

SCELG

STRATHCLYDE CENTRE FOR
ENVIRONMENTAL
LAW & GOVERNANCE

WORKING PAPER

No. 5, November 2016

A Legal Assessment of Indigenous Peoples' Rights to Lands and Natural Resources over Transboundary Aquifers Contaminated by Mining Production within the Lake Titicaca Region

Pauline Robert

The integrated and inter-disciplinary research conducted by the **Strathclyde Centre for Environmental Law and Governance (SCELG)** seeks to address real-world knowledge gaps in partnership with government institutions, NGOs, private institutions and local communities. Our researchers hold considerable expertise in the fields of national, EU and international environmental law, with regard to, among others, biodiversity, land, food and agriculture climate change and energy, corporate accountability, environmental justice, water and oceans, human rights and sustainable development.

For more information, visit:

<https://www.strath.ac.uk/scelg/>

A Legal Assessment of Indigenous Peoples' Rights to Lands and Natural Resources over Transboundary Aquifers Contaminated by Mining Production within the Lake Titicaca Region

Pauline Robert

Legal Intern at the Center for International Environmental Law (CIEL)

1 Introduction

Lake Titicaca is the largest lake in South America and the highest navigable lake in the world.¹ Due to pressure on natural resources and losses from environmental events, Peru and Bolivia put forward a Binational Master Plan for the Lake Titicaca – Desaguadero River – Lake Poopó – Coipasa Salt Lake (TDPS) System to protect its waters through a Joint Sub-Commission for the Development of the Integrated Region of Lake Titicaca (SUBICOMILAGO), between October 1989 and June 1993. In 1996, both countries established an Autonomous Binational Authority of the TDPS System (ALT). This framework embraces the entire TDPS System and includes Peruvian and Bolivian institutions related to water resources.² The United Nations Environment Programme (UNEP) and the General

¹ UNESCO – World Water Assessment Programme (WWAP), 'Water for People, Water for Life: The United Nations World Water Development Report' (UNESCO and Berghahn Books, 2003) 466, available at <<http://unesdoc.unesco.org/images/0012/001297/129726e.pdf#page=480>> accessed on 30 May 2016.

² UNEP, 'Perspectivas del Medio Ambiente en el Sistema Hídrico Titicaca-Desaguadero-Poopó-Salar de Coipasa (TDPS)' (UNEP, 2011) 20, 22, available at <http://www.unep.org/dewa/Portals/67/pdf/Geo_Titicaca.pdf> accessed on 6 June 2016.

Secretariat of the Organisation of American States (OAS) supported the project and helped States with scientific assessments and funds.³

The ALT aims to facilitate water management throughout the TDPS System by providing data collection and exchange of information on the region's physical and geographical features. In addition, it increases a better understanding of water resources within the region to reduce environmental harm, in particular for sectors such as mining, which causes harm to the natural environment and contaminates waters.⁴ Surface water and groundwater are mainly exposed to contamination by mining industries and wastes caused by the cities, such as Puno and Juliaca on the Peruvian side and Oruro and El Alto in Bolivia.⁵ Groundwater is particularly contaminated when an aquifer's intake or recharge area receives pollutants, or when pollutants are discharged into wells tapping the aquifer or into surface waters that flow into aquifers. Conversely, contaminated groundwater contaminates surface water by its effluent streams that feed surface waters.⁶ Therefore, in 2008 the United Nations International Law Commission (UNILC) adopted the Draft Articles on the Law of Transboundary Aquifers to guide aquifer States in the development of legal and institutional enforcement mechanisms.⁷

Nevertheless, the Statute and the Master Plan of the ALT do not include groundwater and indigenous peoples' rights. While Peru and Bolivia are parties to the

³ OAS, 'Binational Master Plan for Integral Development of the Lake Titicaca, Desaguadero River, Poopó, Coipasa Salt Marsh System (TDPS System) Executive Summary' (OAS, 1996) 1-2, available at <<http://www.oas.org/dsd/publications/classifications/publicationswr.htm>> accessed on 30 May 2016.

⁴ Ibid.

⁵ UNESCO – WWAP (n 1) 471.

⁶ Ludwik A. Teclaff and Eileen Teclaff, 'Transboundary Groundwater Pollution: Survey and Trends in Treaty Law' (1979) 19(1) NRJ 630.

⁷ Draft Articles on the Law of Transboundary Aquifers, with commentaries (Adopted on 5 August 2008) found in Vol. II, Part Two of the *Yearbook of the International Law Commission*.

International Labour Organisation (ILO) Convention No. 169 that encourages the protection of natural resources on indigenous lands, both States also signed the UN Declaration on the Rights of Indigenous Peoples (UNDRIP) that includes indigenous peoples' rights to lands, territories and resources under States' responsibilities.⁸ Subsequently, Bolivian and Peruvian national laws remain relevant in the assessment of the Lake Titicaca region.

Consequently, this paper aims to emphasise the linkages between indigenous peoples' rights, the law of transboundary aquifers and mining law within the Lake Titicaca region. Section 2 provides general information regarding Lake Titicaca and the TDPS System by outlining geographical factors and environmental problems, and by underlining indigenous peoples' situations and mining activities within the region. Section 3 assesses the research question through international law, and particularly through the law of transboundary aquifers, mining law and indigenous peoples' rights. Section 4 focuses on the law and policy of the ALT and Peruvian and Bolivian national laws. Finally, Section 5 presents the recommendations that might be reached within the TDPS System and Bolivian and Peruvian national laws to adopt indigenous peoples' rights to lands and natural resources by including groundwater in case of contamination.

A. Methodology

A qualitative method is undertaken throughout the paper. The research question is answered through a critical assessment of international, regional and national laws regarding indigenous peoples' rights, mining law, international water law and the law of transboundary aquifers. This assessment takes place in order to examine indigenous peoples' rights to lands and natural resources in relation to the risk of groundwater contamination resulting from mining activities. International law provides an international legal framework and in the context of the Lake Titicaca region, the law and the policy of the ALT are examined as well as Peruvian and

⁸ United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP) (Adopted on 2 October 2007) A/RES/61/295, Art 26; ILO, Indigenous and Tribal Peoples Convention No. 169 (ILO Convention No. 169) (Adopted on 27 June 1989 and entered into force on 5 September 1991) C169, Art 15(1).

Bolivian national laws, to provide a comprehensive analysis.

B. Research Limitations

Because of the word count limit, this paper cannot detail all the legislation and case law within the region. Accessing all of these legal documents is also impractical in the short period of time provided. In addition, Peruvian and Bolivian case law on indigenous peoples' rights over groundwater are limited. Therefore, the research question is answered by considering only the relevant legal instruments. Similarly, there is limited literature on indigenous peoples' rights to lands and natural resources in relation to groundwater mining contamination, as well as there being limited literature related to the ALT. Thus, the research question is restricted by the available literature.

2 Lake Titicaca Region and the TDPS System

This Section sets the context of the Lake Titicaca region and the TDPS System by presenting the geographic area and its environmental issues, as well as offering an overview of the situation of indigenous communities and mining operations.

A. Geographic Situation and Environmental Issues

The TDPS System, located in Peru and Bolivia, is divided between four major basins constituting a surface area of 143,900 km² and situated in the *altiplano* region between 3,600 and 4,500 meters above sea level. The four basins, Lake Titicaca, Desaguadero River, Lake Poopó and Coipasa Salt Lake, flow from north to south of the TDPS System.⁹ With a surface area of 56,300 km², the Lake Titicaca basin represents the main basin located in the upper TDPS System. Lake Titicaca has a surface of 8,400 km², a length of 176 km, a width of 70 km and an altitude of 3,810 meters. Six Peruvian rivers (Ramis and Huancané in the north, Coata and Illpa in the west and Ilave and Zapatilla in the southwest) are the principal tributaries of the TDPS System. While the Ramis River represents the major tributary with 26% of the tributary basin, its flow is

⁹ UNESCO – WWAP (n 1) 466-467.

approximately 76 cubic meters per second. Bolivian tributaries also flow in the TDPS System, but to a lesser extent.¹⁰

Despite the large volume of surface water, aquifers also constitute the TDPS System. The main aquifers are situated in the middle and lower basins of the Ramis and Coata Rivers, in the basin of Ilave River in Peru, and in the strip that extends from the south of Lake Titicaca to Oruro in Bolivia.¹¹ Other less significant aquifers are located around the Desaguadero River, Lake Poopó and the Coipasa Salt Marsh.¹²

The tropical climate within the TDPS System is particular for its large degree of rain variability and the manifestation of extreme events, such as frost and freezing rain, and particularly floods and droughts that have large negative environmental and socioeconomic impacts, *i.e.* important economic losses.¹³ These natural hazards cause damage to the agricultural sector, which is the main source of income in this region. Moreover, annual rainfall fluctuates from 200 millimetres to 1,400 millimetres within the TDPS System and occurs principally from December to March. In the north, the Lake Titicaca basin is the most humid of all the four basins, with precipitation varying between 800 to 1,400 millimetres and rainfall diminishing in the south of the system.¹⁴ Therefore, precipitation represents 55% of the water input into Lake Titicaca.¹⁵ Similarly, evaporation is particularly high in the north of the system with an annual average of 1,450 millimetres around Lake Titicaca compared to the annual average of 1,900 millimetres in the south. Consequently, the main issues within the TDPS System are related to the irregularity and insecurity of the water resources.¹⁶ Likewise, due to precipitation variability, climate change will affect water quantity and quality and have

¹⁰ UNESCO – WWAP (n 1) 466-467.

¹¹ *Ibid* 470-471.

¹² OAS (n 3) 3.

¹³ *Ibid* 3-4; UNESCO – WWAP (n 1) 467, 471, 477.

¹⁴ OAS (n 3) 3; UNESCO – WWAP (n 1) 467, 477.

¹⁵ Jörg Rieckermann and others, 'Assessing the Performance of International Water Management at Lake Titicaca' (ETH Zurich and University of Zurich, Centre for Comparative and International Studies, 2006) Working Paper No 12, 7, available at <https://www.ethz.ch/content/dam/ethz/special-interest/gess/cis/cis-dam/CIS_DAM_2015/WorkingPapers/WP_2006/2006_WP12_Rieckermann_Daebel_Ronteltap_Bernauer.pdf> accessed on 4 June 2016.

¹⁶ OAS (n 3) 3.

negative socioeconomic consequences on the TDPS region and its inhabitants.¹⁷

Water resources are mostly directed at covering basic needs and agricultural irrigation. Although Lake Titicaca contains a large quantity of water, the TDPS System endures poor regulation of its water resources and available hydrological resources do not satisfy the demands of the entire region. In addition, while water for basic needs can be reused, water for irrigation constitutes an important loss due to evaporation and transpiration processes.¹⁸

Furthermore, groundwater flows pursue the direction of water reservoirs, the place of recharge areas and their base levels. Consequently, water tables on the Peruvian side, such as the Huanané, Ramis, Coata and Parco River basins, and the Tiwanaku and Katari River basins in Bolivia, drain into Lake Titicaca and the average hydraulic gradient is situated between 1 to 0.1%. However, groundwater aquifers are poorly used because of the lack of infrastructure and regulation. Nearly four cubic meters per second of the total volume of groundwater goes into the system through tube wells used mainly to provide water to cities.¹⁹ There are approximately 800 groundwater taps throughout the TDPS System from ten metres to 110 metres deep. The largest volumes of groundwater are taken principally in the Bolivian towns, El Alto and Oruro.²⁰ Consequently, surface water and groundwater constitute essential natural resources.

B. Indigenous Peoples

More than two millions inhabitants lived within the TDPS System in 2003.²¹ Despite the exception of mixed populations in cities and towns within the TDPS region, almost the entire population comprises indigenous peoples with various ethnicities, cultures and languages. Indigenous communities in the TDPS System are Quechua in the north and the south of Lake Titicaca, and Aymara in the centre of the lake. Uro population also live around Lake Titicaca, including around Puno in Peru, in the

¹⁷ UNEP (n 2) 42.

¹⁸ Rieckermann and others (n 15) 7-9; UNESCO – WWAP (n 1) 473-474, 477.

¹⁹ UNESCO – WWAP (n 1) 471.

²⁰ OAS (n 3) 4.

²¹ UNESCO – WWAP (n 1) 468.

Desaguadero River basin and near Lake Poopó in Bolivia.²²

While the tertiary sector provides 50% of the gross domestic product and represents the main sector of the region's economy, the primary sector also contributes highly to the economy of the region, principally with agriculture and mining. Because of cultural traditions, the agricultural sector dominates Peru as much as Bolivia but remains rudimentary. The principal areas of cultivation are located around Lake Titicaca on ground and gentle hills. The Tiwanaku culture was important within the TDPS System during the pre-Colombian period and in the Inca Empire before the arrival of the Spanish colonists.²³ Moreover, Lake Titicaca is known as the 'Sacred Lake' among the Aymaras and is relevant within Inca mythology. Although Spanish colonisation has lasted for four centuries in this region, populations from the *altiplano* continue practising their own cultural traditions. Consequently, agriculture has been central in their culture and a source of income. Before colonisation, land ownership was in the hands of persons or land holdings. However, due to European domination, local communities have often been socially excluded and underdeveloped. By the middle of the twentieth century, Bolivian and Peruvian governments have administered reforms in order to change land ownership. After the reforms, agricultural production diminished and rural property became fragmented.²⁴

Moreover, urban and rural populations living on the sides of the lake suffer from extensive poverty. Populations face difficulties to meet their basic needs, such as poor nutrition and lack of clean water and sanitation, as only 20% of the population has a water supply and a sewer system connection. Around 70% of the region's population lives under the poverty line.²⁵ A lack of locally available resources limits inhabitants' living conditions, and morbidity and mortality rates remain high.

²² The World Bank, 'Lessons for Managing Lake Basins for Sustainable Use' (The International Bank for Reconstruction and Development / The World Bank, 2005) Report No. 32877, 68, available at <http://www-wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/2006/03/14/000090341_20060314150533/Rendered/PDF/328770Lake0Basins.pdf> accessed on 6 June 2016.

²³ OAS (n 3) 8, 12.

²⁴ UNESCO – WWAP (n 1) 469.

²⁵ Ibid 467-468; OAS (n 3) 12.

Peoples are consequently encouraged to migrate to cities resulting in rural exodus and urban growth. This influences high population density in cities such as Puno, Julia in Peru and El Alto and Oruro in Bolivia, and low population density in rural areas.²⁶ As the main rural population are dispersed and their mother tongue is not Spanish, poverty also leads to a poor literacy rate due to a lack of education, and an increase in illnesses due to a lack of water and sanitation and exposure to environmental contamination, such as mining.²⁷

Furthermore, despite indigenous marginalisation, cultural traditions from indigenous peoples play a significant role within the Lake Titicaca region. For instance, indigenous peoples always avoid maximising production but rather try to minimise risks. Sharing water resources depends on upstream communities that provide conditions in regard to natural resources' allocation and distribution.²⁸ Nevertheless, indigenous peoples are affected by environmental damages, such as ecosystem and biodiversity harms that reduce their access to lands and natural resources, and disrupt their cultural habits.²⁹

C. Mining Operations

Because the economy of the TDPS System relies highly on the secondary sector, and Peru and Bolivia contain a large quantity of minerals, mining is a relevant source of income, which has environmental impacts.

a. Financial Revenues

Mining activities within the TDPS System constitute the extraction of various metals, such as tin, silver, zinc and gold, and are mainly located in the southern part of the TDPS System, around Oruro area.³⁰ On a smaller scale, mining industries operate in the upstream basin, in Peru.³¹ Bolivian and Peruvian national economies are highly dependent on mining extractions and exportations, just as much as local communities within the TDPS System. During colonisation, the Spanish used indigenous peoples as labour to extract minerals in mines.³² In Bolivia, 60% of Bolivian mineral production comes from

²⁶ UNESCO – WWAP (n 1) 467-468; OAS (n 3) 8.

²⁷ UNESCO-WWAP (n 1) 468; OAS (n 3) 12-14.

²⁸ UNESCO – WWAP (n 1) 469.

²⁹ The World Bank (n 22) 68.

³⁰ OAS (n 3) 11-12.

³¹ Ibid 12.

³² UNEP (n 2) 31, 51.

medium-scale mining and 32% of small-scale mining, and Oruro constitutes one of the main mining activity areas.³³ In Peru, the mining industry represented 57% of Peru's exports in 2003.³⁴ Nevertheless, mining production is undoubtedly not without consequences.

b. Environmental Impacts

Due to a lack of environmental awareness, mining production has negative environmental impacts. Although water demand for mining and industries within the region does not constitute a principal problem because of low water consumption in mining operations, mining is the main cause of heavy metal water contamination, salinization of waters due to rain water carrying mineral salts in open-cast mining, and air pollution. Such contamination that makes water very acidic and exceed permissible limits for human consumption has been found particularly in the southern area of the TDPS System, such as around Oruro and in the Lakes Poopó and Uru Uru. In these areas, there is the presence of pyrite, a mineral that produces sulphuric acid when it is in contact with water. Around the Desaguadero River, high concentrations of arsenic have been measured, and in Lake Poopó and the Coipasa Salt Lake, presence of high levels of lead, cadmium, nickel, cobalt, manganese and chromium has also been registered.³⁵

Within the Puno Bay of Lake Titicaca, mercury and arsenic concentrations have been measured and reports of serious water contamination in Copacabana Bay have been advanced, although mining industries no longer exist around this part of the lake.³⁶

³³ USAID, 'USAID Country Profile, Property Rights and Resource Governance – Bolivia' (USAID, 2011) 14, available at <http://www.usaidlandtenure.net/sites/default/files/country-profiles/full-reports/USAID_Land_Tenure_Bolivia_Profile.pdf> accessed on 2 May 2016; Tom Perreault, 'Dispossession by Accumulation? Mining, Water and the Nature of Enclosure on the Bolivian Altiplano' (2013) 45(5) *Antipode* 1055.

³⁴ USAID, 'USAID Country Profile, Property Rights and Resource Governance – Peru' (USAID, 2010) 15, available at <http://www.usaidlandtenure.net/sites/default/files/country-profiles/full-reports/USAID_Land_Tenure_Peru_Profile.pdf> accessed on 2 May 2016.

³⁵ UNESCO – WWAP (n 1) 471, 474; OAS (n 3) 5, 12.

³⁶ UNESCO – WWAP (n 1) 471; Rieckermann and others (n 15) 9.

Consequently, mines contaminate for decades to centuries even after its closure.³⁷ Moreover, high concentrations of heavy metals have been registered in the sediments of the Coata River in the upstream basin in Peru and this measure proves that despite being locally registered, mining causes water contamination within the entire basin.³⁸

Moreover, the TDPS System faces organic contamination from weak sewage and sanitation systems due to inappropriate disposals of wastewater in urban centres in the basin, such as in Puno and Juliaca in Peru. Peruvian and Bolivian population growth also increases pressure on water resources and water contamination, and the use of fertilisers in agriculture and toxic chemicals pollute waters, in particular around and in Lake Titicaca.³⁹

Thus, while the ALT provides a structure to protect waters within the TDPS System, contamination, and particularly mining contamination, is significant. Local communities and indigenous peoples live within these territories and use waters for basic needs or agricultural purposes. However, most scientific assessments and the ALT consider mainly surface waters, although mining contaminates surface water as much as groundwater.

3 International Law

Throughout this Section, an assessment of international law, particularly focused on international water law, mining law and the rights of indigenous peoples is undertaken to provide a legal framework for answering the research question in Section 4.

A. International Water Law

Surface water and groundwater do not respect political boundaries and are vulnerable to contamination.⁴⁰ Contamination affects the

³⁷ Anthony Bebbington and Mark Williams, 'Water and Mining Conflicts in Peru' (2008) 28(3) *Mountain Research and Development* 195.

³⁸ OAS (n 3) 5.

³⁹ UNESCO – WWAP (n 1) 471; Rieckermann and others (n 15) 9; OAS (n 3) 8.

⁴⁰ Robert D. Hayton and Albert E. Utton, 'Transboundary Groundwaters: The Bellagio Draft Treaty' (1989) 29(1) *NRJ* 679; Yoram Eckstein and Gabriel E. Eckstein, 'Transboundary Aquifers: Conceptual Models for Development of International Law' (2005) 43(5) *Groundwater* 681.

water quality of the entire hydrologic system, as aquifers generally receive and transmit water through a cycle, which modifies directly the quantity and quality of the water in the aquifer. Not all aquifers are interconnected with surface water, but most aquifers have an interdependent relationship with surface water. Hence, a comprehensive perspective in the use, management and conservation of water resources is relevant. In addition, although some aquifers are domestic, others are transboundary or international and as result, groundwater is a subject of international law.⁴¹

While international water law has been developed through the UN Convention on the Non-Navigational Uses of International Watercourses (UNWC) adopted in 1997, law in relation to transboundary aquifers is not legally binding, as the Draft Articles on the Law of Transboundary Aquifers adopted in 2008 constitutes a soft law document. This legal instrument represents a further development of principles in international water law and both documents provide States' obligations. Nevertheless, the UNWC excludes nonrecharging aquifers from its scope, as they are not part of any 'system[s] of surface waters or groundwaters', do not contain a 'physical relationship' with any water resources and do not move 'into a common terminus'.⁴² In 1994, the UNILC adopted a Resolution on Confined Transboundary Groundwater, in order to encourage States to apply the principles within the UNWC to groundwater not related to an international watercourse. However, due to a lack of effectiveness of the resolution, a lack of consistency with the UNWC and misinterpretation regarding nonrecharging and confined aquifers, the issue remained unresolved. Nonetheless, nonrecharging aquifers are extremely susceptible to contamination because of their stagnant character and their absence of recharge and flow, making decontamination difficult.⁴³ Consequently, protecting, monitoring and conserving groundwater from aquifers through legal instruments constitute an important issue.

a. General Principles of International Water Law

Although the UNWC constitutes a legally binding treaty, its principles have been influenced by past documents. Under Article II of the Helsinki Rules of 1966, the International Law Association (ILA) developed the 'drainage basin' doctrine that embraces all water resources defined geographically by the notion of 'watershed'.⁴⁴ Through the concept of 'drainage basin', not only rivers and lakes are included but also groundwater and all small streams that flow within large water resources.⁴⁵

Consequently, through the 'drainage basin' doctrine, also called the 'watercourse system', 'common water resources' are shared equitably between riparian states.⁴⁶ Article IV of the Helsinki Rules emphasises that each riparian State within its territory must share reasonably and equitably the water resources within the international drainage basin. Nevertheless, in contrast to the Harmon Doctrine that allows exclusive and unlimited rights of a State over waters within its territory, sharing through this principle involves limited sovereignty approach. Thus, a riparian state does not have an 'exclusive and unlimited right to utilise and dispose of international waters flowing through its territory'.⁴⁷ In addition, basin states have a duty to cooperate in order to develop coordinated legislation on water law and to protect their water resources. Riparian States also have the responsibility for transboundary injury initiated in their respective territories.⁴⁸

Moreover, Principle 24 of the 1972 Stockholm Declaration highlights multilateral or bilateral arrangements to improve cooperation for environmental developments and protection. In addition, the Mar del Plata Action Plan adopted at the UN Water Conference in 1977 requires states' cooperation in water resources management through joint committees in order to collect and share information and prevent

⁴¹ Eckstein and Eckstein (n 40) 682.

⁴² Convention on the Law of the Non-Navigational Uses of International Watercourses (UNWC) (adopted on 21 May 1997 and entered into force on 17 August 2004), 36 ILM 700; UN Doc A/RES/51/229, Art 2(a); Draft Articles.

⁴³ Eckstein and Eckstein (n 40) 686.

⁴⁴ Dante A. Caponera, 'Patters of Cooperation in International Water Law: Principles and Institutions' (1985) 25(3) NRJ 564; Eckstein and Eckstein (n 40) 681.

⁴⁵ Ibid 564.

⁴⁶ Ibid 566; UNWC, Art 2(a).

⁴⁷ Caponera (n 44) 566, 568; Dante A. Caponera and Dominique Alh riti re, 'Principles for International Groundwater Law' (1978) 18(1) NRJ 615.

⁴⁸ Caponera (n 44) 566, 569-571.

and control water contamination, floods and droughts.⁴⁹

The UNWC, which represents a milestone in international law, defines 'watercourse' as 'a system of surface waters and groundwaters constituting by virtue of their physical relationship a unitary whole and normally flowing into a common terminus'.⁵⁰ Consequently, this legal instrument embraces surface water and groundwater and pursuant to Article 8(1) of the UNWC, States have a duty to 'cooperate on the basis of sovereign equality, territorial integrity, mutual benefit and good faith in order to attain optimal utilisation and adequate protection of an international watercourse'. Article 5(1) emphasises riparian States' participation and use of the watercourse through 'an equitable and reasonable manner' and Article 6 outlines a non-exhaustible list of ecological, natural and socioeconomic factors, such as the population, that must be considered to determine an equitable and reasonable use of the water.⁵¹ Article 10(2) protects populations further by ensuring that the States must respect all 'vital human needs'.⁵²

Furthermore, pursuant to Article 7(1), States are limited in their watercourse use by considering 'all appropriate measures to prevent the causing of any significant harm to other watercourses States'.⁵³ Consequently, the duty to cooperate within an international watercourse is a general principle and constitutes a requirement to achieve the principles of equitable and reasonable use of the water resources and the prevention of significant harm in transboundary water resources. These main principles also appear within the UNILC's Draft Articles on the Law of Transboundary Aquifers.⁵⁴

b. Draft Articles on the Law of Transboundary Aquifers

Although the UNWC includes surface water and groundwater, the law of transboundary aquifers more clearly provides rules regarding

groundwaters and aquifers to solve a 'paucity of treaties and norms'.⁵⁵

Aquifers are defined as 'bodies of permeable rocks where significant quantities of groundwater are stored'.⁵⁶ An aquifer is either: *unconfined* as it is open to the surface environment and water seeps from surface directly above the aquifer; or *confined* due to an impermeable rock layer preventing water from seeping into the aquifer except in partial connection to the surface. An aquifer is described as *fossil* when water is stored deeply under heavy rock sediments and it has taken thousands of years to build.⁵⁷ Most aquifers receive and transmit water through a hydrologic cycle that directly affects water quantity and quality of the aquifer, and if an aquifer becomes contaminated, in particular for aquifers without any recharge zone and unrelated to surface water, cleaning is extremely difficult. Thus, sharing information between aquifer States is relevant to identify aquifers' dimension and contents.⁵⁸

While 'transboundary aquifer' means an aquifer traversing a political boundary between two or more States, the UNWC includes, under Article 2(a)(b), only aquifers connected to surface waters that contain part located in different States. A particular aquifer does not have to be found across a boundary to be covered by the UNWC, but such groundwater can be located only in one State connected to transboundary surface water. Consequently, a confined aquifer unconnected with any surface water crossing an international boundary or located completely in another State does not fall within the scope of this legal instrument, even when the recharge zone is in an unconfined part of the aquifer. Moreover, it does not embrace all transboundary aquifers unrelated to any surface water and disconnected from the hydrological cycle. Therefore, various aquifers are excluded.⁵⁹

⁵⁵ Eckstein and Eckstein (n 40) 680.

⁵⁶ Michela Miletto, 'The Invisible Resource Transboundary Aquifers: an Opportunity for International Cooperation' (OAS, 2004) Policy Series No. 3, 1.

⁵⁷ *Ibid.*

⁵⁸ Eckstein and Eckstein (n 40) 682, 686.

⁵⁹ *Ibid.* 680, 684-686; UNWC, 'User's Guide Fact Sheet Series: Number 3 – Groundwater System' (UNWC) 1-2, available at <<http://www.unwatercoursesconvention.org/documents/UNWC-Fact-Sheet-3-Groundwater-Systems.pdf>> accessed on 28 June 2016; UNWC, Art 2(a)(b).

⁴⁹ Caponera (n 44) 573-574.

⁵⁰ Eckstein and Eckstein (n 40) 681; UNWC, Art 2(a).

⁵¹ Christina Leb, 'The UN Watercourses Convention: the Eminence Grise behind Cooperation on Transboundary Water Resources' (2013) 38(2) *Water International* 150; Leonard Hammer, 'Indigenous Peoples as a Catalyst for Applying the Human Right to Water' (2003) 10(1) *IJMG* 157-158; UNWC, Art 5(1), 6, 8(1).

⁵² UNWC, Art 10(2).

⁵³ Leb (n 51) 152; UNWC, Art 7(1).

⁵⁴ Leb (n 51) 153-154.

While the Helsinki Rules include the international drainage basin, the ILA adopted the Seoul Rules in 1986, which encompasses all types of aquifers. However, the Seoul Rules are not legally binding over States, as the ILA is a private non-governmental organisation.⁶⁰ Therefore, the Draft Articles adopted by the UNILC represents an important development by the international community, and could be adopted as an international legally binding treaty in the future.

Provisions of the Draft Articles have a similar scope to the UNWC. While Article 4 of the Draft Articles re-establishes the equitable and reasonable utilisation of the waters, Article 5 of the Draft Articles also includes the consideration of the population relying on the aquifer or the aquifer system. Under Article 5(2), 'vital human needs' must be considered by 'weighing different kinds of utilisation of a transboundary aquifer or aquifer system'.⁶¹ Similarly, aquifer States must also prevent any significant harm to other States and take appropriate measures under Article 6(1) and Article 12 ensures that aquifer States prevent, reduce and control contamination to their transboundary aquifers or aquifer systems. Articles 7 and 8 state respectively the duty to cooperate and to exchange data and information between aquifer States and Article 9 encourages bilateral or regional agreements or arrangements between aquifer States.⁶²

Nevertheless, there is an important distinction between the UNWC and the Draft Articles. Under Article 3, 'each aquifer State has sovereignty over the portion of transboundary aquifer or aquifer system located within its territory', which is absent in the UNWC.⁶³ Consequently, although they do not reference water contamination and indigenous rights to surface waters and groundwaters in particular, the UNWC and the Draft Articles endorse riparian or aquifer States to protect and use their surface waters and groundwaters with a special attention to vital human needs. However, Article 3 of the Draft Articles reduces the scope of the law on transboundary aquifers and leads to unlawful conduct. Nevertheless, this concept does not constitute customary international watercourse law.⁶⁴

⁶⁰ Eckstein and Eckstein (n 40) 681.

⁶¹ Draft Articles, Art 4, 5(1)(a)(b), 5(2).

⁶² Ibid Art 6(1)-9, 12.

⁶³ Ibid Art 3.

⁶⁴ Stephen C. McCaffrey, 'The International Law Commission's Flawed Draft Articles on the Law of

B. Mining Law

Due to minerals' values, mineral production constitutes an important economic activity, which local communities also financially rely on. States, companies or illegal artisanal miners own mining production. Mining industry is mainly led by transnational corporations implemented in foreign nations. In accordance with the national law and policy of the mineral producing State, mining companies have access to land. Consequently, mining regulations, enforcements and damages depend on each jurisdiction and no common international mining law exists, although jurisdictions have common features.⁶⁵

a. Mineral Rights and Concession

Most States retain ownership of their minerals. However, there are three different methods of mining ownership. Either the State owns minerals and gives extraction rights to private companies and sell the minerals, or the State owns the minerals but mining is executed by State-owned companies or private entities contracted by the government, or minerals are owned by the person located on the land who gives mining rights to others. The latter method involves indigenous peoples in general.⁶⁶

States usually prohibit mining activity unless there is government permission through a grant to provide mineral rights, which gives parties rights over minerals. Mineral rights are considered in each jurisdiction differently. Some States ensure that a mineral right is a property right, while others deny its property value and some affirm that it is a unique right with property characteristics.⁶⁷

In contrast, a mining right constitutes one of the mineral rights and allows a right to extract minerals, which is usually called concession. Consequently, these rights exist only when a government grants an individual legal permit, such as through a mining lease or an exploration license. They constitute a contractual agreement between the government and the holder. While most States allow land access to mining companies to

Transboundary Aquifers: the Way Forward' (2011) 36(5) Water International 570.

⁶⁵ Eric L. Garner, 'The Case for an International Mining Law' (2004) The Australasian Institute of Mining and Metallurgy: Melbourne 5, 8, 18.

⁶⁶ Ibid 9; John Southalan, *Mining Law and Policy: International Perspectives* (The Federation Press 2012) 41-42.

⁶⁷ Southalan (n 66) 43, 45.

exploit minerals, companies are subject to general laws of the jurisdiction, but the government sometimes stipulate specific rights and obligations in the contract. Consequently, national mining law provides general requirements for mineral rights and some governmental conditions might be added on each mineral right.⁶⁸

b. Land Access and Use

Because of the different concepts of ownership and property rights in mining law in different States, there is no universal legislation related to land access and use. While the government usually allocates minerals, land is conversely either privately or publicly owned. Consequently, mineral rights are often separately controlled or owned through the land's surface and companies must make separate arrangements for possessing land access and land use in order to develop their mineral rights. Land access arrangements might also be different in States for particular minerals.⁶⁹

Moreover, mining access and use do not usually give an entire right to enter a certain land and the full possession of the land, but it gives access to land for particular mining purposes and the mining right ensures the holder can do all the necessary activities for mining. The mineral right directly involves land access and use, or the government gives land access and use through a legal process.⁷⁰

c. Environmental Impact Assessment (EIA)

While the Stockholm Declaration adopted in 1972 encourages sustainable development through the protection of natural resources and the prevention and reduction to adverse environmental effects, the 1992 Rio Declaration on Environment and Development further emphasised sustainable development and environmental protection. For the first time, it developed the precautionary principle that considers environmental effects from any activity.⁷¹

Because of mining environmental impacts, the Berlin Guidelines adopted in 1991 requires the undertaking of an EIA during the

licensing process.⁷² The EIA includes environmental considerations into programmes and public participation prior to the approval or authorisation of a project in order to reduce environmental risks and consider alternatives. It also embraces scientific knowledge and assessment. EIAs are legally binding within the Espoo Convention on Environmental Impact Assessment in a Transboundary Context and for most States parties to the United Nations Economic Commission for Europe.⁷³ The jurisprudence relating to EIAs has also underlined its rank in customary international law. For example, the *Pulp Mills* case was brought to the International Court of Justice where discharges from a paper pulp mill flowed in the River Uruguay, which forms the border with Argentina.⁷⁴

In mining law, before the holder of the permit explores or starts mining exploration or exploitation, States may request additional approvals relating to environmental impacts and management of the mine development that might be considered within the EIA. An integrated land-use planning included legal ownership and rights and land use rights, geology of the land, public participation and long-term implications might also be required by the government to give land access and use.⁷⁵

Therefore, EIAs require public participation throughout any activity that might have environmental impacts and thus, while indigenous peoples must be consulted within the process, their involvement relies mainly on national legislation and policy on mining.

C. Rights of Indigenous Peoples

Indigenous peoples represent a sub-national group sharing a common cultural history with political and socioeconomic characteristics and claiming a specific territory or land.⁷⁶ In 1957,

⁷² George W. Pring, 'International Law and Mineral Resources' (UNCTAD, 1999) 39, available at <<http://www2.udec.cl/alfat/intro/docs/pring.pdf>> accessed on 25 June 2016.

⁷³ Pring (n 72) 15; Alan Boyle, 'Developments in International Law of Environmental Impact Assessments and their Relation to the Espoo Convention' (2011) 20(3) RECIEL 228.

⁷⁴ Boyle (n 73) 227.

⁷⁵ Southalan (n 66) 44, 74.

⁷⁶ Lorie M. Graham and Nicole Friederichs, 'Indigenous Peoples, Human Rights and the Environment' (Suffolk University Law School Research

⁶⁸ Southalan (n 66) 43.

⁶⁹ Ibid 66-67.

⁷⁰ Ibid 69.

⁷¹ Garner (n 65) 9-10.

the ILO adopted the first international convention providing indigenous communities' rights. In 1989, the ILO Convention No. 169 replaced this instrument and in 1993, the UN adopted the UNDRIP, a universal but not legally binding document *per se*.⁷⁷

a. Right of Self-determination

The right of self-determination is a fundamental principle for indigenous peoples. Articles 1(2) and 55 of the UN Charter recognise the right of 'self-determination of peoples'.⁷⁸ This right is incorporated within the International Covenant on Civil and Political Rights (ICCPR) and the International Covenant on Economic, Social and Cultural Rights under Article 1 that emphasises a free right to 'determine their political status' and to pursue freely 'economic, social and cultural development'.⁷⁹ Article 3 of the UNDRIP has a similar scope. The right of self-determination also highlights that people can 'freely dispose of their natural wealth and resources' and cannot 'be deprived of its own means of subsistence' as has been outlined in the Inter-American Court on Human Rights (IACtHR) case of *Saramaka Peoples v. Suriname*.⁸⁰ Under Article 39 of the ILO Convention No. 169, States have a duty to recognise and protect particular boundaries of the land and water of indigenous peoples and their traditional management and use rules in regard to the right to self-determination.⁸¹

Consequently, the right of self-determination is relevant to understand indigenous peoples' rights overall and this means that indigenous peoples can govern their lands and natural resources.

b. Information, Consultation and Participation

While Principle 22 of the Rio Declaration ensures that indigenous peoples and other local communities represent an important role in environmental management and development due to their traditional knowledge

Paper, Yale Human Rights and Environment Dialogues Report, 2011) Report No 12(1) 3.

⁷⁷ Graham and Friedrichs (n 76) 2.

⁷⁸ Geir Ulfstein, 'Indigenous Peoples' Rights to Land' (2004) 8 MP UNYB 4.

⁷⁹ Ibid.

⁸⁰ Ibid; UNDRIP, Art 3.

⁸¹ Joyeeta Gupta, Antoinette Hildering and Daphina Misiedjan, 'Indigenous Peoples' Right to Water under International Law: a Legal Pluralism Perspective' (2014) 11(1) Current Opinion in Environmental Sustainability 28.

and practices, States must consider their effective participation for achieving sustainable development. Within Agenda 21 adopted in Rio, Chapter 26.3 considers indigenous peoples' protection from environmentally unsound activities and culturally or socially inappropriate activities. These protections are given because of their dependence on renewable resources and ecosystems, which although without mentioning it, would support indigenous peoples' right to water.⁸²

Moreover, ILO Convention No. 169 reflects the right of indigenous peoples to participate in decision-making under Articles 6 and 7.⁸³ This legal instrument provides indigenous peoples' right to be consulted by the State even though natural resources are under state ownership. However, the UNDRIP goes further and requires 'free, prior and informed consent'.⁸⁴ Similarly, information, consultation and participation go hand in hand with indigenous peoples' rights to lands and natural resources.

c. Rights to Lands and Natural Resources

Before colonisation, indigenous peoples possessed lands under a communal land tenure system, where land was collectively owned and centred on the group or community.⁸⁵ Consequently, the ILO Convention No. 169 protects indigenous peoples' rights and guarantees under Articles 4(1) and 7(3), the adoption of special measures and States' obligations to safeguard the environment of indigenous peoples.⁸⁶ Similarly, pursuant to Article 15, natural resources

⁸² David H. Getches, 'Indigenous Peoples' Rights to Water Under International Norms' (2005) 16(2) COJIELP 278-279.

⁸³ Ulfstein (n 78) 13.

⁸⁴ Marcos A. Orellana, 'Indigenous Peoples, Mining and International Law' (Mining, Minerals and Sustainable Development, International Institute for Environment and Development and World Business Council for Sustainable Development, 2002) Report No 2, 13, available at

<http://www.peacepalacelibrary.nl/ebooks/files/002_orellana_eng.pdf> accessed on 25 June 2016; UNDRIP, Art 10, 11(2), 19, 28, 29(2), 39(2).

⁸⁵ Jo M. Pasqualucci, 'International Indigenous Land Rights: A Critique of the Jurisprudence of the Inter-American Court of Human Rights in Lights of the United Nations Declaration on the Rights of Indigenous Peoples' (2009) 27(1) WIJL 58.

⁸⁶ Getches (n 82) 278; ILO Convention No. 169, Art 4(1) and 7(3).

pertaining to indigenous peoples' lands must be protected and these peoples have a right 'to participate in the use, management and conservation of these resources'. The term 'natural resources' includes water resources that constitute a 'basic resource for the survival of indigenous communities'.⁸⁷ Article 32(2) of the UNDRIP also emphasises that in the use of lands and natural resources, consultation and cooperation must be undertaken 'in connection with the development, utilisation or exploitation of mineral, water or other resources'.⁸⁸

Furthermore, Article 14 of the ILO Convention No. 169 underlines the rights of ownership and possession of indigenous peoples over their lands traditionally occupied, but as it constitutes not an exclusive right, it does not exclude non-indigenous peoples from undertaking activities through permits or grants delivered by the State over indigenous lands.⁸⁹ Article 15(2) stipulates that States can retain ownership over minerals or sub-surface resources and 'shall establish or maintain procedures through which they shall consult these peoples'.⁹⁰ Consequently, it does embrace groundwater, but provides a specific right to sub-surface resources and uses the term 'consult' that is weaker than a prior, free and informed consent. Thus, due to this recognition, indigenous peoples have priority rights in the use of natural resources, but not absolute ownership. This means that they need to be considered first in the award of privileges within existing laws and regulations, with special attention to their needs and welfare, particularly for extraction, exploitation or development of any natural resources within their area as they have traditionally occupied their lands.⁹¹

⁸⁷ Marco Parriciatu and Francesco Sindico, 'Contours of an Indigenous Peoples' Right to Water in Latin America under International Law' (2012) 1(1) IHRLR 222-223.

⁸⁸ Daphina Misiedjan and Joyeeta Gupta, 'Indigenous Communities: Analysing their Right to Water under Different International Legal Regimes' (2014) 10(1) ULR 84; UNDRIP, Art 32(2).

⁸⁹ Ulfstein (n 78) 17.

⁹⁰ Orellana (n 84) 13; ILO Convention No. 169, Art 15(1)(2).

⁹¹ Sedfrey M. Candelaria, 'Comparative analysis on the ILO Indigenous and Tribal Peoples Convention No. 169, UN Declaration on the Rights of Indigenous Peoples (UNDRIP), and Indigenous Peoples' Rights Act (IPRA) of the Philippines' (2012) International Labour Organisation 38.

Similarly, the IACtHR ensures that property rights provide automatic resource rights. Within its constitutional provisions, the Inter-American Commission on Human Rights (IACHR) emphasises the rights of indigenous communities to their territories, natural resources and their right to consultation and to have prior, free and informed consent, in any situation in which exploitation of natural resources in indigenous territories is to start. In the case *Mayagna (Sumo) Awas Tingni Community v. Nicaragua*, the IACtHR mentioned that:

*'Among indigenous peoples there is a communitarian tradition regarding a communal form of collective property of the land, in the sense that ownership of the land is not centred on an individual rather on the group and its community. Indigenous group, by the fact of their very existence, have the right to live freely in their own territory; the close ties of indigenous people with the land must be recognized and understood as the fundamental basis of their cultures, their spiritual life, their integrity, and their economic survival. For indigenous communities, relations to the land are not merely a matter of possession and production but a material and spiritual element which they must fully enjoy, even to preserve their cultural legacy and transmit it to future generations.'*⁹²

The IACHR also asserted in the lawsuit that indigenous peoples' right to traditional lands is an international customary law norm, but this claim was not directly addressed by the Court as it was not essential for the ruling.⁹³

Besides, the case *Kichwa Indigenous People of Sarayaku v. Ecuador* guarantees the linkage between indigenous peoples and their lands, including their natural resources of the ancestral territories, outlined under Article 21 of the American Convention on Human Rights, which stipulates the right to the use and enjoyment of property. Ecuador had granted a communal property title to these communities by reserving rights, such as their rights to subsurface natural resources. However, although a company initiated oil exploration

⁹² *Case of the Mayagna (Sumo) Awas Tingni Community v. Nicaragua*, Series C No 79 (IACtHR, Judgment 31 August 2001) para 149.

⁹³ *Ibid* para 140(d).

after Ecuador had signed a contract with it, the Sarayaku claimed that it threatened their way of life and damaged their lands.⁹⁴

Similarly, throughout the case *Sawhoyamaya Indigenous Community v. Paraguay*, the IACtHR affirmed that the State is held responsible for its failure to deny indigenous peoples' title and possession of their lands. As result, the community became vulnerable and their integrity and survival were threatened.⁹⁵ The case *Saramaka v. Suriname* also confirmed that a State cannot restrict property rights to indigenous peoples through exploration and extraction activity in an indigenous territory, because it threatens indigenous peoples' use and enjoyment of natural resources used and necessary for their survival. The term 'survival' includes States' assistance to preserve and safeguard indigenous peoples' special relationship with their territory and authorises them to continue living traditionally. In the report of 1997 related to the situation of the Ecuadorian human rights, the IACtHR observed that indigenous peoples' survival depends on their continued utilisation of traditional systems of their territory and lands. Land involves their capacity of providing resources to sustain their life and their geographical territory for their cultural and social reproduction.⁹⁶

Consequently, in the *Saramaka* case, indigenous peoples' rights to clean natural water might be disturbed by mining concessions. However, if certain conditions are met, particularly effective participation through consultation and free, prior and informed consent, benefit sharing and prior environmental and social impact assessment, the State can grant concessions. Therefore, the right to natural resources for indigenous communal landholders is restricted and the court concluded that the consent of indigenous peoples is only required for large-scale projects

⁹⁴ Case of the *Kichwa Indigenous People of Sarayaku v. Ecuador*, Series C No 245 (IACtHR, Judgment 27 June 2012); Thomas M. Antkowiak, 'Rights, Resources, and Rhetoric: Indigenous Peoples and the Inter-American Court' (2014) 35(1) UPAJIL 155-156.

⁹⁵ WaterLex, 'WaterLex Legal Database | Case of the Sawhoyamaya Indigenous Community v. Paraguay (Merits, Reparations and Costs) (IACHR, 2006)', available at <<http://www.waterlex.org/waterlex-legal-database/index.php?r=legalDocument/customView&id=356>> accessed on 27 June 2016.

⁹⁶ Orellana (n 84) 10; Case of the *Saramaka People v. Suriname*, Series C No 172 (IACtHR, Judgment 28 November 2007).

that would affect the integrity of peoples' lands and natural resources. Thus, the IACtHR does not coincide entirely with the principles of indigenous peoples' rights.⁹⁷

In addition, Article 13(2) of the ILO Convention No. 169 stipulates that the concept of territories includes the total environment of the areas that indigenous peoples occupy and use.⁹⁸ While natural resources are everything that has a natural existence on Earth, groundwaters and aquifers having an environmental impact on indigenous peoples must be included under the total environment. Hence, governments must protect and guarantee aquifers' use, need and occupation to indigenous peoples. Because of the lack of accepted definition, the interpretation of lands, territories and resources must be broad to embrace indigenous culture developed within the environment, also referred to as Mother Earth.⁹⁹

Consequently, groundwater can be treated either as part of the land, as a commodity subject to its capture through a well for instance, or subject to absolute ownership by a property owner. Under Spanish law, which influenced the South American groundwater law, the owner of the superadjacent land has traditionally possessed groundwaters. The South American interpretation also affirms that groundwater underlying public lands represents public groundwater.¹⁰⁰

Furthermore, despite not being located on indigenous peoples' land and territory, water transcends political boundaries and indigenous peoples' land and territory. Thus, General Comment No. 15 of the Committee on Economic, Social and Cultural Rights protects the right to water for all persons and under paragraph 16(d), indigenous peoples have access to water resources on their ancestral lands and this must be protected from

⁹⁷ Case of the *Saramaka People v. Suriname*, para 17 (n 96); Graham and Friedrichs (n 76) 9; Pasqualucci (n 85) 81, 83, 98.

⁹⁸ Getches (n 82) 273; Parriciatu and Sindico (n 87) 223; ILO Convention No. 169, Art 13(2).

⁹⁹ Candelaria (n 91) 34; ILA, 'The Hague Conference – Rights of Indigenous Peoples' (ILA, 2010) 20-21, available at <www.ila-hq.org/download.cfm/docid/9E2AEDE9-BB41-42BA-9999F0359E79F62D> accessed on 27 June 2016.

¹⁰⁰ Albert E. Utton, 'The Development of International Groundwater Law' (1982) 22(1) NRJ 98; Eckstein and Eckstein (n 40) 680.

contamination.¹⁰¹ Consequently, contaminated surface waters or groundwaters, passing through indigenous peoples' lands and territories might have consequences on them. By providing obligations only to States, the UNWC guarantees only 'vital human needs', but in contrast, the ILO Convention No. 169 includes States' duties and indigenous rights. 'Vital human needs' constitute a way to sustain human life and to prevent starvation, but understanding it through indigenous peoples' rights leads to a broader interpretation of indigenous peoples' rights.¹⁰² The Human Right Committee also decided within the communication *Poma Poma v. Peru* that the diversion of water that degrades indigenous lands was a violation of Articles 1(2) and 27 of the ICCPR if indigenous peoples can prove the connection between water and their expression of culture and consequently, Article 27 could protect indigenous peoples' right to water.¹⁰³

Furthermore, under Article 29 of the UNDRIP, States have a duty to take effective measures to guarantee that no hazardous materials are placed or stored on indigenous peoples' lands without their free, prior and informed consent. Consequently, this provision considers indigenous health and indigenous risks when these people are in contact with hazardous materials due to negative human impacts. States have environmental and human obligations to protect their indigenous peoples in the case of contaminated water that has consequences on peoples' health.¹⁰⁴

Consequently, while indigenous peoples have suffered unjust dispossession of their lands, territories, natural resources and social marginalisation in many parts of the world, international legal instruments guarantee *de jure* indigenous peoples' rights over lands, territories and natural resources. States then have duties to protect these rights according to regional courts, such as the IACtHR that demonstrated that indigenous rights to traditional lands have attained the rank of customary international law. As a result, due to their communal ownership over natural resources, indigenous peoples can fully enjoy

¹⁰¹ Christina Leb, 'The Right to Water in a Transboundary Context: Emergence of Seminal Trends' (2012) 37(6) *Water International* 641; Parriciatu and Sindico (n 87) 225.

¹⁰² Hammer (n 51) 157.

¹⁰³ Misiedjan and Gupta (n 88) 80, 81, 87.

¹⁰⁴ Graham and Friederichs (n 76) 5 ; UNDRIP, Art 10, 25-29.

their collective rights over water resources without external interference. States must grant territorial titling through effective and regulated procedures in order to protect indigenous peoples' right to property on their lands. The right to self-determination provides indigenous peoples' right to give their prior, informed and free consent to any natural resource exploitation where they live and the State can only exploit natural resources after gaining this right through consent. However, it is limited by the survival of the indigenous communities.¹⁰⁵ If contaminated groundwater infringes upon the survival of indigenous communities as provided in *Saramaka v. Suriname*, it might be in violation of indigenous peoples' rights and in breach of States' protection for 'vital human needs' as regards the UNWC and the Draft Articles.

4 ALT and Peruvian and Bolivian National Laws

This Section analyses the ALT and Peruvian and Bolivian national laws in relation to the assessment realised in the previous Section to consider the indigenous peoples' rights to lands and natural resources in the context of groundwater contamination in the Lake Titicaca region.

A. ALT

a. Law and Policy

In 1955, Bolivia and Peru signed their first formal agreement in Lima in order to study and manage Lake Titicaca's water resources. This document emphasised that the waters of the lake must be indivisibly and exclusively joint owned. In 1986, this framework moved to a more institutionalised bilateral sub-commission, SUBCOMILAGO, assisted financially and technically by the European Community to improve the joint watershed management. In 1993, studies realised by European companies led to a Binational General Master Plan for the Development of the Integrated Region of Lake Titicaca, which represents a basis reference relating to watershed management in different basins. This Plan includes the use of the water resources within the TDPS System and

¹⁰⁵ Getches (n 82) 27; Parriciatu and Sindico (n 87) 218, 235.

measures for flood control and prevention around Lake Titicaca and biodiversity and environment preservation. In 1996, the two riparian States then set up the ALT, which involves representatives from both States. The responsibility of the ALT is to guarantee the implementation of the Binational General Master Plan.¹⁰⁶ The Peruvian and Bolivian Congresses then ratified the statute of the ALT, the Bolivian Congress adopted the Law No. 1972 on 30 April 1999, and the Peruvian Congress passed the Legislative Resolution No. 26873 on 12 November 1997.¹⁰⁷

While the ALT constitutes a supreme body and decides to implement and enforce regulations on control and protection of the waters of the TDPS System, the Peruvian and Bolivian Ministries of Foreign Affairs are responsible within the ALT for its political functioning and two national projects on a technical level: the Special Project Lake Titicaca in Peru and the Bolivian Operational Unit in Bolivia.¹⁰⁸ Under Article 8 of the Statute of the ALT, the ALT is autonomous to decide and manage its functions after both Ministries of Foreign Affairs have approved them within the Operative Annual Plan, a plan adopted each year related to the current needs regarding water management and development.¹⁰⁹ Pursuant to the Headquarter Agreement adopted by the ALT and Bolivia that established the Headquarter of the ALT in La Paz, Article 16 ensures that the realisation of the Master Plan must be considered scientifically and technically and through an annual plan adopted by the Peruvian and Bolivian Ministries of Foreign Affairs.¹¹⁰ The Ministry of Sustainable Development and Planning in Bolivia and the Peruvian

¹⁰⁶ Rieckermann and others (n 15) 9-10.

¹⁰⁷ Autoridad Binacional Autónoma del Lago Titicaca, Sistema Hídrico TDPS: Perú – Bolivia (ALT), 'ALT | Leyes de Creación', available at <<http://alt-perubolivia.org/web/nosotros/marco-legal/itemlist/category/2-de-creaci%C3%B3n.html>> accessed on 15 June 2016.

¹⁰⁸ UNESCO – WWAP (n 1) 475.

¹⁰⁹ Estatuto ALT (29 May 1996) Art 8, available at <<http://www.alt-perubolivia.org/web/nosotros/marco-legal/itemlist/category/3-normatividad-de-funcionamiento.html>> accessed on 15 June 2016 (Translation by the author).

¹¹⁰ Convenio Sede (15 April 1996) Art 16, available at <<http://www.alt-perubolivia.org/web/nosotros/marco-legal/itemlist/category/3-normatividad-de-funcionamiento.html>> accessed on 15 June 2016 (Translation by the author).

Development Institute in Peru also control and enforce water laws and policies within their country and the TDPS System.¹¹¹

Consequently, under Article 5 of the Statute of the ALT, the ALT has various functions. Especially, its first function is the achievement of the Master Plan. The ALT must also promote sustainable development within the TDPS System and consider, *inter alia*, projects that regulate the waters within the basin of Lake Titicaca, regulate the water resources particularly in the event of floods and droughts, ensure data collection, coordinate all the bodies working for the TDPS System, and support the preservation and protection of the ecosystems.¹¹²

b. Limits

Nevertheless, the scope of the ALT is limited. Although Article 4 of the Statute of the ALT provides that this body has a duty to encourage and rule actions, programmes and projects and enact legislation for the management, control and protection of the water resources of the TDPS System, the ALT and its associated legislation does not clearly define 'water'.¹¹³ However, concerning its geographical field of competence, Article 6 ensures that the work of the ALT is located within the basins of the TDPS System and the Master Plan requires projects to ensure water resources' availability in surface water or groundwater sources. Consequently, the Statute does not distinguish surface water and groundwater, and the Master Plan includes both only for implementing new projects of irrigation and drainage. Although the ALT and the Master Plan do not specifically mention the principles of the UNWC, these documents develop them broadly. For example, the ALT demonstrates cooperation between riparian States, exchange of information within the TDPS System, and the obligation to preserve the quality of the water.¹¹⁴ However, as there is no indication in the Statute and no more information within the Master Plan about management and preservation of groundwater or aquifers, the ALT does not seek to achieve the provisions of the Draft Articles.

¹¹¹ UNESCO – WWAP (n 1) 475.

¹¹² Estatuto ALT Art 5.

¹¹³ *Ibid* Art 4.

¹¹⁴ *Ibid* Art 5-6; ALT, 'ALT | Plan Director', available at <<http://www.alt-perubolivia.org/web/publicaciones/plan-director.html>> accessed on 6 July 2016.

Indigenous peoples are also absent from the scope of the ALT. Under Article 12(a)(1) of the Statute, the Master Plan must foster cooperation and participation of the required actors. However, it does not determine who the actors are. The Master Plan includes the participation of the future beneficiaries of the new projects of irrigation and drainage, but it does not define what their rights are.¹¹⁵ Similarly, neither the Statute nor the Master Plan refers to ‘vital human needs’ having priority in the case of a conflict of the uses of the water resources, as required under the UNWC. These instruments do not include any human perspective in the management and preservation of the water resources of the TDPS System.

Regarding mining production, mining activities might be included as Article 5(e) states that the ALT must coordinate and prevent activities affecting the dynamics of the TDPS System. The Statute does not define the types of activities, although they can be temporary or permanent, current or future, national or binational and public or private. The Master Plan, however, stipulates that controls of mining contamination must be established.¹¹⁶ Subsequently, though mining activities must be controlled to prevent damages to the TDPS System, the legal framework of the ALT does not clearly include aquifers and groundwater or indigenous peoples’ rights. Assessing Peruvian and Bolivian national laws is therefore pertinent.

B. Water and Groundwater National Laws

The body in charge of integrated water resources management must enact rules within the TDPS System and by virtue of Article 12(b)(2) of the Statute, it must consider current legislation in Peru and Bolivia related to the water resources and contemplate their compatibility to improve the management and regulation of the water resources of the TDPS System.¹¹⁷

Riparian States have different approaches regarding the protection of their water resources. Under Article 374, the Bolivian New Constitution of 2009 sets up an important place for guaranteeing all inhabitants’ access to water resources and it limits privatization

previously realised. Under Article 373(II), surface and groundwater resources are vulnerable, limited and have a social, cultural and environmental function and pursuant to Article 375, the State has a duty to manage, conserve and use water basins sustainably. Pursuant to Article 377(II), border and transboundary waters must be protected for populations.¹¹⁸ Similarly, the Water and Sanitation Services Law No. 2066 under Article 8(k)(vii)(o) and the Irrigation Law No. 2878 under Articles 20 and 21 include traditional and customary rights, uses and management of water resources by indigenous peoples and peasant farm worker communities. Under Article 5 of the Water and Sanitation Law No. 2066, water must be shared for human well-being and no discrimination between citizens is allowed. Bolivian legislation also includes landowners’ rights to water on their land, but none of the legislation includes groundwater resources.¹¹⁹ Nevertheless, under Article 20 and 21 of the 1906 Water Law, the owner had a right of property over groundwater and could freely extract water through wells, unless it would have diminished waters of the neighbours. However, this legislation has been replaced.¹²⁰ Hence, the Bolivian water law does not distinguish surface water and groundwater, but stipulates the protection of water and particularly transboundary water for its citizens.

In contrast to Bolivia, under Article 66 of the Peruvian Constitution, natural resources constitute the patrimony of the nation and the government holds sovereign rights over all

¹¹⁸ USAID, ‘USAID Country Profile, Property Rights and Resource Governance – Bolivia’ (n 33) 11; Nueva Constitución Política del Estado, Bolivia (Adopted on 21 October 2008, entered into force on 7 February 2009) Art 373(II), 374, 375, 377, available at <<http://www.santacruz.gob.bo/archivos/PN22102010122236.pdf>> accessed on 30 May 2016 (Translation by the author).

¹¹⁹ USAID, ‘USAID Country Profile, Property Rights and Resource Governance – Bolivia’ (n 33) 11; Ley No. 2066, Ley de los Servicios de Agua Potable y Alcantarillado Sanitario (11 April 2000) Gaceta Oficial de Bolivia, Art 5, 8 (Translation by the author); Ley No. 2878, Ley de Promoción y Apoyo al Sector Riego para la Producción Agropecuaria y Forestal (8 October 2004) Gaceta Oficial de Bolivia, Art 20-21 (Translation by the author).

¹²⁰ Rocío Bustamante, ‘Legislación del Agua en Bolivia’ (WALIR Research Vol. 2, Centro Agua, UN/CEPAL and Wageningen University, 2002) 65-66, available at <<http://www.cepal.org/drni/proyectos/walir/doc/walir4.pdf>> accessed on 20 June 2016.

¹¹⁵ Estatuto ALT Art 12(a)(1); ALT, ‘ALT | Plan Director’ (n 114).

¹¹⁶ Estatuto ALT, Art 5(e); ALT, ‘ALT | Plan Director’ (n 114).

¹¹⁷ Estatuto ALT, Art 12(b)(2).

natural resources, including water, and has a right to regulate their use by private parties.¹²¹ On 31 March 2009, the Water Resources Law No. 29338 replaced the 1969 General Water Law by enhancing the National Water Resources System, which includes many institutions at various political levels. Under Article 18, native communities must be represented within the National Water Authority. Peruvian legislation improves water resources management to the river basin level, as Article 1 ensures that all water resources, including surface water and groundwater, are embraced, as well as emphasising public participation in water management. This recent legislation leads to customary law governing water resources, and water rights are given to households within a community through a hierarchical system. Under this system, legitimate users of the water resources alternatively own water rights and for instance, a person has a right alternatively with other users to irrigate a plot of land, as stated under Article 32. Article 90 of the Regulation of the Law No. 29338 supports an imprescriptible right for native communities to use the water resources on their lands and on the basin where water resources came in accordance with ancestral uses and customs. This provision also ensures that native communities do not have to form communities of water users to claim this right to water. Articles 3.5 and 64 of the Law allow native communities to use water resources on their lands and require their participation in the use and management of the water resources. Moreover, under Article 43 of the Regulation, the use of transboundary basins must be in conformity with the principles of international law and agreements in force.¹²²

Furthermore, while Bolivia does not incorporate groundwater management, the Peruvian Water Resources Law No. 29338 encompasses surface water and groundwater

¹²¹ Patrick Wieland, 'Going Beyond Panaceas: Escaping Mining Conflicts in Resource-rich Countries Through Middle-ground Policies' (2013) 20(1) NYUJL 211; Constitución Política del Perú (Adopted on 29 December 1993 and entered into force on 1 January 1994) Diario Oficial 'El Peruano' Art 66 (Translation by the author).

¹²² USAID, 'USAID Country Profile, Property Rights and Resource Governance – Peru' (n 34) 10-11; Ley No. 29338, Ley de Recursos Hídricos (30 March 2009) Diario Oficial 'El Peruano' Art 1, 3.5, 32, 64 (Translation by the author); Reglamento de la Ley de Recursos Hídricos (January 2010) Diario Oficial 'El Peruano' Art 18, 43, 90 (Translation by the author).

management under Article 1. Title IX provides provisions only for groundwater mandated by the National Water Authority to study, control, preserve and regulate groundwater. It also stipulates exploitation requirements to use groundwater. Under Article 243, the National Water Authority can use groundwater in case of basic needs in rural areas. Moreover, pursuant to Article 277(c), the contamination of any source of surface or groundwater constitutes an infraction regardless of the situation or circumstances.¹²³

Consequently, both Bolivian and Peruvian national water laws provide particular rights to all citizens and particularly to indigenous peoples or native communities, as called for under Peruvian legislation. While Bolivia protects transboundary waters for its population but does not embrace groundwater, Peruvian legislation ensures that native communities have a right to groundwater as the Law No. 29338 protects all water resources. Peru also guarantees the protection of transboundary basins such as in international law. Nevertheless, no legislation mentions the Draft Articles.

C. Peruvian and Bolivian Mining Laws

Despite the fact that there is no international mining law, States usually retain ownership over their minerals. This is the case in Bolivia, where the 2009 Constitution ensures the State's ownership and responsibility for all mineral resources located in the soil and subsoil under Article 369 and 370. The State also has the right to contract with mining companies and to control the mineral production chain.¹²⁴ Similarly, the 1997 Mining Code highlights States' ownership over minerals, including metals and precious stones, and minerals located on communal lands. Exploration and extraction of minerals are also regulated by the government that distribute grant concessions to individuals and entities through a particular right under Article 4, after individuals and entities have applied for concessions. This right is distinct from the right of the owner, but transferable in case of hereditary succession. Article 31 stipulates that when the mining concession holder has received their concession, they have the right to

¹²³ Reglamento de la Ley de Recursos Hídricos, Art 1, 243, 277(c) and Title IX.

¹²⁴ USAID, 'USAID Country Profile, Property Rights and Resource Governance – Bolivia' (n 33) 14-15; Nueva Constitución Política del Estado, Bolivia, Art 369-370.

explore and exploit minerals within the perimeter of their concession or outside depending on the agreement. Thus, the government has an oversight and participates in mining exploration and extraction, although the project mining code using contracts instead of concession is processing. In case of a violation of the terms of mining concessions, the Mining Code stipulates penalties, including loss of concession. Likewise, this legal instrument involves stakeholder participation in the mining sector. Moreover, it includes particular provisions to protect the environment. Pursuant to Article 85, contaminated discharges must be controlled by the concession holder or the mining company. In virtue of Article 86, environmental damages must be alleviated.¹²⁵ In the case of transboundary impacts, under Article 167 of the 1992 Environment Law, an EIA must be undertaken.¹²⁶

This legal instrument also provides a legal framework for mining production. Article 70 regulates mining disposals and dismantling and Article 71 protects waters once mining activities are finished.¹²⁷ Moreover, in May 2007, President Evo Morales signed the Presidential Decree No. 29117, which reaffirmed State jurisdiction over minerals, metals and stones and that the Mining Corporation of Bolivia manages mineral wealth, except minerals that have received grant concession before the decree. This legal document also ensures that all mining companies process to a joint venture with this body.¹²⁸

Beside Bolivian mining law, in Peru, the 1981 General Mining Law, amended by the Mining Investment Promotion Law of 1991, governs mineral sector. However, the 1992 General Mining Law consolidates these changes and incorporates mining activities within one single document. The Preamble of the General Mining Law reiterates States'

indefeasible and inalienable ownership over minerals and the system of concessions relating to mineral use. Under Article 9, the concession owner has a right to explore and exploit minerals granted through a particular depth notified in the plans. Article 222 prevents water contamination from discharges and Article 225 guarantees studies to prevent environmental contamination, such as water contamination.¹²⁹

Consequently, the State owns mineral deposits and grants concessions for the exploration and exploitation of minerals to nationals, foreign nationals or juridical persons. Granting concessions can include subsurface resources existing below privately owned land. Although mining operators and landowner must firstly reach an agreement in urban areas, in the event the parties do not agree, an easement can be obtained by the national government for the mining company to assess underground resources. Furthermore, though an EIA is mandatory for receiving a license, Peruvian institutions lack the capacity to regulate them efficiently, and in some areas informal prospecting concessions can be acquired.¹³⁰

Moreover, under Article 15 of the General Law of the Peasant Communities, the State must protect and support peasant communities to exploit mining concessions on their territories, but in case of extinction of possession, other companies can be requested through a consensual agreement that includes peasant communities' participation.¹³¹ Besides, an EIA is mandatory within an activity having potential environmental impact and public participation is therefore compulsory throughout the EIA. The case brought to the Latin American Water Tribunal, *Grufides y PIC v Estado Peruano y Minera Yanacocha SRL*, provides an interconnection between mining law and indigenous peoples' rights. It concluded that mining exploitation infringed the right to citizens to participate before any mining activity and that mining exploitation would

¹²⁵ USAID, 'USAID Country Profile, Property Rights and Resource Governance – Bolivia' (n 33) 14-15; Ley No. 1777, Código de Minería (17 March 1997) Gaceta Oficial de Bolivia, Art 4, 31, 85, 86 (Translation by the author).

¹²⁶ Ley No. 1333, Ley del Medio Ambiente (27 April 1992) Gaceta Oficial de Bolivia, Art 167 (Translation by the author).

¹²⁷ USAID, 'USAID Country Profile, Property Rights and Resource Governance – Bolivia' (n 33) 14-15; Ley No. 1333, Ley del Medio Ambiente Art 70-71.

¹²⁸ USAID, 'USAID Country Profile, Property Rights and Resource Governance – Bolivia' (n 33) 14-15.

¹²⁹ USAID, 'USAID Country Profile, Property Rights and Resource Governance – Peru' (n 34) 16-17; Ley General de Minería, Decreto Supremo No. 014-92-EM (4 June 1992) Diario Oficial 'El Peruano', Preamble, Art 9, 222, 225 (Translation by the author).

¹³⁰ USAID, 'USAID Country Profile, Property Rights and Resource Governance – Peru' (n 34) 16-17.

¹³¹ Ley No. 24656, Ley General de Comunidades Campesinas (14 April 1987) Diario Oficial 'El Peruano', Art 15 (Translation by the author).

generate, from technical reports provided by experts, irreversible damage to the environment, including surface water and groundwater, and it therefore does not respect the EIA.¹³² Hence, although riparian countries own and give grants for the exploitation of their minerals, they both consider the environmental damages of mining and the importance of protecting their indigenous communities from mining impacts.

D. National Rights of Indigenous Peoples

Despite the fact that Bolivia and Peru are constituted by a large population of indigenous peoples sharing similar traditions, their national indigenous laws are different. In Bolivia, the Law No. 1257 adopted in 1991 agrees on the adoption of the ILO Convention No. 169.¹³³ Similarly, the 2009 Constitution recognises under Articles 2 and 289 respectively self-determination to indigenous peoples and indigenous peoples' possibility to form their own government if they are sharing territory, culture, history, language or political, socioeconomic and juridical institutions. The Preamble also outlines the linkage of the Bolivian population to its land and territory. Article 30 further guarantees indigenous peoples' rights to receive titling of their lands and territories, live in a healthy environment and benefit from exclusive use of the renewable natural resources on their territory.¹³⁴

Furthermore, Article 304 ensures indigenous peoples' autonomy for various competences, particularly, their management of renewable natural resources, their planning and management of territorial occupation, their preservation of their habitat and landscape in conformity with their cultural, technological, historical and spatial norms and practices, and their concurrent competences regarding environmental preservation and controlling of mining activities. Article 78 of the Environmental Law No. 1333 adds indigenous peoples' participation to ensure sustainable development and to use renewable natural resources rationally. In case of the natural resources' exploitation, indigenous peoples

¹³² *Case Grupo de Formación e Intervención para el Desarrollo (Grufides) y Plataforma Interinstitucional Celendina (PIC) v Estado Peruano y Minera Yanacocha SRL* [2012] TLA (Translation by the author).

¹³³ Ley No. 1257 (11 July 1991) Gaceta Oficial de Bolivia (Translation by the author).

¹³⁴ Nueva Constitución Política del Estado, Bolivia, Preamble, Art 2, 30, 289.

must be consulted pursuant to Article 352 of the 2009 Constitution. Article 353 also emphasises the right of the Bolivian population to have an equitable access to natural resources.¹³⁵ Finally, in regard to water resources, Article 20 of the Irrigation Law No. 2878 stipulates indigenous peoples' easement over water resources traditionally used.¹³⁶

While Bolivian legislation highlights indigenous peoples' right to natural resources, indigenous lands are also protected. Article 397 of the 2009 Constitution guarantees indigenous peoples' rights over property and their sustainable use of the land.¹³⁷ The 1996 National Agrarian Reform Service Law and the regulations issued for that law also provide institutions and procedures for legal recognition of indigenous lands. Although Bolivia recognised millions of hectares belonging to indigenous peoples through this legislation, these communities were confronted by several obstacles. This included the rules for deciding land allocation, which led to the granting of smaller areas than originally claimed, and a significant fragmentation of indigenous land claims due to an increase of titling for agricultural colonists. As a result, protests arose since this breached indigenous peoples' rights provided under the UNDRIP and the ILO Convention No. 169.¹³⁸

The Peruvian constitutional provisions are the earliest in the Americas to recognise indigenous rights. In 1974, Peru adopted the first Law of Native Communities, which ensures full property rights over lands to indigenous communities and has been amended by a similar and later law still in force. The 1979 Constitution guarantees indigenous lands as being inalienable, unmortgageable and imprescriptible. However, the 1993 Constitution constitutes a step backward on this issue, as under Article 88, indigenous lands can be

¹³⁵ Nueva Constitución Política del Estado, Bolivia, Art 304, 352-353; Ley No. 1333, Ley del Medio Ambiente, Art 78.

¹³⁶ Ley No. 2878, Ley de Promoción y Apoyo al Sector Riego para la Producción Agropecuaria y Forestal, Art 20.

¹³⁷ Nueva Constitución Política del Estado, Bolivia, Art 397.

¹³⁸ Roldán Ortega R, 'Models for Recognizing Indigenous Land Rights in Latin America' (The World Bank Environment Department, Biodiversity Series, 2004) Paper No. 99, 5-6, available at <<http://siteresources.worldbank.org/GLOBALENVIRONMNTFACILITYGEOFOPERATIONS/Resources/Publications-Presentations/Biopublication2005ModelsforRecognizing.pdf>> accessed on 25 June 2016.

bought and sold. Consequently, the territoriality of indigenous lands proclaimed in the ILO Convention No. 169 is not respected under Peruvian legislation. Moreover, before claiming their indigenous lands, indigenous communities must first form a legally recognised group to guarantee their title. This constitutes a difficult process.¹³⁹

Moreover, under Article 70 of the General Environmental Law No. 28611, environmental politics must include indigenous peoples in environmental territorial management. In virtue of Article 72.3, indigenous peoples have free access over natural resources to satisfy their subsistence needs and their ritual uses. Pursuant to Article 72.1, any study or project to exploit or explore natural resources located within indigenous lands must adopt rational measures to avoid cultural and socioeconomic damages.¹⁴⁰ The Water Resources Law No. 29338 also includes indigenous peoples' rights. Article 64 highlights States' obligation to recognise and respect native communities in the use of waters over their lands.¹⁴¹

Moreover, under Article 1(a) of the 1987 General Law of the Peasant Communities, the State must guarantee native communities' right to ownership of the territory.¹⁴² Similarly, under Article 17 and 18 of the Organic Law for the Sustainable Use of Natural Resources, peasant and native communities have priority and free access to natural resources on the contiguous environment of their lands, unless third parties have exclusive rights or it is a State reserve. In addition, ancestral natural resource uses are recognised, unless they infringe on the rules for environmental protection.¹⁴³ However, while indigenous peoples rights include States' responsibility to protect peoples in the use, management and conservation of their resources, States own minerals and resources from the subsoil, which restricts indigenous

¹³⁹ Ortega R (n 138) 9, 20, 22; Constitución Política del Perú, Art 88-89.

¹⁴⁰ Ley No. 28611, Ley General del Ambiente (15 October 2005) Diario Oficial 'El Peruano', Art 70, 72 (Translation by the author).

¹⁴¹ Ley No. 29338, Ley de Recursos Hídricos, Art 64.

¹⁴² Ley No. 24656, Ley General de Comunidades Campesinas, Art 1(a).

¹⁴³ Ley No. 26821, Ley Orgánica para el Aprovechamiento Sostenible de los Recursos Naturales (25 June 1997) Diario Oficial 'El Peruano', Art 17-18 (Translation by the author).

peoples' rights to participation and consultation.¹⁴⁴

Therefore, while the ALT includes only surface water resources, both riparian States provide a general legal framework to protect indigenous peoples' rights to lands and natural resources. In Peru, while water legislation protects groundwater and includes indigenous peoples' rights, the process for indigenous peoples to claim their rights to lands and natural resources is cumbersome. In Bolivia, although indigenous peoples' rights are comprehensive, indigenous communities also have difficulties in the recognition of their lands and natural resources. Hence, these failures have led to various indigenous protests in these countries because of breaches of international indigenous peoples' law and national legislation. In addition, the mining economy often takes priority over indigenous peoples' rights.

5 Recommendations

This Section provides potential recommendations of reforms to Bolivian and Peruvian national laws and the ALT concerning indigenous peoples' rights to lands and natural resources over groundwater in the event of mining contamination.

A. *Interconnection between Surface Waters and Groundwaters*

While groundwater can be contaminated through pollutants discharged into recharge areas on the land surface and surface streams that provide water to the aquifers, contaminated groundwater may also contaminate surface water by effluent streams fed by aquifers.¹⁴⁵ Consequently, groundwater and surface water are interlinked and are not contained by political boundaries. Moreover, due to aquifers' division into political boundaries, possibilities of transboundary contamination are significant. Because groundwater stores more pollution than flowing surface water that can to a

¹⁴⁴ Armando Guevara Gil, 'El Derecho Oficial Frente a la Gestión Indígena y Campesina del Agua en el Perú' (WALIR Research, Centro Agua, UN/CEPAL and Wageningen University, 2002) 7, available at <<http://www.cepal.org/dnri/proyectos/walir/doc/walir7.pdf>> accessed on 27 June 2016.

¹⁴⁵ Teclaff and Teclaff (n 6) 630.

considerable extent clean itself, contamination of groundwater is more serious than in the case of surface water. Therefore, a conjunctive management with recognition of the interrelationship and interconnection between surface and groundwaters is relevant.¹⁴⁶

In the TDPS System, the ALT constitutes a transnational agency with the capacity to set up policies, but its Statute includes mainly surface water and the Master Plan includes only the consideration of availability of groundwater in regard to new projects for irrigation and drainage. Thus, the ALT does not clearly embrace the interconnection between surface waters and groundwaters and does not provide its policies concerning this feature within the TDPS System. Although the Master Plan establishes studies of the waters within the region and compares laws of both riparian States to further improve policies and legislation within the TDPS System, only Peru includes groundwater in its legal scope and involves all water resources through a basin level approach.¹⁴⁷ Within the studies of the ALT, as neither groundwater nor aquifers are clearly mentioned, no hydrologic measures and information can be provided and shared between riparian States. Although the ALT constitutes an international body, this issue is not part of its mandate. Consequently, the ALT fails to legally incorporate the provisions of the Draft Articles.

While the only legally binding document – the UNWC – states that under Article 2(a), a ‘watercourse’ represents ‘a system of surface waters and groundwaters’, it emphasises the use of the watercourse for ‘vital human needs’. In addition, the Draft Articles re-establishes this requirement and under its Preamble, emphasises the importance of groundwater for humankind and the need to conserve and protect it within the legal protection of the aquifers.¹⁴⁸ Therefore, within the TDPS System, steps should be taken to improve the protection of groundwaters and aquifers through the

¹⁴⁶ Utton (n 100) 103-114.

¹⁴⁷ Estatuto ALT; ALT, ‘ALT | Plan Director’ (n 114); USAID, ‘USAID Country Profile, Property Rights and Resource Governance – Peru’ (n 34) 10-11; Ley No. 29338, Ley de Recursos Hídricos (30 March 2009) Diario Oficial ‘El Peruano’ (Translation by the author); Reglamento de la Ley de Recursos Hídricos (January 2010) Diario Oficial ‘El Peruano’ (Translation by the author).

¹⁴⁸ UNWC, Art 2(1), 10(2); Draft Articles, Preamble.

consideration of international law and the interconnection between surface waters and groundwaters, in order to further protect both natural resources.

B. Protection against Mining Activities

The bodies of the Inter-American system have similarly emphasised the importance of protecting indigenous peoples against environmental damages. States and regional bodies must assume that potential mining activities might generate toxic waste or dangerous materials within indigenous lands or indigenous natural resources. This threat affects indigenous life, physical integrity and their collective survival. It also disturbs indigenous peoples’ right to property over lands and natural resources.¹⁴⁹

Consequently, although States must guarantee indigenous peoples’ rights to lands and natural resources associated to all the indigenous rights and provide an EIA for any activity having environmental impacts, suspension, compensation, reparation and prevention must also be included within national laws and policies to reduce further environmental damages and provide all indigenous peoples’ rights.¹⁵⁰ Although the Statute of the ALT and the Master Plan include the establishment of controls related to mining contamination, like Bolivia and Peru, the ALT should improve their laws and policies to this direction, in order to reduce environmental impacts on indigenous peoples and thus, diminish indigenous peoples’ demonstration. As the IACtHR has emphasised, riparian States and the ALT must follow a human approach by including in their laws and policies the protection of indigenous life, physical integrity and collective survival, throughout mining production.¹⁵¹

C. Rights to Lands and Natural Resources and Public Participation

Because its mandate only covers water resources, the ALT does not obviously include any rights to indigenous peoples. However, it

¹⁴⁹ IACHR, ‘Indigenous and Tribal Peoples’ Rights over their Ancestral Lands and Natural Resources: Norms and Jurisprudence of the Inter-American Human Rights System’ (OAS – IACHR, 2009) 85-87, available at <<http://www.oas.org/en/iachr/indigenous/docs/pdf/ancstrallands.pdf>> accessed on 3 July 2016.

¹⁵⁰ Ibid.

¹⁵¹ Case of the *Saramaka People v. Suriname* (n 96).

also fails to include public participation, which would authorise indigenous communities to claim their rights to lands and natural resources within the TDPS System.

Public participation is embraced within the obligation to conduct an EIA. It involves informing and consulting interested or affected persons or entities in the process of decision-making.¹⁵² The UNDRIP outlines the right of free, prior and informed consent for any measures that may affect indigenous communities or any disposal of hazardous measures on their lands or territories. Consequently, consent is harder to achieve than consultation and while the ALT does not include public participation, riparian States do not include 'consent' in their national laws. The Peruvian Law No. 29785 ensures only indigenous peoples' right of consultation and information throughout any measure that might affect them. Similarly, under the Bolivian Constitution, only participation, information and consultation are considered.¹⁵³

Moreover, both States have a specific national law regarding EIAs. In Peru, the National Environmental Impact Assessment Law No. 27446 adopted in 2001 involves, under Article 1(c), public participation within the EIA and under Article 5(b) and (c), water protection and preservation of its quality. However, under Article 14, public participation embraces consultation and information but does not require any consent.¹⁵⁴ In Bolivia, the Law of the Environment and the Supreme Decree No. 24176 adopted in 1995 includes an EIA under Chapter IV of the Title III about environmental aspects of the Law of the Environment. However, under this Chapter, there is no mention of public participation, which is instead contained under Chapter I of the Title V relating to population and the environment. Article 78 stipulates governments' obligations to provide satisfactory measures to include the

¹⁵² UNEP, 'Environmental Impact Assessment and Strategic Environmental Assessment: Towards an Integrated Approach' (UNEP, 2004) 163 p, available at <<http://www.unep.ch/etu/publications/textONUBr.pdf>> accessed on 28 June 2016.

¹⁵³ Nueva Constitución Política del Estado, Bolivia; Ley No. 29785, Ley de Consulta Previa (7 September 2011) Diario Oficial 'El Peruano' (Translation by the author).

¹⁵⁴ Ley No. 27446, Ley del Sistema Nacional de Evaluación del Impacto Ambiental (23 April 2001) Diario Oficial 'El Peruano', Art 1(c), 5(b) and (c) and 14 (Translation by the author).

participation of traditional communities and indigenous peoples.¹⁵⁵

Consequently, although both States recognise public participation in their national laws and under the EIA, they do not guarantee the right to free, prior and informed consent to indigenous communities, which could help indigenous peoples claim their rights to lands and natural resources in the case of groundwater contamination. While Peru and Bolivia meet many indigenous protests due to mining operations having environmental impacts on indigenous lands and natural resources, prior to any mining operations, communities need to give their consent as much as they need to receive prior information regarding plans and management. Increasing public participation also leads to improving indigenous peoples' involvement in decision-making and access to justice. This last point would expand Bolivian and Peruvian jurisprudence on indigenous rights. Nevertheless, although the free, prior and informed consent is outlined within the UNDRIP, a non-legally binding treaty, the ILO Convention No. 169 has failed to include it in the context of any measures that might affect indigenous communities. This instrument only includes this right in cases of relocation.¹⁵⁶ Thus, the failures of the ALT, Peru and Bolivia reflect the failures at the international level.

6 Conclusion

Although the mandate of the ALT is to preserve and protect water resources, the ALT considers mining contamination and includes the establishment of controls in its Master Plan. The ALT has also developed projects to protect waters around Lake Titicaca from contamination. Nevertheless, the mandate of the ALT does not recognise the interconnection between surface waters and groundwaters, and thus does not embrace the aquifers in the TDPS System, particularly the one underlying Lake Titicaca shared by Bolivia and Peru.

The ALT also fails to include, in proper terms, public participation and the rights of the populations living in the TDPS System. This is despite the fact that both riparian States gather

¹⁵⁵ Ley No. 1333, Ley del Medio Ambiente, Title III and V and Article 78.

¹⁵⁶ UNDRIP, Art 10, 11(2), 19, 28, 29(2), 39(2); ILO Convention No. 169, Art 16(2).

a large number of indigenous peoples, particularly around Lake Titicaca due to its traditional and cultural history. Thus, it fails to involve the major persons concerned with the policies and laws of the ALT, but this failure has been previously denounced and improvements have been made. However, this reflects international law, as the IACtHR outlined in the *Saramaka* case that indigenous peoples' consent is required only for large-scale projects on indigenous territories.

While Peru and Bolivia legally include the obligation to conduct an EIA, they do not guarantee the consent of indigenous communities for mining production. Moreover, although the law of Bolivia related to indigenous peoples' rights to lands and natural resources is the most impressive, it does not provide any legislation about groundwater. Conversely, Peruvian legislation includes groundwater and protects indigenous peoples' rights over all water resources. However, it does not clarify whether indigenous rights to lands and natural resources include groundwater, although within the ILO Convention No. 169, the interpretation of the total environment should include groundwater and aquifers if it infringes the survival and physical integrity of the affected persons. Hence, the ALT should further protect all indigenous peoples' rights as much as both riparian States, in order to respect international law. This includes the implementation of all provisions related to indigenous peoples' rights, but also participation in decision-making and access to justice to provide a complete framework allowing indigenous communities to claim their rights to lands and natural resources.