical Research*, 54: 86– 102. doi: 10.1111/1745-5871.12158.

Spoor, M. (2018). 25 Years of Rural Development in post-Soviet Central Asia: Sustaining Inequalities, *Eastern European Countryside*, 24(1), 63-79. doi: <https://doi.org/10.2478/eec-2018-0004>.

State of the Nation Address by the President of the Republic of Kazakhstan Nursultan Nazarbayev, January 10, 2018 — Official website of the President of the Republic of Kazakhstan. Akorda. (2021a.). Retrieved 6 August 2021, from https://www.akorda.kz/en/addresses/addresses_of_president/state-of-the-nation-address-by-the-president-of-the-republic-of-kazakhstan-nursultan-nazarbayev-january-10-2018.

State of the Nation Address by the President of The Republic of Kazakhstan Kassym-Jomart Tokayev’s, September 2, 2019 — Official website of the President of the Republic of Kazakhstan. Akorda. (2021b.). Retrieved 6 August 2021, from

https://www.akorda.kz/en/addresses/addresses_of_president/president-of-kazakhstan-kassym-jomart-tokayevs-state-of-the-nation-address-september-2-2019.

The Open Data Barometer. (2013). *Global report*. Eds. Davies. T. Retrieved from <https://opendatabarometer.org/1stEdition/>.

The Open Data Barometer. (2016a). *Kazakhstan. Country detail*. Retrieved from https://opendatabarometer.org/4thedition/detail-country/?_year=2016&indicator=ODB&detail=KAZ .

The Open Data Barometer. (2016b). *Kyrgyzstan. Country detail*. Retrieved from https://opendatabarometer.org/4thedition/detail-country/?_year=2016&indicator=ODB&detail=KGZ.

The Open Data Barometer (2016c). *Tajikistan. Country detail*. Retrieved from https://opendatabarometer.org/4thedition/detail-country/?_year=2016&indicator=ODB&detail=TJK.

The Open Data Barometer. (2017). *Global Report*. Fourth Edition. World Wide Web Foundation. Retrieved from <https://opendatabarometer.org/doc/4thEdition/ODB-4thEdition-GlobalReport.pdf>.

The World Bank. (2012). *The Land Governance Assessment Framework: Identifying and Monitoring Good Practice in the Land Sector*. Agriculture and Rural Development. Eds. Deininger, K., Selod, H. & A. Burns. Retrieved from <https://openknowledge.worldbank.org/handle/10986/2376>.

The World Bank. (2019). What Is the Land Governance Assessment Framework (LGAF)? Retrieved from <https://www.worldbank.org/en/programs/land-governance-assessment-framework>.

Transparency International. (2013). *Global Corruption Barometer 2013*. Retrieved from https://images.transparencycdn.org/images/2013_GlobalCorruptionBarometer_EN_200525_112757.pdf.

Transparency Kazakhstan. (2021). *Transparency Kazakhstan presented the results of monitoring the state of corruption in the country for 2020*. Retrieved from <http://tikazakhstan.org/transparency-kazakhstan-presented-the-results-of-monitoring-the-state-of-corruption-in-the-country-for-2020/>.

Trapnell, S., Jenkins, M. & Chêne, M. (2017). *Tracking corruption across the framework — A sectoral approach*. Report Title: *Monitoring corruption and anti-corruption in the Sustainable Development Goals*. Transparency International. Retrieved from <http://www.jstor.com/stable/resrep20564.7>.

UN-GGIM. (2019). *Framework for Effective Land Administration*. A reference for developing, reforming, renewing, strengthening or modernizing land administration and management systems. Expert Group on Land Administration and Management United Nations Committee of Experts on Global Geospatial Information Management (UN-GGIM). Retrieved from https://ggim.un.org/documents/FELA_Consultation_Draft.pdf.

United Nations. (2015). *The 17 Sustainable Development Goals*. Department of Economic and Social Affairs. Retrieved from <https://sdgs.un.org/goals>.

Visser, O., & Spoor, M. (2011). Land grabbing in post-Soviet Eurasia: The world's largest agricultural land reserves at stake. *Journal of Peasant Studies*, 38(2), 299–323. <https://doi.org/10.1080/03066150.2011.559010>.

Visser, O., Mamonova, N., & Spoor, M. (2012). Oligarchs, megafarms and land reserves: Understanding land grabbing in Russia. 34. *The Journal of Peasant Studies*, 39: 3-4, 899-931, DOI: 10.1080/03066150.2012.675574.

Wegren, S.K. (2009). *Land reform in Russia*. Institutional Design and Behavioral Responses. UK, London: Yale University Press.

Wren-Lewis, L. (2013). *Corruption in Land Administration: Roles for Donors to Minimize the Problem*. U4 Brief March 2013 (1). Retrieved from <https://ssrn.com/abstract=2659212>.

World Wide Web Foundation. (2017). *Open Data Barometer: As citizens demand accountability, governments keep data locked away*. May 22, 2017. The Open Data Barometer. Retrieved from <https://webfoundation.org/2017/05/open-data-barometer-as-citizens-demand-accountability-governments-keep-data-locked-away/>.

You, J. (2014). Land Reform, Inequality, and Corruption: A Comparative Historical Study of Korea, Taiwan, and the Philippines. *The Korean Journal of International Studies*. Vol.12-1, 191-224. Retrieved from <https://ssrn.com/abstract=2505635>.