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# Water property rights in investor-state contracts on extractive activities, affects water governance: An empirical assessment of 80 contracts in Africa and Asia

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## Abstract

In view of increasing globalization, the ongoing promotion of foreign direct investment and the lack of comparative literature on how water property rights are changing in the global South, this article asks: How have property rights in water evolved through investor-State contracts on mineral, petroleum and land issues in Africa and Asia? We analyse 80 publicly available contracts—22 minerals, 40 petroleum and 18 land—of 34 African and 19 Asian countries. We find that: (i) in addition to a State's water law, water allocation is also implicitly governed by contracts and international investment treaties; (ii) States *de facto* privatize water by allocating quasi-property rights through the granting of contracts to foreign international investors; (iii) such waters exploited by virtue of contracts reduce the ability of States to regulate water during the term of the contract especially as investors' water use is protected by bilateral investment treaties and potential compensation claims; and (iv) the need of the State to increasingly adaptively govern water as the impacts of climate change on water become more noticeable will be challenged by the long-term quasi property rights granted by States to investors in such contracts.

## 1 | INTRODUCTION

In most countries, resources such as minerals, petroleum and water are generally State-controlled. To exploit these resources, especially technology-poor developing countries often sign contracts with foreign companies—'investor-State' contracts. With globalization<sup>1</sup> and neoliberal capitalism,<sup>2</sup> investor-State contracts have increased tremendously. These contracts often include water, as it is essential in all

industrial and agricultural undertakings.<sup>3</sup> Water rights can be created (indirectly) through contracts (e.g., supply, investment and service contracts) between an (inter)national actor and a State,<sup>4</sup> as the 'rights to the use of water can ... be transferred by the state via permit and subsequent state delivery contracts to end users'.<sup>5</sup> These contracts

<sup>1</sup>Globalization refers to the 'significant increase in the movement of goods, services, capital, and money across national boundaries, resulting in a capitalism that is more globally integrated than before, including the creation of global production and distribution chains'; see DM Kotz, *The Rise and Fall of Neoliberal Capitalism* (Harvard University Press 2015) 35.

<sup>2</sup>The dominance of neoliberal capitalism postulates a 'form in which market relations and forces predominate, [which] has promoted the increasing power of capital over labour'; *ibid* 44.

<sup>3</sup>J Gupta and HJ Bosch, 'Changing "Ownership" in Water Law: Comparative Experiences in the Developing World' in JW Dellapenna and J Gupta (eds), *Water Law* (Edward Elgar 2021) 315.

<sup>4</sup>L Cotula, 'Land deals in Africa: What is in the contracts?' (International Institute for Environment and Development 2011); S Hodgson, 'Exploring the Concept of Water Tenure' (Food and Agriculture Organization of the United Nations (FAO) 2016); A Scott and G Coustalin, 'The Evolution of Water Rights' (1995) 35 *Natural Resources Journal* 821; HJ Bosch and J Gupta, 'Access to and Ownership of Water in Anglophone Africa and a Case Study in South Africa' (2020) 13 *Water Alternatives* 205.

<sup>5</sup>Sr Saxer, 'The Fluid Nature of Property Rights in water' (2010) 21 *Duke Environmental Law and Policy Forum* 49, 79.

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**FIGURE 1** Global network of BITs in force. *Source:* Authors' own, based on UNCTAD, 'International Investment Agreements Navigator' (2022), <https://investmentpolicy.unctad.org/international-investment-agreements/ii-a-mapping>

are protected by a global network of about 3,000 bilateral investment treaties (BITs) (see Figure 1). For foreign investors, BITs create a 'sound, secure, and predictable investment climate' which protects their investments.<sup>6</sup> While the literature assesses case studies and theories, there is little comparative analysis on property rights in water and the role of contracts in them, especially in the global South. Hence, we ask: How have property rights in water evolved through investor-State contracts on minerals, petroleum and land in Africa and Asia? By conducting a comparative analysis of investment contracts, we assess how these contracts affect water rights. We do not assess whether water included in contracts is considered *de jure* property in water, as this is determined by legislation and case law and most States avoid mention of property in relation to water. Instead, we show how implicitly and explicitly these contracts often lead to the creation of 'quasi-property rights', transferring some control over water resources to private sector actors.<sup>7</sup> With 'quasi', we mean, 'As if; as it were; analogous to. ... [Indicating] that one subject resembles another, with certain characteristics, but that there are also intrinsic differences between them.'<sup>8</sup>

In the 195 national legal regimes today, a water right is defined 'in terms of the relationship of the use to the water source'.<sup>9</sup> It is property in terms of a right to use a certain quantity of water,<sup>10</sup> rather than owning the molecule of water, and it 'constitutes a possessory

interest in the right to use water'.<sup>11</sup> An investor-State contract is a contractual agreement by a State (or State entity) and a foreign investor,<sup>12</sup> which can be seen as a 'tenure relationship whereby rights to use water resources are created on the basis of investment contracts'.<sup>13</sup> Contracts have reciprocity: the exchange of goods, services and values, in which there is a correlation between the obligations of the parties. The transfer or allocation of rights may be unilateral depending on the contract.

This article analyses contracts on minerals, petroleum and land between host governments and investors for large-scale projects. Investor-State contracts confer rights on foreign investors, subject to obligations. We analyse such contracts on minerals, petroleum and land focusing on 13 elements,<sup>14</sup> clustered into six quasi-property rights. These are as follows:

1. *The temporal dimension:* (i) the period for which the contracts are valid and (ii) the possibility to extend this period.
2. *The right to use and operate,* including the right to: (i) operate an economic activity; (ii) use water in the operation, through a water use permit, right or authorization; and (iii) use the land on which the operation takes place.
3. *Dispute settlement and litigation:* (i) the amicable settlement within a relatively short period; (ii) the settlement of purely technical matters by an expert; and (iii) arbitration to settle the dispute under international arbitration rules.
4. *Compensation:* in case of (i) expropriation; and (ii) indirect expropriation.

<sup>6</sup>S Jandhyala, WJ Henisz and ED Mansfield, 'Three Waves of BITs: The Global Diffusion of Foreign Investment Policy' (2011) 55 *Journal of Conflict Resolution* 1047, 1054.

<sup>7</sup>L Godden, 'Communal Governance of Land and Resources as a Sustainable Property Institution' in D Grinlinton and P Taylor (eds), *Property Rights and Sustainability* (Brill 2011); S Hodgson, 'Modern Water Rights: Theory and Practice' (Food and Agriculture Organization of the United Nations (FAO) 2006); HJ Bosch, J Gupta and H Verrest, 'A Water Property Right Inventory of 60 Countries' (2021) 30 *Review of European, Comparative and International Environmental Law* 263.

<sup>8</sup>H Campbell Black, *Black's Dictionary of Law* (Lawbook Exchange Ltd 1991) 977.

<sup>9</sup>JW Dellapenna and J Gupta, 'The evolution of water law through 4,000 years' (2013) 9.

<sup>10</sup>JW Dellapenna and J Gupta, 'Fundamental Concepts of Property in Water and the Role of Markets in Water Governance' in JJ Bogardi et al (eds), *Handbook of Water Resources Management: Discourses, Concepts and Examples* (Springer 2021) 86.

<sup>11</sup>D Caponera, *Principles of Water Law and Administration: National and International* (2nd edn, Taylor & Francis 2007) 127.

<sup>12</sup>United Nations Conference on Trade and Development (UNCTAD), 'State contracts' (UNCTAD 2004) 3.

<sup>13</sup>S Hodgson, *Exploring the Concept of Water Tenure* (FAO 2016) x.

<sup>14</sup>Bosch et al (n 7); AM Honoré, 'Ownership' in AG Guest (ed), *Oxford Essays in Jurisprudence* (Oxford University Press 1961) 107.

5. *Stability*: (i) the continuing support of the host State regarding the right to operate; and (ii) protection against changing laws and policies.
6. *Alienation*: the possibility to transfer rights.

The period for which a contract is valid specifies for how long the investor can enjoy, and benefit from the allocated rights. The longer the contract period, the more security it gives to the investor to be able to recoup a return on investment and make a profit. The right to use and operate determines the economic activity and the boundaries in respect to an exploitable resource. The clearer this right is defined, for instance by granting exclusive use, the more it resembles actual property. The right to dispute resolution and litigation is a proxy of the protection and security an investor enjoys. It allows investors to protect their rights and investment through suing the host State. This right is closely related to the right of compensation, which allows investors to claim compensation when their rights are expropriated resulting in damages. The right of stability protects the investor against a change of legislation that would adversely affect the (economic) interest of the investor, adding to the protection and security of the investment. The right of alienation, as with property, allows the investor to transfer the rights it holds to another actor.

Water property rights may affect adaptive water governance—the ability of a State to adapt to the increasing uncertainties caused by climate change and the rapidly changing socio-economic conditions.<sup>15</sup> The increasing pressure on freshwater availability in many parts of the world<sup>16</sup> requires flexibility in the (re)allocation of water among competing uses and users.<sup>17</sup> Actors holding quasi-water property rights may hinder the State in the (re)allocation of water for the period covered by the contract, which is secured by the rights to dispute settlement, litigation and compensation. Moreover, water rights are not returned to the public domain when transferred to a different actor and therefore cannot be reallocated.

The contracts (including concession agreements, production and profit-sharing contracts, exploration permits and licenses, exploitation permits and licenses, and joint venture agreements) have been retrieved from open-access databases. We analysed contracts that are (i) company-State contracts; (ii) in English, Portuguese, Spanish or French; (iii) signed between 1 January 2000 and 1 September 2021; (iv) with developing countries; (v) especially in Asia and Africa; and (vi) excluding small island States. In addition, (vii) for petroleum, we focused on onshore petroleum operations, and (viii) for land, we included only agricultural (and, for instance, not wind and solar energy) contracts. Since countries work with model contracts, we included one contract per country from each contract group in the analysis. We prioritized signed over model contracts. Subject to data

accessibility, we analysed 80 contracts from 34 African and 19 Asian countries including 40 petroleum contracts (involving 24 African and 16 Asian countries), 22 mineral contracts (18 African and 4 Asian countries) and 18 land contracts (14 African and 4 Asian countries) (see Appendices A and B; Tables A1 and B1–B3).

We chose land, mining and petroleum because water is crucial in all three industries—for mineral extraction (e.g., dust suppression, transport of waste in slurries and suspension, and separation of minerals through chemical processes),<sup>18</sup> for petroleum operations (e.g., drilling, cooling and discharging waste)<sup>19</sup> and on land (e.g., irrigation, livestock and afforestation). While mining consumes small volumes of water, at the regional and local level, it impacts freshwater quality.<sup>20</sup> Water pollution is important (e.g., in Ghana—untreated mine discharge polluting waterbodies<sup>21</sup>; South Africa—sulphuric acid flowing into streams and groundwater<sup>22</sup>; Nigeria—oil pollution in Nigeria's Niger Delta<sup>23</sup>; and Bangladesh—water pollution by the petroleum refining industry),<sup>24</sup> and 'indirect' water use is generally much larger than 'direct' water use. However, the issues of pollution and indirect water use are beyond the scope of this article, and we specifically focus on the 'direct' entitled use of water. We focus on Africa and Asia because water is getting scarcer,<sup>25</sup> and the freshwater demand will grow consequent to population growth of 1.1 billion people (equal to 86%)<sup>26</sup> by 2050, and industrial growth by 800% in Africa and 250% in Asia, respectively.<sup>27</sup> Moreover, Africa holds 30% of global mineral reserves, and mineral exploitation will likely rise,<sup>28</sup> and natural capital represents between 30% and 50% of their total wealth.<sup>29</sup>

Sections 2 to 7 analyse what quasi-property rights are allocated by States through concluding investor-State contracts. Section 8 draws the conclusions.

<sup>18</sup>J Prosser, L Wolf and A Littleboy, 'Water in Mining and Industry' in J Prosser (ed), *Water: Science and Solutions for Australia* (CSIRO Publishing 2011) 135.

<sup>19</sup>E Allison and B Mandler, 'Water in the Oil and Gas Industry: An Overview of the Many Roles of Water in Oil and Gas Operations' (American Geosciences Institute 2018).

<sup>20</sup>S Meißner, 'The Impact of Metal Mining on Global Water Stress and Regional Carrying Capacities—A GIS-Based Water Impact Assessment' (2021) 10 *Resources* 120; M Schoderer, J Dell'Angelo and B Huitema, 'Water Policy and Mining: Mainstreaming in International Guidelines and Certification Schemes' (2020) 111 *Environmental Science and Policy* 42.

<sup>21</sup>AY Emmanuel, CS Jerry and DA Dzibodi, 'Review of Environmental and Health Impacts of Mining in Ghana' (2018) *Journal of Health Pollution* 43.

<sup>22</sup>A Minnaar, 'Water Pollution and Contamination from Gold Mines: Acid Mine Drainage in Gauteng Province, South Africa' in K Eman et al (eds), *Water, Governance, and Crime Issues* (Springer 2020) 193.

<sup>23</sup>AO Babatunde, 'Oil Pollution and Water Conflicts in the Riverine Communities in Nigeria's Niger Delta Region: Challenges for and Elements of Problem-Solving Strategies' (2020) 38 *Journal of Contemporary African Studies* 274.

<sup>24</sup>MG Mostafa, 'Environmental Hazards of Petroleum Refinery in Bangladesh: A Review' (2021) 4 *Petroleum and Chemical Industry International* 1.

<sup>25</sup>A Boretti and L Rosa, 'Reassessing the Projections of the World Water Development Report' (2019) 2 *NPJ Clean Water* 15.

<sup>26</sup>United Nations Department of Economic and Social Affairs, 'World Population Prospects 2019 Volume I: Comprehensive Tables' UN Doc ST/ESA/SER.A/426 (2019) 2020–2100 – Medium variant.

<sup>27</sup>Schoderer et al (n 20).

<sup>28</sup>International Council of Mining and Metals (ICMM), *Role of Mining in National Economies: Mining Contribution Index* (5th edn, ICMM 2020).

<sup>29</sup>GM Lange, Q Wodon and K Carey, 'The Changing Wealth of Nations 2018: Building a Sustainable Future' (World Bank 2018).

<sup>15</sup>C Pahl-Wostl, 'Transitions Towards Adaptive Management of Water Facing Climate and Global Change' (2007) 21 *Water Resources Management* 49.

<sup>16</sup>UN-Water, *The United Nations World Water Development Report 2021: Valuing Water* (UNESCO 2021).

<sup>17</sup>Pahl-Wostl (n 15).

## 2 | TEMPORAL DIMENSION

Most contracts mention the duration of contract validity (mineral: 16 out of 22; petroleum: 37 out of 40; land: 16 out of 18). This provides security, as it guarantees the investor the right to operate for the specified years, thereby earning back the investment and ensuring profit.

Mineral exploitation contracts are granted for 14,<sup>30</sup> 20,<sup>31</sup> 25,<sup>32</sup> 30<sup>33</sup> and 40 years.<sup>34</sup> Some contracts do not specify the period. For example, a contract by the Democratic Republic of the Congo (DRC) reads, the '[d]evelopment period shall be the one selected by the Joint Committee'. And in Malawi, a contract states the period is valid for the life of the proposed mining operation. Similarly, petroleum exploitation permits are granted ranging for up to 20,<sup>35</sup> 25<sup>36</sup> or 30 years.<sup>37</sup> A Cameroonian contract states that it remains in effect until the contract is terminated. In most States, contracts can be extended for a maximum of 5<sup>38</sup> and 10 years<sup>39</sup> or extended twice for 5<sup>40</sup> or 10<sup>41</sup> years each. Some contracts allow extension but do not specify the period.<sup>42</sup> In other contracts, extension is subject to negotiation,<sup>43</sup> extension is granted if commercial production remains possible and economically feasible,<sup>44</sup> or when a specified production level has been achieved.<sup>45</sup>

Unlike mining contracts, land contracts have less homogeneous temporal aspects. In Cameroon, a contract is granted for 99 years, extended as the parties may agree or due to force majeure. In the DRC, land contracts are for 25 years, extendable by 25 years, and in Gabon for 50 years, renewable for 49 years. A Sierra Leonean contract is granted for 48 years, with a 25-year extension possibility; a Liberian contract for 65 years, extendable by 33 years, and a Timor-Leste contract for 50 years, extendable by 50 years. In Mozambique, the contract is for 25 years, renewable by 10-year periods. And a Malian contract leases land for 30 years, renewable indefinitely for periods of 30 years. Some countries grant land for a specified term,<sup>46</sup> but do not specify the extension period.

<sup>30</sup>Ghana.

<sup>31</sup>Mauritania, Niger.

<sup>32</sup>Burkina Faso, Burundi, Cameroon, Guinea, Liberia, Philippines, Senegal, Sierra Leone, Zambia.

<sup>33</sup>Afghanistan, Mali, Mongolia.

<sup>34</sup>Papua New Guinea.

<sup>35</sup>Bangladesh, China, DRC, Egypt, India, Iraq, Mongolia, Timor-Leste, Yemen.

<sup>36</sup>Afghanistan, Azerbaijan, Chad, Côte d'Ivoire, Equatorial Guinea, Ethiopia, Georgia, Guinea, Jordan, Kazakhstan, Kenya, Liberia, Libya, Madagascar, Malawi, Mauritania, Senegal, Sierra Leone, Tajikistan, Uganda.

<sup>37</sup>Cambodia, Indonesia, Ghana, Mozambique, Tunisia.

<sup>38</sup>Azerbaijan, Bangladesh, Equatorial Guinea, Georgia, India, Iraq, Jordan, Madagascar, Malawi, Tajikistan, Uganda, Yemen.

<sup>39</sup>Afghanistan, Chad, China, Côte d'Ivoire, Egypt, Liberia, Mauritania, Senegal, Afghanistan.

<sup>40</sup>Mongolia.

<sup>41</sup>Guinea.

<sup>42</sup>DRC, Kazakhstan. In a Somali contract, the information is redacted from the contract as it constitutes sensitive business information.

<sup>43</sup>Sierra Leone. A Ghanaian contract states, the 'failure to enter any such further agreement shall give rise to arbitration'.

<sup>44</sup>Cambodia, Ethiopia, Liberia.

<sup>45</sup>Nigeria.

<sup>46</sup>An initial term of 49 years in South Sudan; Congo—60 years; Ethiopia—25 years; Central African Republic (CAR)—30 years; Malaysia—60 years; Cambodia—70 years; Sudan—50 years; and Madagascar—30 years.

Contracts are granted for long periods, including the possibility to extend the period. The contract period determines for how long the rights that are included in the contract are valid. However, it can pose challenges for the host States. For example, the length of a contract determines for how long States 'lose' control over the rights to water that are included in the contract. Once granted, these water rights cannot easily be reallocated. Thus, the longer the contract period, the longer certain rights are granted, and the more adaptive governance is impaired. Moreover, States are reluctant to breach contracts because of the implications that may have.<sup>47</sup> Breaking a contract before it ends may result in compensation claims,<sup>48</sup> which can affect a host State's reputation<sup>49</sup> and future foreign direct investment (FDI).<sup>50</sup>

## 3 | RIGHT TO USE AND OPERATE

States grant foreign investors a 'right to operate', which enables them to perform a specified economic activity (e.g., mining, extracting and farming) subject to specific conditions within a certain timeframe. They grant companies the 'right to use' including land and water.

### 3.1 | Right to operate

The analysis of constitutions, mining and petroleum laws show that all studied States have put minerals and petroleum deposits in the public domain, subject to State allocation. An exploitation right is granted through a permit following a prescribed application process. The permit and the ensuing rights are subsequently included in investor-State contracts. Companies can apply for an exploration (reconnaissance, prospecting or research) permit, which, if successful, confers priority in accessing a mining right for the exclusive exploitation of the discovered deposits. An exclusive exploration permit means the State authorizes the contractor to exclusively work in the designated area to discover minerals or petroleum, subject to specified rights, obligations and timeframe.

#### 3.1.1 | Mineral contracts

In all 22 mineral contracts, investors are given the exclusive right to explore or exploit minerals. Depending on the contract, States either grant: (i) an exploitation permit or license (18 out of 22 contracts) for

<sup>47</sup>AT Guzman, 'The Design of International Agreements' (2005) 16 *European Journal of International Law* 579.

<sup>48</sup>E Aisbett, M Busse and P Nunnenkamp, 'Bilateral Investment Treaties as Deterrents of Host-Country Discretion: The Impact of Investor-State Disputes on Foreign Direct Investment in Developing Countries' (2018) 154 *Review of World Economics* 119.

<sup>49</sup>N Jensen, 'Political Risk, Democratic Institutions, and Foreign Direct Investment' (2008) 70 *Journal of Politics* 1040.

<sup>50</sup>T Allee and C Peinhardt, 'Contingent Credibility: The Impact of Investment Treaty Violations on Foreign Direct Investment' (2011) 65 *International Organization* 401.

the exclusive right<sup>51</sup> to exploit mineral deposits covered by the permit, or (ii) an exclusive exploration permit for the right of priority for obtaining an exploitation permit if economically exploitable deposits within the perimeter of the permit area are found (4 out of 22 contracts).<sup>52</sup> The national mining laws often specify the legal status of the granted mining right. For example, some contracts<sup>53</sup> state that an exploitation and mining permit constitutes a real property right that may be mortgaged.<sup>54</sup> Similarly, the mining laws of Congo, Côte d'Ivoire and Gabon state that the exploitation permit constitutes an indivisible property right that may be mortgaged subject to the prior approval of the Minister controlling mines.<sup>55</sup> Gabon, Mali, Morocco and Senegal state that the property right is distinct from land ownership. And Cameroon and Mauritania grant investors a real indivisible and non-modifiable right of limited duration.

### 3.1.2 | Petroleum contracts

Similar to mineral contracts, petroleum contracts either confer on the contractor the sole and exclusive right<sup>56</sup> to carry out all petroleum operations in the exploration contract area for the duration of the contract (33 out of 40), or appoint the contractor as the exclusive entity to conduct petroleum operations in the contract area (7 out of 40). The petroleum laws of these States show that several States specify the legal status of the granted exclusive petroleum right. For example, the petroleum law of Burundi and Central African Republic (CAR) state that the concession constitutes a property right of limited duration, distinct from land ownership. And the petroleum laws of Cameroon, Côte d'Ivoire and Liberia state that granting an exploitation authorization does not confer ownership of the deposits but a right of limited duration which is not mortgageable and is distinct from land surface ownership.

<sup>51</sup>The following laws are cited because some contracts do not specify issues regarding exclusivity, and the laws do. The contracting parties can cite the law to strengthen their claim in case of a dispute. Loi No. 036-2015/CNT Portant Code Minier du Burkina Faso art 45; Loi No. 1-21 du 15 Octobre 2013 Portant Code Minier du Burundi art 59 and 75; Loi No. 2016-17 du 14 Décembre 2016 Portant Code Minier Cameroun art 4; Loi No. 007/2002 du 11 Juillet 2002 Portant Code Minier CDR art 64; Minerals and Mining Law 2000 (Liberia) art 5.2(c) and 6.3; Mines and Minerals Act 1981 (Malawi) art 43; Ordonnance No. 2019-022/P-RM du 27 Septembre 2019 Portant Code Minier en République du Mali art 69; Ordonnance No. 93-16 Portant Loi Manière 1993 (Niger) art 32; The Mines and Minerals Act 2009 (Sierra Leone) art 114; Loi No. 2003-30 du 28 Avril 2003, Portant Promulgation du Code Minier (Tunisia) art 54; Chapter 213 Mines and Minerals Act 1995 (Zambia) art 23; Minerals Law of Mongolia 2006 art 21; Mining Act 1992 Papua New Guinea art 41; Philippine Mining Act of 1995 art 26.

<sup>52</sup>Afghanistan, Chad, Egypt, Togo.

<sup>53</sup>Burkina Faso, CAR, DRC, Guinea, Mali, Morocco, Senegal.

<sup>54</sup>The laws are cited because they specify the legal status of the granted mining right, which some contracts do not. The contracting parties can cite the mining laws to strengthen their claim in case of a dispute. See Loi No. 036-2015/CNT Portant Code Minier du Burkina Faso art 47; Dahir No. 1-15-76 of 14 Ramadan 1436 (1 July 2015) Promulgating Law No. 33-13 Relating to Mines (Morocco) arts 3 and 51.

<sup>55</sup>Loi No. 2014-138 du 24 Mars 2014 Portant Code Minier (Côte d'Ivoire) art 31; Loi No. 04-2005 Portant Code Minier art 29; Loi No. 037/2018 du 11 Juin 2019 Portant Réglementation du Secteur Minier en République Gabonaise art 91.

<sup>56</sup>Law No. 15/012 of 1 August 2015 on the General Regime for Hydrocarbons (DRC) art 59; Petroleum Act 1969 (Nigeria) art 11.

### 3.1.3 | Agricultural contracts

As with mining rights, through selling or leasing land, States grant contractors a right to operate and a land right. However, these rights are less homogeneous as States lease the allocated land to contractors for exclusive use for palm oil production,<sup>57</sup> agriculture, livestock,<sup>58</sup> cotton,<sup>59</sup> and so on, and sometimes for production plants, such as ethanol plants, processing facilities or oil extraction mills.<sup>60</sup>

## 3.2 | Land use rights

A land right implies defining the area in coordinates and hectares. Some contracts elaborate on the land rights, which is a proxy of how 'strong' the rights are. For a contractor to exercise the right to operate, a right to occupy and use the land surface is needed. The right to operate is included in the contract to enable the contractor to carry out the operation on the land.

### 3.2.1 | Mineral contracts

Mineral contracts grant the contractor a 'basic' and implicit land right, by allowing the contractor to operate in a specified area. Most studied contracts (19 out of 22) elaborate on the rights in relation to the land: the right to undertake specified mining activities,<sup>61</sup> or to operate and to have undisputed use of the land.<sup>62</sup> In some contracts, the State guarantees to the investor the occupation and use of land necessary for exploiting the deposit(s) covered by the exploitation permit within the contract, inside and outside the perimeter.<sup>63</sup> A Cameroonian contract restricts the use to the land in the exploitation area, while a Malawian contract allows access to land reasonably required for mining.<sup>64</sup> Sometimes, land use is subject to State authorization as in the studied Philippines and Mongolian contracts.

Moreover, half the contracts (11 out of 22) provide for eviction and resettlement of the local population or rightful occupier if deemed necessary, subject to the payment of fair or reasonable compensation.<sup>65</sup> Some contracts state that at the investor's request, the State should resettle inhabitants whose presence could hinder the exploitation works,<sup>66</sup> other contracts state that the government can exercise its powers of eminent domain to acquire the land rights.<sup>67</sup> A land Malawian contract reads, '[i]n the event the proposed disturbance ... requires the resettlement of any owner or occupier to some

<sup>57</sup>Cameroon, Gabon, Sierra Leone.

<sup>58</sup>DRC, Mozambique.

<sup>59</sup>Malaysia, Mali.

<sup>60</sup>Philippines, Sierra Leone, Timor-Leste.

<sup>61</sup>Afghanistan, Ghana, Liberia.

<sup>62</sup>Mauritania.

<sup>63</sup>Burkina Faso, Burundi, Mali, Niger, Senegal.

<sup>64</sup>Malawi, Sierra Leone.

<sup>65</sup>Afghanistan, Burkina Faso, Burundi, Cameroon, Guinea, Liberia, Mali, Mongolia, Papua New Guinea, Senegal, Sierra Leone.

<sup>66</sup>Burkina Faso, Mali, Senegal.

<sup>67</sup>Liberia.

alternative location, then the Company shall meet the reasonable costs of resettlement and any associated compensation'. In the 11 contracts that do not have a provision on the eviction and resettlement of people, it is unclear what is permitted and what actually happens, requiring further research.

### 3.2.2 | Petroleum contracts

As with mineral mining, petroleum contracts grant the contractor a 'basic' and implicit land right, by allowing the contractor to operate in a specified area. In most contracts (25 out of 40), the States allows the contractor to occupy the land necessary for the petroleum operations and connected activities. A Kenyan contract states that '[t]he Government may at the request of the Contractor, make available to the Contractor such land as the Contractor may reasonably require for the conduct of Petroleum Operations', and a Senegalese contract states that '[s]ubject to the Minister's approval, which shall not be withheld without a reason, the Contractor shall have the right to construct at its own expense any and all installation(s) which may be required to be built in the area necessary for Petroleum Operations'. According to a Liberian contract, when the contractor cannot reach an agreement with the landowners, the State must expropriate the land against compensation. An Ethiopian contract requires the contractor to negotiate a compensation settlement if executing the contract involves displacing people. In case residents refuse to resettle, the Minister can evict them and determine the payment of reasonable compensation.<sup>68</sup>

### 3.2.3 | Agricultural contracts

The right to operate farmland is linked to a specified land on which the contractor can operate. The contract area ranges from less than 10,000<sup>69</sup> to 100,000 ha,<sup>70</sup> to even beyond.<sup>71</sup> Moreover, most contracts<sup>72</sup> specify what the land should be used for, implying water use to produce palm oil,<sup>73</sup> forest resource exploitation,<sup>74</sup> cotton farming,<sup>75</sup> agricultural activities<sup>76</sup> and/or cattle industry.<sup>77</sup> Most contracts do not have provisions on the displacement of people. Only two contracts<sup>78</sup> address the resettlement of people. A Liberian contract states that an investor 'may by Notice to Government request

that certain settlements be relocated if ... such existing settlements and its inhabitants would impede Investor's development of the Concession Area'.

## 3.3 | Water use rights

States may entitle foreign investors to abstract a specified volume or percentage of water subject to specified conditions (e.g., time, obligation not to pollute, taking into account the rights of others). The studied contracts show that different language is used to denote this entitlement—water is included either as a right to use water or subject to State authorization, for instance via a water use permit or authorization. Moreover, one contract may grant multiple water use rights. The legal status of the water use entitlements would have to be confirmed by courts. Whether as a right in a contract, by law, under a permit, and/or to construct infrastructure, most studied contracts (mineral 16 out of 22; petroleum 24 out of 40, land 8 out of 10) contain a provision on water. In case a permit is required, most contracts required that the government support the contractor in application or even guarantees the permit (thus making the granting of the permit just a formality).

### 3.3.1 | Mineral contracts

#### *Right to use water*

In some mineral contracts, the contractor has the right to take and use water needed for the agreed activities in accordance with the regulations<sup>79</sup> and subject to the rights of third parties.<sup>80</sup> A Liberian contract grants the contractor the right to abstract water if it is reasonable in relation to its activities and does not affect the surrounding population or if the population is compensated by providing water from an alternative source. Two countries guarantee a contractor a water right: a Nigerian contract guarantees the contractor the use of groundwater reserves, within and outside the perimeter, and a Sierra Leonean contract allows the contractor to use the water from any natural water course, within or outside the mining area. A Mauritanian contract guarantees the contractor all rights to extract, convey and use sufficient quantities of water from sources discovered and developed. In Senegal, a contractor is authorized to use water, and in Mali, the contractor has a right (in accordance with legislation) to use unused or reserved waterfalls for mining works. A Mongolian contract states that '[t]he Investor is granted the right to access and use its self-discovered water resources for purposes connected with the project'. A Burkina Faso contract refers to the Mining Code, which states that land occupation allows the right to water from waterfalls, surface and groundwater within the perimeter.<sup>81</sup>

<sup>68</sup>Côte d'Ivoire, Ethiopia.

<sup>69</sup>DRC: 193 ha; Mozambique: 1,000 ha; Malaysia: 3,880 ha; Madagascar: 6,558 ha; Cambodia: 8,959 ha.

<sup>70</sup>Ethiopia and Mali: 10,000 ha; Sierra Leone: 12,000 ha; Sudan: 12,504 ha; Ghana: 18,880; Philippines: 50,000 ha; Gabon: 67,154 ha; Cameroon: 73,086 ha.

<sup>71</sup>Timor-Leste: 100,000 ha; CAR: 187,856 ha; Liberia: 220,000 ha; Congo: 470,000 ha; South Sudan: 600,000 ha—extendable to 1,000,000 ha.

<sup>72</sup>Except Madagascar.

<sup>73</sup>Cameroon, Congo, Sierra Leone, South Sudan.

<sup>74</sup>CAR, Ghana, Liberia, South Sudan.

<sup>75</sup>Ethiopia.

<sup>76</sup>DRC, Mali, Mozambique, South Sudan, Sudan, Cambodia, Malaysia, Philippines, Timor-Leste.

<sup>77</sup>Mozambique, Sudan.

<sup>78</sup>Cambodia, Liberia.

<sup>79</sup>Burundi.

<sup>80</sup>Philippines.

<sup>81</sup>Loi No. 036-2015/CNT Portant Code Minier du Burkina Faso, art 124.

### *Right to water subject to permit application*

Other contracts require mining contractors to acquire State authorization to exploit, or enable exploitation on its behalf, of water resources in the project area pursuant to a water usage agreement in compliance with the legislation.<sup>82</sup> According to a Guinean contract, the contractor must obtain approval from the competent authority for exploiting unused waterfalls that are not reserved for mining activities. Based on a Papua New Guinea contract, the State must grant the contractor water use permits allowing water extraction to enable mining. A Mongolian contract states that the State 'shall ensure that a contract [30 years, extendable for 20 years] on water utilization is awarded upon request of the Investor in accordance with the Water Law, the Law on Fees for Use of Water and Mineral Water and other laws and regulations'. And according to a Malawian contract, the contractor can take the necessary water subject to a permit from the relevant minister.

### *Right to use water from public water provision*

A Cameroonian contract allows the contractor to either negotiate drawing from the water facilities available in the relevant project area or negotiate to receive running water supplies through a contract with any entity entitled to distribute water. A Tunisian contract states that the licensing authority shall 'facilitate to the Licensee, if it so requests, the subscription to temporary or permanent subscription policies to the public drinking or industrial water distribution networks, within the limit of its legitimate needs, and within the limit of the flows available to these networks, in accordance with the provisions of the Water Code'. A Zambian contract states that the government 'will procure the provision of municipal water infrastructure the areas in which the contractor will operate'.

### *Right to develop infrastructure*

A Sierra Leonean contract grants a company the right to construct and operate, within or outside the contract area, infrastructures or facilities needed for the mining operations, including for example water supply systems, subject to State approval. A Senegalese contract authorizes the contractor to carry out work required for the supply of water to works and facilities.

## 3.3.2 | Petroleum contracts

### *Right to use water*

Some petroleum contracts have provisions in place that state that contractors can use water for petroleum operations,<sup>83</sup> or have a right to use water,<sup>84</sup> subject to the provision that people, livestock watering places, homes and/or flora and fauna are not deprived from

water and/or that water is adversely affected,<sup>85</sup> that existing irrigation or navigation is not disturbed<sup>86</sup> or efforts are taken to minimize adverse effects.<sup>87</sup>

### *Right to use water subject to approval or permit application*

Some contracts state that the water use is subject to State approval or authorization.<sup>88</sup> In other contracts, water use is subject to obtaining a water use permit. For example, a Kenyan and Malawian contract state that the Minister or Ministry 'shall facilitate on behalf of the Contractor any permit necessary to enable the Contractor to use the water in the Contract Area for the purpose of the Petroleum Operations'. This is subject to other water uses not unreasonably being deprived of their supply of water. Similarly, a contract in Jordan states that the government will assist in obtaining the permission to use water. According to contracts in Azerbaijan, Cameroon and Nigeria, although not specifically mentioning water, the contractor shall acquire the authorization required for or in connection with the petroleum operations.

Other contracts describe the facilitating role of the State. For example, a Mozambican contract states that the government must authorize the contractor the right to use, drill for and/or impound water and establish water supply systems, for the petroleum operations. And a Tunisian contract shall give the contractor the facilities that cover the supply of water.

### *Right to construct water infrastructure*

A few contracts grant the right to construct water works needed for their activities.<sup>89</sup> For example, a Ugandan contract states that the government shall assist the contractor in obtaining the right to contract facilities related to the operations, which includes water well drilling. A Chadian contract allows contractors to make the necessary boreholes and water works and/or divert watercourses provided that the water supply to people, livestock, fauna and flora is not adversely affected. Similarly, a Mauritanian contract grants the contractor the right to carry out works for the supply of water for petroleum operations, subject to legislation.

## 3.3.3 | Agriculture contracts

About half of land contracts (8 out of 18) include water provisions. Four contracts allow the construction of water infrastructure: an Ethiopia contract grants a contractor a right to build infrastructure including dams, boreholes and water reservoirs subject to government approval; a Liberian contract grants a similar right 'free of charge', subject to legislation and approval which shall not be unreasonably withheld, and the water use shall not deprive others (tribes, villages,

<sup>82</sup>e.g., Cameroon.

<sup>83</sup>Chad, Côte d'Ivoire, Georgia, Guinea, Iraq, Liberia, Tajikistan.

<sup>84</sup>Bangladesh, DRC, Equatorial Guinea, Georgia, Kazakhstan, Mozambique, Senegal, Somalia, Yemen.

<sup>85</sup>Chad, Côte d'Ivoire, DRC, Ethiopia, Georgia, Guinea, Iraq, Liberia, Senegal, Somalia, Tajikistan, Yemen.

<sup>86</sup>Côte d'Ivoire, Liberia.

<sup>87</sup>Georgia, Tajikistan.

<sup>88</sup>Bangladesh, Chad, Ethiopia, Iraq, Jordan, Kazakhstan, Kenya, Madagascar, Malawi, Mauritania, Mozambique, Somalia, Yemen.

<sup>89</sup>Chad, Equatorial Guinea, Jordan, Mauritania, Mozambique, Senegal, Sudan, Uganda.



towns, houses or animals) from the reasonable supply of water. And a Cambodian contract states that the contractor needs a permit to construct a dam on canals.

Based on a Liberian contract, a lease of 220,000 ha of government land includes bodies of water, streams, creeks and rivers on such land. And a Cameroonian contract states that the government grants a contractor the right to exclusively take and use water as necessary for the activities, without obtaining authorization. In Sierra Leone, a contract guarantees no restriction on the volume of water abstracted.

The analysis shows that water rights are explicitly included in most mineral (16 out of 22) and petroleum (26 out of 40) contracts and half of the land (8 out of 18) contracts. States grant contractors (i) a right to use water, (ii) a water right subject to State authorization, (iii) a right of the use of water service provision, and/or (iv) a right to develop water infrastructure. Including water use rights in contracts may have implications, since the right to use water is inextricably linked to the right to use land and the right to operate, taking away the right to use water infringes on the right to operate. With contracts possibly falling under BITs (see Section 4), this can be seen as indirect expropriation of the right to operate, which can be subject to compensation claims (see Section 5). This implies that in addition to a State's water law, water allocations are implicitly also governed by contracts and international law,<sup>90</sup> as water rights are embedded in the current existing legal constructs. This undermines and bypasses a State's water law and water governance regime, which requires water use to be subject to permits.<sup>91</sup>

## 4 | DISPUTE RESOLUTION MECHANISMS

Contracts generally have a provision in place on dispute resolution instruments, to solve a dispute, disagreement, controversy, claim or difference of whatsoever nature arising under, out of, in connection with, or relating (in any manner whatsoever) to the agreement. Investors are granted the right to dispute resolution, and the contracts specify the instruments that are available to them, including the: (i) amicable settlement of disputes within a specified timeframe, (ii) settlement of technical matters by an expert, and (iii) settlement of disputes through arbitration.

### 4.1 | Mineral contracts

Most mineral contracts urge the contractors to settle the dispute amicably. Some countries specify that this should happen between 15 and 120 days.<sup>92</sup> Three States require mediation to be exhausted before going to arbitration.<sup>93</sup>

<sup>90</sup>OK Folake, 'State Responsibility for Breaches of Investment Contracts' (2020) 23 *Journal of International Economic Law* 293.

<sup>91</sup>Bosch et al (n 7).

<sup>92</sup>15 (Malawi), 30 (DRC, Liberia, Tunisia, Zambia), 45 (Afghanistan), 60 (DRC, Liberia, Tunisia, Zambia), 90 (Burkina Faso, Egypt, Niger, Senegal) and 120 (Guinea) days.

<sup>93</sup>Liberia, Malawi, Philippines.

In all mining contracts, the disputes are finally resolved through arbitration, subject to specified rules, by one or three arbitrators selected by both parties. The arbitration decision is binding, final and without appeal. The contracts refer to the Arbitration Rules of the International Chamber of Commerce (ICC),<sup>94</sup> the Convention on the Settlement of Investment Disputes Between States and Nationals of Other States (ICSID),<sup>95</sup> the Arbitration Rule of the United Nations Commission on International Trade Law (UNCITRAL),<sup>96</sup> the London Court of International Arbitration (LCIA),<sup>97</sup> the Arbitration Rules of the Cairo Regional Centre for International Commercial Arbitration,<sup>98</sup> the Joint Court of Justice of Abidjan<sup>99</sup> and the Philippines Arbitration Act.<sup>100</sup> A few States explicitly waive any right or claim of (sovereign) immunity from jurisdiction made by an arbitral tribunal,<sup>101</sup> meaning a State cannot invoke its immunity from jurisdiction to avoid arbitration.<sup>102</sup> This implies that in case of arbitration, a State can lose control over the water included in investor-State contracts.

Some States (8 out of 22) provide for technical dispute resolution,<sup>103</sup> for example, via an independent technical expert, chosen jointly by the parties, whose decision by expert opinion is binding, final and without appeal.

### 4.2 | Petroleum contracts

In most petroleum contracts, the parties agree to make a reasonable effort to solve disputes amicably. Failing such an amicable solution within specified days, the dispute can be submitted for formal settlement via an expertise procedure or arbitration.

Fifteen countries allow a 'technical dispute' to be submitted to an expertise procedure administered in accordance with the agreement or specified rules. This procedure includes appointing a sole qualified expert, or experts, jointly agreed, which is final and binding. Where a dispute persists, it has to be settled by arbitration.<sup>104</sup>

As with mining contracts, all petroleum contract-related disputes are finally and exclusively settled by arbitration, by three arbitrators appointed in accordance with the agreement or arbitration rules. Any party may submit such a dispute to arbitration by notice to the other parties. The tribunal's award is final, irrevocable, binding and enforceable in any court with appropriate jurisdiction. Some contracts follow

<sup>94</sup>Cameroon, DRC, Guinea, Senegal.

<sup>95</sup>Afghanistan, Burkina Faso, Burundi, Malawi, Mali, Mauritania, Papua New Guinea, Zambia.

<sup>96</sup>Ghana, Liberia, Mongolia.

<sup>97</sup>Sierra Leone.

<sup>98</sup>Egypt.

<sup>99</sup>Niger.

<sup>100</sup>Philippines.

<sup>101</sup>Afghanistan, Cameroon, DRC, Guinea, Liberia, Malawi, Papua New Guinea, Sierra Leone, Zambia.

<sup>102</sup>United Nations Convention on Jurisdictional Immunities of States and Their Property (adopted 2 December 2004, not yet in force) UN Doc A/RES/59/38 (2 December 2004) art 7.

<sup>103</sup>Burkina Faso, Cameroon, Malawi, Mali, Papua New Guinea, Senegal, Sierra Leone, Zambia.

<sup>104</sup>Bangladesh, Chad, Ghana, India, Mauritania, Sierra Leone, Tanzania.

the rules of the ICC,<sup>105</sup> UNCITRAL,<sup>106</sup> ICSID,<sup>107</sup> CRCICA,<sup>108</sup> Chartered Institute of Arbitrators (Nigeria), the China International Economic and Trade Arbitration Commission (CIETAC) (China), the Arbitration and Conciliation Act, 1996 (India), or the LCIA (Iraq).

### 4.3 | Agriculture contracts

In eight agricultural contracts, if an amicable solution is not reached within the specified period, the dispute can be settled by a court or by arbitration. In these eight countries, such contract-related disputes are settled by binding arbitration and are subject to the rules of the ICSID,<sup>109</sup> UNCITRAL,<sup>110</sup> ICC<sup>111</sup> or the LCIA-MIAC Arbitration Centre.<sup>112</sup> In four countries,<sup>113</sup> national courts may resolve disputes: for example, the Ethiopian Federal Court<sup>114</sup> or courts in Bangui.<sup>115</sup>

The analysis shows that in the majority of mineral (22 out of 22), petroleum (40 out of 40) and land contracts (8 out of 18), disputes are ultimately solved through international arbitration. This can be problematic for the host State. In case the host State is part of one of the approximately 3,000 BITs, the investor is protected by these treaties and the applicable arbitration rules. States that have signed BITs are bound by the provisions of these agreements which create a favourable investment climate for and protect foreign investors' rights. Protection under contracts is substantively different from protection under BITs. Although the dispute settlement mechanisms may lead to the same arbitral institutions and arbitration rules, the applicable law is not the same. Under a contract, both the State and the investor have rights and obligations, while under a BIT the investor has rights and the State only has obligations (to protect the investment). States may be reluctant to start arbitration proceedings since: (i) the costs of arbitration and possible payment of compensation can be enormous, placing a heavy burden on a State's national treasury,<sup>116</sup> (ii) the arbitration decision takes place behind closed doors,<sup>117</sup> is final, and no appeal is possible and thus not reviewable by a domestic court, and (iii) the award is directly enforceable against the host State under the New York Convention,<sup>118</sup> which is ratified by

most countries in this analysis.<sup>119</sup> Arbitration further reduces the national court's mandate to a supervisory role. National courts are thus side-lined in the dispute settlement process.<sup>120</sup> Thus, de facto, the position of the State as the custodian of the natural resources is impaired. This implies that the responsible authority for water governance can lose control over the water included in investor-State contracts.

## 5 | COMPENSATION

Contractors can claim the right to compensation from the host State in case of direct or indirect expropriation. Direct expropriation occurs when an investment is nationalized, expropriated by physical seizure of assets or formal transfer of title. Indirect expropriation refers to State interference in the investment or benefits that have a similar effect to nationalization or expropriation.<sup>121</sup>

### 5.1 | Mineral contracts

Most mineral contracts (14 out of 22) protect the investor against expropriation without compensation. Two contracts explicitly mention indirect expropriation.<sup>122</sup> Two other contracts, by Liberia and Niger, assure the investor that it has no intention to expropriate, while contracts involving Mauritania and Senegal state that they shall not expropriate or nationalize. Some contracts suggest that a State is allowed to expropriate, for example, for public necessity, interest, utility or purpose, for reasons of national or general interest, where permitted by the appropriation law, or if circumstances or a particular situation require such measures.<sup>123</sup> In these cases, the State promises to pay fair and equitable compensation to the injured parties.

### 5.2 | Petroleum contracts

Unlike mineral contracts, only four petroleum contracts mention expropriation, nationalization or other taking, stating that the capital, property, assents, rights or interests of a contractor shall not be expropriated. The exceptions are if this is for public or national purposes or interest, only in accordance with the due process of law, on a non-discriminatory basis and subject to the payment of compensation.

<sup>105</sup>Chad, Congo, DRC, Equatorial Guinea, Côte d'Ivoire, Indonesia, Jordan, Liberia, Libya, Mauritania, Pakistan, Somalia, Tajikistan, Tanzania, Tunisia, Yemen.

<sup>106</sup>Azerbaijan, Bangladesh, Cambodia, Cameroon, China, Egypt, Ethiopia, Ghana, Kenya, Mongolia, Mozambique, Sierra Leone, Uganda.

<sup>107</sup>Afghanistan, Cameroon, Georgia, Guinea, Kazakhstan, Madagascar, Malawi, Pakistan, Senegal, Sierra Leone, Timor-Leste.

<sup>108</sup>Egypt.

<sup>109</sup>Cameroon, Liberia.

<sup>110</sup>Congo.

<sup>111</sup>Gabon, Sierra Leone, South Sudan.

<sup>112</sup>Ghana.

<sup>113</sup>Cambodia, CAR, Ethiopia, Mali.

<sup>114</sup>Ethiopia.

<sup>115</sup>CAR.

<sup>116</sup>LE Trakman, 'Investor State Arbitration or Local Courts: Will Australia Set a New Trend?' (2012) 46 *Journal of World Trade* 83.

<sup>117</sup>S Lester, 'Rethinking the International Investment Law System' (2015) 49 *Journal of World Trade* 211.

<sup>118</sup>United Nations Convention on the Recognition and Enforcement of Foreign Arbitral Awards (adopted 10 June 1958, entered into force 7 June 1959) 330 UNTS 3; see New York Arbitration Convention, 'In Brief' (2022) <<https://www.newyorkconvention.org/in+brief>>.

<sup>119</sup>New York Arbitration Convention, 'Contracting States: New York Convention' (2022) <<https://www.newyorkconvention.org/countries>>. Chad, Congo, Togo, Libya, Somalia, South Sudan, Timor-Leste and Yemen have not ratified the Convention.

<sup>120</sup>S Sattar, 'National Courts and International Arbitration: A Double-Edged Sword?' (2010) 27 *Journal of International Arbitration* 51.

<sup>121</sup>Organisation for Economic Co-operation and Development (OECD), "'Indirect Expropriation" and the "Right to Regulate" in International Investment Law' (OECD 2004) 3–4.

<sup>122</sup>Liberia, Niger.

<sup>123</sup>Afghanistan, Burkina Faso, Cameroon, Egypt, Guinea, Liberia, Mali, Mauritania, Mongolia, Senegal, Zambia.

### 5.3 | Agriculture contracts

Six land contracts have provisions on (in)direct expropriation. Four contracts state that expropriation in the public interest is subject to compensation<sup>124</sup> or that the government shall not expropriate or nationalize, except upon payment of compensation.<sup>125</sup> Regarding indirect expropriation, in the event that the Cameroonian government undertakes activities that adversely impact the (future) production of the contractor, the investor is to be compensated for the devaluation of their investment. In Madagascar, a breach of contract allows the investor to claim compensation for damage.

Of the 80 contracts, 24 have a provision in place on expropriation, which can be problematic, as it allows investors to claim compensation in case of expropriation.<sup>126</sup> Since there are approximately 3,000 BITs in place, contracts may possibly fall under one of the BITs. Moreover, about 97% of these BIT agreements mention indirect expropriation,<sup>127</sup> which gives more ground for possible claims. For example, if a host State interferes with the water use impairing the right to operate, foreign investors may claim a breach of a BIT.<sup>128</sup> This may limit the State in governing the water resources. There are multiple examples where host States have been found liable for breaching the BIT against a foreign investor in which compensation had to be paid. For example, in both *Vivendi Universal v Argentine Republic*<sup>129</sup> and *SAUR International v Argentine Republic*,<sup>130</sup> indirect expropriation was found in which the claimants were awarded US\$105 million and US\$39.9 million in compensation respectively, because of the BIT (i.e., Argentina-France BIT and Argentina-United States BIT) being breached.<sup>131</sup>

## 6 | STABILITY

The right to stability guarantees a stable investment climate regarding commercial operations, including protection against legislative change after the agreement was signed, and State support to contractors regarding contract implementation.

### 6.1 | Change of legislation

#### 6.1.1 | Mineral contracts

Most mining contracts (14 out of 22) have provisions that to some extent guarantee stability by protecting the investors against

modifications in the applicable law, the adoption of new laws or provisions, conditions, regulations and/or administrative action, which unfairly or adversely affect the interest, operations, economic or commercial position or rights of the investor.<sup>132</sup> In case the investor experiences an adverse impact, compensation can be claimed,<sup>133</sup> or the State must agree to amendments to the contract to maintain the economic or commercial position.<sup>134</sup> Some contracts even state that the change shall not be applicable to the investor.<sup>135</sup>

#### 6.1.2 | Petroleum contracts

Thirty petroleum contracts have a provision on stability that to some extent guarantees to the company stability regarding the legal regime. Most contracts guarantee to the contractor stability of the legal, economic, petroleum, fiscal, customs, financial and/or exchange control regime applicable to the contract and to the petroleum operations, by guaranteeing the maintenance of the general economic equilibrium for the contract's duration. Where a State modifies the relevant legal framework, or when there is a change in the interpretation by a judicial, arbitral or administrative authority which significantly affects the general economic balance of the contract, the terms of the contract may be renegotiated at the request of either of the parties to restore the balance (24 out of 40).<sup>136</sup>

#### 6.1.3 | Agriculture contracts

Four land contracts protect investors against a change of law, and provisions on restoring adverse impact. For example, a Cameroonian contract states that if any change of law impairs, conflicts with or interferes with the implementation of the project, or limits, adversely affects the value of the production area, or the rights, indemnifications or protections granted under the contract, or imposes (directly or indirectly) any costs on the contractor, the government will compensate the contractor.

Most mining contracts (14 out of 22), petroleum contracts (28 out of 40), and land contracts (9 out of 18) have a stabilization clause in place protecting the investor against for example a change and adoption of laws, provisions, conditions or regulations that would adversely affect the interest, operations, economic or commercial position or rights of the investor. While this creates a more favourable investment climate, legitimate expectations for the foreign investors, and minimizes their risk, it can cause problems for the host State. For example, it can limit a State in amending or modifying its legislation (the 'freezing' or 'chilling' effect) or can only do so if it restores the

<sup>124</sup>Gabon, Mali.

<sup>125</sup>Liberia, Sierra Leone.

<sup>126</sup>J Marboe, 'Damages in Investor-State Arbitration: Current Issues and Challenges' (2018)

2 Brill Research Perspectives in International Investment Law and Arbitration.

<sup>127</sup>UNCTAD, 'International Investment Agreements Navigator (2022) <[https://](https://investmentpolicy.unctad.org/international-investment-agreements/iia-mapping#>)

[investmentpolicy.unctad.org/international-investment-agreements/iia-mapping#>](https://investmentpolicy.unctad.org/international-investment-agreements/iia-mapping#>).

<sup>128</sup>J Chaisse and M Polo, 'Globalization of Water Privatization: Ramifications of Investor-State Disputes in the Blue Gold Economy' (2015) 38 Boston College International and Comparative Law Review i.

<sup>129</sup>*Compañía de Aguas del Aconquija S.A. and Vivendi Universal S.A. v Argentine Republic*, ICSID Case No. ARB/97/3, Award, 10 August 2010.

<sup>130</sup>*SAUR International SA v Republic of Argentina*, ICSID Case No. ARB/04/4, Award, 22 May 2014.

<sup>131</sup>Chaisse and Polo (n 128).

<sup>132</sup>Afghanistan, Cameroon, Ghana, Guinea, Liberia, Malawi, Mali, Mauritania, Mongolia, Niger, Papua New Guinea, Senegal, Sierra Leone, Zambia.

<sup>133</sup>Cameroon, Malawi, Senegal.

<sup>134</sup>Afghanistan, Ghana, Sierra Leone.

<sup>135</sup>Mali, Mauritania, Mongolia.

<sup>136</sup>Afghanistan, Azerbaijan, Cambodia, Chad, China, Congo, Côte d'Ivoire, DRC, Egypt, Equatorial Guinea, Ethiopia, Georgia, Ghana, Guinea, India, Iraq, Kenya, Liberia, Malawi, Mozambique, Pakistan, Senegal, Tajikistan, Uganda.

economic equilibrium—stabilizing the economic position of the investor.<sup>137</sup> Moreover, it may hinder a State's pursuit of sustainable development and the realization of human rights.<sup>138</sup> In case raising the environmental and social standards would affect the economic equilibrium, resulting in a breach of the stabilization clause, compensation can be claimed.<sup>139</sup> This may result in the freezing of the 'non-optimal balance between social, environmental and economic considerations'.<sup>140</sup> When falling under the umbrella clauses of a BIT, not only is compensation more likely to be awarded, compensation is also likely to be higher.<sup>141</sup>

## 6.2 | State support to investors

### 6.2.1 | Mineral contracts

Sixteen contracts have provisions supporting contractors regarding contract implementation. For example, seven contracts specifically offer State facilitation in acquiring the necessary authorizations for mining operations.<sup>142</sup> A contract involving Niger requires the State to take all measures and grant all necessary authorizations for mining operations in accordance with the law. A Burkina Faso contract states that the government guarantees the investor the right to use all the rights arising from the exploitation permit during the contract's validity. A Philippines contract commits the State to fully cooperate with the contractor in the exercise of its rights granted under the contract. In another contract, Mauritania guarantees the company stable conditions and advantages during the contract period.

### 6.2.2 | Petroleum contracts

Twenty-eight petroleum contracts provide State support: 18 pertain to the State<sup>143</sup> (government, ministry, minister, State company or agency, president) taking reasonable steps in facilitating or assisting in, granting necessary permits, licenses or authorizations for petroleum operations. Although there is no explicit reference to water, two contracts<sup>144</sup> explicitly ensure government support in securing water. Eleven other contracts have more general provisions on support, indicating that the State will take all reasonable measures in facilitating or assisting in the objectives or activities of the contractor.

### 6.2.3 | Agriculture contracts

Half of the land contracts (9 out of 18) include State support provisions ranging from the government guaranteeing the investor the peaceful enjoyment and use of the land for the duration of the lease<sup>145</sup> to assisting in obtaining the necessary authorizations.<sup>146</sup> Two contracts<sup>147</sup> state that the government promises to facilitate, coordinate or safeguard the investor's business operations, and support the development of the project by agreeing to the main incentives, exemptions and rights.

Most contracts explicitly state that countries must facilitate the investments of contractors including facilitating the relevant permits (which may include water permits). This may result in conflicting interests: for example, while the department mandated with the governance of water is responsible for sustainable water governance, ensuring access to water and granting water use permits, the departments mandated with managing the national treasury, and mineral, oil or land may focus only on revenue generation and economic growth, without considering the availability of water and ecosystems.<sup>148</sup> Many developing countries depend financially on the large multinational investors, either sharing profits or receive royalties and/or taxes.<sup>149</sup> Economic gain tends to prevail over sustainable water governance for the benefit of the public.<sup>150</sup>

## 7 | ALIENATION

The right to alienate includes the right to transfer assets or rights. Most mining and petroleum contracts (19 out of 22 and 40 out of 40, respectively) grant the investor the right to alienate. In some contracts, the contractor is given a mining license—the sole right to explore, develop and produce petroleum in the contract area and to exercise other rights granted by the agreement. The contractor is also granted the right to alienate (i.e., sell, assign, transfer, convey or otherwise dispose of all or any part of the rights, interests and obligations under the agreement) subject to approval. In other contracts, the parties agree to establish a joint venture or operating company that is responsible for carrying out the exploitation works. The joint venture may be subject to consent and/or assign its entire interest or an undivided proportionate share of its interest in the project assets or its rights and obligations under the contract.

More than half the land contracts (11 out of 18) grant investors the right to transfer (i.e., assign, mortgage, charge, pledge or otherwise encumber) any or all interests or rights and obligations subject to

<sup>137</sup>S Frank, 'Stabilisation Clauses and Foreign Direct Investment: Presumptions Versus Realities' (2015) 16 *Journal of World Investment and Trade* 88.

<sup>138</sup>L Cotula, 'Regulatory Takings, Stabilisation Clauses and Sustainable Development' in OECD (ed), *OECD Investment Policy Perspectives 2008* (OECD Publishing 2009) 69.

<sup>139</sup>E Quak, 'The Impact of State-Investor Contracts on Development' (2018) <[https://assets.publishing.service.gov.uk/media/5c18dc6a40f0b60c22fb8e88/397\\_The\\_Impact\\_of\\_State-Investor\\_Contracts\\_on\\_Development.pdf](https://assets.publishing.service.gov.uk/media/5c18dc6a40f0b60c22fb8e88/397_The_Impact_of_State-Investor_Contracts_on_Development.pdf)>.

<sup>140</sup>Cotula (n 138) 70.

<sup>141</sup>AFM Maniruzzaman, 'Damages for Breach of Stabilisation Clauses in International Investment Law: Where Do We Stand Today?' (2007) *International Energy Law and Taxation Review* 246.

<sup>142</sup>Afghanistan, Burkina Faso, Burundi, Cameroon, DRC, Guinea, Niger.

<sup>143</sup>Cambodia, China, DRC, Ethiopia, Equatorial Guinea, Georgia, Guinea, Iraq, India, Jordan, Kenya, Liberia, Madagascar, Malawi, Mauritania, Pakistan, Tajikistan, Yemen.

<sup>144</sup>Jordan, Kenya.

<sup>145</sup>Ethiopia, Gabon, Mali.

<sup>146</sup>Liberia, South Sudan, Timor-Leste.

<sup>147</sup>Cambodia, Cameroon.

<sup>148</sup>V Munnik, 'Water risks of coal driven mega projects in Limpopo: The Mokolo Crocodile West Augmentation Project (MCWAP) and the Electro Metallurgical Special Economic Zone (EMSEZ)' (Friedrich Ebert Stiftung and University of Witwatersrand 2020).

<sup>149</sup>UNCTAD (n 141); P Guj, 'Mining Taxation in Mineral-Rich Developing Countries: Past Mistakes and Future Challenges' in SK Lodhia (ed), *Mining and Sustainable Development* (Routledge 2018) 176.

<sup>150</sup>C Pahl-Wostl, J Gupta and D Petry, 'Governance and the Global Water System: A Theoretical Exploration' (2008) 14 *Global Governance* 419.

providing notice to the government or government consent. In some contracts, the transfer of land or land use rights (by transferring shares, setting up a new company or subletting the land) is subject to prior consent, and/or on the completed level of development as agreed in the contract, for example, a percentage of land developed ranging from 30%,<sup>151</sup> 75%<sup>152</sup> to 100%.<sup>153</sup> A contract by Congo allows the investor to partially subcontract the land subject to state approval, while a South Sudan contract grants the right to sublease any part of the land. A Gabonese contract states that the long leases constitute a real right for the lessee which is transferable and mortgageable.

Most mining, petroleum and land contracts (19 out of 22, 40 out of 40, and 11 out of 18, respectively) have a provision in place on the right to alienate. This allows the contractor to transfer any part of the rights, interests and obligations under the agreement before the contract period ends. For the contract period, the government no longer holds the granted rights and loses control over these rights. Since these rights can be alienated, the only way to get the rights back is to break up the contract, which is subject to compensation. Regarding water, this implies that when water rights are included in the contracts, these rights are *de facto* no longer part of the public domain and are only returned once the contract ends.<sup>154</sup> With investors holding the right to alienate, water is thus not returned to the public domain when changing hands. This may impair adaptive water governance.<sup>155</sup>

## 8 | CONCLUSION

We have assessed how investor-State contracts on minerals, petroleum and land affect water rights. Although contracts are normally confidential and difficult to access, we accessed and analysed 80 publicly available contracts—22 mineral, 40 petroleum and 18 land—of 34 African and 19 Asian countries. The analysis of these contracts is just the tip of the iceberg; the contracts that are not publicly available may have even more restrictive clauses.

The analysis shows, first, that water rights are explicitly included in most mineral (14 out of 22) and petroleum (26 out of 40) contracts, and half of the land (8 out of 18) contracts. They grant the contractor: (i) a right to use water, (ii) a water right subject to State authorization, (iii) a right of the use of water service provision, and/or (iv) the right to develop water infrastructure. The right to use water or develop water infrastructure undermines and bypasses a State's water law, which requires water use to be subject to permits.<sup>156</sup> Even if a water use right is granted based on a permit, by being included in an investor-State contract, it is possible that the rules of the contract override the water law's provisions or require so much compensation

that States cannot really withdraw such permits easily. This affects the ability of poorer countries to adaptively govern water based on new and changing circumstances. The right to develop infrastructure may result in exclusive claims to (stored) water.

Second, the right to water is inextricably linked to the right to operate, and the right to land—bound to each other by the contract and protected by a global network of BITs. No operation can take place without water. When a water right is taken away, the right to operate is encroached on.

Third, contracts are granted for long periods, including the possibility to extend the period. Once granted, the rights that are included in a contract cannot easily be reallocated. The longer the contract period, the longer water rights are allocated, and the longer States lose control over these water rights.

Fourth, most contracts allow the investor to transfer any part of the rights before the contract period ends. With investors holding the right to alienate, water rights are not returned to the public domain when changing hands. Only when the contract ends, or when the contract is breached, can water be reallocated. This impairs adaptive water governance.

Fifth, contracts are protected by BITs and arbitration rules, which can be problematic for the host State. Dispute settlement most often involves international arbitration, which reduces the national court's mandate to a supervisory role. National courts are thus side-lined in the dispute settlement process. This affects the control over the water that is included in investor-State contracts.

Sixth, related to this, in case of expropriation of the right to operate, compensation can be claimed. While few contracts mention indirect expropriation, most (97%) BITs mention the possibility to claim compensation in case of indirect expropriation. States that have signed BITs are bound by the provisions of these agreements which create a favourable investment climate for and protect foreign investors' rights. Taking the right of water away indirectly encroaches on the right to operate as without water, no operation can take place. This may imply an indirect expropriation of the right to operate and breach of a BIT, which may lead to compensation claims. States may be reluctant to resolve matters through arbitration because of the high costs of arbitration and possible payment of compensation, reputation damage and loss of FDI. This may result in States losing control over the water included in investor-State contracts.

Seventh, most contracts have a stabilization clause in place. While this protects the investor from any adverse impact on the economic equilibrium of the investment, it may restrict the ability of the State to amend or modify their legislation and hinder its pursuit of sustainable development. Compensation can be claimed if raising environmental and social standards would affect the economic equilibrium for the investor.

We conclude that in addition to a State's water law, water allocation is also implicitly governed by contracts and international investment treaties. Even though States have put all water in the public domain, States *de facto* privatize water by allocating quasi-property rights through the granting of contracts to foreign international investors. Thus, waters exploited by virtue of contracts granted by States

<sup>151</sup>Sudan.

<sup>152</sup>Ethiopia.

<sup>153</sup>Mali.

<sup>154</sup>Bosch et al (n 7).

<sup>155</sup>J Gupta and C Pahl-Wostl, 'Global Water Governance in the Context of Global and Multilevel Governance: Its Need, Form, and Challenges' (2013) 18 *Ecology and Society* 1; Cotula (n 4).

<sup>156</sup>Bosch et al (n 7).

can be seen as being de facto excluded from the public domain. States further appear to have lost their regulatory power and control over the water resources, as investors' water use is protected by BITs, arbitration and compensation claims, limiting the State's ability to govern, redistribute and reallocate water. Contracts can be inconsistent with the aims of host country development policies, and since contracts are in place for long periods, they will still be in place as the effects of climate change on water availability become more noticeable and require States increasingly to reallocate the water.

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#### DATA AVAILABILITY STATEMENT

The data that support the findings of this study are publicly available. These data were derived from the following resources available in the public domain: the petroleum and mining contracts at <<https://resourcecontracts.org/>>, and land contracts at <<https://www.openlandcontracts.org/>>.

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## APPENDIX A

**TABLE A1** Overview of contracts included in analysis

Contract # and document code	Host country	Contract type	Government entity	Company name	Year	
<b>Mining contracts</b>						
1	1410	Burkina Faso	Concession Agreement	State of Burkina Faso	La Societe Roxgold Sanu SA	2015
2	837	Burundi	Concession Agreement	State of Burundi	Burundi Mining Metallurgy International (BMM International)	2013
3	691	Cameroon	Concession Agreement	Republic of Cameroon	Cam Iron S.A.	2012
4	3942	Chad	Cahier des Charges	Chadian State	Serdar Tchad Company	2016
5	4067	DRC	Concession Agreement	La Generale des Quares et ees Mines SA.	Evelyne Investissement Sau	2018
6	5057	Egypt	Exploration Permit/License [Model contract]	Egyptian Mineral Resource Authority	N.A.	2021
7	2791	Ghana	Concession Agreement	Government of The Republic of Ghana	XTRA Gold Mining Limited	2011
8	4822	Guinea	Exploitation Permit/License	The Republic of Guinea	Simandou-Sau	2020
9	834	Liberia	Concession Agreement	Government of The Republic of Liberia	Western Cluster Ltd; Sesa Goa Ltd; Bloom Fountain Ltd; Elenilto Minerals and Mining LLC.	2011
10	2136	Malawi	Concession Agreement	Government of The Republic of Malawi	Paladin (Africa) Limited; Paladin Energy Minerals NL	2007
11	1249	Mali	Concession Agreement	The Government of The Republic of Mali	La Société des Mines De Goukoto SA	2014
12	4100	Mauritania	Concession Agreement	Islamic Republic of Mauritania	La Société Mauritania Copper Mines	2009
13	952	Niger	Exploitation Permit/License	Republic of Niger	Areva NC	2009
14	2385	Senegal	Concession Agreement	Government of The Republic of Senegal	Mapathe Ndiouck Company (EMN)	2016
15	4024	Sierra Leone	Concession Agreement	Government of Sierra Leone	SierraMin Bauxite (SL) Ltd.	2017
16	4734	Togo	Exploration Permit/License	Togolese Republic	Jun Hao Mining (Togo) SA	2018
17	2490	Tunisia	Cahier des Charges	Tunisia	EL BENIA	2016
18	1680	Zambia	Concession Agreement	Government of The Republic of Zambia	Konkola Copper Mines Plc (KCM)	2000
19	4727	Afghanistan	Concession Agreement	Government of The Islamic Republic of Afghanistan	Natural Stone Company	2020
20	18	Mongolia	Concession Agreement	Government of Mongolia	Ivanhoe Mines Mongolia Inc LLC; Ivanhoe Mines Ltd; Rio Tinto International Holdings Ltd.	2009
21	2808	Papua New Guinea	Joint Venture Agreement	Papua New Guinea	Ramu Nickel Ltd. Orogen Minerals (Ramu) Ltd.	2000
22	73	Philippines	Production or Profit Sharing Agreement	Republic of the Philippines	Mt. Sinai mining exploration and development corporation	2011
<b>Petroleum contracts</b>						
23	758	Cameroon	Joint Venture Agreement	Societe Nationale Des Hydrocarbures (SNH)	Perenco Oil and Gas (Cameroon) Kosmos Energy Cameroon HC	2008

TABLE A1 (Continued)

Contract # and document code	Host country	Contract type	Government entity	Company name	Year
24 4209	Chad	Production or Profit Sharing Agreement	La République du Tchad	Ewaab Investors Ltd.	2019
25 4158	Congo	Production or Profit Sharing Agreement	The Societe Nationale des Petroles du Congo	Total E&P Congo	2019
26 5203	DRC	Production or Profit Sharing Agreement	The Democratic Republic of the Congo	Dominion Petroleum Congo Soco Exploration-Production RDC La Congolaise Des Hydrocarbures	2007
27 5155	Egypt	Concession agreement	Arab Republic of Egypt; Egyptian Natural Gas Holding Company	IEOC Production B.V.; BP Exploration (Delta) Ltd.	2021
28 4074	Equatorial Guinea	Production or Profit Sharing Agreement [Model contract]	Republic of Equatorial Guinea; Guinea Ecuatorial de Petróleos	N.A.	2017
29 2165	Ethiopia	Production or Profit Sharing Agreement [Model contract]	Federal Democratic Republic of Ethiopia	N.A.	2011
30 2166	Ghana	Concession agreement	Government of The Republic of Ghana; Ghana National Petroleum Corporation.	GNPC Exploration and Production Company Ltd; Eni Ghana Exploration and Production Ltd; Vitol Upstream Tano Ltd.; Woodfields Upstream Ltd.	2015
31 2143	Guinea	Production or Profit Sharing Agreement	Republic of Guinea	SCS Corporation	2006
32 2752	Côte d'Ivoire	Production or Profit Sharing Agreement	Republic of Cote d'Ivoire	BP Exploration Operating Company Ltd; Kosmos Energy Cote d'Ivoire; Petrochi Holding	2017
33 150	Kenya	Production or Profit Sharing Agreement	Republic of Kenya	ERHC AGC Profond LTD.	2012
34 2116	Liberia	Production or Profit Sharing Agreement [Model contract]	The Republic of Liberia by and through the National Oil Company of Liberia	N.A.	2004
35 1275	Libya	Exploration and Production Sharing Agreement	Joint Exploration Exploitation and Petroleum Services Company	Canadian Superior Energy Inc.	2008
36 4173	Madagascar	Production or Profit Sharing Agreement [Model contract]	The Office of National Mines and Strategic Industries (OMNIS)	N.A.	2006
37 2584	Malawi	Production or Profit Sharing Agreement	Government of the Republic of Malawi	RAK Gas MB45 Ltd.	2014
38 4428	Mauritania	Production or Profit Sharing Agreement [Model contract]	République Islamique de Mauritanie	N.A.	2018
39 3975	Mozambique	Production or Profit Sharing Agreement	Government of Mozambique	Sasol Petroleum Mozambique Exploration Ltd Empresa Nacional de Hidrocarbonetos E.P.	2018
40 713	Nigeria	Production or Profit Sharing Agreement	Nigerian Petroleum Development Company Ltd.	Atlantic Energy Drilling Concepts Nigeria Limited	2011
41 2831	Senegal	Production or Profit Sharing Agreement	Republic of Senegal	Blackstairs Energy Senegal Limited Societe des Petroles du Senegal	2013

(Continues)



TABLE A1 (Continued)

Contract # and document code	Host country	Contract type	Government entity	Company name	Year
42 2183	Sierra Leone	Concession agreement [Model Contract]	Government of the Republic of Sierra Leone	N.A.	2012
43 171	Somalia	Production or Profit Sharing Agreement	Government of Puntland	Canmex Holdings (Bermuda) II Ltd; Range Resources Limited	2007
44 1819	Tanzania	- [Model contact]	The Government of The United Republic of Tanzania; Tanzania Petroleum Development Corporation	N.A.	2013
45 2015	Tunisia	Concession agreement	Tunisian State	Tunisian Oil Activities Company	2011
46 147	Uganda	Production or Profit Sharing Agreement	Government of The Republic of Uganda	Tullow Uganda Limited	2012
47 2806	Afghanistan	Production or Profit Sharing Agreement	The Ministry of Mines & Petroleum of the Government of the Islamic Republic of Afghanistan	Dragon Oil (Mazar-i-Sharif) Limited TP Afghanistan Limited Ghazanfar Investment Ltd.	2013
48 5159	Azerbaijan	Production or Profit Sharing Agreement	The State Oil Company of the Republic of Azerbaijan	Zenith Aran Oil Company Limited Socar Oil Affiliate	2016
49 2161	Bangladesh	Production or Profit Sharing Agreement [Model contract]	President of the People's Republic of Bangladesh; Bangladesh Oil, Gas and Mineral Corporation (Petrobangla)	N.A.	2008
50 2162	Cambodia	Production or Profit Sharing Agreement [Model contract]	Kingdom of Cambodia	N.A.	2004
51 768	China	Production or Profit Sharing Agreement	People's Republic of China; China United Coalbed Methane Corp. Ltd	Pacific Asia Petroleum Ltd.	2007
52 789	Georgia	Production or Profit Sharing Agreement	State of Georgia: State Agency for Regulation of Oil and Gas Resources in Georgia, Georgia Oil	Canargo Norio Ltd.	2000
53 805	India	Production or Profit Sharing Agreement	The Government of India; Oil India Ltd	Geoglobal Resources (Barbados) Inc.	2007
54 4791	Indonesia	- [Model contact]	Badan Pelaksana Kegiatan Usaha Hulu Minyak Dan Gas Bumi (Badan Pelaksana)	N.A.	2013
55 1773	Iraq	Production or Profit Sharing Agreement	Kurdistan Regional Government of Iraq.	Repsol YFP Oriente Medio S.A.	2011
56 2169	Jordan	Production or Profit Sharing Agreement [Model contract]	Natural Resources Authority of the Hashemite Kingdom of Jordan	N.A.	2009
57 844	Kazakhstan	Concession agreement	Ministry of Energy and Mineral Resources of The Republic of Kazakhstan	Joint-Stock Company Caspi NEFT TME.	2006
58 18	Mongolia	Production or Profit Sharing Agreement	Mineral Resources and Petroleum Authority of Mongolia	DWM Petroleum Ag	2009
59 2181	Pakistan	Concession agreement [Model contract]	President of the Islamic Republic of Pakistan	N.A.	2009

TABLE A1 (Continued)

Contract # and document code	Host country	Contract type	Government entity	Company name	Year
60 821	Tajikistan	Production or Profit Sharing Agreement	Government of Republic of Tajikistan Represented by the State Authorized Body Ministry of Energy and Industry	Kulob Petroleum Limited	2008
61 2306	Timor-Leste	Production or Profit Sharing Agreement [Model contract]	Autoridade Nacional Do Petroleum	N.A.	2014
62 143	Yemen	Production or Profit Sharing Agreement	Ministry of Oil and Minerals	Occidental of Yemen TG Holdings Yemen Yemen General Corporation for Oil & Gas	2007
<b>Land/agricultural contracts</b>					
63 1150	Cameroon	Contract	Republic of Cameroon – represented by the Minister of Economy, Planning and Regional Development.	SG Sustainable Oils Cameroon PLC	2009
64 4655	Central African Republic	Contract	The Ministry of Water, Forests, Hunting and Fishing	The Company Timberland Industries S.A.	2019
65 4313	Congo	Contract	Congo: Ministry of Agriculture and Livestock.	Atama Plantation Company	2010
66 3623	DRC	Contract	Democratic Republic of Congo	La Société Plantations Et Huileries Du Congo S.A.	2016
67 1037	Ethiopia	Contract	Ministry of Agriculture, Federal Democratic Republic of Ethiopia	OMO Valley Farm Cooperation PLC.	2012
68 4184	Gabon	Contract	Gabonese Republic	Oil Palm Gabon	2012
69 1842	Ghana	Contract	Government of The Republic of Ghana	Socfinaf S.A.	2015
70 682	Liberia	Contract	Republic of Liberia: Represented by the Minister of Agriculture, the Minister of Finance, the Chairman of the National Investment Commission	Golden Veroleum (Liberia) Inc.	2010
71 1900	Madagascar	Contract	Malagasy State Represented by the Deputy Prime Minister in Charge of Development and Territorial Development	La Societe Tozzi Green	2012
72 2104	Mali	Contract	Office du Niger, a Public Establishment of an Industrial and Commercial Nature	Petrotech - FFN Agro Mali SA	2007
73 4429	Mozambique	Contract	Republic of Mozambique, Ministry of Planning and Development the Office of the Minister	Emvest Chokwe Mauritius Ltd Pro-Alia Investment 1 Mauritius	2009
74 1872	Sierra Leone	Contract	Government of the Republic of Sierra Leone	Socfin Agricultural Company (S.L) Ltd	2012
75 1180	South Sudan	Contract	Mukaya Payam Cooperation, an authorized territorial subdivision of Southern Sudan	Nile Trading & Development, A Delaware Corporation	2008
76 1870	Sudan	Contract	Government of the Republic of Sudan	Government of the Syrian Arab Republic	2002
77 1028	Cambodia	Contract	Kingdom of Cambodia		2010

(Continues)

TABLE A1 (Continued)

Contract # and document code	Host country	Contract type	Government entity	Company name	Year	
				Heng Yue (Cambodia) International Company Limited (Cambodian company)		
78	2785	Malaysia	Contract	Superintendent of Lands and Surveys Samarahan	Lembaga Pembangunan Dan Lindungan Tanah Nirwana Muhibbah SDN. BHD	2000
79	4431	Philippines	Contract	Far East Agricultural Investment Company	Agri Nurture Inc	2010
80	1869	Timor-Leste	Contract	Timor-Leste: Ministry of Agriculture and Fisheries	Gtleste Biotech: Sugar Cane Industry	2008

**APPENDIX B.**

**TABLE B1** Allocation of quasi-property rights through mineral extraction contracts

Contract #	Right to use and operate				Temporal		Alienation		Dispute resolution mechanisms				Compensation		Stability		Change in law/policy
	Mineral mining right	Water use		Permit	Infrastructure	Land rights	Exploitation period	Renew period	Alienation	Amicable settlement	Technical matters	Litigation: Arbitration	Expropriation	Indirect expropriation	State support		
		Right	Permit														
1. Burkina Faso	✓					✓	✓	✓	✓	✓	✓	✓	✓		✓		
2. Burundi	✓	✓	✓			✓	✓	✓	✓	✓	✓	✓			✓		
3. Cameroon	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓		✓		✓
4. Chad <sup>a</sup>	✓						✓	✓									
5. DRC	✓					✓		✓	✓	✓	✓	✓			✓		
6. Egypt <sup>a,b</sup>	✓			✓		✓		✓	✓	✓	✓	✓	✓		✓		
7. Ghana	✓					✓	✓	✓	✓	✓	✓	✓					✓
8. Guinea	✓	✓	✓			✓	✓	✓	✓	✓	✓	✓	✓		✓		✓
9. Liberia	✓	✓	✓			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓
10. Malawi	✓	✓	✓			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓
11. Mali	✓	✓	✓			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓
12. Mauritania	✓	✓	✓			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓
13. Niger	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓
14. Senegal	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓
15. Sierra Leone	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓
16. Togo <sup>a</sup>	✓							✓									
17. Tunisia	✓								✓								
18. Zambia	✓	✓	✓			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓
19. Afghanistan	✓					✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓
20. Mongolia	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓
21. Papua New Guinea	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓
22. Philippines	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓

<sup>a</sup>Exploration/research permit.

<sup>b</sup>Model contract.

**TABLE B2** Allocation of quasi-property rights through petroleum extraction contracts

Contract #	Right to use and operate			Temporal		Alienation		Dispute resolution mechanisms			Compensation		Stability	
	Petroleum extraction right	Water use	Land rights	Exploitation period	Renew period	Alienation	Amicable settlement	Technical matters	Litigation: Arbitration	Expropriation	Indirect expropriation	State support	Change in law/policy	
23. Cameroon	✓			✓		✓			✓					
24. Chad	✓	✓	✓	✓	✓	✓	✓	✓	✓			✓	✓	
25. Congo	✓					✓			✓			✓	✓	
26. DRC	✓	✓	✓	✓	✓	✓		✓	✓			✓	✓	
27. Egypt	✓			✓	✓	✓			✓				✓	
28. Equatorial Guinea <sup>a</sup>	✓	✓	✓	✓	✓	✓	✓	✓	✓			✓	✓	
29. Ethiopia <sup>a</sup>	✓	✓	✓	✓	✓	✓	✓	✓	✓			✓	✓	
30. Ghana	✓		✓	✓	✓	✓	✓	✓	✓			✓	✓	
31. Guinea	✓	✓	✓	✓	✓	✓	✓	✓	✓			✓	✓	
32. Côte d'Ivoire	✓	✓	✓	✓	✓	✓	✓	✓	✓			✓	✓	
33. Kenya	✓	✓	✓	✓	✓	✓	✓	✓	✓			✓	✓	
34. Liberia <sup>a</sup>	✓	✓	✓	✓	✓	✓	✓	✓	✓			✓	✓	
35. Libya	✓			✓		✓			✓					
36. Madagascar <sup>a</sup>	✓	✓	✓	✓	✓	✓	✓	✓	✓			✓	✓	
37. Malawi	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	
38. Mauritania <sup>a</sup>	✓	✓	✓	✓	✓	✓	✓	✓	✓			✓	✓	
39. Mozambique	✓	✓	✓	✓	✓	✓	✓	✓	✓			✓	✓	
40. Nigeria	✓			✓		✓	✓	✓	✓				✓	
41. Senegal	✓	✓	✓	✓	✓	✓	✓	✓	✓				✓	
42. Sierra Leone <sup>a</sup>	✓	✓	✓	✓	✓	✓	✓	✓	✓			✓	✓	
43. Somalia	✓	✓	✓	✓	✓	✓	✓	✓	✓			✓	✓	
44. Tanzania <sup>a</sup>	✓					✓	✓	✓	✓					
45. Tunisia	✓	✓	✓	✓	✓	✓	✓	✓	✓					
46. Uganda	✓	✓	✓	✓	✓	✓	✓	✓	✓			✓	✓	
47. Afghanistan	✓		✓	✓	✓	✓	✓	✓	✓			✓	✓	
48. Azerbaijan	✓		✓	✓	✓	✓	✓	✓	✓			✓	✓	
49. Bangladesh <sup>a</sup>	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	
50. Cambodia <sup>a</sup>	✓		✓	✓	✓	✓	✓	✓	✓			✓	✓	

**TABLE B2** (Continued)

Contract #	Right to use and operate				Temporal		Alienation		Dispute resolution mechanisms			Compensation		Stability		
	Petroleum extraction right	Water use	Right	Permit	Infrastructure	Land rights	Exploitation period	Renew period	Alienation	Amicable settlement	Technical matters	Litigation: Arbitration	Expropriation	Indirect expropriation	State support	Change in law/policy
51. China	✓						✓	✓	✓	✓		✓			✓	✓
52. Georgia	✓	✓				✓	✓	✓	✓			✓			✓	✓
53. India	✓						✓	✓	✓	✓		✓			✓	✓
54. Indonesia <sup>a</sup>	✓						✓		✓			✓				
55. Iraq	✓		✓	✓		✓	✓	✓	✓		✓				✓	✓
56. Jordan <sup>a</sup>	✓		✓	✓	✓	✓	✓	✓	✓	✓		✓			✓	✓
57. Kazakhstan	✓		✓	✓		✓	✓	✓	✓			✓	✓		✓	✓
58. Mongolia	✓		✓			✓	✓	✓	✓			✓	✓		✓	✓
59. Pakistan <sup>a</sup>	✓								✓			✓			✓	✓
60. Tajikistan	✓		✓			✓	✓	✓	✓			✓			✓	✓
61. Timor-Leste <sup>a</sup>	✓						✓		✓			✓				
62. Yemen	✓		✓	✓		✓	✓	✓	✓			✓			✓	✓

<sup>a</sup>Model contract

**TABLE B3** Allocation of quasi-property rights through land contracts

Contract Country #	Right to use and operate				Temporal		Alienation		Dispute resolution mechanisms			Compensation		Stability	
	Agricultural right	Water use		Land right	Exploitation period	Renew period	Alienation	Amicable settlement	National court	Litigation: Arbitration	Expropriation	Indirect expropriation	State support	Change in law/policy	
		Right	Permit												Infrastructure
63. Cameroon	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
64. CAR	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
65. Congo	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
66. DRC	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
67. Ethiopia	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
68. Gabon	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
69. Ghana <sup>a</sup>	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
70. Liberia	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
71. Madagascar	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
72. Mali	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
73. Mozambique	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
74. Sierra Leone <sup>b</sup>	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
75. South Sudan	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
76. Sudan <sup>c</sup>	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
77. Cambodia	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
78. Malaysia	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
79. Philippines <sup>b</sup>	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
80. Timor-Leste <sup>b</sup>	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	

<sup>a</sup>Sell agreement.

<sup>b</sup>Memorandum of Understanding (MoU).

<sup>c</sup>Agreement between States (Sudan and Syria).