



Fair compensation in large-scale land acquisitions: Fair or fail?

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ABSTRACT

Despite the existence of a legal framework defining the right to fair compensation, and notwithstanding the vast literature on transnational and domestic land deals, no theory has been developed so far to allow for a specific analysis of the economics of fair compensation in large-scale land acquisitions (LSLAs), limiting our understanding of the underlying reasons of success or failure of this important legal protection mechanism. Building on the review of the existing literature on fair compensation and on the critical examination of several real-world case studies, this paper fills this gap by developing a three-player sequential game, which captures the peculiarities of fair compensation in large-scale land deals. We show that, under specific but not uncommon circumstances, the local community will be offered a zero-compensation as a rational consequence of the players' optimisation, and this will lead to a land conflict, with all players incurring additional costs. Our findings suggest that local populations will be offered – and willing to accept – a compensation that is smaller than their original livelihood, unless they can oppose the land deal at no cost. Thus, the right to consent is inextricably related to the right to reject in LSLAs. If the former is frictionless while the latter comes at a cost, then there is space for strategic behaviours that exploit power imbalances and discretionary processes, and the fair compensation right is, in practice, weakened.

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1. Introduction

Large-Scale Land Acquisitions (LSLAs) are transnational and domestic land deals typically covering an area of 200 hectares (ha) or more (Land Matrix, 2021). LSLAs are often part of wider investments that seek to promote local economic growth and development, as well as a range of other social and environmental benefits, particularly in low and middle-income countries (Baumgartner et al., 2015; Deininger et al., 2010; Liu, 2014; Matenga & Hichaambwa, 2017; Nolte & Ostermeier, 2017; Santangelo, 2018). However, when these investments target land already being farmed and inhabited by Indigenous People and local communities, they are often associated with a range of negative outcomes, which include – among others – social unrest, dispossession, forcible evictions, land tenure disputes, and land conflicts (Aha & Ayitey, 2017; Dell'Angelo, D'Odorico, Rulli, & Marchand, 2017; Regassa et al., 2018; Sändig, 2021; Schoneveld, 2017). With an estimated 85 million ha of transnational land deals and an addi-

tional 22 million ha of domestic land deals concluded, failed, or attempted since the year 2000,¹ LSLAs are reshaping ecosystems, livelihoods, and development trajectories both globally and locally, with direct and indirect repercussions on the achievement of each of the Sustainable Development Goals (Dell'Angelo, D'Odorico, & Rulli, 2017; Lay et al., 2021; Oberlack et al., 2016).

The impact of LSLAs on local communities has received considerable attention in the literature, especially when the affected populations are socially, politically and economically vulnerable (Behrman et al., 2012; Cotula et al., 2014; Dell'Angelo et al.,

¹ Figures retrieved from the Land Matrix on 16/09/2021 (<https://landmatrix.org/map>), filtering for all intended, concluded, and failed deals ('contract expired' excluded) over 200ha, from the year 2000 onwards ('unknown years' excluded). In trying to increase the accuracy of these numbers, we excluded 'pure contract farming' deals (under 'nature of the deal'), 'forest concessions', and projects with no information on 'implementation status' and 'intention of the investment'. We then filtered for transnational and domestic deals, respectively. The data on the Land Matrix – which is arguably the most accurate and complete global database on LSLAs – are constantly evolving as deals are added and updated, and despite thorough validation procedures, are inevitably subject to biases (see: <https://landmatrix.org/faq/#are-there-biases-in-the-data>). For instance, aggregate figures like the ones we presented in the text, are likely to underestimate the full scale of land deals (<https://landmatrix.org/faq/#why-do-the-numbers-constantly-change>).

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2021; Hall et al., 2015; Yang & He, 2021). While the application of the *Free, Prior and Informed Consent* (hereinafter simply FPIC) principle is typically seen as the best practice to promote voluntary and conflict-free tenure changes in land-based investments affecting local populations (MacInnes et al., 2017; Vermeulen & Cotula, 2010), the right to fair compensation arguably remains the most important legal protection mechanism in those situations – not infrequent in LSLAs – where consultation processes and FPIC fail, or where expropriation and compulsory land acquisitions are unavoidable (Verstappen et al., 2016).

The FPIC and the fair compensation principles are not new concepts in international law. Various international norms and soft laws, such as the *United Nations Declaration on the Rights of Indigenous People* (UN, 2007) and the *Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries and Forests in the Context of National Food Security* (FAO, 2012) – hereinafter simply the VGGTs – establish the right to FPIC and to prompt and fair compensation in case of land tenure changes. Article 32 of the *United Nations Declaration on the Rights of Indigenous Peoples* (UN, 2007) explicitly refers to land, granting to Indigenous Communities the right to free, prior and informed consent, as well as the right to fair compensation beyond pure economic damages. Endorsed by more than 140 countries and reaffirmed in the preamble of the *Declaration on the Rights of Peasants and Other People Working in Rural Areas* (UN Human Rights Council, 2018), the VGGTs broadens the perspective even further, recognising the FPIC principle and the right to fair compensation for all communities under customary and informal tenure regimes.

The recently revised *UNDP Social and Environmental Standards* (UNDP, 2019), in force from January 2021, indicate a preference for – and the precedence of – the right to FPIC over the right to fair compensation. The updated set of standards prohibits forced evictions and relegates the use of full and fair compensation to the ‘*exceptional circumstances*’ of ‘*unavoidable*’ displacements and evictions (Ibid., Standard 6, Part B). It also reaffirms the right to FPIC for Indigenous People whose traditional livelihood, culture, and territory – irrespective of the formal or informal nature of their land title – are affected by a development project (Ibid., Standard 6, Part B; Stakeholder Engagement and Response Mechanism, Part C).

The FPIC and fair compensation principles are also incorporated in laws and regulations at the national level. A number of countries have domestic provisions for fair compensation, such as the *Land Act* in Tanzania (United Republic of Tanzania, 2019), the *Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act* in India (Parliament of India, 2013), and the ‘*Takings Clause*’ of the Fifth Amendment to the U.S. Constitution. The *Customary Land Rights Act*, adopted in Sierra Leone in 2022, is arguably the benchmark for national laws enshrining the right to FPIC in customary tenure regimes, as it explicitly states that (Republic of Sierra Leone, 2022, §28, p. 15):

“No investment shall take place on any land subject to customary law unless the investor obtains the written free, prior and informed consent of at least 60 % of the male and female adult members of the family or a fair representation of the community with rights to the land”.

The FPIC principle is possibly becoming – both nationally and internationally – the gold standard in dealing with land tenure changes induced by land-based investments, development projects, mining activities, and other extractive industries. However, its domain of application remains largely limited to Indigenous People, and it is further reduced when national level legislation does not formally recognise customary and collective tenure regimes. The review by Tagliarino (2017) reveals that out of 50 countries assessed across Africa, Asia, and Latin America, only 7 provide compensation for Indigenous People and local communities with unregistered customary tenure rights, suggesting that

often the provisions on fair compensation and FPIC remain valid only on paper. When it comes specifically to LSLAs, the existing evidence suggests that consent and participation of Indigenous People and local communities are very limited (Arnall, 2018; Porsani & Lalander, 2018; Woods, 2020).

The fair compensation mechanism remains, in many jurisdictions across the globe, the main form of redress for local populations in the context of LSLAs characterised by expropriations, requisitions, and other compulsory forms of land acquisitions. However, the actual payment of a compensation is not a common outcome in transnational land deals (Nolte et al., 2016). Dissatisfaction can lead to turmoil, legal disputes, and land conflicts with long-lasting negative consequences for all stakeholders involved – even when some form of compensation is awarded to local populations (Tagliarino et al., 2018).

In this paper we explore whether the fair compensation of local communities and Indigenous People is an achievable outcome in the context of LSLAs; if it can be efficiently combined with the interests of foreign investors and host governments; and if fair compensation can reduce speculation in land-based investments and protect affected populations from potential negative impacts. We further attempt to find a rational justification for the zero compensation outcome and the proliferation of land disputes that is often observed on the ground in LSLAs.

The rest of the paper is organised as follows. First, we examine the theory and the practice of fair compensation, analysing – with the support of the theoretical literature and three real-world case studies – the key legal and economic views and the main human rights implications in the context of LSLAs. Based on the insights emerging from this review, we then formalise a simple yet original theoretical model, structured as a fair compensation sequential game in LSLAs. Our game considers a tailor-made range of actors, behaviours, tenure regimes, and outcomes – reflecting the peculiarities of transnational land deals. Thereafter, we discuss the main implications of the fair compensation game, linking our theoretical results back to the reality of LSLAs on the ground. The final section summarises our key insights, also providing concluding remarks and concrete policy recommendations.

2. Fair compensation and LSLAs: Theory and practice

2.1. The law and economics theory of fair compensation

The fair or just compensation principle dates back to at least 1215, with Clause 28 of the Magna Carta, a document that is seen as the symbolic foundation of individual liberties and rule of law in modern England, even though most of its clauses have been repealed or superseded by new legislation over the centuries. According to Ely (1992), in the English and American Common Law tradition, compensating landowners for tenure changes was already a widespread practice well before 1791, when the Bill of Rights was passed. The Bill included the Takings Clause in the Fifth Amendment to the U.S. Constitution, which reads: “*nor shall private property be taken for public use, without just compensation*” (National Archives, 2023, Amendment V). If tracking back the legal foundations for the fair compensation principle requires a journey over the centuries, it was only a few decades ago that economists started to formalise different approaches for the determination of the optimal compensation rule.

The seminal model proposed by Blume, Rubinfeld and Shapiro (hereinafter simply BRS) fuelled – and still fuels – the discussion over the optimal compensation rule (Blume et al., 1984). Their paper, which was framed around the U.S. Takings Clause, formally introduced an economic perspective into the compensation debate, which until then had been mainly driven by legal concerns. Cur-

rently, different economic views over the optimal compensation rule range between two extreme positions, namely the 'zero-compensation rule' and the 'full-compensation rule', which is sometimes also referred as the 'full-market-value rule' – although we will argue later that the full market value, in some cases, might fall short of the full value of the fair compensation.

The zero-compensation approach originally appeared as a corollary of the BRS model (Ibid.). The main justification for the idea that a zero-compensation could be optimal is related to the moral hazard of the landowner. Intuitively, private landlords whose land is at risk of expropriation would have the incentive to invest in that piece of land more than they would have done otherwise, thus inflating the market price of the land, as well as the value of the compensation to which they would be entitled to.

The mathematical formulation of the BRS model was such that – under specific circumstances and assumptions – zero-compensation was an optimal result, leaving no space for the moral hazard of landowners. The controversial nature of this specific corollary of the BRS model stimulated an intense debate and yielded to the multiplication of economic views and approaches over the optimal compensation rule. For instance, [Fischel and Shapiro \(1989\)](#) adopted a public choice perspective and considered the specific nature of the government explicitly. With a benevolent (or Pigouvian) government – that is, a government that will never overuse the eminent domain power vested in its hands – zero-compensation would be an optimal solution. However, in the case of a majoritarian or authoritarian government – that is a government for which the individual interests of its members would prevail over the collective interest – the optimal compensation would always be greater than zero, thus limiting the risk of excessive expropriation to the detriment of private landowners.

Other economists discarded the possibility that zero-compensation could be an optimal compensation rule. For instance, [Nosal \(2001\)](#) positioned himself on the other side of the spectrum of optimal compensation procedures, advocating for the so-called full-compensation rule. In particular, he suggested that the optimal compensation should be based on the price that private investors would pay in the free market when buying a given parcel of land – in other words, the market value. In his tax-and-compensation scheme, in equilibrium, the average market value of land equals the most efficient and fair indemnification for landowners whose land is expropriated.

Miceli and Segerson approached the optimal compensation issue from another angle, using a bargaining model in the context of the so-called land assembly problem ([Miceli & Segerson, 1994, 2007](#)). While rejecting the possibility that the zero-compensation rule could be regarded as optimal, they also warned of the risks associated with overcompensating private landholders – thus counterbalancing the concerns of excessive expropriation that were raised, for instance, by Fischel and Shapiro under their majoritarian government scenario. Miceli and Segerson (Ibid.) mainly focused on the holdout problem. They considered the case of a developer who wants to buy several plots of land owned by different individuals for a large-scale development project. Assuming that all plots are needed by the developer, holdouts could undermine the success of the whole project. Indeed, when only a few of these plots remain in order for the developer to assemble the whole area required for the proposed development scheme, the private owners of these plots gain disproportionate bargaining power, ultimately allowing them to obtain compensation that goes well above the full market valuation of those plots.

The risk of excessive expropriation by public authorities can be offset by holdouts and moral hazard for private landholders, especially in the case of projects requiring the assembly of several parcels of land. According to [Epstein \(1985\)](#), these two conflicting forces are balanced when a fair compensation, equal to the individ-

ual reservation price – the price at which the landowner would be willing to sell on the free market – is granted. However, even this line of reasoning has limitations. In particular, the problem related to the individual reservation price is that it includes a subjective component, which is not directly observable and varies according to personal considerations of each landlord, so that the observed market price does not necessarily and fully incorporate the subjective market price. The actual market price paid for land and properties (or for similar ones) – which would only include the individual reservation price in an ideal, perfect, land and property market – is often observable, and therefore it is traditionally used as a practical solution for the determination of the fair compensation value.

2.2. Beyond monetary evaluation: Land rights and human rights

Different economic approaches offer useful insights when it comes to the determination of the monetary value of the fair compensation, but they often neglect the aspects related to human and land rights. However, the weak recognition of land rights – particularly in customary, informal, and ancestral tenure regimes – is crucial to understand the current wave of LSLAs and to frame the fair compensation issue in this context. There is no official recognition of a universal 'human right to land', but a wide range of national and international laws acknowledge the pivotal importance of land rights and land tenure security for the realization of fundamental human rights, including the non-discrimination principle, the rule of law, the right to life, adequate food, adequate housing, as well as the right to an effective remedy, and the right of Indigenous People to self-determination ([United Nations, 2014](#)).

It is estimated that Indigenous People hold and manage 37.9 million km² of land, corresponding to about 30% of the planet's land area ([Garrett et al., 2018](#)). While the contribution of the traditional way of life of Indigenous People and local communities to sustainable and equitable conservation, forest management, and carbon sequestration is widely acknowledged ([Arneeth et al., 2019; Dawson et al., 2021; IPBES, 2019; Sze et al., 2022](#)), governments worldwide formally recognise only a fraction of these territories ([RRI, 2015](#)). Customary, collective, and ancestral lands *de facto* coexist – without being fully recognised *de jure* by national laws, nor mapped in cadastral registries – alongside other forms of tenure formally certified ([Alden Wily, 2018; De Schutter, 2011; ICCA Consortium, 2021](#)).

The lack of recognition, formalisation, and enforcement of land rights translates into a high level of tenure insecurity, which acts as a double-edged sword: on the one hand, it stimulates LSLAs by inflating the amount of land potentially suitable for investments, but, on the other hand, it increases the level of vulnerability of affected communities to dispossession and other negative consequences of LSLAs ([Doss et al., 2013; Nolte et al., 2022](#)). The existing evidence suggests that more than half of the foreign attempts to acquire land on a large scale are directed towards relatively highly populated areas, which were often already used as cropland, in destination countries that are characterised by weak levels of tenure security ([Messerli et al., 2014; Schoneveld, 2014](#)). These areas are often managed by Indigenous People and local communities collectively and sustainably, through low-intensity agroforestry and hunting practices that evolved with nature over the centuries, but with no formal recognition of their native land title. Land tenure regularisation processes for ancestral, indigenous, and community lands are often more complex and time-consuming compared to the land acquisition procedures faced by private companies and institutional investors involved in LSLAs ([Notess et al., 2021](#)). Even when due diligence is followed, and affected populations give their informed consent and are paid a full market price for their land, the land use changes induced by LSLAs can be deep

and pervasive, undermining the community's access to land and natural resources, their food security, and their cultural identity (Rulli & D'Odorico, 2014). In such contexts, the increasing pressure over land caused by LSLAs has triggered a series of land disputes and land conflicts between local populations, national governments, and international investors, leading in some cases to extreme consequences such as displacement, dispossession and forced evictions (Dell'Angelo, D'Odorico, Rulli, & Marchand, 2017; Meyer, 2016; Ndi & Batterbury, 2017; Nolte & Voget-Kleschin, 2014; Tagliarino et al., 2018; Tura, 2018; Woods, 2020).

In general, the LSLA phenomenon shows elements of continuity with other land rushes that have characterised human history in the past and some of its key features are deeply rooted in the legacy of the colonial era (German et al., 2013; Huggins, 2011; Wily, 2012). Nevertheless, the current wave of transnational land deals embodies a unique process of international commodification of land, with several new peculiar traits (De Maria, 2019). While global and local land markets can potentially reflect different levels of tenure (in)security in the price and availability of land, they do not automatically strengthen nor protect customary and informal land rights, especially when they are poorly defined and enforced by the law (Rulli & D'Odorico, 2014). In addition, some of the values ascribed to land by local populations across the globe cannot be simply translated into the monetary terms that define land as a commodity and its profitability. D'Odorico et al. (2017, p. 2235) explained well this point, saying that:

“for a large majority of rural people in developing countries, land represents a critical asset for subsistence and production. Land embodies a plurality of values that cannot adequately be reflected in a monetary unit. From an emic perspective, land has a cultural, spiritual, and societal value that is dismissed when it is reduced to a commodity.”

2.3. Fair compensation in practice: A collection of real world case studies

If the review of the economic approaches and the human rights implications of fair compensation is crucial for the theoretical understanding of the multiple issues associated with this concept, the jurisprudence – here intended as the analysis of the course of actual cases and court decisions – provides very practical insights. A notable example is the decision by the U.S. Supreme Court in *Kelo v City of New London* (Supreme Court of the United States, 2005). When the City of New London, Connecticut, initiated the expropriation of individual properties required for a private development plan, expected to enhance the local economy and job market, Susette Kelo and other landlords unwilling to sell went to court. The petitioners refused the full-market-value compensation they were offered, but they did not ask for more money. Instead, they claimed that the private nature of the development project requiring the forcible taking of their properties, would violate the public use restriction contained in the Fifth Amendment's Takings Clause. The Supreme Court ruled otherwise, recognising with its decision that even private investments can satisfy the public use requirement, and allowing the expropriation of the properties in question.

This interpretation of the Court raised some concerns. Miceli (2016) argued that most private development projects can be linked to some generic positive effects on the local population and economy, thus virtually fulfilling the public use requirement at all times. A pitfall of such a broad interpretation of the public use requirement is that it can disproportionately hit low-income households and ethnic and religious minorities. In fact, the urban and *peri*-urban areas that are home to disadvantaged population groups, are also very often the most attractive ones for both private developers (as these areas can typically offer the highest invest-

ment return) and local authorities (because these zones can usually guarantee higher public revenues from the prospect of increasing property taxes). The literature on urban land grabs has analysed similar situations, highlighting how tenure insecurity and power imbalances can exacerbate the vulnerability of poor and marginalised groups of urban dwellers, also increasing their exposure to dispossessions, relocations, and evictions (Neimark et al., 2018; Steel et al., 2019; Sweet, 2018).

The Kelo case shows how blurred can be the line that divides individual rights and freedoms from the greater good of the citizens (that is, the 'public utility'), but it is very far from the settings in which LSLAs occur. In fact, the existing literature on fair compensation is often framed in the context of high-income countries, and mainly revolves around the Anglo-American Common Law and the U.S. Takings Clause (Duke, 2014; Miceli & Segerson, 2014). The focus tends to be on domestic acquisitions requiring the expropriation of privately owned properties (Farber, 1992; Nosal, 2001), and only occasionally has it adopted the perspective of rural populations, Indigenous People, and customary land rights holders in developing countries (Ghatak & Mookherjee, 2014; Jana et al., 2019; Tagliarino, 2017).

To fill this gap and explore the peculiar implications of fair compensation in LSLAs, we present three distinct case studies in the rest of this section. First, we explore the Timber Creek case, that arguably is the most important ruling for Native Title compensation in Australia. Then, we look at the controversial case of the expansion of the land concession granted to the United Arab Emirates-based Otterlo Business Corporation in Loliondo, Tanzania. Finally, we analyse the land acquisition of the development project aiming at transforming the Lekki peninsula, near Lagos, into the largest free trade zone in Africa.

2.3.1. Timber Creek: Fair compensation and Indigenous People

The impossibility of determining in an objective way the true value of the subjective component of the reservation price is not the only problem arising when trying to establish the value of fair compensation. In this regard, the recent *Griffiths v Northern Territory of Australia* case – also known as the Timber Creek case – suggests that estimating the monetary value of fair compensation based on the average value of similar properties on the market might not be sufficient when Indigenous People are involved.

In the first instance, when determining the amount of the compensation to be paid to the Ngaliwurru-Nungali aboriginal peoples for the loss of their traditional land in favour of the development of the town of Timber Creek and its surroundings, the Judge adopted a dual approach (Federal Court of Australia, 2016). On the one hand, the Judge estimated the strictly economic loss – corresponding to 80% of freehold value of the land, plus the simple (and not compound) interest rate on this sum – using a criterion that very closely mirrors the full-market-price compensation rule. On the other hand, the spiritual, ceremonial, and cultural harm was evaluated separately, as a lump sum *solatium* – that is a sum of money awarded for pain and suffering – in addition to the present market value of the land that was requisitioned.

The final decision confirmed this approach. Indeed, the High Court of Australia (High Court of Australia, 2019) not only awarded a compensation to the Ngaliwurru and Nungali Peoples of Timber Creek for the economic loss deriving from (and since) the extinguishment of their native title rights and interests, but also for the cultural loss suffered by these Aboriginal communities – ultimately recognising the coexistence and the relevance of both purely economic and non-economic values in the final determination of the compensation. One of the key limitations of the fair compensation approach when Indigenous People and local communities are affected is that while the compensation can (and should) count for the loss or extinguishment of ancestral land

rights and intangible values, the simple payment of a monetary sum can hardly restore those rights and values that have been lost.

2.3.2. Loliondo: A private game reserve encroaching on ancestral Maasai land

The dispute that opposed a foreign company, the Government of Tanzania, and the pastoralist Maasai people in the Loliondo area – which is enclosed between the western border of the Serengeti National Park and the northern limit of the Ngorongoro Conservation Area – lasted for decades. It all began when the government approved the request of a foreign firm for the expansion of an existing private land concession in the Arusha Region. The concessionaire – namely, the Otterlo Business Corporation, a private company based in the United Arab Emirates – motivated the request for additional land with the desire to expand and improve the game reserve that the company was managing in the area.

Eventually, the case received global media coverage when it escalated into forced evictions, violent altercations, wrongful arrests, intimidations and repeated human rights violations (The Oakland Institute, 2018). The consequences of the Government-backed plan to extend further the existing game concession managed by the Otterlo Business Corporation over 1,500 square kilometres of Maasai ancestral lands in 2009 also caught the attention of the *United Nations Special Rapporteur on the Human Rights and Fundamental Freedoms of Indigenous Peoples* (Anaya, 2010, §424):

“Between 4 and 6 July 2009, the paramilitary police Field Force Unit of the United Republic of Tanzania, together with security forces from the United Arab Emirates enterprise Otterlo Business Corporation began a forced eviction of Maasai pastoralists inhabiting several villages in Loliondo. [...] Thus far, during the course of the evictions, more than two hundred bomas were completely burnt, as were the possessions and food supplies found within the bomas and in the nearby crop fields. The evictions impacted more than 20,000 pastoralists [...]. The evicted villagers were left homeless and without food, clothing, land, water, medical and other basic social needs. [...] Government representatives admit the burning of bomas, claiming that it was done to prevent residents from resettling in the villages from which they were evicted. The 20 May 2009 letter from the Executive’s Office ordering the evictions asserts that the reasons for evicting the pastoralists are environmental degradation from agriculture, unsustainable tree cutting and the establishment of permanent bomas within the hunting area”.

Remarkably, the Special Rapporteur framed the Loliondo episodes as the consequence of a shift in the Country’s conservation policy, that was “favouring the interests of private enterprises engaged in conservation tourism and wildlife hunting [...] over the rights of indigenous peoples” (Ibid., §424, j). The Rapporteur also noted that customary land rights of the Maasai Indigenous People are inextricably connected to their fundamental human rights, and therefore any limitation to the access and use of their ancestral lands would need a much stronger case than in most of the other circumstances, as well as the full adherence to all applicable national and international laws, conventions, and standards on human rights (Ibid., §443).

In 2015, however, the turmoil in Loliondo was still ongoing. This time, the European Parliament adopted a resolution calling for an independent investigation into the Loliondo land dispute, firmly condemning the “illegal displacement of local rural communities, the destruction of their villages and traditional way of life, and the violation of their basic human rights” (European Parliament, 2015, §1). Despite an historical legal victory in 2018, with the East African Court of Justice forbidding further evictions and intimidations against the Maasai People (East African Court of Justice, 2018) and a corruption investigation that incriminated the managing

director of the Otterlo Business Corporation and a number of Government Officials,² the Maasai struggle for land rights in the Loliondo area continues and the threat of further evictions and displacement from their ancestral land remains. The recent Multiple Land Use Model and the accompanying Resettlement Plan developed by the Tanzanian Government, aim at combining natural conservation goals with the expansion of touristic activities, as well as with the rights of the Indigenous People residing in the area, but they also imply the mass eviction and relocation of about 80,000 people (The Oakland Institute, 2021).

2.3.3. The case of the Lekki free trade zone in Nigeria

A 16,500 ha compulsory land acquisition was required for the creation of the largest free-trade zone in Africa, the Lekki Free Trade Zone. The development plan covered a large part of the Lekki peninsula, in the vicinity of Lagos, Nigeria, which belonged to the local rural, coastal, and lagoon communities. The project was founded and implemented through the Lekki Worldwide Investment Limited (LWIL), a consortium between a number of Chinese companies and the Lagos State Government. This time, various forms of compensation – including monetary payment, alternative land, jobs, and the creation of healthcare and education facilities for the affected populations – were agreed upon among the parties, as documented in a Memorandum of Understanding (MoU) signed in 2007 by nine local communities and the developing consortium (Tagliarino et al., 2018). Despite the binding clauses contained in the MoU, protests and discontent mounted in the following years, culminating in the assassination of the Managing director of the LWIL during a riot that erupted at the entrance of the project site. The police and demonstrators accused one another of having fired the death blow and the government opened an investigation on the LFTZ case.

The report of the government enquiry, conducted in 2015 after the incident, recognised major procedural flaws and acknowledged the failure to fully comply with most of the compensation and redress measures originally set into the MoU (Lagos State Government, 2016). This document explicitly acknowledged the “failure to faithfully implement and honour” the MoU (Ibid., §4.1), highlighting that the local communities were granted only 375 ha of land, out of 750 ha of alternative land that were promised in the MoU (Ibid., §5.1). Furthermore, the inquiry found that the community members received “inadequate or no compensation at all” (Ibid., §7); that they were compensated “for crops and buildings only but not for empty land” (Ibid., §7.1.4); that the scale used for calculating the value of the compensation, which was based on prices for agricultural goods recorded in the year 2000, was obsolete and needed to be revised upwards (Ibid., §7.2); and that “beneficiaries of compensation were paid in cash and sometimes through proxies in circumstances which facilitate diversion of money, theft, embezzlement, manipulation and fraud” (Ibid., §8.2.1).

The mixed public and private nature of the managing consortium of the Lekki Free Trade Zone suggests that the private investors and the public authority might have the incentive to collude and act strategically in the case of joint development projects. The public authorities here not only have the power to resort to expropriation and forcible takings, but also have a direct, vested interest in the project in the form of an economic joint-venture. This situation, in the Lekki case, led to strategic behaviours and to sub-optimal compensation outcomes both in terms of economic efficiency and equity. In countries characterised by weak institutions, tenure insecurity, corruption and poor law enforcement, the incentive for public officials to abuse the eminent

² See the online storymap *Maasai vs Otterlo in Loliondo*: <https://indigenousof.org/maasai-vs-ortello-in-loliondo/> (accessed on 29/06/2021).

domain power and ally with private investors at the expense of – often politically, economically and socially marginal – local communities might be even stronger. While communities can act strategically too, and can experience problems of elite capture of compensation payments and of some of the economic benefits associated with LSLAs (German et al., 2013), the space for holdouts and for other strategic behaviours induced by moral hazard is largely reduced when the affected populations only hold informal rights over land. In these cases, the fair compensation mechanism becomes a crucial tool to limit the excessive use of eminent domain and to protect vulnerable population groups from the unintended consequences of compulsory land tenure changes and relocations.

2.4. The fair compensation game in the context of LSLAs

If the FPIC and fair compensation principles are the known antidotes, why then do we continue to observe only a limited adoption of these principles and the proliferation of detrimental land conflicts and land disputes in LSLAs? This section of the paper addresses this question by presenting an original model for fair compensation in LSLAs.

In the existing literature, the fair compensation issue is typically framed as a two-player problem, in which the planning and developing power of the public authority needs to be balanced with the interests of private landlords. However, when we consider the specific context of LSLAs by looking, for instance, at the previously discussed Lekki dispute and the Loliondo case, the problem looks more like a three-player contest, in which private investors, governments, and local communities play each with their own strategies and interests. Transnational land deals are often motivated by the prospect of economic returns for private companies, investment funds, individual entrepreneurs, and joint ventures in which private shareholders retain the majority of shares (Nolte et al., 2016). National governments and public authorities attract foreign investors and define the rules of the game. Local populations often complete the picture, populating the land that has been identified as suitable for the proposed land-based investment. We explicitly take into account each of the three-players in our fair compensation game in LSLAs.

Our theoretical contribution is inspired by game theory, a discipline that has a long tradition of developing mathematical models for the study of conflict and cooperation choices made by rational subjects, and how they influence each other's welfare (Myerson, 1991). Our game is sequential (Fudenberg & Tirole, 1991), meaning that – just like in a game of chess – the players move one at a time. There are three players: a foreign investor (*inv*), which maximises profits; the government of the destination country (*gov*), which maximises its revenue from the proposed investment; and the local community (*com*), which maximises its land-based livelihood.

When the game starts, we assume that the investor has already compared different investment opportunities and has identified the most suitable concession area for the planned investment. The community affected by the land deal collectively holds formally recognised customary rights over the whole concession area. While this assumption captures collective forms of ownership that often characterise LSLAs, it reflect the best-case scenario when it comes to tenure security and formalisation of land rights of the affected communities. Here, fair compensation – in line with Verstappen et al. (2016) – is defined as compensation that at least restores the livelihoods of affected people, therefore using an approach that goes beyond pure income and market prices by also incorporating intangible, cultural and spiritual values into the wider definition of livelihood. The model assumes perfect and sym-

metric information among the players, so that all payoffs are known, and all actions are observable. The structure and the dynamic of the game – with key information such as payoffs, moves, nodes, and sequencing – are summarised in Figure 1.

The investor moves first, choosing whether to make an offer to the government on the fixed area of land that it values at V . This term (V) is exogenously determined before the beginning of the game, but is known to all players. If the investor does not make an offer, the game ends and both the government and investor get a payoff of zero, whilst the community's payoff is L , the livelihood value of the land to the community. If an offer is made, the investor chooses the amount D of that offer. The government then moves, and either rejects the investor's offer, in which case the game ends and the payoffs are as before; or accepts the offer. In the latter case, the government then chooses the compensation rule regarding the share of D that goes to the community in the form of compensation, K , and the share that government keeps, $D - K$. The community has a dichotomous choice: accept K in exchange for the loss of the land, or fight. Fighting imposes a cost C_i on each player i . Nature determines whether the community wins the fight, with probability q , in which case it keeps the land, and no external investment occurs; or loses, with probability $(1 - q)$, in which case it receives the compensation K , and the investment goes ahead.

2.4.1. Solving the game: Nature and the land conflict

This sequential game is solved using backward induction, so we first look at *node 4*. In game theory, including its Bayesian applications, 'Nature' is often introduced as a fictitious actor to represent uncertainty associated with factors that are not under the direct control of each player, and yet influence their decisions and payoffs (Fudenberg & Tirole, 1991). In this node, Nature plays and – like with the toss of a weighted coin – chooses whether the community wins, with probability q , or loses, with probability $1 - q$, should the land deal escalate to a conflict. With perfect and symmetric information, all players know what is the probability that they win or lose, and so it is possible to express their individual payoffs as expected values (E_i). We can write the community's expected payoff at this node as the probability-weighted sum of their payoff should they win, with probability (q), and the payoff should they lose, with probability $(1 - q)$:

$$E_{com} = q(L - C_{com}) + (1 - q)(K - C_{com}) = q(L - K) + K - C_{com} \quad (1)$$

Similarly, we can write the investor and the government payoffs at this node. Specifically, the government's expected payoff will be:

$$E_{gov} = (1 - q)(D - K) - C_{gov} \quad (2)$$

Finally, we can write the investor's expected payoff in *node 4* as follows:

$$E_{inv} = (1 - q)(V - D) - C_{inv} \quad (3)$$

Now, for the following steps, we need to keep in mind that equations (1), (2), and (3) represent – respectively – the expected payoff for the community, the government, and the investor, should they enter into a dispute.

2.4.2. Solving the game: How does the community play?

We now look at *node 3*, where the community plays. A risk-neutral community accepts the government's offer of K , rather than choosing to fight, if the compensation they are offered is greater than the expected payoff they would get by starting a land conflict, so if $K > q(L - C_{com}) + (1 - q)(K - C_{com})$. This implies that the community accepts K peacefully, if:

$$K > L - \frac{C_{com}}{q} \quad (4)$$

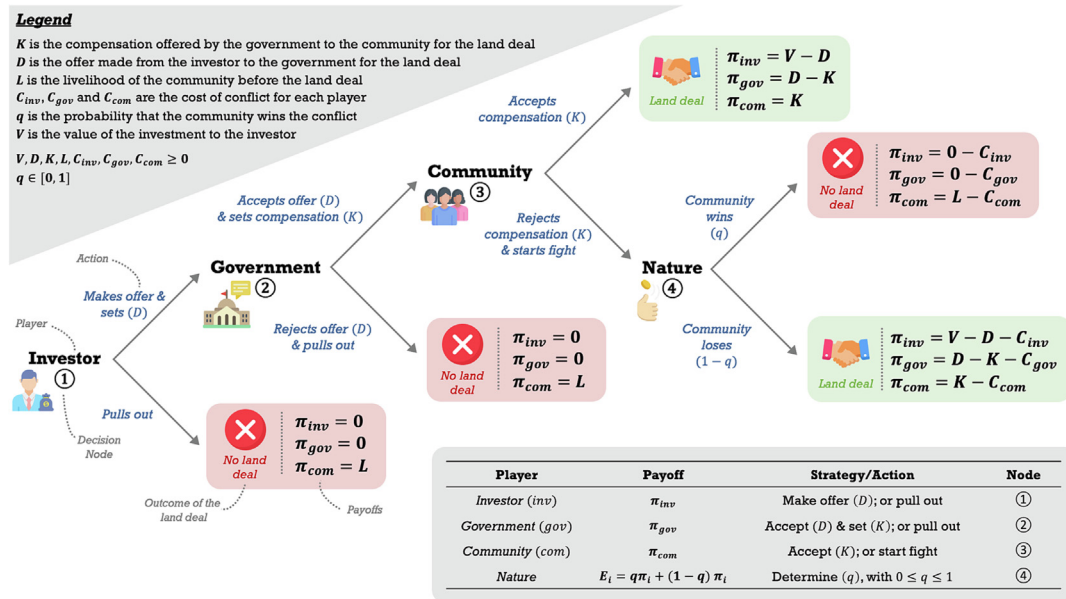


Figure 1. Overview of the LSLAs fair compensation game tree.

The value of K in equation (4), can be seen as a ‘switch’ (Robinson et al., 2002), as it is such that the community will accept any compensation that is at least equal to the expression on the right-hand side. For any compensation lower than this value, the community will always reject the land deal and start a land conflict. We can therefore rename this specific value of K as K^* , denoting the minimum compensation level that the community is willing to accept.

2.4.3. Solving the game: How does the government play?

We now consider the optimal choice for the government, which can either choose to offer some K to the villagers, or to reject the investor’s offer of D . Equation (4) defines the minimum compensation (K^*), that the government must offer the community to avoid a land conflict, that is the situation where the community rejects the compensation and chooses to fight. The government would never offer more than K^* , because the community’s reaction would not change, while the government’s return would fall. Thus, the government is maximising its payoff when avoiding a land conflict by offering K^* .

We can see that the minimum compensation required to avoid a conflict is higher if the community values the land more highly (that is, the livelihood that they can obtain from the land), if the community’s costs of fighting are relatively low, and if their probability of winning is high. If the government chooses to offer less than K^* , then its optimal choice of compensation is zero compensation – let us call this K_0 – and the community fights. The government also has the choice of rejecting the investor’s offer, in which case the payoff for the government is zero. Formally, the government can obtain the following payoffs in each of the possible game outcomes: $(D - K^*)$ when the governments accepts the investor’s deal and offers enough compensation to the community to avoid a conflict; $(1 - q)(D - K_0) - C_{Gov} = (1 - q)D - C_{Gov}$ when the government accepts the deal, but offers zero compensation to the community, thus starting a conflict; or a zero-payoff when the government rejects the deal. When comparing the different payoffs, the government therefore faces the following decision:

- Offer community K^* , if $0 > (D - K^*) > (1 - q)D - C_{Gov}$;

- Offer community $K_0 = 0$, if $(D - K^*) < (1 - q)(D - K_0) - C_{Gov} > 0$;
- Or else, reject the investor’s offer.

We can then rewrite the set of government’s choices as follows:

- Offer community K^* , if $D > K^*$ and $D > \frac{K^* - C_{Gov}}{q}$;
- Offer community K_0 if $D > \frac{C_{Gov}}{(1 - q)}$ and $D < \frac{K^* - C_{Gov}}{q}$;
- Or else, reject the investor’s offer and cancel the land deal.

These conditions reveal that, in certain situations, it may be optimal for a government to offer zero compensation to communities, even knowing that this move will lead to a land conflict as a consequence.

2.4.4. Solving the game: How does the investor play?

Finally, we consider the investor. In general, the greater the investor’s offer D , the lower the profit will be – whether the community fights or not. Certainly, the investor’s profits will always be greater for any given D if the community does not fight – that is, when the government offers them K^* as a compensation.

However, the investor knows that if they want the government to make an offer of K^* , the initial offer D they make to the government must be sufficiently high. Therefore, the investor chooses between the following options: no offer and zero profits; the minimum level of D – let us call it D_{K^*} – that leads the government to offer K^* and avoid a land conflict, with a payoff of $(V - D_{K^*})$ for the investor; or the minimum level of D – which we will label D_{K_0} – that leads the government to accept the deal, but offer zero compensation to the villagers, which triggers a community fight response and results in an investor payoff of $(1 - q)(V - D_{K_0}) - C_{Inv}$.

The investor therefore faces the following decision:

- Offer D_{K^*} , that is such that the government compensate the community with K^* , if $0 < (V - D_{K^*}) > (1 - q)(V - D_{K_0}) - C_{Inv}$;
- Offer D_{K_0} , that is such that the government compensate the community with K_0 and there is a fight, if $0 < (1 - q)(V - D_{K_0}) - C_{Inv} > V - D_{K^*}$;

- Or else, reject the investor's offer and cancel the land deal.

Therefore, the investor's preferred strategies can be formalised as follows:

- Offer the government D_{K^*} , if $V > D_{K^*}$ and $V > D_{K_0} + \frac{D_{K^*} - D_{K_0} - C_{inv}}{q}$;
- Offer the government D_{K_0} , if $V < D + \frac{C_{inv}}{1-q}$ and $V < D_{K_0} + \frac{D_{K^*} - D_{K_0} - C_{inv}}{q}$;
- Or else, cancel the land deal.

At this point, we have defined the conditions under which the different players, in each node, will chose their best move, thus describing how the game is played, what leads to different potential outcomes, and what are the resulting payoffs. The fair compensation game in LSLAs, at first glance, looks deceptively simple. However, this game is sufficient to demonstrate that zero compensation may be the optimal strategy, even though the players know that offering zero compensation lead to a land conflict. In addition, the game shows that, with the looming risk of a land conflict, the compensation offered to the community will be potentially lower than their initial livelihood before the land deal, as it will be discounted by the opportunity cost of the land conflict.

3. Discussion

Despite a growing consensus around the FPIC principle, with countries like Sierra Leone making a local community's free, prior, and informed consent mandatory with the *Mines and Mineral Development Act* and with the *Customary Land Rights Act of 2022*, fair compensation arguably remains the key legal protection mechanism in cases of compulsory land acquisition in most countries around the world. Notwithstanding its inherent simplicity, the fair compensation game in LSLAs presented in this article provides a number of important insights. The model is designed to reflect the limited bargaining power that local communities and indigenous populations affected by LSLAs typically have, accommodating the community's right to reject a deal, but not to negotiate the terms of the deal. Yet though the game grants the right to reject the deal to the local populations, together with full and complete information about the whole negotiation process, the game also suggests that these conditions are not sufficient, alone, for the actual achievement of fair compensation. The community cannot negotiate the compensation in the model, rather it is given only a dichotomous choice: either accept the compensation amount set by the government, or reject it and trigger a land conflict. The *right to consent* is inextricably related to the *right to reject*. If the former is frictionless while the latter comes at a cost, then there is space for strategic behaviours and power imbalances, and the fair compensation right is – in practice – weakened.

Another important contribution of the game is that it provides a rational justification for the proliferation of land conflicts that have often been observed in conjunction with LSLAs. Even if the fight comes with additional costs for all players – and, arguably, with a deadweight loss for the society as a whole – the land conflict outcome can be seen as the consequence of the rational optimisation behaviour of the different actors. Intuitively, land conflicts and land disputes are the results of the different – and often opposed – interests of the players, especially in a context where the actual opportunity cost of a land conflict is not the same for each player. When public authorities have discretionary powers in setting the compensation amount, and when the opportunity cost of fighting is relatively low for the investors and the government, and relatively high for the community, then the land conflict becomes a more likely outcome of LSLAs.

The identification of a rational justification for the proliferation of land conflicts in LSLAs leads to the next important contribution of this work. The game highlights a direct connection between the fight and the zero-compensation outcome, providing new evidence for the controversial debate that originated from the BRS model. The zero-compensation result is not rejected by the model, and, under specific circumstances, it is the dominant strategy for the investor and the government. If it can be argued that the zero compensation is not an efficient result from the perspective of the society as a whole, because it leads to conflict with additional costs for all players, nor it is a fair outcome for the local communities affected by a land deal, it can still be the best option to maximise the expected return for some of the players.

In this sense, the game also offers a rational justification for the lack of compensation for local populations affected by LSLAs that is often observed on the ground. For instance, the Loliondo land dispute can be framed in light of the zero-compensation outcome, with the government offering no compensation to the local population and the situation escalating to violence. On the one hand, the social, economic, and political marginality of the semi-nomadic pastoral Maasai community reflects a low probability of them winning a land conflict, with relatively high costs associated with opposing the land deal. Such a situation, on the other hand, becomes an incentive for the investor and the local authorities to provide no compensation and start a land conflict that they believe they can easily win, with an opportunity cost that is lower than compensating the local community.

Notably, the model also suggests that the government may offer the community a compensation K^* , that is typically less than the community's livelihood deriving from the land (L), unless the community can reject the deal and fight with a zero-opportunity cost. Intuitively, the players discount the fair compensation value that the community would be entitled to, by the opportunity cost of fighting. Formally, when the government compensates the community with $K^* = L - C_{com}/q$, the community will accept the land deal peacefully. As such, K^* ultimately depends on the pre-deal livelihood of the local community (L), but also on their cost of fighting (C_{com}), and on the probability of winning the dispute (q). *Ceteris paribus*, the greater the community's cost of fighting and the lower their probability of winning, the lower the fair compensation offer (K^*) will be. This implies that the community will often be offered a "fair" compensation that does not fully restore their pre-deal livelihood ($K^* < L$), and therefore, that the compensated populations will always be worse off compared to the pre-deal scenario, unless they can reject the deal at a zero cost. Notwithstanding the adoption of a fair compensation definition based on livelihood restoration, the model suggests that there is an incentive to undercompensate local communities, even in those situations where the community accepts the deal and the compensation offer peacefully. At the same time, the LSLA fair compensation game rejects the overcompensation of local populations as a possible outcome.

In this sense, the model reflects the evidence emerging from our case studies and from the empirical LSLA literature, which provides a number of examples where the actual payment of fair compensation turned out to be incomplete or insufficient, while virtually offering no evidence in support of the existence of overcompensation issues. This result also reinforces the idea that, in the specific context of LSLAs, the excessive use of the eminent domain power by public authorities is a greater threat to the achievement of fair compensation, compared to other traditional issues on the landholder side, such as holdouts and moral hazard.

The Lekki case, for instance, is a good example of how this theoretical result – that is, the existence of incentives to undercompensate affected populations – might become a tangible outcome

in the real world. The coastal communities whose land was expropriated for the development of the Lekki Free Trade Zone project willingly accepted the compensation offered under the terms of the MoU, but they only received a fraction of the money, the alternative land and the investment shares that they were promised (Tagliarino et al., 2018). While this outcome reinforces the importance of due process, it also suggests that the incentive to only partially restore the livelihood of affected communities was even stronger, with the Lagos State Government being a direct shareholder of the Lekki Free Zone development consortium.

The theoretical framework built through the fair compensation game in LSLAs already offers a number of original and important insights, providing a solid background for the understanding of the interactions between fair compensation, land conflicts and transnational land deals. However, this work is just the starting point for further research in this field. Further refinements and variations of the proposed game can help to answer other important questions that were not addressed directly in this research.

For instance, what would happen if the discretionary power of the government to rule the compensation amount was limited by law, for instance by setting a mandatory level of compensation? What would be the opportunity cost of ensuring such mandatory fair compensation in terms of cancelled investment and reduction of public revenue? Additionally, what would be the consequence of not looking at the community as one single player? Would this shed some light on elite capture mechanisms within local populations? Would uncertainty over fighting costs and other parameters lead to different strategies and outcomes?

4. Conclusions

This work has framed the well-known issue of fair compensation in the new and peculiar context of LSLAs. The implications of the commodification of land embedded in transnational land deals are complex and diverse, but opportunities and risks related to this phenomenon are often seen as two sides of the same coin. On the one hand, LSLAs bring new investments and prospects for both global and local development. On the other hand, however, this new wave of land-based investments comes at a cost, which is often paid by the most vulnerable population groups.

National and international legal frameworks provide tools – namely the FPIC (in the context of voluntary tenure changes) and fair compensation (in case of compulsory land acquisitions) – that have the potential to limit and prevent some of the negative consequences of LSLAs, including land conflicts, forced evictions and dispossession. However, the existing evidence suggests that these tools often remain only on paper, failing to protect the rights of indigenous populations and local communities affected by LSLAs. To understand and tackle the causes of this failure, we built a simple yet original three-player sequential game for fair compensation in LSLAs.

Our results suggest that the interaction among the three players – namely the foreign investor, the local community and the host-country government – is not trivial, even under the assumptions of formally recognised land rights and full and complete information. While these assumptions constitute a strong limitation, as they do not reflect the lack of transparency and the widespread tenure insecurity of affected populations that often characterise transnational land deals, they help us measure the expectations in one of the best possible case scenarios. In addition, if the results of our LSLA fair compensation game offer a potential rational explanation for the multiplication of land and natural resource conflicts across the globe, they do not imply that the fair compensation issue is the only root cause of such conflicts.

Under specific circumstances, zero-compensation and land conflicts are the rational consequences of each player's optimisation process, although the land conflict is in principle modelled as a suboptimal outcome, with additional losses for all actors. Even when the game ends with the community peacefully accepting the fair compensation that they are offered, the actual amount that they receive tends to be lower compared to their livelihood before the deal – as it is discounted by the community's opportunity cost of opposing the deal and starting a fight. In other words, when the right to consent is granted, but the rejection of LSLAs comes at a cost, this cost is directly deducted from the fair compensation of local communities. The higher the opportunity cost of the land conflict for the local population, the lower the fair compensation offer will be. Sadly, this also suggests that the more vulnerable and marginal these communities are, the greater their loss of livelihood will be.

Despite the intrinsic focus on LSLAs and fair compensation, the scope of this study can be further extended. Indeed, the original approach developed here can contribute more generally to framing and analysing both equity and efficiency issues arising from the increasing number of conflicts over the control of the limited natural resources that our planet has to offer.

CRedit authorship contribution statement

Marcello De Maria: Conceptualization, Methodology, Investigation, Visualization, Funding acquisition, Supervision, Writing - original draft, Writing - review & editing. **Elizabeth Robinson:** Conceptualization, Methodology, Funding acquisition, Writing - review & editing. **Giacomo Zanello:** Conceptualization, Writing - review & editing.

Data availability

No data was used for the research described in the article.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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