



LAND MATRIX



Few development benefits, many human and environmental risks

Taking stock of the global land rush

Analytical Report III | 2021



Acknowledgements

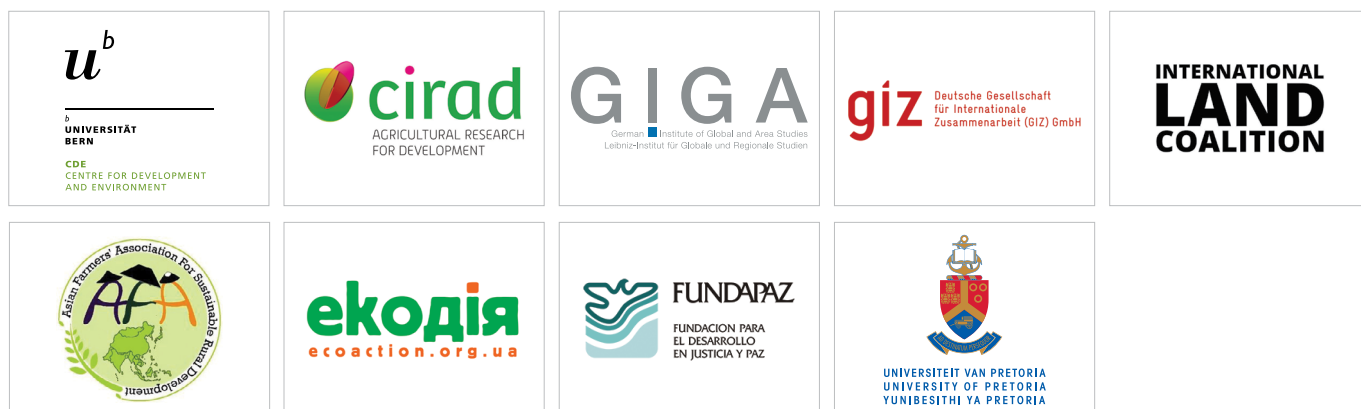
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The Land Matrix Initiative's partners are:



EXECUTIVE SUMMARY

More than 10 years after the surge in large-scale land acquisitions (LSLAs) in developing countries following the spike in agricultural commodity prices in the late 2000s, the Land Matrix Initiative has taken stock of the “global land rush” and its socio-economic and environmental impacts. Our findings draw on evidence from the Land Matrix database as well as a literature review in order to analyse and better understand the wide-ranging effects of LSLAs.

The results of our review and complementary analyses are sobering, in part alarming. Compliance with the principles of responsible business conduct is rare, and scant consultation with the affected communities is common. The non-consensual and uncompensated loss of land often comes with only little socio-economic benefits – be they employment, positive productivity spillovers, or infrastructure. “Business-as-usual” continues to destroy rainforests, natural habitats, and biodiversity on the agricultural frontiers of the Amazon, Southeast Asia, and the Congo Basin. Although progress has been made with regard to land governance, a lack of policy implementation in this area is evident. This is particularly apparent from our assessment of the application of the Voluntary Guidelines on the Responsible Governance of Tenure (VGGTs) and the transparency of land acquisitions.

While the development community has different views on desirable or feasible patterns of rural development and which instruments, policies, and priorities are required to achieve this in a sustainable way – views which are echoed within the Land Matrix Initiative and among the authors of this report, based on the evidence we have collected, we have reached a consensus that, by and large, LSLAs have not delivered on their promises for rural development.

As the ongoing implementation of LSLAs continues to pose significant threats to rural livelihoods and natural habitats, swift and decisive action is needed to protect both. To address the failings of LSLAs to date, we recommend policy changes in five priority areas:

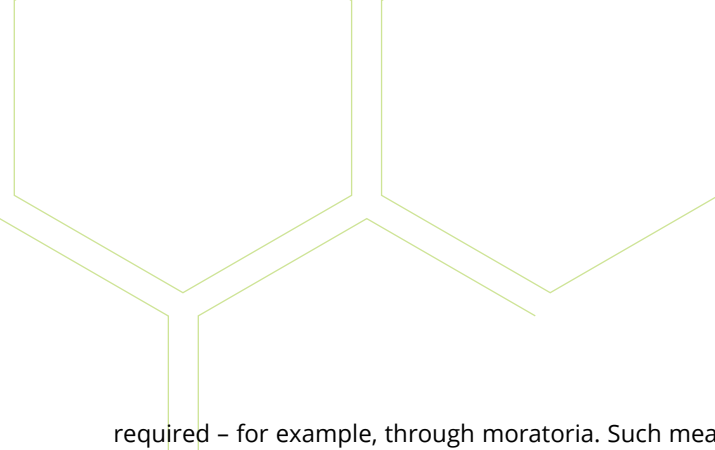
1. Land governance reforms and their effective implementation, based on the VGGTs, should be pursued and fast-tracked by governments. Implementation of and follow-up on the VGGTs should be made a prerequisite

imposed by all donors and investor countries for land- and agricultural-related financial support or investments. In this way, key risks associated with LSLAs can be addressed and effective land policy reform assured. Policy compliance and effective implementation should be secured through national and local multi-stakeholder engagement platforms. Importantly, these platforms need to be strengthened and supported by governments and donors.

2. Local development should take centre stage, with a focus on spillovers to and the inclusion of smallholder farmers. Not only do LSLAs need to comply with the principles of Responsible Investment in Agriculture and Food Systems (RAI), but host governments also need to develop and implement a strategic approach to rural development that pays more attention to local endogenous growth patterns and to positive spillovers for broad-based rural development. In particular, targeted measures should enhance benefits for smallholder farmers, and local development in affected areas should be prioritised.

3. International investment treaties must integrate human rights and environmental provisions, and human rights due diligence should be mandatory. To change the conduct of businesses, human rights and environmental provisions that reflect the specific risks of LSLAs should be included in international investment treaties. Further, we support the introduction of mandatory sustainability due diligence legislation. However, such legislation can only lead to more responsible land-based investments if the affected populations are able to use it effectively in the context of LSLAs. Relatedly, it is of the utmost importance that the participation of citizens, parliaments, and civil society in discussions about the treaties and frameworks that concern human and other basic rights in LSLA contractual arrangements is supported and encouraged.

4. LSLAs that lead to deforestation, the conversion of other valuable natural habitats, or damage important carbon stores such as peatlands need to be stopped. Host governments must develop comprehensive landscape plans that address the trade-offs between environmental, economic, and social objectives. Drastic action is urgently



required – for example, through moratoria. Such measures can be incentivised by the international community with benefits such as climate funding. Environmental governance around the risks associated with LSLAs, including the emergence of zoonotic diseases and declining water resources, also needs to be improved through stricter environmental impact assessments, broader planning approaches, and new methodologies.

5. Binding commitments to increase transparency are needed, for all stakeholders. Transparency should be increased by, firstly, making it mandatory if public capital is involved; secondly, supporting independent transparency

and monitoring initiatives; and thirdly, monitoring land ownership, land transactions, and land-use change at the local level. We call on all stakeholders to step up their efforts. Target countries should draw up transparent land-based contracts guided by the VGGTs and RAIs; commodity fora should apply transparency requirements to their members; and donor countries should support independent transparency and monitoring initiatives, including those at the local level.

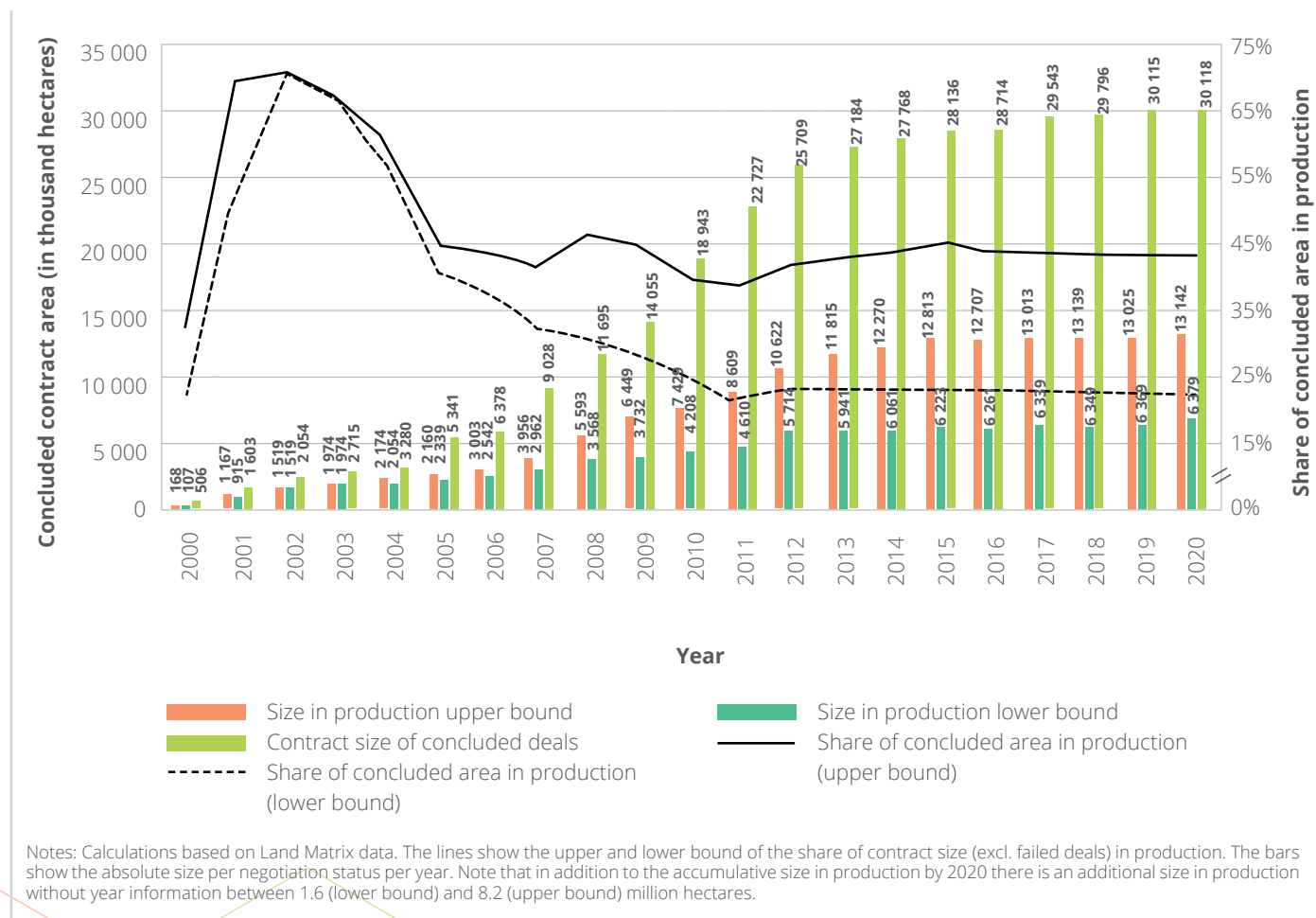
Main findings of the report

After a decade of gradually declining LSLAs, is a new land rush in the making? The analysis of the Land Matrix data presented in this report clearly reflects a surge in LSLAs in the wake of the commodity price hike of 2007/08, which saw investors hastening to secure land worldwide. This rush for land plateaued after 2010, and since 2013, deals totalling approximately 3 million hectares (ha) have been captured in the database compared to the total volume of 33 million ha for the 1 865 deals recorded by 2020 (of which 1 560 deals with 30 million ha are concluded). More moderate price expectations could be one reason for the slowdown in additional LSLAs after 2013, but policies have also changed. These include land moratoria in important

target countries, dwindling support for first-generation biofuels, and restrictions on selling land to foreign investors in some cases.

However, the pendulum may well swing back again as economies try to recover from the pandemic-induced economic crisis. Restrictions could be lifted and more favourable economic conditions – possibly a new “commodity super-cycle” driven by the post-COVID economic recovery – could once more accelerate global LSLAs. Indeed, some countries, including Indonesia and India, have already liberalised their land markets to attract foreign investments.

Figure 0.1: Cumulative global contract size of concluded deals over time and size under production (left axis) and share of concluded size under production (right axis)



The slow but steady implementation of land deals can be observed, with many also being (re)negotiated, transferred, or abandoned. The report has also uncovered **huge regional variation** in implementation rates. Since 2012 – taking into consideration an upper- and lower-bound estimate due to incomplete information on the exact size of the area under production and the additional area under production without year information – we estimate that between 30% and 73% of the contracted land has been put into production. These figures show that the LSLAs documented by the Land Matrix since the year 2000 had, by 2020, put an area of somewhere between 8 million ha, comparable in size to Sierra Leone or Austria, and 21 million ha, equivalent in size to Ghana or Great Britain, into agricultural production. They also imply that between 9 million and 22 million ha of the 30 million ha of land currently acquired by investors have not yet been used for production. In many world regions, especially sub-Saharan Africa, the Asia-Pacific region, Europe and Central Asia, deal implementation has been slow in the 10 years following the global land rush.

Delays in land deals often result from long negotiation phases, while deal implementation proceeds quickly following deal conclusion. Although land deals remain in the negotiation phase for 6.6 years on average, once a deal is concluded, investors (in 64% of the cases) generally start production in the same year. The effects of the different timing and trajectories of land deals are not known, and the reasons for the delays are not always clear. In some cases, delays occur because careful consultation with local communities draws out the process, but in others, they are due to technical and management challenges on the part of investors.

Deal failures are significant and grounded in the jatropha hype and other ill-conceived investments. The hasty acquisition of land (often that which is used by local farmers and pastoralists) for ill-planned projects in the aftermath of price spikes led to a significant number of project failures, particularly in sub-Saharan Africa, which accounted for half of all failed deals. Failed deals may cause lasting harm, especially if they involve conflicts over land. The reasons for failed deals vary, from miscalculations and misconceptions in planning and management to “realities on the ground”, which include financing problems, the underestimation of set-up costs, and agronomic difficulties. However, one crop stands out as “attracting” such problems: 50% of the deals intended for jatropha cultivation, again mostly in sub-Saharan Africa, have failed to date.

LSLAs are related to big global business that focuses on international commodity markets. Oil palm-related LSLAs recorded in the Land Matrix database account for more than 20% of the area currently cultivated with this crop worldwide, a

share which is also well above the 10% (of currently cultivated area) for rubber and sugar beet and the 5% for sugar cane. This demonstrates how substantially LSLAs have already added or will add to the global production of these crops. For staple crops, on the other hand, the shares are much lower. Estimates reveal, for example, that fully implemented LSLAs for maize, rice, or wheat would make up less than 1% of the globally cultivated area. However, in absolute terms these crops still cover large tracts of land – approximately 2 million ha each for maize and wheat.

Investors are diverse and truly global, originating from the North, the South, and tax havens. In addition to hailing from both the global North and the global South, many investors operate through investment hubs, many of them tax havens, thus obscuring their “real” origin. This explains why the top-10 investor origins include countries such as Cyprus (in fourth place), Singapore (seventh place), the British Virgin Islands (eighth place) and Hong Kong (ninth place). Other top investor countries are developing countries with competitive agricultural sectors, like Brazil and Malaysia, and high-income countries such as Great Britain, the Netherlands, and the United States. China also features, having climbed up the ladder to third place among the top investor nations over the last few years. However, contrary to the widely held belief that sub-Saharan Africa is the primary target for investors from China, only 23% of deals with Chinese investors actually occurred in this region. In fact, Chinese investors are far more active in neighbouring countries such as Cambodia, Laos, and Myanmar, with 54% of deals with Chinese involvement taking place in one of these three countries.

LSLAs occur regardless of the degree of land tenure security. While the literature confirms that land tenure security clearly plays a role in investors’ interest in specific deals, no linear relationship exists between the locational choice of investors and land tenure systems at the country level. In contrast to the case for other forms of foreign investment, land-based investments can frequently be found in countries with weak institutions. Indeed, in such contexts, LSLAs may lead to increased corruption and competition for land, particularly with locals whose land rights are less protected.

The land targeted by investors is often already used by smallholders, leading to competition over land and displacement without consultation or compensation. According to current Land Matrix data, in at least 18% of concluded deals, the land (or part of the land) was previously or is currently used for smallholder agriculture, pastoralism, or shifting cultivation. When combined with weak tenure security, this frequently leads to one of the most adverse outcomes of LSLAs: the displacement of local communities. Such displacement, as well as other forms of conflict, could be avoided through proper consultation. However, as the report

shows, consultation on LSLAs is inadequate in most cases. Indeed, for the more than 250 deals globally for which the Land Matrix has information on consultation, only 15% report that free, prior, and informed consent (FPIC) was given, while almost 45% report no consultation whatsoever.

LSLAs often exacerbate the weaknesses of land governance systems since they affect tenure security and the perception of it, particularly with regard to customary land and collective land rights. Indeed, the exclusion of local communities from their land, as well as from the decision-making processes and institutions governing the land, are putting enormous strain on land rights and governance systems. In many countries in Africa, for example, customary rights will be lost permanently, often leaving institutional voids. LSLAs can also induce institutional, structural, and practice-based changes, such as contract farming or tenure formalisation, which may reinforce pre-existing inequalities that fuel land insecurity and conflicts.

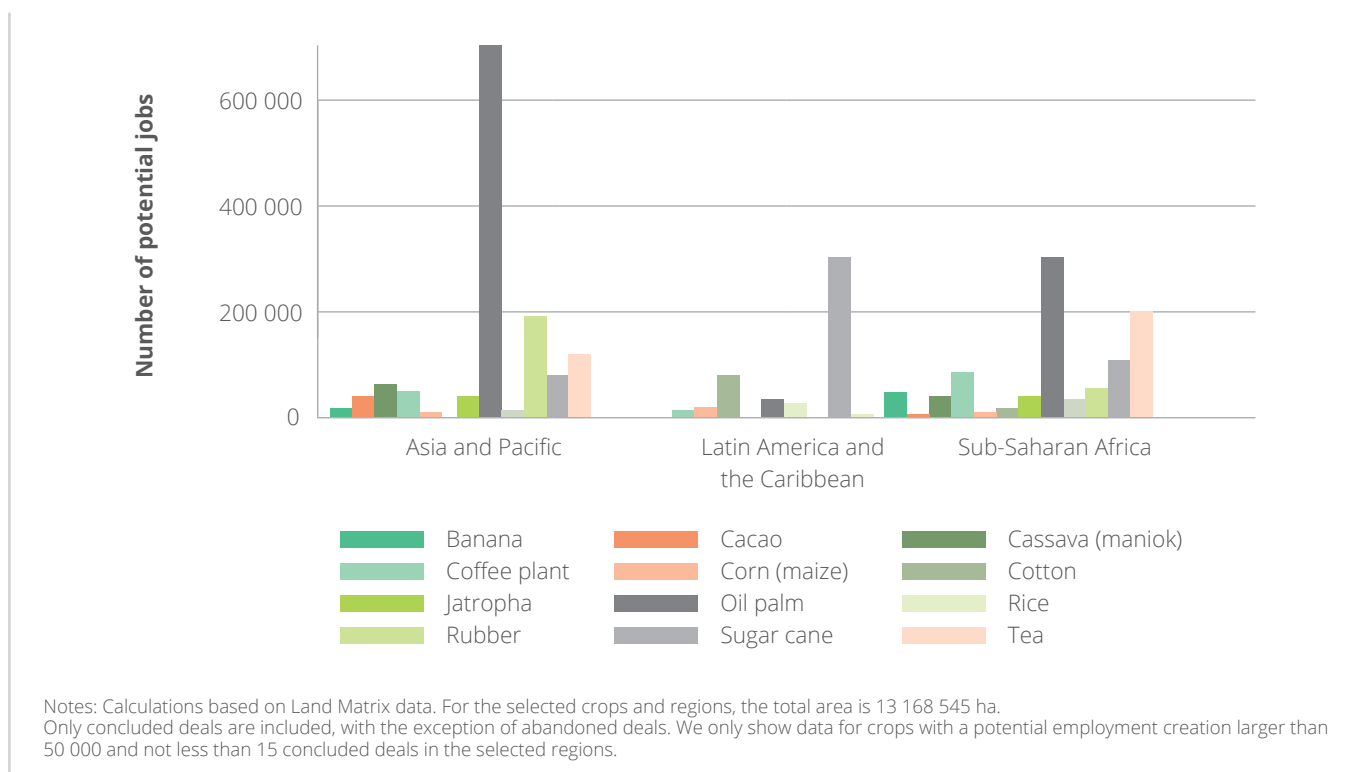
The emerging evidence on the socio-economic development impacts of LSLAs suggests that **the rural development expectations have remained largely unfulfilled** and that the promises of jobs, rural infrastructure, and positive spillovers

to smallholders have been broken, particularly in sub-Saharan Africa. **There is only limited employment creation due to the low labour intensity of production on most large-scale farms.** Depending on the crops and locations, our assessment of the effect of LSLAs on the quantity of rural jobs highlights that the net employment effects of large farms may be relatively small, or even negative, when LSLAs replace smallholder farms. Only highly labour-intensive crops, such as vegetables and roses, can replicate the labour intensity of smallholder farms (estimated at two permanent jobs per ha) at scale. In contrast, highly mechanised production – for example, in South America – employs one worker on approximately 100 ha, while semi-mechanised production in India employs one worker on approximately 7 ha.

Only a few crops generate significant employment.

One such crop is oil palm, the cultivation of which is relatively labour intensive. Since this crop covers large tracts of land in Southeast Asia in particular, and increasingly in sub-Saharan Africa, it could potentially create close to one million jobs worldwide if the LSLAs are fully implemented. Rubber, another relatively labour-intensive crop, could generate up to 200 000 jobs in Southeast Asia, while in Latin America, sugar cane

Figure 0.2: Potential employment creation through LSLAs by crop type



could create a further 300 000 potential jobs. The employment impact of other crops is generally lower at the country or global level, either due to the relatively small area, as is the case for cocoa, coffee, and tea, or due to low labour intensity, as is the case for most staple crops such as barley, sorghum, teff, and wheat. Most rural labour markets will therefore not benefit significantly from transnational LSLAs, except in some less densely populated countries – for instance, the Democratic Republic of Congo, Gabon, Laos, Namibia, and Papua New Guinea – where LSLAs hold some promise because the job creation potential relative to the labour force is high. On average, though, less than 0.5% of the national workforce will be employed on acquired land in most countries.

LSLAs are not a remedy for precarious labour markets since temporary and underpaid jobs prevail.

The limited evidence focusing on LSLA job quality indicates a trend towards less permanent salaried work, except for the few management positions, and a greater reliance on casual temporary work. While these temporary jobs may help diversify the income portfolio of the local population, they can only serve as an additional source of income alongside other permanent sources of income. Nevertheless, exceptions to this rather bleak assessment have been documented, including formal work in Kenya's horticultural sector and in selected soya production projects in Mozambique. It is important to note that there is often a gender dimension to LSLA labour demand. For example, while horticultural production in Kenya and Ethiopia predominantly uses unskilled female labour, oil palm (Indonesia) and sugar cane production (Liberia) is more male labour intensive.

Positive spillovers to smallholders are rare due to the inadaptability of capital intensive and scale-dependent new technologies.

Evidence on spillovers from newly established large-scale farms for grains and staples in sub-Saharan Africa suggests that they are extremely limited, and only moderately positive overall. This holds in particular for crops with larger yield gaps between smallholders and large-scale farms, such as maize production in Zambia where smallholder yields increased by 20% if farms were located near large-scale farms. In the oil palm sector on the other hand, smallholders, particularly in Southeast Asia, quickly took up the newly introduced oil palm, given that it is highly profitable even on a small scale. In Indonesia, smallholders currently account for over 40% of the total oil palm area. However, in many cases, new technologies are not adaptable to the small plots, limited budgets, and traditional skillsets of smallholder farmers. Although contract farming arrangements can help overcome some of these constraints, such arrangements are only found in 15% of the concluded deals captured in

the database. Moreover, contract farming may not always be beneficial for smallholder farmers because of unequal risk-sharing and high costs. There is also very little evidence on spillovers through local land, labour, and product markets, such as the depression of local crop prices for staples such as maize. Indeed, there is some evidence from West Africa on potentially adverse impacts on local smallholder farmers through the labour market due to increased wages for hired labour.

The expectation that large-scale land-based investment would improve social and physical infrastructure has remained unfulfilled.

Just 15% of the concluded deals recorded in the Land Matrix have information on the benefits promised in terms of infrastructure development, and of these, in only half of the cases have these benefits actually materialised on the ground. Even so, these data should be interpreted with caution due to potential under-reporting. Furthermore, LSLAs bring little to no tax revenue. Companies are often exempted from customs duties, income, and excise taxes, and sometimes even receive subsidies. If at all, tax revenue comes from the one-off sale of licenses and concessions. In fact, some companies even "optimise" taxes, for example, in Ukraine, where Land Matrix data reveals that countries such as Cyprus and Luxembourg, which are known for low corporate taxes, are the primary location of investors.

Under specific conditions, LSLAs can lead to poverty reduction, but the bulk of them do not.

In sub-Saharan Africa, the evidence suggests that the effects of LSLAs on poverty will be very limited, if not poverty-augmenting. In Asia, however, empirical evidence suggests that the oil palm sector, the primary target of investments according to the Land Matrix, has lifted millions of Indonesians out of poverty, while in Laos, LSLAs focused on various crops have contributed to poverty reduction. Both cases suggest that LSLAs are associated with poverty reduction when smallholders are included, farmers in the target region have the skillset to adopt the newly introduced crops and technologies, and LSLAs do not compete for smallholder and pastoral lands. The latter, however, often means that LSLAs encroach on non-agricultural land, such as forests, as has been widely documented with respect to the oil palm sector.

Local elites often control the redistribution of land, thereby reinforcing inequality.

LSLAs have, to date, received little attention in terms of their inequality effects. On the one hand, there is some evidence that local elites can take advantage of the redistribution of land or compensation, thus reinforcing pre-existing inequalities. On the other hand, recent

research indicates that employment and labour market effects could favour relatively poor households with little land, which may have positive distributional effects.

LSLAs have a limited impact on food security and cause competition for land to increase. Export-oriented LSLAs, particularly when related to biofuel production, have often been associated with threats to food security in target countries as they compete with food production for scarce resources. The empirical evidence on such effects is, however, ambiguous. For example, at the household level, the effect of specialised cash crop production on local dietary diversity is negative, but the effect tends to be small in size. In addition, positive income effects, such as income from cash crops or wage employment, partly counteract the potential losses in dietary diversity. Still, in certain settings where food markets are not easily accessible and income-generating activities are rare, on-farm production diversity may remain important for local food security.

LSLAs continue to be a key deforestation threat. LSLAs are a core driver of land-use change, contribute substantially to deforestation, habitat destruction, and land degradation, and, consequently, are associated with massive losses of biodiversity and high carbon emissions, particularly when tropical rainforests are affected. This grim assessment is supported by our own analysis, which combines Land Matrix data on international LSLAs with data on forest cover. Looking at data from 964 geo-located land deals in tropical regions with a total contract area of 19 million ha, we have found, for example, that whereas approximately 9.4 million ha were still forested in 2000, this area had been reduced by 20.2% (1.9 million ha) by 2019.

East Asia shows continued forest loss, tropical rainforests are at risk in sub-Saharan Africa, and old and new agricultural frontiers have emerged in Latin America. Some LSLA target countries, including Brazil and Indonesia, have been hotspots for deforestation for decades, but LSLAs have also created new deforestation frontiers worldwide. In East Asia and the Pacific, for instance, approximately 74% of the area around the location of the deals was still forested in 2000, a share which has declined by 16 percentage points over the past 20 years (mainly through oil palm expansions in Malaysia and Indonesia, but also through new agricultural frontiers in Cambodia, China, Laos, and Vietnam). Although deforestation rates have generally been lower in sub-Saharan Africa to date, partly due to the slower pace of LSLA implementation, tropical rainforests in Africa are presently also at risk. This is particularly the case at new frontiers, with huge deforestation threats in the Congo Basin and West Africa (specifically in Côte d'Ivoire, Liberia, and Sierra Leone) – often supported by deliberate government policies.

Of grave concern, many deforestation impacts from LSLAs are still expected. Our spatial analysis shows that, based on a 50% tree-cover threshold, approximately 39% of the total LSLA area was still forested in 2019; however, as many LSLAs begin to move into implementation, an imminent threat for remaining forests looms. **With increasing deforestation and damage to other ecosystems, biodiversity is equally affected.** Our data shows that 87% of LSLAs are located in regions of medium-to-high terrestrial biodiversity, of which 39% fall, at least partially, within biodiversity hotspot areas. The current pattern of LSLAs, which generally sees deals concentrated in tropical areas (where endemic diversity is higher), is harming global biodiversity far more than if these deals were located in more temperate climates. **The link between LSLAs and pandemic risks is another reason for concern.** Several mechanisms accompanying agricultural deals may contribute to the emergence of zoonotic diseases, and whole outbreaks of these diseases are seldom, if ever, factored in when assessing the benefits and costs of agricultural investments. Initial estimates indicate that the costs of a change in policies by creating incentives that reduce deforestation and wildlife trade – and thus the risk of pandemics – could be low compared to the cost of a pandemic.

LSLAs frequently produce crops requiring a large amount of water – even in dryland zones. Water resources are an important dimension of the potential environmental consequences of land acquisitions, as starkly illustrated by the fact that 54% of all deals recorded in the Land Matrix database are intended to produce water-intensive crops, including cotton, oil palm, rubber, and sugar cane. Worse yet, 34% of these deals take place in dryland zones, with 10% of them producing crops that require large amounts of water. The intensive use of water for LSLAs can also have negative environmental impacts in humid areas due to significant changes in the hydrological cycle through the conversion of rainforests to agricultural land. However, in many dryland areas, such as the Nile region, water-intensive crops like cotton, fodder, potatoes, and sugarcane have the added issue of being likely to cause increased competition and conflict between different users, sectors, and even countries.

This report clearly shows the urgent need to rethink LSLAs. The current practices of large-scale agricultural investments need to be transformed into responsible and sustainable contributions to economic and social development that respect human rights and the environment. In addition, our report shows the necessity of promoting broad-based rural development and endogenous growth patterns with clear priority given to smallholder development. In order to achieve these goals, fundamental changes in the conduct of both domestic and international businesses, as well as dedicated and targeted efforts by investor and host-country

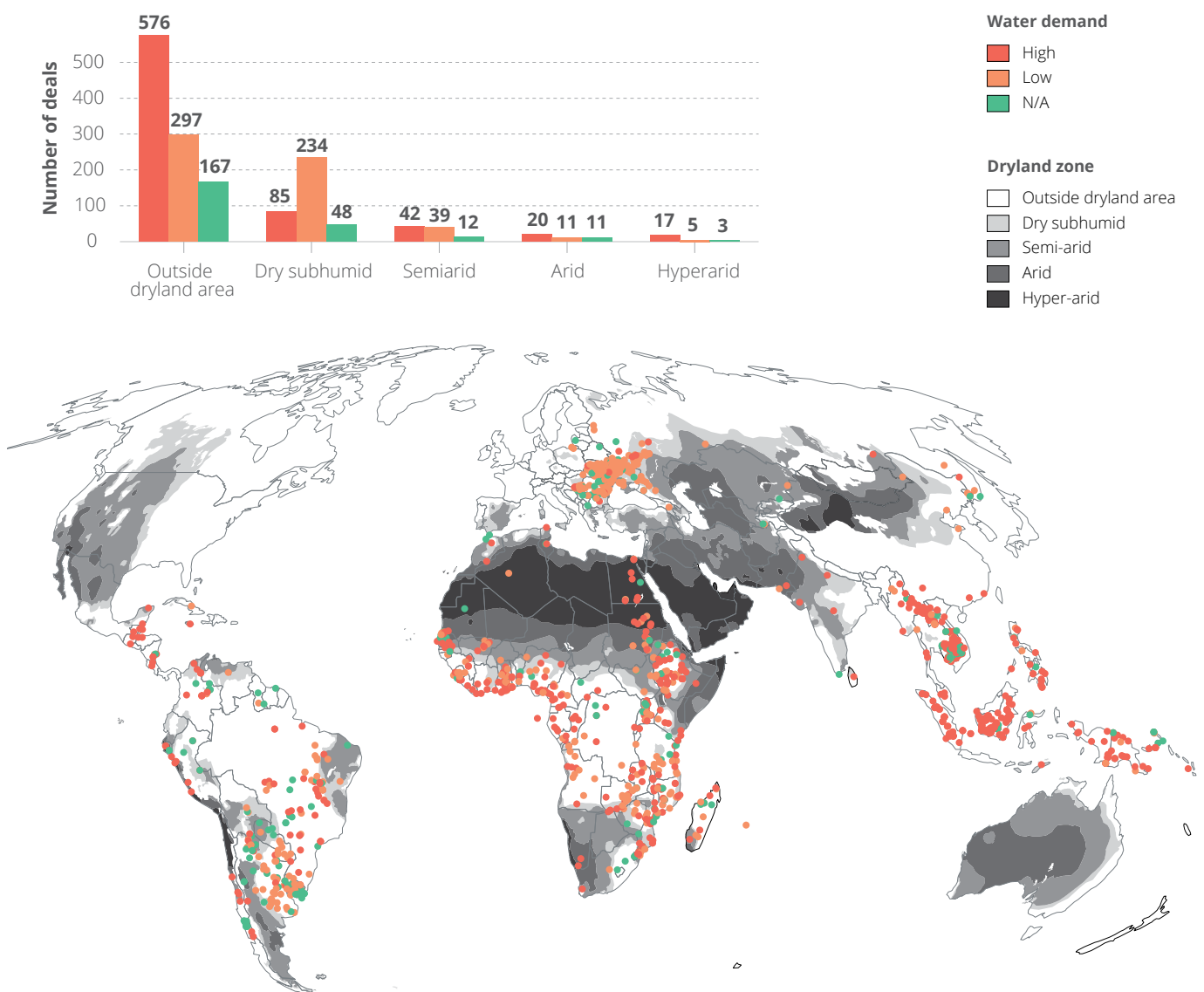
governments, are required. Although progress has been made with the VGGTs and RAIs, much remains to be done at all levels, from global to local, to effectively ensure that land rights are protected, social development in target regions is enhanced, and the environment is respected.

the deals assessed do not comply with the VGGT guidelines and standards at all, and only 25% are considered to have achieved the minimum compliance. Additional analyses on the transparency of land deals in other regions show a similar picture.

The implementation of the VGGTs and associated principles at the country and deal level remains low. Our analysis shows that in Africa, for instance, almost one-third of

LSLAs remain opaque due to the lack of information emanating from the local level in target regions, as well as investors, including those from the bigger and

Figure 0.3: Water demand categories of crops cultivated in LSLAs and dryland zones



Notes: Water demand categories based on Johansson et al. (2016) (High: > 8 500 m3/ha; Low: <= 8 500 m3/ha; NA: Crop demand not classified). Map background showing different dryland zones (in grey). LSLAs: n=1 568.

most developed countries, failing on transparency.

Even though some publicly accessible information regarding LSLAs is provided by companies and governments from G20 member states, detailed analysis of Land Matrix data shows that the operating company is known in less than 20% of deals, the exact location of the land investments is communicated to the public in only 15% of all G20 deals, and less than 10% of investors publish the purchase price or leasing fee. Regardless of prior efforts by the G20, to date its member states are no

more transparent on average than non-G20 investing and target regions. Indeed, despite the continuous and rigorous efforts of the Land Matrix Initiative over the last 10 years, the persistent shortcomings in the data confirm that there is a dearth of reliable information around the processes of LSLAs, in all countries.

Our report provides 11 specific policy recommendations for the road ahead.



Policy recommendations

Recommendation 1:

All governments need to pursue and fast-track land governance reforms and their effective implementation based on the VGGTs.

Recommendation 2:

Governments should utilise national and local multi-stakeholder engagement platforms to ensure policy compliance with regard to land management and investment.

Recommendation 3:

Land deals and their related projects need to comply with RAI principles and put local development centre stage.

Recommendation 4:

Governments need to develop and implement a strategic approach for land-based investments that pays more attention to positive spillovers for broad-based rural development, particularly through spillovers to and inclusion of smallholder farmers.

Recommendation 5:

Human and other basic rights (right to food, right to water, right to land), as well as aspects related to the environment, need to be included in international investment treaties.

Recommendation 6:

Mandatory human and other basic rights due diligence legislation should be introduced and affected populations should be empowered to effectively use such legislation in the context of LSLAs.

Recommendation 7:

LSLAs that lead to (or might lead to if implemented) deforestation, the destruction of other valuable natural resources or habitats, or damage to important carbon stores need to be stopped.

Recommendation 8:

Governments should develop comprehensive landscape plans that address the trade-offs between environmental, economic, and social objectives, and in which the purpose, role, and dimensions of LSLAs are clarified.

Recommendation 9:

All actors engaged in large-scale agricultural investment projects must increase transparency; indeed, when public capital is involved, it should be made compulsory.

Recommendation 10:

Donor countries should provide a mandate to and support independent transparency and monitoring initiatives.

Recommendation 11:

All countries should, at the local level, continuously monitor land ownership and control, land transactions, and land-use change.