

At a turning point?

Commercial investments and pressures on land in low and middle-income countries

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NB This paper is chapter 2 of a draft report that takes stock of evidence and lessons from trends in natural resource investments over the period 2006-2016. The stocktaking covers agribusiness, forestry, mining and petroleum. Comments are very gratefully appreciated – please send them to lorenzo.cotula@iied.org

2. Investment trends and pressures on resources

This chapter discusses investment trends in the agriculture, forestry, mining and petroleum sectors; developments in policy frameworks to promote investments in these sectors; and the implications for pressures on natural resources in low and middle-income countries. It finds that a wave of investments has increased competition for higher-value lands; and that while the commodity slump has changed the global outlook, pressures on resources are expected to continue growing in the longer term.

2.1. Trends in natural resource investments

The investment boom

Despite important sectoral specificities, in the early 2000s commercial investments experienced a new momentum across the natural resource sectors reviewed. Globally, investment in metals exploration is estimated to have increased ten-fold between 2002 and 2012, and investment in fossil fuels is estimated to have doubled over the same period (Le Billon and Sommerville 2016 citing SNL Metals & Mining 2014 and IEA 2014). Petroleum operations on new frontiers resulted in several low and middle-income countries becoming petroleum producers, including Chad (Irish 2014), Ghana (BBC 2010) and Mozambique (Macauhub 2014).

Over the same period, foreign direct investment in the forest sector increased as part of a wider trend towards greater internationalisation in the industry (Toppinen *et al.* 2010). Timberland investments by financial investors also grew (Toppinen *et al.* 2010), and the imperatives of climate change mitigation and adaptation have channelled new finance into sustainable forest programmes (World Bank 2008; Eliasch Review 2008; Norman *et al.* 2014; CIF 2016).

While figures on agriculture are contested, partly due to methodological challenges (Oya 2013; Edelman 2013; Scoones *et al.* 2013; Cotula 2013; Locher and Sulle 2014), evidence clearly points to an increased volume of agribusiness plantation deals in the period starting at least from 2006, and with renewed momentum following the food price hike of 2007–2008 (GRAIN 2008; Cotula *et al.* 2009; Deininger and Byerlee 2011; Anseeuw *et al.* 2012a; Nolte *et al.* 2016).

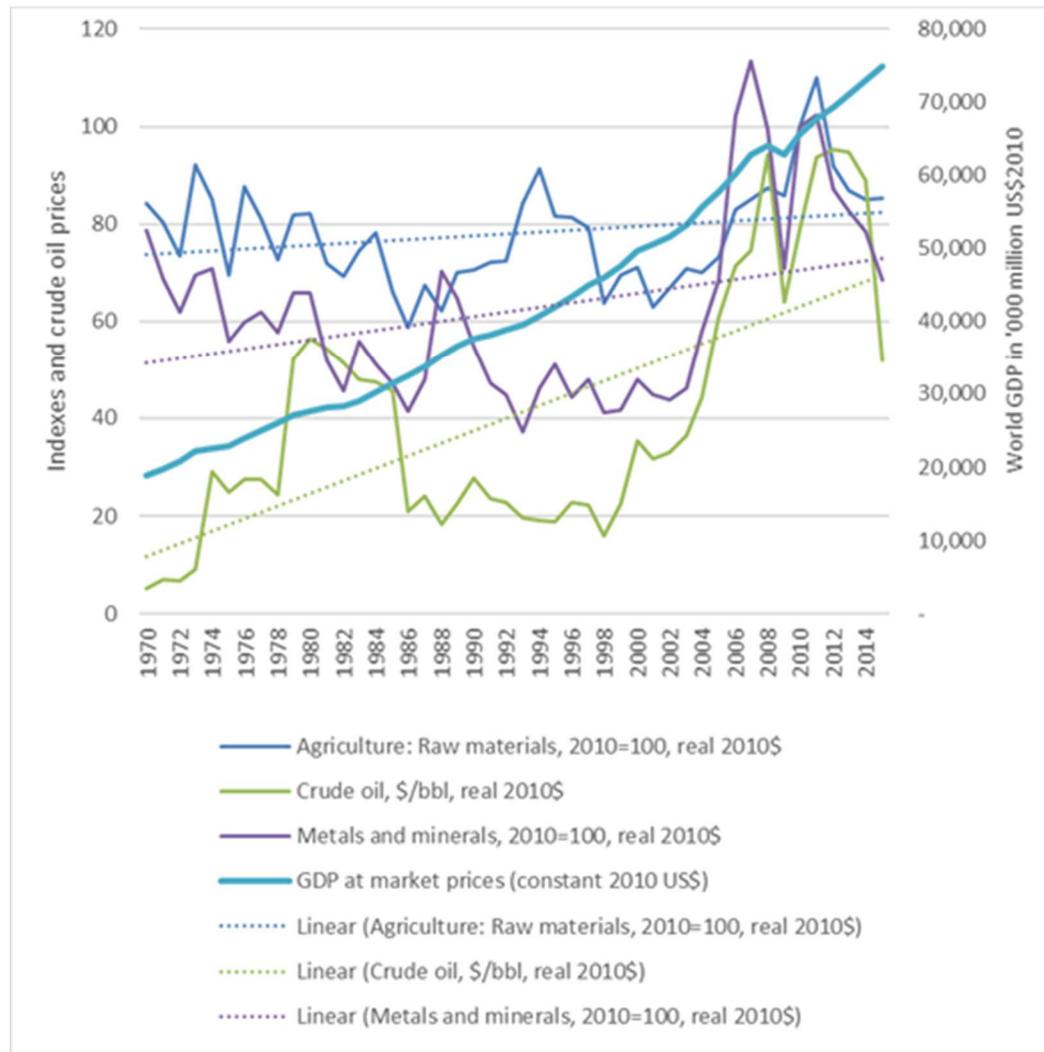
The investment boom triggered lively debates, particularly on agriculture. Enduring misperceptions permeated public discourses – for example, exaggerating the role of Chinese firms in agribusiness plantation deals in Africa (e.g. Brautigam and Zhang 2013), and neglecting the role of Southeast Asian companies in driving the expansion of oil palm in West and Central Africa (e.g. Cotula 2013). And while much public debate focused on foreign investments, national actors were major land acquirers in many countries, either directly (e.g. Deininger and Byerlee 2011) or as local partners in joint ventures with foreign capital (e.g. Sokphea 2016), partly as part of longer-term processes of accumulation and differentiation in national societies (refs).

Investment drivers: the commodity cycle, longer-term policy and market forces

Commodity prices tend to fluctuate significantly, but have displayed an upward trend over the past forty years – a trend associated with the overall growth of the global economy and the world’s population (Figure 1). The link between GDP growth and the price and consumption of crude oil is well established (see e.g. IEA 2015, 2016). The prices for other commodities such as agricultural products and metals and minerals have also exhibited an underlying upward trend, of varying intensity and despite significant fluctuations, over the past 45 years (Figure 1).

In recent years, changing commodity prices underpinned the wave of natural resource investments, mentioned above (Seppänen and Haltia 2007; Deininger and Byerlee 2011; Le Billon and Sommerville 2016). Oil prices began to rise in the early 2000s (see Figure 1), amidst “peak oil” narratives suggesting that the rate of crude oil extraction would begin to decline permanently (IEA 2009). Prices of minerals and metals also started to rise from 2003 (Le Billon and Sommerville 2016 and Figure 1), and agricultural commodity prices rose from the mid-2000s and spiked in 2011 amidst concerns about long-term mismatches between global food demand and supply (FAO 2016a and Figure 1).

Figure 1. Trends in global commodity prices and global GDP, 1970 – 2015, controlling for inflation



Source: based on World Bank data (see Annex 1 for detail)

These rising commodity prices improved return prospects and promoted investments in petroleum and mining (Le Billon and Sommerville 2016) and in forestry (Seppänen and Haltia 2007). In agriculture, higher and more volatile commodity prices shifted the distribution of risks and returns in global value chains: farming became a more attractive business proposition, and relying on open markets to source agricultural commodities involved greater supply risks (Selby 2009; Cotula 2013).

Besides the commodity cycle, the investment boom also responded to structural changes in the relevant industries. In the agriculture sector, for example, several forces increased the commercial appeal of the agricultural production segment of the value chain, including technological innovation that favours larger-scale operations (Deininger and Byerlee 2012), and more stringent quality, safety and traceability requirements that create incentives for companies to control farming or source from fewer larger producers (Deloitte 2013). Increased involvement of financial operations channelled large-scale capital in forestry (Toppinen *et al.* 2010; UNFF 2016; Brotto *et al.* 2016) and agriculture (Faye *et al.* 2013; Visser 2015; Fairbain 2015; Ducastel and Anseeuw 2016),

with farmland or forestland as an “asset class” being perceived to present significant risk/return advantages (Toppinen *et al.* 2010; Hardman and Co 2010; Savills World Research 2013).

Policy forces were also at play. Despite differences in the rhetoric, governments of diverse political orientations took measures to attract foreign investment in natural resources, in a trend that some described as the “commodity consensus” (Svampa 2013; Faundez forthcoming). Policy interventions included cross-sectoral reforms, such as revising investment codes, restructuring investment promotion agencies and liberalising trade; as well as sector-specific initiatives. For example, over 90 countries modified their mining legislation between the mid-1980s and the early 2000s in order to boost investment (Bridge 2004; Otto 2006). Policy efforts have also been made to promote investment in the forestry sector, including tax breaks (Tomaselli 2006; Gregersen *et al.* 2011; FAO 2016b); and in agriculture, including policies to make “idle” land available to agribusiness on favourable terms (Alden Wily 2012).

The commodity slump and investment patterns

The global outlook has changed considerably in recent years. Oil prices dropped dramatically starting from 2014 (IEA 2015 and Figure 1). Prices of minerals, metals and agricultural commodities declined after 2011 (Figure 1), but agricultural commodity prices remain above pre-2006 levels (FAO 2016a; see also Figure 1). There is debate about the causes of the commodity slump, with many commentators pointing to “structural” supply and demand factors (see e.g., on oil prices, Baffes *et al.* 2015, and Le Billon and Good 2016), and others to responses not immediately linked to supply and demand fundamentals (e.g. Tokic 2015).

Depending on the sector and the country, policy shifts also occurred. In the extractive industries, many states enacted measures to capture a greater share of the commodity windfall (Wälde 2008; Ward 2009). And in response to concerns about the social and environmental impacts of investments, several governments introduced restrictions on the size of agricultural land investors can lease (e.g. in Tanzania: Kiishweko, 2012), as well as moratoria on the issuance of new mining and agribusiness plantation concessions (e.g. in Laos: ABC 2012) or logging permits (e.g. in Democratic Republic of Congo: Kipalu *et al.* 2016), or moratoria on specified activities (e.g. biofuel plantations in Tanzania: Veit 2010; forest and peatland concessions in Indonesia: Kurniawan 2016).

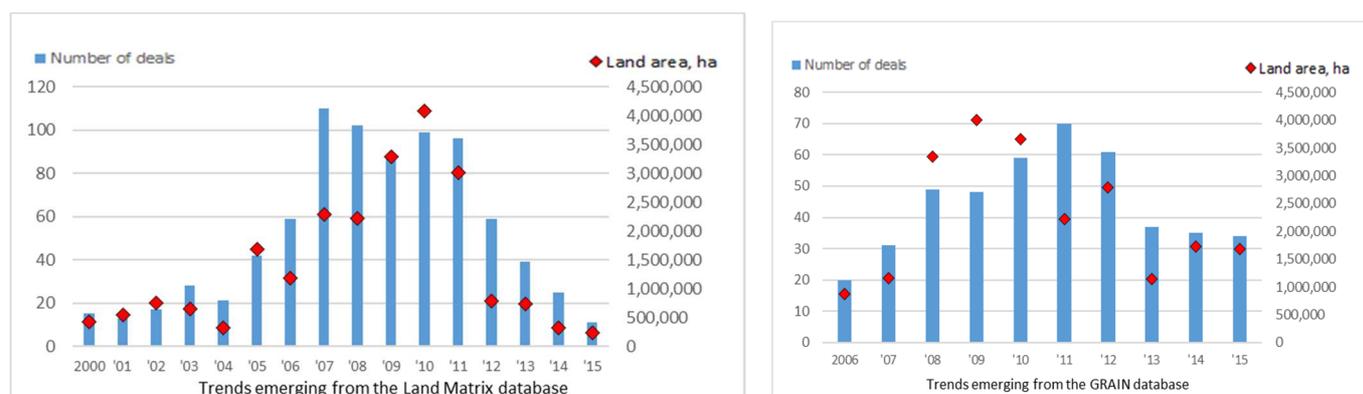
The changed commodity outlook appears to have affected investment trends. Lower prices led to delayed projects (World Bank 2016; Le Billon and Good 2016) and diverted investments (Deloitte 2015). In petroleum, the number of rigs in Africa and Latin America dropped sharply after the oil price fall (World Bank 2016). In the mining sector, exploration budgets dropped by 19% between 2014 and 2015 alone, and were reduced by half between 2012 and the end of 2015 (SNL Metals & Mining 2016). Data from the forest sector also points to a steady tightening of the global softwood timber supply base (Taylor 2016), and anecdotal evidence suggests that lower prices led companies to delay or discontinue major logging operations (e.g. Kaieteur News 2016).

Further, figures derived from global datasets suggest that the pace of deal making for agribusiness plantations has slowed (Figure 2 and Annex 1; IMF 2016 provides a consistent picture).¹ Qualitative evidence corroborates this finding, including industry reports of companies advising on how to exit agricultural production (e.g. Agrimoney

¹ In relation to Land Matrix data, Nolte *et al.* (2016) note that a lag in information becoming publicly available might have caused underestimation in the figures for more recent years.

2016). That said, there are continuing media reports of new agribusiness plantation deals, for example by Turkish firms in Mali (Diawara 2016) and Sudan (Doğan 2016) and by Saudi investors in Ethiopia (Tekle 2016) and Niger (Barma 2017).

Figure 2. Trends in agribusiness plantation deals



Source: derived from Land Matrix and GRAIN (2016a) data (see Annex 1 for information on methods)

Future outlook

Uncertainty in different commodity sectors makes it difficult to develop reliable projections. Commodity prices are likely to be a key factor affecting future patterns in natural resource investments. While the commodity cycle appears to have done its course, a long-term perspective points to an upward trend in both global GDP and commodity prices (see Figure 1). Global population growth, rising incomes and changing consumption patterns are ultimately expected to fuel demand for commodities in the medium to longer term (OECD and FAO 2016; IEA 2016).

In agriculture, for example, global demand for agricultural commodities is projected to continue increasing, albeit at a slower rate than in the previous decade, and with commodity prices varying but remaining above pre-2008 levels (OECD and FAO 2016). Continuing long-term structural changes in specific sectors, the capital appreciation and “safe haven” value of land as an asset class, and deliberate policy interventions could also affect the commercial appeal of the natural resource sectors.²

2.2. Trends in investment promotion frameworks

This section explores developments in the policy, legal and institutional frameworks that have the stated aim of promoting investment, including in the natural resource

² See e.g. Bolivia Information Forum (2015), discussing proposed measures to offset the extractives slump by expanding the agribusiness frontier.

sectors. The role of public policy was mentioned earlier, for example when discussing the forces that underpinned the investment boom over the period 2006-2016. This section focuses on ongoing developments. If successful, arrangements to promote investment could affect future investment patterns, and depending on specifics these arrangements could also influence the terms for mediating pressures on resources. A wide range of policy arenas are relevant but space constraints prevent a comprehensive review. A brief discussion of two examples – agriculture-related public-private partnerships and international investment treaties – can help to illustrate these dimensions.

Frameworks for public-private partnerships in agriculture

Despite their considerable diversity, institutional frameworks for public-private partnerships in agriculture typically aim to catalyse private-sector investment through concerted action at national, regional and/or global levels. They may involve initiatives originating from public or private-sector sources. This is illustrated by the close collaboration and interlinked governance structures between the New Alliance for Food Security and Nutrition, which the G8 launched in 2012 to boost agricultural development in Africa; and Grow Africa, which was jointly launched in 2011 by the World Economic Forum (WEF), the New Partnership for Africa's Development (NEPAD) and the African Union (New Alliance for Food Security and Nutrition and Grow Africa 2015). In Southeast Asia, WEF launched Grow Asia in 2015 in collaboration with Association of Southeast Asian Nations (ASEAN) (Grow Asia 2016).

These global or regional frameworks cascade down to the national level. For example, the New Alliance involves Country Cooperation Frameworks that embody commitments from different stakeholders: governments often commit to policy reform and/or implementation, donors to development aid, and private-sector companies to new investments.³ At the country level, institutional frameworks may also be associated with spatial development initiatives, including agricultural development corridors such as the Southern Agricultural Growth Corridor of Tanzania (SAGCOT) in Tanzania (SAGCOT 2011; Gálvez Nogales 2014) and the Beira Agricultural Growth Corridor (BAGC) in Mozambique (BAGC 2010; Gálvez Nogales 2014); agricultural growth poles such as the Bagré Growth Pole in Burkina Faso and a similar initiative being explored in Niger (UNECA 2016); and agro-processing zones such as the Bukanga Lonzo Agricultural Business Park in the Democratic Republic of Congo (Jones 2014; Ulimwengu 2016).

Depending on the commodities and the context, some such schemes may be associated with targets to expand cultivated land – for example, 350,000 hectares in SAGCOT and 270,000 hectares in the Beira Corridor (Gálvez Nogales 2014). This may involve investments in medium to large-scale commercial farms (e.g. Gálvez Nogales 2014). However, the emphasis is often on value chain development, commercial investments in agro-processing and distribution, and linking small-scale farming to regional and international markets (e.g. SAGCOT 2011; Gálvez Nogales 2014; Levard 2014; Grow Asia 2016).

Supply chain relations may involve direct arrangements between agribusinesses and farmers and/or farmer organisations (e.g. contract farming), and possibly framework agricultural commercialisation contracts whereby governments grant agribusiness firms the (possibly exclusive) right to supply inputs to farmers and purchase produce from them, develop processing infrastructure and/or commercialise the crop in a given

³ The Country Cooperation Frameworks are available at <https://new-alliance.org/resources?type%5B%5D=Cooperation%20Framework>.

geographic area (Cotula and Berger 2014; see also Tanzania Daily News 2017, and Citizen 2017).

Initiatives to commercialise agriculture have attracted considerable interest from both supporters and detractors (e.g. Gálvez Nogales 2014; Oxfam 2014; ActionAid 2015; ISPC 2016; De Schutter 2015; GRAIN 2016b). In the context of this analysis, they are primarily relevant for their aim and potential of increasing commercial investment in agriculture – even though the specific commitments companies make might not necessarily materialise in full.

An assessment of the implementation status of 56% of the 292 letters of intent submitted by companies participating in Grow Africa (for an estimated total value of some US\$10 billion) indicated that, as of 2014, 80% of the commitments were either on plan or facing minor implementation problems. Through these investments, participating companies reportedly reached over 8.2 million small-scale farmers in 2014, two and a half times the comparable figure for 2013. However, amounts invested by 2014 appeared to account for less than 10% of commitments made (New Alliance for Food Security and Nutrition and Grow Africa 2015).

While primarily relevant to agriculture, these initiatives can involve linkages to developments in other sectors too. Research highlights the connections between several agricultural growth corridors and mining developments – partly because extractive industry projects can involve the development of transport and other infrastructure, which in turn is deemed to be able to unlock agricultural potential in otherwise remote areas (Weng *et al.* 2013). For example, mining and infrastructure projects constituted an important part of the rationale and catalysing force of the Beira Corridor in Mozambique (BAGC 2010).

International investment treaties and arbitration

The period 2006-2016 witnessed major evolutions in the development and activation of international legal frameworks to facilitate cross-border investment. Until relatively recently, trade negotiations focused on multilateral arrangements at the World Trade Organization (WTO), while treaties to promote foreign investment primarily involved bilateral and regional negotiations. Trade and investment negotiations have more recently converged: the most ambitious negotiations now involve comprehensive regional or bilateral economic treaties that cover both trade and investment (UNCTAD 2013).

In the first half of 2016, close to 150 countries worldwide – including many low and middle-income countries – were involved in negotiating at least 57 investment treaties (UNCTAD 2016). These negotiations include “mega-regional” deals such as the proposed Regional Comprehensive Economic Partnership (RCEP) being negotiated between the ASEAN states and China, India, Japan, Australia and New Zealand. Although usually not specific to the natural resource sectors, these international legal developments can have a significant bearing on natural resource investments. For example, trade preferences can encourage companies from non-eligible countries to set up ventures in countries that enjoy preferential market access (UNCTAD 2005; McKay *et al.* 2016). Trade treaties can also trigger extensive national law reforms including in areas relevant to natural resource investments (e.g. Anaya 2009).

International investment treaties – including standalone treaties and investment chapters in wider trade and investment treaties – have an even more explicit connection to investment promotion. Under many such treaties, states agree to provide each other’s investors with specified standards of treatment in the expectation that this will promote

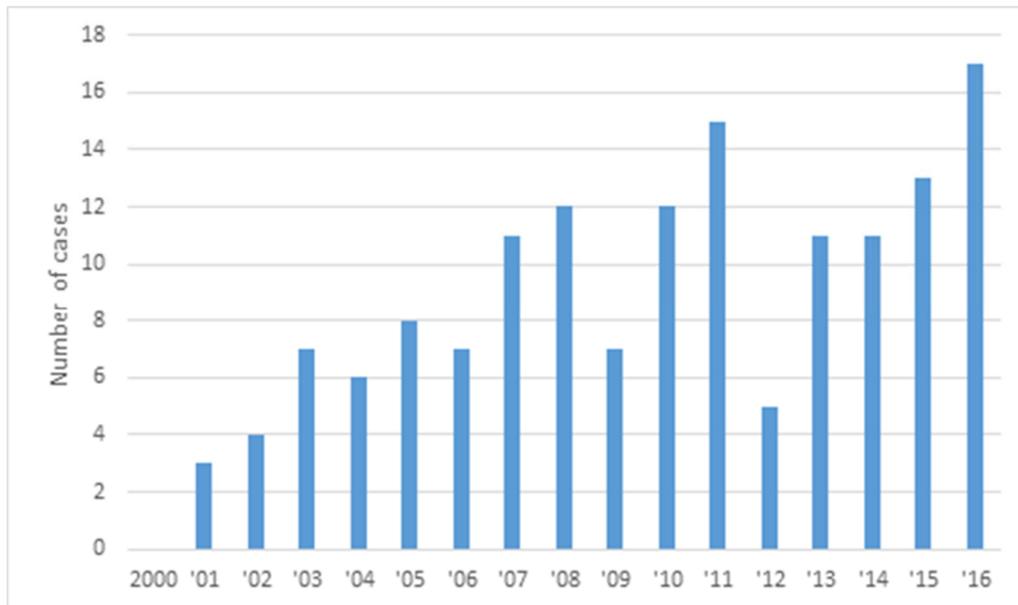
cross-border investments. In most cases, these standards primarily relate to investment protection, but a growing minority of treaties also cover investment liberalisation. Most investment treaties allow investors to bring disputes with states to international investor-state arbitration (e.g. Newcombe and Paradell 2009; Dolzer and Schreuer 2012; and with a specific focus on the natural resource sectors, Cotula 2016b). In practice, evidence of whether investment treaties do promote foreign investment is mixed (see e.g. Hallward-Driemeier 2003, Salacuse and Sullivan 2005, Neumayer and Spess 2005, Yackee 2011, Berger *et al.* 2011, Colen *et al.* 2014, Cotula *et al.* 2016 and Danzman 2016).

Over the period 2006-2016, the pace of investment treaty making slowed, but the global stock of treaties reached over 3000 (UNCTAD 2016). Qualitatively, many recent treaties involve economically and politically ambitious deals – in terms of treaty content and number of states parties (UNCTAD 2016). Evidence points to considerable treaty coverage of natural resource investments in low and middle-income countries, including an estimated 64% of all documented agribusiness plantation deals concluded since 2000 (Cotula and Berger 2015).

The number of investor-state arbitrations brought under investment treaties has increased over time. By 2016, investors brought some 700 such arbitrations against over 100 states to challenge state conduct in a wide range of policy areas (UNCTAD 2016), with the natural resource sectors accounting for 30% of the caseload of the International Centre for Settlement of Investment Disputes (ICSID), a prominent global forum for investment treaty arbitration (ICSID 2016).

Figure 3 points to a rapid increase in activation of treaty-based investor-state arbitration in connection with natural resource investments, particularly extractives. The commodity boom, and measures taken by states to tap into the higher returns, was among the factors underpinning several arbitrations. But while these proceedings are between an investor and a state, in a number of cases the underlying dispute involves affected communities too – for example, where grassroots groups mobilised against investment projects. In these contexts, investment protection provisions could affect the terms for addressing competing claims to land and natural resources (Cotula 2015; Daniels 2015; Thrasher and Wise 2015; Cordes *et al.* 2016; Perrone 2016; Phillips Williams 2016; Cotula and Schröder forthcoming).

Figure 3. Trends in investor-state arbitration concerning natural resource investments



Source: based on UNCTAD data (see Annex 1 for detail)

Future outlook

While the pace of actual investments in the natural resource sectors considered has slowed, the review period has witnessed significant developments in the legal and institutional infrastructure to promote investments. Depending on the effectiveness of the diverse policy instruments deployed, this trend could boost investment flows in the medium to longer term. It could also affect the nature of investments and their wider reverberations.

In agriculture, for example, the development of national to global frameworks for public-private partnerships highlights the need to consider not only agribusiness plantation deals, now in decline, but also wider processes of agricultural commercialisation that involve investments in different segments of the value chain. The geographically bounded nature of some public-private partnership schemes, particularly spatial development initiatives, would also call for a sharper analytical focus on geographic “hotspots” that are expected to experience higher levels of investments.

International frameworks to promote investment can also affect the terms for addressing natural resource disputes between businesses, governments and communities. This is particularly the case of international investment treaties and arbitration. It compounds the case for monitoring investor-state arbitrations in the natural resource sectors, and more generally evolutions in the overarching international investment frameworks.

2.3. Commercial pressures on resources

Natural resource investments can have both positive and negative social, economic and environmental outcomes, and they can raise difficult distributional issues where positive and negative outcomes are spread unevenly. The academic literature highlights that investment can contribute to economic development and improve livelihoods, for

example by creating jobs, providing opportunities for local suppliers, developing infrastructure and contributing revenues to finance public services (e.g. Li and Liu 2005; Kemeny 2010; Deininger and Byerlee 2011; Gohou and Soumaré 2012; World Bank and UNCTAD 2014). The potential for harmful impacts on affected people and ecosystems is also widely recognised (e.g. Boocok 2002; Cotula *et al.* 2009; Deininger and Byerlee 2011; Anseeuw *et al.* 2012b; Arcus Foundation 2014, 2015; WWF 2015).

A comprehensive assessment of social, economic and environmental outcomes is beyond the scope of this report. Instead, this section discusses the implications that trends in investment patterns and frameworks can have for pressures on land and natural resources in low and middle-income countries. To tackle this issue, this section examines data in the following three areas:

- Land footprint of natural resource investments in low and middle-income countries;
- Land availability in these countries;
- Investment-related land and resource disputes.

What is the land footprint of natural resource investments in low and middle-income countries?

Data on affected land areas in low and middle-income countries is of varying availability and quality, and it is difficult to assess the implications of aggregate figures of scale for pressures on land at the local level – not least because purely quantitative measures say little about differences in the quality, value and use of the land transacted (Scoones *et al.* 2013). Overall, available figures suggest that the recent wave of natural resource investments had a significant land footprint.

In agriculture, the Land Matrix contains data on agribusiness plantation deals for 24.1 million hectares of land, which were concluded in low and middle-income countries over the period 2000-2016 (Nolte *et al.* 2016). This figure of aggregate scale is significant, but considerably smaller than earlier estimates based on past versions of the Land Matrix dataset – the highest figure being 203 million hectares (Anseeuw *et al.* 2012b).⁴ Systematic national inventories based on official government records suggest that, at the country level, agribusiness plantation deals (including both foreign and domestic investment) may account for a very small share of national land suitable for rain-fed agriculture – for example, between 1.1% and 1.9% in Ethiopia, Ghana and Tanzania (Cotula and Oya 2014).

However, evidence also suggests that the deals may be concentrated in specific districts or regions, and as such they exacerbate competition for land in high-value locations (Cotula and Oya 2014). In-depth case studies also show that agribusiness investments may occur in contexts where competition for land is already increasing as a result of local demographic growth, land acquisition by national elites and extractive industry developments (Knapman *et al.* 2017). And in addition to agribusiness plantations involving direct land acquisition, schemes to integrate small-scale farming into commercial value chains can also exacerbate pressures on land and, in forest areas, deforestation (e.g. ERM 2013; Smalley 2013).

⁴ Successive Land Matrix reports use different parameters, so their findings are difficult to compare (see Annex 1). Unlike the 2012 figure cited, the 2016 figure of 24.1 million hectares only refers to agribusiness plantation deals; the total Land Matrix figure for 2016, including land acquisitions in forestry, extractives, tourism and manufacturing, is 42.4 million hectares (Nolte *et al.* 2016).

These circumstances reinforce the case for identifying geographic hotspots where pressures are particularly acute. And besides their land implications, investments can have significant water footprints too, for example in relation to irrigated agriculture (e.g. Smaller and Mann 2009, FAO 2016d).

Global data for logging, mining and petroleum concessions is more dispersed, and available land area figures say little about trends over the period 2006-2016. For example, data suggests that at least 122.8 million hectares are under commercial forest concessions in Latin America, West and Central Africa, and Southeast Asia (van Hensbergen 2016), including some 56 million hectares in West and Central Africa alone (Karsenty 2016); while forest plantations worldwide are estimated to cover approximately 291 million hectares (FAO 2016c). However, these figures provide a snapshot of the global stock, and offer no insight on investment patterns in 2006-2016.

Country-level data suggests that multiple land uses can overlap in both planned and unplanned ways. For example, research from Ghana and Peru points to overlaps between extractive industry concessions and agricultural land use, protected areas and – in Peru – land titled to indigenous peoples (Cuba *et al.* 2014). Research has also documented the overlap between forestry, mining and agribusiness concessions, for example in Cameroon (Nguiffo and Sonkoue Watio 2015).⁵

This expanding frontier of commercial natural resource development has had significant social and environmental impacts. Agribusiness and logging concessions have resulted in deforestation and habitat loss, documented for example in Southeast Asia and in West and Central Africa (e.g. Arcus Foundation 2014 and 2015; Ancrenaz *et al.* 2014; Karsenty 2016; Brotto *et al.* 2016). The environmental impacts of mining and petroleum concessions have also been documented (e.g. Boocok 2002; Butler 2012; Arcus Foundation 2014).

Social impacts include the conversion of land previously used for rural livelihood activities such as farming, herding and foraging, reflected in the numerous reports of land dispossession in connection with agribusiness plantation deals (e.g. Schoneveld *et al.* 2011; Colchester and Chao 2013; Boamah 2014; Hunt and Balfe 2015), logging concessions (e.g. Alden Wily 2012b; Woods 2013), mining projects (e.g. Holden *et al.* 2011; Andrews 2015) and petroleum operations (e.g. Oil in Uganda 2012; Peel 2016).

The investment slowdown associated with the commodity slump could in principle ease pressures on natural resources (Butler 2015). However, much depends on long-term expectations, rather than short-term prices (Butler 2015), and evidence suggests that – at the local level – pressures on resources are continuing after the commodity slump. This is partly because many past deals have now reached the implementation stage (Oxfam 2016): based on Land Matrix data, Nolte *et al.* (2016) estimate that, in agribusiness, more deals are now being implemented, with 710 deals (out of a total of 1004 considered) having at least started implementation.⁶

How much land is left?

⁵ Extractive industry concession areas tend to be larger than the land footprint of actual operations, particularly but not only at exploration stage; but the transfer of legal rights embodied in the concession, and the indirect impacts that extractive industry operations can have (e.g. via infrastructure developments) make concession areas a relevant proxy for assessing pressures on resources (Cuba *et al.* 2014).

⁶ However, data on the scale of actual cultivation is not available, and the possibility cannot be ruled out that this dataset might overestimate the degree of implementation.

There has been debate about whether enough land is available to meet humankind's growing needs. Diverging views are driven by difficulties in predicting trends in the forces that shape the global supply and demand of commodities and resources; and by different analyses on the potential for technological innovation, consumption choices and policy reform to shift the parameters of resource scarcity and availability (WEF 2014; Cotula 2016). Some observers have noted that narratives of resource scarcity can be used for political ends (Scoones *et al.* 2014).

Several technical studies have assessed land availability in low and middle-income countries based on global-level soil and climate data (e.g. Fischer *et al.* 2012, which presents data from the Global Agro-Ecological Zones exercise, GAEZ; Deininger and Byerlee 2011, relying on GAEZ data). Such assessments typically involve significant assumptions, and critics have highlighted that the global model-based data underestimates land use by small-scale rural producers (Young 1999; Roudart and Even 2010; Toulmin *et al.* 2011; Chouquer 2012; Merlet 2013; Chamberlin *et al.* 2014; Locke and Quan 2016). Land availability is a theoretical construct that does not consider barriers to land conversion, such as lack of infrastructure, remoteness, ecological fragility, disease and lack of security (FAO 2011).

Data suggests that low and middle-income countries, particularly in Latin America and Africa, account for the bulk of remaining land areas suitable for rain-fed agriculture (Fischer *et al.* 2012). However, careful analyses point to an increasingly constrained resource base even in these contexts. For example, Africa is often characterised as being particularly land abundant, and estimates suggest that the continent hosts 52% of the world's remaining arable land (Deininger and Byerlee 2011; Jayne *et al.* 2014). But according to GAEZ data, most of this land is affected by one or more barriers to conversion (FAO 2011). Also, most of this land is concentrated in very few countries, with land being increasingly scarce in the remaining countries (Cotula *et al.* 2008; Chamberlin *et al.* 2014; Jayne *et al.* 2014).

In "land abundant" countries such as Cameroon, Congo, Gabon and the Democratic Republic of Congo, underutilised land is primarily under tropical forests (Jayne *et al.* 2014), so expanding natural resource development is likely to involve environmental costs. Africa is estimated to have lost 15.6 million hectares of forest between 2010 and 2015 due to agriculture expansion (FAO 2016c). In both land constrained and abundant African countries, the rural population is clustered in areas presenting higher potential in terms of soil fertility, water access, climatic factors or infrastructure development (Jayne *et al.* 2014; Locke and Quan 2016): estimates indicate that 82% of the continent's rural population resides in just 20% of total rural land area (Jayne *et al.* 2014). In these high population density areas, demographic growth is driving land fragmentation, with average farm sizes in Africa being estimated to have shrunk by 30-40% since the 1970s (Jayne *et al.* 2014).

Meanwhile, land acquisition by national elites and the rise of a domestic medium to large-scale farming sector are fostering land concentration and increasing pressures on smallholdings: data suggests that national actors account for a large share of recent land acquisition for agribusiness plantations (Deininger and Byerlee 2011; Cotula and Oya 2014). This trend preceded the commodity boom and was documented over the years in case studies (e.g. Mathieu *et al.* 2003; Ouédraogo 2003; Ouédraogo 2006; Djiré 2007; Moyo 2011) and aggregate-level analyses (Jayne *et al.* 2014; Knapman *et al.* 2017).

The overall effect of these factors is that pressures on land are growing, and land disputes are on the rise in many parts of the continent. These disputes have been widely documented in the literature (e.g. Peters 2004, 2013; Anseeuw and Alden 2010;

Benjaminsen *et al.* 2012; Knapman *et al.* 2017) and recurring media reports (e.g. Egbejule 2016), including in countries where average population densities are low (e.g. Hub Rural 2016a; Hub Rural 2016b).

Analyses from other continents also indicate that potential for land conversion is lower than previously assumed. For example, Lambin *et al.* (2013) draw on six case studies from areas of Latin America, Central Africa, Eurasia and Southeast Asia that are commonly believed to be land abundant. They conclude that, once the constraints and trade-offs associated with land conversion are factored in, there is substantially less available land than generally assumed; and that land conversion is likely to be associated with significant social and environmental costs (Lambin *et al.* 2013).

Investment-related land and resource disputes

Given their land footprint in contexts where the resource base is increasingly constrained, natural resource investments have often been associated with disputes. Research covering 30 countries showed a gradual increase in mining-related conflicts between 2002 and 2012 (ICMM 2015). In Latin America, for example, a mining boom has been associated with conflicts between, on the one hand, companies and governments, and, on the other, indigenous peoples and organisations of small-scale rural producers (OCMAL 2015). Similarly, research combining geo-referenced data on mining extraction and conflict events in Africa over the period 1997–2010 concluded that mining operations increased local conflicts, and that rising mineral prices could explain up to a quarter of the violence across the continent (Berman *et al.* 2016). Other research also documented a rise in conflicts linked to the extraction of resources such as oil, diamond, copper and cobalt in Africa (Kishi 2014), and a connection between mining and conflict in Southeast Asia (Pichler and Brad 2016).

The recent wave of agribusiness plantation deals has also been associated with land disputes (TMP Systems and RRI 2016), for example in Cambodia (e.g. Subedi 2012; Chan 2013; Rudi *et al.* 2014), Colombia (Hunt and Balfe 2015), Ghana (e.g. Boamah 2014), Guatemala (e.g. Brodzinsky 2013), Indonesia (e.g. Colchester *et al.* 2006; Abram *et al.* 2017), Laos (e.g. Kenney-Lazar 2012), Liberia (e.g. Client Earth 2016), Mozambique (e.g. Nhantumbo and Salomão 2010; FIAN 2012), Myanmar (e.g. Woods 2015), Tanzania (e.g. Sulle and Nelson 2009; Greco 2017), and Uganda (e.g. Reuters 2015).

Again, the commodity slump might be expected to ease the pressures, but data points to a more complex picture, with the changed context possibly exacerbating disputes. This is partly because the lower commodity prices are creating budgetary pressures for companies to sustain the social responsibility programmes. A recent World Bank survey found that most companies reported cuts to their social responsibility staff and budgets (Kazemi 2016). Reduced capacity in this sensitive area could increase potential for disputes and contestation. In addition, the recent commodity slump has been associated with a number of investor-state arbitrations (see Figure 3), including cases where community opposition to the investments featured prominently in the factual circumstances of the dispute – for example in Bolivia, Ecuador, El Salvador and Peru (Phillips Williams 2016; Cotula and Schröder forthcoming).

In many contexts, land and resource-related disputes unfold in increasingly constrained political spaces (Global Witness 2016; Oxfam 2016; RRI 2017). Global Witness (2016) documented 185 killings of land and environmental defenders in 2015 alone – a 59% increase on 2014 and the highest annual toll on record. That report identified collusion between state and business interests in the mining, agribusiness and forestry sectors as

a key driver of violence, with the worst hit countries including Brazil, the Philippines and Colombia (Global Witness 2016). Criminalisation of protests (e.g. Sekaggya 2011) and legal harassment of activists (Global Witness 2016) have also been documented.

2.4. To sum up

A continued priority, with shifting contours. While the outlook has changed considerably since the global resource squeeze started making the headlines about ten years ago, improving the governance of natural resource investments and helping rural people to analyse issues, make informed choices, exercise rights and advance their position vis-à-vis government and the private sector remain an urgent imperative for both policy and practice. However, changes in investment patterns have important implications for priorities in research and action.

Higher commodity prices drove a boom in natural resource investments, and a global land rush. Since the mid-2000s, a spike in global commodity prices fostered an investment boom affecting the agriculture, forestry, mining and petroleum sectors. Globally, the aggregate scale of agribusiness plantation deals seems smaller than originally thought, but it represented a significant increase compared to earlier patterns. Also, the deals are often geographically concentrated, and can thus exacerbate pressures in specific localities. Concomitant pressures from investments in other sectors, including petroleum, mining and forestry, compound competition for land in situations where the land frontier is closing.

The commodity slump slowed investment, but in the longer term pressures are likely to continue growing. Investments appear to have slowed across the review sectors as a result of the more recent commodity slump, though structural factors would tend to increase demand for commodities in the longer term. Also, land acquisition by national elites reflects a longer-term process and is likely to continue even as the global outlook changes. And significant evolutions in the policy infrastructure to promote investments could foster more natural resource investments in future – though caution is needed in drawing any conclusions about the extent to which the policy instruments will deliver actual investments.

On the ground, the squeeze continues to be felt. Meanwhile, data suggests that more agribusiness plantation deals are being implemented, so the pressure of past deals is now being felt. This trend is reflected in numerous reports of land conflict in connection with agribusiness plantation deals. Natural resource disputes have also been widely documented in the extractives sector, with the commodity slump imposing cuts in social responsibility budgets and thus possibly exacerbating resource conflict. In many contexts, political space is shrinking and activists have been exposed to repression or intimidation.

The changed contexts calls for advancing “implementation themes”, and improving readiness for future upturns. In the agribusiness sector, the slowing pace of new plantation deals and the fact that many deals are now being implemented calls for paying greater attention to “implementation issues” such as strengthening labour rights, addressing “legacy” land rights issues when ventures change hands, and managing community grievances. As demand for commodities is ultimately expected to continue rising in the longer term, now is also the time to invest in improving readiness to handle investment issues in future. The shrinking political space means that any interventions at local or national level would need to carefully consider the risks for those involved.

It also requires tracking multi-sector developments in geographic hotspots, and evolutions in investment frameworks. Developments in investment frameworks also deserve greater attention. In agriculture, for example, the establishment of frameworks for public-private partnerships highlights the importance of considering not only agribusiness plantation deals, now in decline, but also wider processes of agricultural commercialisation that may involve investments in different segments of the value chain. Also, the emergence of spatial development initiatives linking different sectors (e.g. agriculture, mining) highlights the importance of tracking cumulative, multi-sector developments in geographic “hotspots”, moving away from established “case study” approaches to research and action; while the growing number of natural resource-related investor-state arbitrations with significant community dimensions calls for monitoring developments in neglected sites of resource conflict.

Annex 1. Additional remarks on research methods and limitations

Remarks on Figure 1

This chart is based on data from the World Bank Global Economic Monitor ([http://databank.worldbank.org/data/reports.aspx?source=global-economic-monitor-\(gem\)-commodities](http://databank.worldbank.org/data/reports.aspx?source=global-economic-monitor-(gem)-commodities)). It uses real price indices for raw agricultural products, metals and minerals, and crude oil – that is, controlling for inflation. GDP figures are represented in 2010 US\$, again avoiding direct inflation effects.

Linear trend lines were added to the commodity price index series to help visualise long-term upward trends. The trend lines use basic regression analysis methodology to minimise the squared sum of distances from the actual points to the identified line. The use of a linear representation is for visual aid only; the trendline for crude oil represents around 98% of the variation for this variable as compared to less than 20% for raw agricultural products, which exhibit high variation around a moderately sloping long-term trendline.

It is important to recognise that there are multiple measures of commodity prices and the methods vary by trade weighting and adjustments related to currency exchange. There is also a vast body of literature discussing drivers of changes in commodity prices.

Remarks on Figure 2

This chart draws on two datasets: the Land Matrix database, and the GRAIN (2016a) dataset. Both involve acknowledged limitations due to the inherent difficulties of developing and maintaining global databases of agribusiness plantation deals. The two datasets also use different parameters and methods.

The Land Matrix (<http://landmatrix.org>) collects data on large-scale (>200 hectares) agribusiness plantation deals concluded since 1 January 2000. Its findings were presented in two synthesis reports published in 2012 (Anseeuw *et al.* 2012a) and 2016 (Nolte *et al.* 2016). These reports use somewhat different parameters, so their data is not easily comparable. Data was extracted from the Land Matrix database by filtering as follows:

- We only included transnational investments (investor country \neq target country), and excluded deals for which the investor country was not known;
- We only included “concluded” deals with information on the year;
- We only included agricultural plantation deals, i.e. deals containing one of the following agriculture-related “intentions”, either solely or in combination: “foodcrops”, “livestock”, “agriunspecified”, “biofuels”, “non-food agricultural commodities”.

This produces a list of 826 deals covering 22.5 million hectares. Our results are broadly comparable to those in Nolte *et al.* (2016), who discuss 833 deals covering 23.8 million hectares. But while Nolte *et al.* (2016) presented the information in cumulative form (figure 7 in Nolte *et al.* 2016), we opted for a non-cumulative chart for a clearer representation of change year on year.

The second dataset we used is the latest version of a global database released by the advocacy group GRAIN (2016a). Earlier versions of the database were released in 2008 and 2012 (GRAIN 2008 and 2012). The database provides a snapshot of large-scale

(>500 hectares) transnational agribusiness plantation deals as of June 2016, primarily based on the media, advocacy and research reports included in the <http://farmlandgrab.org> repository. Like the Land Matrix, this repository has become a useful tool for tracking developments in agribusiness plantation deals.

In extracting data from the GRAIN dataset, we did not check data accuracy but made the following adjustments:

- We integrated two separate GRAIN spreadsheets on ongoing and discontinued deals, because all deals are relevant to understanding trends over time, even if later discontinued.
- We restricted the search to agricultural plantation deals initiated after 1 January 2006. As a best approximation of when known deal activity first occurred, we used the date when the deal was first documented, even if still at a negotiation stage. For deals with no reported date but referred to in either the 2008 or 2012 GRAIN databases, we used the date when the deal was first mentioned, i.e. 2008 or 2012.
- We removed deals for which, based on data internal to the GRAIN database itself, there was no information to suggest a deal had in fact been concluded, or where information available in the database did not identify a specific deal. Where individual entries on the GRAIN database referred to multiple transactions, we split them into separate entries. We also excluded from the analysis data concerning a 2009 corporate acquisition in Australia reportedly affecting 5 million hectares.

Remarks on Figure 3

This chart is based on data from the UNCTAD Investor-State Dispute Settlement Navigator (<http://investmentpolicyhub.unctad.org/ISDS>). Using the advanced search function, we selected 2000 to 2016 for date of initiation, selected “primary” economic sector and unticked fishing and aquaculture. This search delivered a total of 149 arbitrations based on international investment treaties.