

The Human Right to Drinking Water: Impact of large-scale agriculture and industry



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IN-DEPTH ANALYSIS

The Human Right to Drinking Water: Impact of large-scale agriculture and industry

ABSTRACT

Access to safe drinking water is a human right. It is indispensable to a healthy, dignified and productive life. However, a significant proportion of the global population is not able to enjoy this human right. The purpose of this in-depth analysis is to consider the impacts of large-scale agricultural activity and industry on the progressive realisation of the human right to drinking water. In particular, it considers how the European Union and the European Parliament can better support non-EU countries to realise this human right. States and businesses have obligations and responsibilities towards citizens to ensure safe drinking water. However, fulfilling these obligations and responsibilities is in contention with competing water uses and economic considerations and marred by poor enabling environments and power dynamics. Achieving the human right to drinking water needs to be considered in the context of trade-offs emerging from the water-food-energy nexus where water use in one sector can have impacts on others. Virtual water embedded in the trade of agricultural goods demonstrates that demand for food can affect local water availability, posing challenges to ensuring the human right to drinking water in these places. Existing good practices focus on better recognition of obligations and responsibilities through a human rights-based approach, improved assessments of impacts, enhanced stakeholder engagement and mechanisms for due diligence. There are opportunities for the EU to extend the discussion on the human right to drinking water with other interlinked rights, noting the complex and integrated impacts of water resources.

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1 Introduction

1.1 Background

Access to safe drinking water is a human right. It is indispensable to a healthy, dignified and productive life. However, a significant proportion of the global population is not able to enjoy this human right. There are 2.2 billion people, or nearly a third of the global population, who lack safely managed drinking water services and 4.2 billion people who lack safely managed sanitation services (UN Water, 2021a). Amidst managing factors that pressure water resources, including population growth and climate change, states have international obligations to cooperate and ensure joint and separate actions are taken to fully realise the rights to water and sanitation (CESCR, 2002). The international community has backed the Sustainable Development Goals (SDGs), which include goal 6 on drinking water and sanitation and hygiene. Businesses also have a role to play in helping to achieve the SDGs and have a corporate responsibility to respect these rights.

The human right to drinking water ‘entitles everyone, without discrimination, to have access to sufficient, safe, acceptable, physically accessible and affordable water for personal and domestic use...while reaffirming that both rights [on drinking water and sanitation] are components of the right to an adequate standard of living’ (UN General Assembly, 2015). The human right to drinking water derived from the 1966 International Covenant on Economic, Social and Cultural Rights (ICESCR), particularly articles 11 and 12 on an adequate standard of living and the highest attainable standard of health. The human rights to water and sanitation were recognised in 2010 by the UN General Assembly and the Human Rights Council (HRC). As a result of a General Assembly resolution in 2015, the human right to drinking water was recognised distinctly from the human right to sanitation. In 2019, the Council of the European Union strengthened its commitment towards the human rights to water and sanitation through the EU Human Rights Guidelines on Safe Drinking Water and Sanitation.

Currently, efforts towards realising these human rights are compounded by competing uses between agriculture, energy, extractive and other industrial activities relying on large quantities of water resources. The global economy facilitates foreign investment and business activities in these sectors, leading to concerns over local water availability and quality. Attention needs to be paid not only to physical water extracted but also to virtual water, or the water used to grow and produce goods. Trade that facilitates the import of food and goods implies that there are vast amounts of virtual water consumed somewhere other than the location of product origin. Thus, realising the human right to drinking water is subject to global, national and local drivers and conditions of water availability.

1.2 Aim

The aim of this in-depth analysis (IDA) is to examine the ways in which the European Parliament (EP) and other institutions of the EU can develop strategies and policies targeting non-EU countries to better support the human right to drinking water. This IDA reviews the impacts of agriculture and industry on drinking water availability at the household level. Furthermore, it considers the implications of state and business involvement in large-scale agricultural activity and industry on the progressive realisation of the human right to drinking water and on fulfilling the UN Guiding Principles on Business and Human Rights (‘Guiding Principles’).

In 2018, in its conclusions on water diplomacy, the Council of the European Union set out that human rights to safe drinking water and sanitation will guide its international engagement. For the EU, considering the role of agriculture and industry is significant because it is the largest virtual water ‘importer’ in the world (Serrano et al., 2016). Companies in the EU have invested in close to 6 million hectares of land outside of the EU for agriculture, biofuel production and livestock production among other purposes (Borras et al.,

2016). Importantly, remedies are being sought for past investments as deterioration of access to water has long and profound effects. Recently, the UN Special Rapporteur on the human rights to safe drinking water and sanitation, along with other human rights rapporteurs, issued a letter of concern on toxic waste, including water pollution by a Swedish mining company operating in Chile. It asked the governments of Sweden and Chile and the mining company to take action even if mining activities occurred nearly 40 years ago (OHCHR, 2021). Thus, the EU's policy and decisions have extensive effects in preventing and addressing potential and actual human rights impacts in many different geographical regions.

The IDA asks the following key questions:

- How are the patterns of water use and water pollution in industrial and large-scale agricultural production changing?
- How can states and businesses' legal obligations and responsibilities arising from the human right to drinking water be met in this context?
- What have been the lessons learnt from a human rights-based approach to realising the human right to drinking water so far?
- How can the external policies of the EU and EP be innovated to address the impacts on water availability by large-scale agriculture and industry?

1.3 Scope and methodology

This IDA broadly considers water use that has impacts on the normative content on this human right, including availability, quality, accessibility, affordability and acceptability. The analysis covers water use by large-scale agriculture and industry in non-EU countries. While there is no agreed definition, the size of large-scale farming is understood to be between 100 and 200 hectares or larger, following the categories used in the EU Common Agricultural Policy (EC, 2017). The industry covers a range of businesses in food, retail, energy and extractives.

The broad scope of the analysis warranted examinations of multiple fields of international and national law (including human rights, water and investment), political economy, agriculture, energy, water governance and corporate social responsibility (CSR). The evidence for this inquiry draws on desk reviews of peer-reviewed academic papers and grey literature (e.g. reports, white papers, policy briefs and comments) published by governments, think tanks, research for development institutions, businesses, non-governmental organisations (NGOs) and other international organisations. This was complemented by elite, semi-structured interviews to discuss nascent findings in this field, existing policy responses, opportunities and gaps for policy action. Furthermore, three cases studies of countries (South Africa, Brazil and India) that have varying levels of institutionalisation of the human right to drinking water, provided empirical evidence on the role of states and businesses.

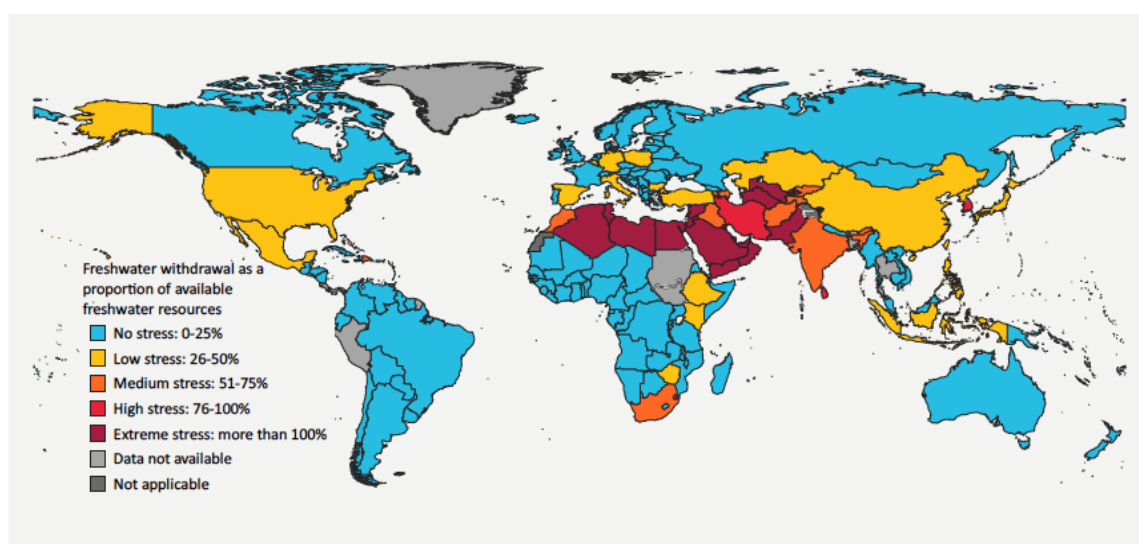
2 Overview of water use and water pollution in agriculture and industry

2.1 Drivers of water use and water quality degradation

While water is a renewable resource, humankind relies on a very small proportion of surface water that makes up just 0.4 % of total freshwater availability (UN Environment, 2019). Rivers, lakes and wetlands are increasingly under pressure, as global water use has risen at an annual rate of 1 % since the 1980s (UN Water, 2021b). As a result, groundwater use has accelerated with estimates suggesting it makes up approximately 33 % of total water withdrawals, with e.g. Africa seeing groundwater supporting 75 % of the population (UN Environment, 2019). Water quality has degraded as a result of large nutrient and pathogen loads. Agricultural run-off and untreated industrial and municipal wastewater contribute to pollution (UN Environment, 2019). Both surface and groundwater sources suffer from water quality deterioration, including almost all major rivers in Latin America, Africa and Asia (UN Water, 2021b; UN Water, 2019; and UN Environment, 2019).

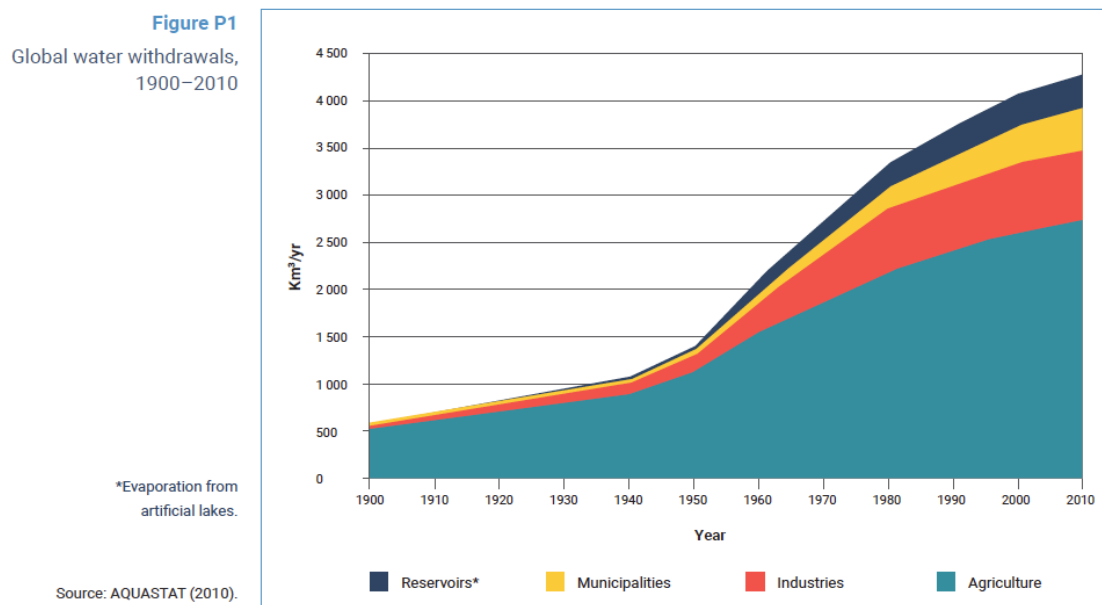
Goal 6 of the Sustainable Development Goals defines water stress as ‘when a territory withdraws 25 % or more of its renewable freshwater resources’ (UN SDGs 2021). Currently, 5 out of 11 regions experience water stress, with southern Asia and central Asia having high water stress and northern Africa having extreme stress (UN Water, 2021a) (see Figure 1). Water stress is marked by a great variance of availability, depending on season, geography, infrastructure and level of water services. This means that approximately two-thirds of the global population experience severe water stress for at least one month of the year (UN Water, 2019).

Figure 1: Level of water stress: Freshwater withdrawal as a proportion of available freshwater resources in 2017 (%)



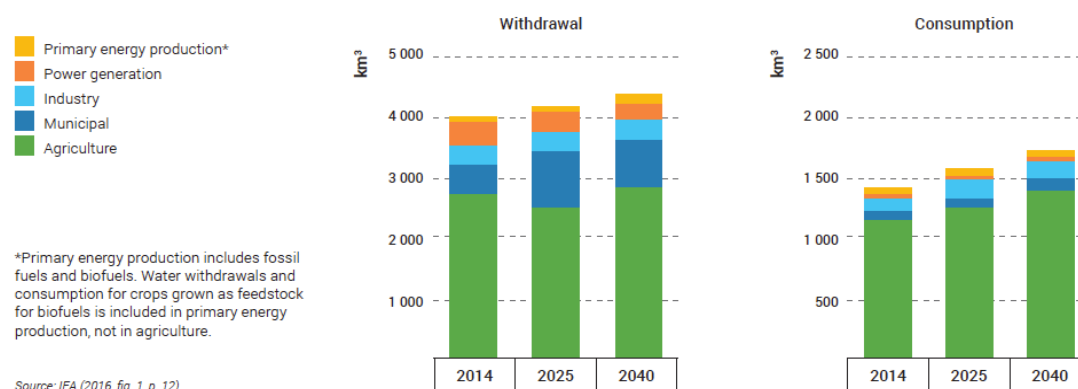
Source: UN Water, 2021a: 24

Global water withdrawals have increased over time (see Figure 2). According to predictions, agriculture will continue to be the largest water user and contribute to increased consumptive use (UN Water, 2019) (see Figure 3). Consumptive use (or consumption as highlighted in Figure 3) refers to water that is nonreusable or irretrievable as a result of evapotranspiration, evaporation, incorporation into plants and products, drainage to sea or other saline basins. Increased agricultural activity will mean less water available for other uses with reduced return flows. In addition, agriculture affects the quality of return flows due to nutrient pollution, most notably through fertiliser use.

Figure 2: Global water withdrawals (1900–2010)

Source: UN Water, 2021b: 12

Businesses are increasingly playing a role in the growing trend of withdrawals, contributing to agricultural water use but also use for energy production and manufacturing. While exact figures are not available, one report suggests that businesses are responsible for over 70 % of water use and pollution, most notably from the food, textile, energy, industry, chemicals, pharmaceutical and mining sectors (UN Water, 2021b).

Figure 3: Global water demand by sector from 2014 to 2040

Source: UN Water, 2019: 13

There are several major drivers for increased water use and water quality degradation. First, continual population growth puts pressure on available freshwater sources. The income growth of populations will mean more consumption associated with a lifestyle change, especially of products such as meat and dairy, which are water-intensive owing to the water requirements of livestock feed. It is estimated that global meat consumption will increase by 14 % in the next decade as the population increases and income rises (OECD-FAO 2021). Accordingly, a further 50 % increase in food production is required by 2050 to feed the population (FAO, 2018). This growth in demand for agricultural products will strain the already unsustainable levels of water use. Second, land use due to such agricultural intensification as well as urbanisation will diminish freshwater sources and affect the rate at which aquifers are recharged through drainage and percolation (UN Environment, 2019). Third, temperature and precipitation changes resulting

from climate change will contribute to the uncertainty of water availability and instances of drought and flooding. Water quality will be exacerbated by climate-induced algae blooms (UN Water, 2020).

2.2 Managing the water–food–energy nexus

The water–food–energy nexus is a concept that seeks ways to enhance synergies and minimise trade-offs to achieve water, food and energy security at multiple scales. The nexus posits that there is no solution to be found in a single sector for which there are ‘structural problems’ of managing water in the face of multiple demands and constraints (WEF, 2011: 1).

There are multiple links between these three sectors. In the agriculture sector, irrigation contributes to the bulk of water withdrawals. Irrigation accounts for only 20 % of cultivated land but supports 40 % of food production, drawing up 2 797 km³ per year from freshwater sources (UN, 2021b).¹ Over the years, agriculture has become an energy-intensive sector with high rates of fossil fuel dependence in many parts of Africa, Central and South America, and Asia. This reflects the industrialisation of agri-food systems (World Bank, 2017a). The energy requirements for food production are about 30 % of global energy consumption. Energy is used for production, such as pumping irrigation water, but much of energy use (approximately 70 %) is in processing, distribution, retail, preparation and cooking (UN Water, 2014). By 2040, water consumption in the energy sector will increase by about 60 % (IEA, 2016). The water requirements of the energy sector are best exemplified by the ongoing ‘global boom’ of dams that will increase hydroelectricity capacity by 73 %, resulting in 1 700 GW (Zarfl et al., 2015). Currently, there is an upward trend of hydropower development in the Asia-Pacific and South America (UN Water, 2014). Multipurpose dams can contribute to energy production as well as irrigation water provision. However, consumptive use through evaporation of water storage is not insignificant and can vary depending on location and capacity (Mekonnen and Hoekstra, 2011). Extraction of fossil fuels such as shale oil and fracking, is water-intensive. Alternatives to fossil fuel, such as thermal power, require water for cooling, which can compete with other water uses.

The nexus concept is particularly useful when considering the implications of biofuels. The demand for biofuels is underpinned by global shifts towards cleaner forms of energy. Various crops, such as rapeseed, palm oil, soybean, sugarcane, sugar beet, corn, sorghum, wheat, maize and jatropha, are produced for biodiesel and ethanol. Biofuels impact other water uses, especially when these crops are irrigated for commercial production, and pose issues of degraded water quality. There are also concerns that land-use for biofuel feedstock production instead of food production could reduce food security, as lower supply drives up prices and makes food less affordable, in particular, for people below the poverty line and prioritising land for biofuel instead of food. While not the sole reason, increased biofuel production played a part in the 2007–2008 global food price crisis (Araújo et al., 2017). For example, the price of maize increased 30 % during this time (FAO, 2011a). With countries setting targets to encourage biofuel use and production, including the EU’s Renewable Energy Directive (currently under review), considerations of impacts on water and food are warranted.

The nexus concept also sheds light on concerns about large-scale land acquisitions (LSLA). Often seen as forms of ‘land grabs’ or ‘water grabs’, 80 % of these acquisitions are for agricultural development and the rest are for extractive activities and infrastructure, all of which impact water availability and quality. It is reported that particularly lands with access to freshwater sources are acquired, facilitating water-intensive crop production (Quick and Woodhouse, 2014). The scale of acquisitions is said to be significant enough to produce food to feed 300–550 million people (Rulli and D’Odorico, 2014). The World Bank estimated that there were 56 million hectares of land deals made in 2009, which significantly outpaces the annual

¹ Note that most agriculture production is rainfed, contributing to 60 % of crop production globally (UN Water, 2021b).

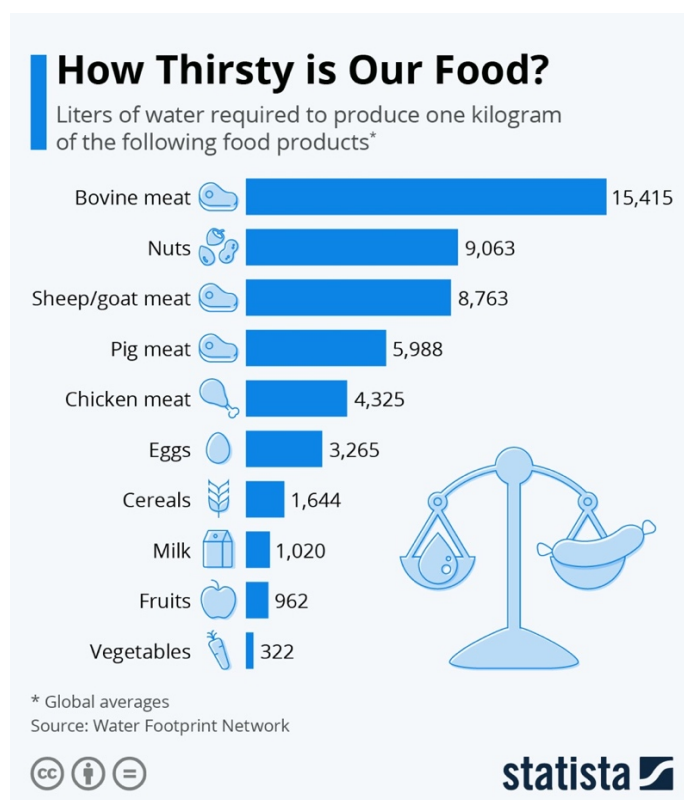
expansion rate of agriculture. Approximately 40 % of investments were for biofuels and non-food cash crops (Deininger et al., 2011). The current figure of the total size of land acquired in deals covering agriculture, forestry, mining and other activities has grown to over 118 million hectares (Land Matrix 2021).

There are arguments that LSLA could increase yields and enhance productivity for local food security. However, there is criticism that it could problematically label smallholders as 'unproductive' or designate 'unused' lands that need converting for productivity (D'Odorico et al., 2017). It seems that many acquisitions have been speculative and have taken time to materialise activities on land. A significant proportion is said to be acquired by national investors (Brüntrup et al., 2014). There are suggestions that foreign investors acquire land to export to domestic or regional markets, but the evidence is lacking, making it difficult to ascertain purpose (Quick and Woodhouse, 2014). Insufficient publicly available data encumbers the assessment of acquisition impacts.

2.3 Water deficit of countries and the role of virtual water

Virtual water is the water embedded in food and other goods during their production and manufacturing. While many food items do not have much water content in their final form, water was required to grow the crop or livestock, making their virtual, 'hidden' water content significant. For example, a cup of coffee may be 125 ml in volume but requires 130 litres to grow 7 grams of coffee beans. A kilogram of beef requires 15 415 litres and 99 % of that water is for livestock feed. A litre of bio-ethanol requires 2 854 litres of water to be produced (Water Footprint Network, 2021a) (see also Figure 4).

Figure 4: Water footprint of food



Source: <https://www.statista.com/chart/9483/how-thirsty-is-our-food/>

The concept of virtual water demonstrates how water deficits of countries are addressed through the import of food. Such import relieves pressure on domestic water sources by the virtual water content of agricultural goods. Water can then be allocated away from the water-intensive agricultural sector to other sectors (Allan, 2001). Virtual water also facilitates a better understanding of the water requirements beyond

the agricultural sector and is credited as enhancing the debate on the water–food–energy nexus (UNECE, 2018).

The concept of virtual water has been operationalised with calculations of the water footprint of products and the consumption of nations, companies and individuals. The global water footprint is 9 087 Gm³/y, based on annual averages between 1996 and 2005. Agricultural and industrial production make up 96.4 % of this figure, with the remaining 3.6 % for domestic water supply (Mekonnen and Hoekstra, 2011). For the purpose of this IDA, the blue water footprint is particularly important as it represents the use of surface and groundwater sources, as opposed to green water or soil moisture, that cannot be used for drinking water purposes (see Box 1). Over half of the blue water footprint of crops (513 Gm³/y) is unsustainable and concerns wheat, rice, cotton, sugar cane, fodder and maize production. Moreover, this unsustainable blue water footprint concentrates in India, China, the United States of America, Pakistan and Iran. These five countries, known to have problems with water scarcity, make up approximately 70 % of this footprint (Mekonnen and Gerbens-Leenes, 2020).

Box 1: Key definitions of virtual water

Virtual water ‘flows’: the pattern of virtual water exchanged between countries and regions as a result of trade of commodities. The volume of these ‘flows’ is determined by the virtual water content of the commodities imported or exported. To point out that food and other goods are traded, not real or virtual water, virtual water ‘trade’ and virtual water ‘flows’ are denoted with inverted commas.

Water footprint: ‘a measure of humanity’s appropriation of fresh water in volumes of water consumed and/or polluted’ (Water Footprint Network, 2021b).

Blue water footprint: the amount of ‘water that has been sourced from surface or groundwater resources and is either evaporated, incorporated into a product or taken from one body of water and returned to another, or returned at a different time. Irrigated agriculture, industry and domestic water use can each have a blue water footprint.’ (Water Footprint Network, 2021b)

Green water footprint: the amount of ‘water from precipitation that is stored in the root zone of the soil and evaporated, transpired or incorporated by plants. It is particularly relevant for agricultural, horticultural and forestry products.’ (Water Footprint Network, 2021b)

Grey water footprint: ‘the amount of fresh water required to assimilate pollutants to meet specific water quality standards. The grey water footprint considers point-source pollution discharged to a freshwater resource directly through a pipe or indirectly through runoff or leaching from the soil, impervious surfaces, or other diffuse sources’. (Water Footprint Network 2021b)

Approximately one-fifth of the global water footprint is for export. The USA is the country with the largest virtual water ‘export’ by far at 314 Gm³/y and followed by China (143 Gm³/y), India (125 Gm³/y) and Brazil (112 Gm³/y). Countries like the USA and China are also ‘importers’, relying on 234 Gm³/y and 121 Gm³/y, respectively. The total volume of virtual water ‘flows’ of agricultural and industrial products is 2 320 Gm³/y. The water footprint of crops is substantially made up by cotton and soybean and other oil crops (Hoekstra and Mekonnen, 2012). As a whole, industrial production is assessed as being 4.4 % of the global water footprint. However, approximately two-fifths of this water footprint is ‘traded’, accounting for twice the proportion for ‘export’ compared to agricultural products. The USA and China contribute to 40 % of the global water footprint for industrial production (Mekonnen and Hoekstra, 2011).

The EU ‘imported’ 585 Gm³ of virtual water in 2009, which is equivalent to 28 % of the virtual trade ‘flows’ of the world. This makes EU member states collectively the largest ‘importing’ region. The volume of virtual

water ‘imports’ of the EU is larger than its domestic consumption.² In particular, virtual blue water ‘flows’ are from China, India, Canada, Russia and other countries in the world. Blue water footprint is 22 Gm³ and much of it is found in the industries dealing with the food and beverage, textile, electrical and utilities sectors.³ From the perspective of impacts to the quality of drinking water, the EU’s grey water ‘flows’ associated with such ‘trade’ cannot be ignored (171 Gm³), which result from the agricultural and industrial sectors (Serrano et al., 2016).

2.4 Impact of water use and pollution on vulnerable groups

The water–food–energy nexus challenges, driven by large-scale agriculture and industry, need to be considered in the context of the existing unequal access to drinking water. Universal coverage of safely managed drinking water services is lagging, particularly in developing regions. It is already established that nearly half of the 785 million people lacking basic drinking water services are poor populations in Least Developed Countries (UN, 2021b). Moreover, 450 million children face poor drinking water services and water scarcity, putting them in situations of high or extreme water vulnerability (UNICEF, 2021). The labour costs of water collection, including that of time spent to fetch water and associated security risks, disproportionately fall on women and girls, affecting 8 out of 10 households without water (WHO-UNICEF, 2017).

Demands in, and across, the water, food, energy and extractive sectors can exacerbate these conditions by directly decreasing water availability. Problems with blue water dependence of these sectors take on an additional dimension when the water is extracted from international transboundary rivers and aquifers. There are 286 transboundary rivers and 592 transboundary aquifers (UNEP-DHI and UNEP, 2016; IGRAC and UNESCO-IHP, 2015). Water use in one part of the river or aquifer can have impacts downstream. The cumulative effects of water use can also result in water quality degradation. Thus, realising the human right to drinking water in these cases cannot be based on discrete efforts within a nation state only. Regulating water development projects is subject to the complex conflict and cooperation dynamics of transboundary basins (Mirumachi, 2015). In addition, activities in these sectors may indirectly affect the quantity and quality of accessed water, contributing to the deterioration of the conditions. For example, in Laos, the construction of the Theun-Hinboun hydropower dam and increased water diversions caused changes to flooding patterns in the basin. The resulting extended wet season flooding meant that drinking water was affected (Baird and Barney, 2017).

There is no systematic data to show comprehensively direct and indirect impacts from large-scale agriculture and industry. Instead, detailed, qualitative, contextualised insight is required to understand the complex trade-offs and human rights implications. The following are some indicative examples of the ways individuals and communities are affected.

Large-scale dams have notable socio-economic and environmental impacts that can affect access to drinking water. For example, the Pak Mun hydropower dam project in Thailand made the river an unreliable source, both in quantity and quality. Consequently, local communities had to find alternative sources, which included investing in water tanks and filters for drinking water safety (Som-in and Gadavanij, 2017). The construction of the Bui Hydropower dam in Ghana restricted access to the Black Volta River for drinking water. Drinking water sources were limited to boreholes, which became higher in

² Germany, Italy, France and the Netherlands are notable ‘importers’. Germany ranks at the top out of the EU countries with 125 Gm³/y (Hoekstra and Mekonnen, 2012). Notably, Germany and France are within the top 10 global virtual water ‘exporting’ countries, highlighting their significant impact on water resources (Hoekstra and Mekonnen, 2012).

³ Recall that most agriculture production is rainfed, thus contributing to a higher green water footprint than blue water footprint in general.

demand than previously. While the quality of the water was considered generally satisfactory, the burdens of longer waiting times and physical labour of fetching water were felt by women (Schafer et al., 2018).

Regarding LSLA, there are critical views that ‘there is not enough evidence of “win-win” scenarios in this sector’ (Spagnuolo, 2017). There are arguments that LSLA dispossesses local communities of water sources for agricultural use, rather than for drinking (Dell’Angelo et al., 2018). Nevertheless, the qualitative impacts on people’s lives from their struggles over drinking water cannot be overlooked. For example, it is reported that drinking water for 45 000 people was contaminated in Iringa, Tanzania, as a result of agriculture and livestock keeping done on leased land (Arduino et al., 2012). Furthermore, women tend to bear the brunt when local water sources are contaminated from plantation development, devoting labour and time to fetch water from afar (Fonjong, 2017).

The negative environmental impacts of extractive activities are well documented. In Myanmar, a country where the government has actively pursued foreign investment in mining, wastewater from mines was attributed to the lack of safe drinking water, affecting ethnic communities (Su Yin Htun, 2018). Mining activities have impacted indigenous communities in Mexico, where concessions for water use have increased eight-fold in the last 14 years (Guzmán López et al., 2019). In Liberia, iron ore mining backed by Chinese investments resulted in significant water quality degradation for local communities (Wilson et al., 2017). In the case of Yanacocha, Peru, the site of South America’s largest gold mine, local farmers were reprimanded by the mining company as ‘illegal’ water users. This situation arose when the existing rights to water were revoked without their knowledge (Sosa and Zwarteveen, 2012). There are concerns that governments will prioritise economic gains from the extractive industry over providing safe drinking water, as highlighted in the case of Afghanistan, where there are already problems with the lack of clean water (Davitti, 2017).

3 States, businesses and the human right to drinking water: Legal obligations and responsibilities

3.1 Overview of a human rights-based approach

The normative content of the human right to drinking water derives from General Comment 15 of the UN Committee on Economic, Social and Cultural Rights (CESCR). It includes ‘the right to maintain access to existing water supplies necessary for the right to water, and the right to be free from interference, such as the right to be free from arbitrary disconnections or contamination of water supplies. By contrast, the entitlements include the right to a water supply and management system that provides equal opportunities for people to enjoy the right to water’ (CESCR, 2002: para. 10). Furthermore, water availability needs to be ‘sufficient and continuous for personal and domestic uses’ (CESCR, 2002: para. 12(a)). The quality of drinking water should be safe and fit for human consumption and ‘of an acceptable colour, odour and taste for each personal or domestic use’ (CESCR, 2002: para. 12(b)). It should also be accessible without discrimination. The availability of drinking water should be prioritised above other uses. It requires regulation according to the context of individual states and to be justiciable. Equity concerns drive the need to provide access to those unserved and underserved (Human Rights Council, 2020a). It should be emphasised that customary rights to drinking water are recognised in case law examples from various countries. Notably, in the case of *Yakye Axa Indigenous Community v. Paraguay* the Inter-American Court of Human Rights decided that states cannot violate the right to life, which includes sufficient drinking water and must take positive measures (WaterLex and WASH United, 2014).

States have obligations towards the human right to drinking water within their territorial jurisdiction. Businesses have responsibilities across their sites, or within their ‘fence line’, and increasingly beyond the fence line, as shown in the sections below. Furthermore, states have extraterritorial obligations to respect this right and need to regulate corporations so that they do not cause human rights abuse in other countries (CESCR, 2002; de Albuquerque, 2014). Businesses are ‘expected to respect covenant [ICESCR] rights regardless of whether domestic laws exist or are fully enforced in practice’ (CESCR, 2017).

To carry out these obligations and responsibilities, states and businesses have often adopted a human rights-based approach (HRBA). In the EU, the 2019 *EU Human Rights Guidelines on Safe Drinking Water and Sanitation* commit to a HRBA⁴ and place emphasis on states to fulfil their obligations to ensure access to safe water as duty-bearers and to be held accountable by citizens who are rights-holders. A HRBA is described as an approach that ‘seeks to identify groups and people whose rights are violated, identify who has the responsibility to act, and to understand the reasons why certain people are unable to enjoy their rights, such as the existence of discriminatory laws and social practices’ (de Albuquerque, 2012: 106). Legal obligations of the duty-bearer are clear so that rights-holders’ needs are met and prioritised over political or economic considerations of water services (Filmer-Wilson, 2005).

Box 2: EU and a HRBA to development

Beyond mainstreaming human rights

For the EU, a HRBA ‘considers human rights principles and standards both as a means and a goal of development cooperation...First, it integrates the fulfilment of rights as an essential condition and key leverage to achieving development. Secondly, it integrates the fulfilment of rights as a component of the needs analysis to eradicate poverty’ (EC, 2014: 6). This approach goes beyond human rights mainstreaming because the normative content of human rights redefines development objectives and drives all aspects of development policies and institutional practices (World Bank and OECD, 2016). The recently updated EU toolbox on a rights-based approach for development cooperation sets out five principles: ‘Applying all human

⁴ See the EU Strategic Framework on Human Rights and Democracy adopted in 2012.

rights for all; Meaningful and inclusive participation and access to decision-making; Non-discrimination and equality; Accountability and rule of law for all; Transparency and access to information supported by disaggregated data.’ (EC 2021: 8). Since the toolbox was published in 2014, further emphasis has been made on addressing inequalities and gender mainstreaming (see also EC, 2014).

A HRBA is particularly useful when considering the water-food-energy nexus challenges driven by large-scale agriculture and industry. First, a HRBA exposes the tensions between competing uses so that trade-offs are acknowledged and considered in any solution. While a HRBA does not ‘solve’ the problem *per se*, it is argued that it extends conflict prevention (Filmer-Wilson, 2005). A HRBA may help consider what kind of synergies between the water, food and energy sectors are sought by local communities and how best to minimise the trade-offs. Second, a HRBA considers interlinked rights and identifies how they facilitate or obstruct the right to drinking water (Filmer-Wilson, 2005). This point is noteworthy as agricultural activities and green water use are deeply tied to land rights issues. Economic rights associated with investment may also mediate how blue water sources are allocated. Cultural rights that do not regard water as an economic good may provide integrative insights on the value of this resource and the needs of people. Third, a HRBA facilitates people-centric development of water projects. Participation is not merely tokenistic: people have a stake in the development, management and maintenance of water services and infrastructure. Using their local knowledge and expertise, a more sustainable process of enabling access is achieved, rather than one that is externally imposed (Filmer-Wilson, 2005). The people-centric nature of a HRBA actively includes women, urban-poor, indigenous people and marginalised groups, all of whom are well-recognised as carrying the burden of accessing water or being worse-off from interventions. States that conduct large-scale agriculture, mining or manufacturing relying on water are duty-bearers and, along with corporations, which have a responsibility towards upholding human rights, need to consider people-centric development.

3.2 Role of the state: Developing an enabling environment

The state's obligations regarding the human right to drinking water are specified in the General Comment No. 15 of CESCR. The primary obligations are to respect, protect and fulfil (CESCR, 2002). The obligation to *respect* requires states to prevent abuses to the human right: ‘states’ parties refrain from interfering directly or indirectly with the enjoyment of the right to water’ (CESCR, 2002: para. 21). States have a responsibility to address unlawful impacts on both water quantity and quality. States must respect customary or traditional arrangements in place for water allocation. The obligation to *protect* requires states to prevent interference by third parties, such as individuals and companies, in the enjoyment of the right to water. This obligation entails legislative measures that prevent the denial of equal access to adequate water. The obligation to *fulfil* centres around issues related to the full realisation of the right to water, affordability and equity. It incorporates three obligations to facilitate, promote and provide. These obligations require positive measures toward the enjoyment of the right (facilitate) and education for safe and sustainable water use (promote). In addition, it requires the state to fulfil the right in certain instances (provide): ‘when individuals or a group are unable, for reasons beyond their control, to realise that right themselves by the means at their disposal’ (CESCR, 2002: para. 25).

There is now an argument that states also need to consider the human right to drinking water in relation to the right to health and the right to life. Thus, once water for drinking purposes is satisfied, further prioritisation can be made on the following:

- ‘water for agricultural production (including pastoralism) that is necessary to prevent starvation;
- water for agricultural production that is necessary for indigenous peoples’ livelihoods and cultural survival; and

- water for subsistence agriculture, particularly for disadvantaged and marginalized farmers and rural women' (Morgera et al., 2020: 101).

This argument reflects the growing recognition of the links between water, food, land and livelihood. The recently adopted United Nations Declaration on the Rights of Peasants and Other People Working in Rural Areas explicitly mentions the 'right to water for personal and domestic use, farming, fishing and livestock keeping and to securing other water related livelihoods' (UN General Assembly, 2018: Article 21.2). In addition, this argument underscores that human rights are interlinked. This implies that state obligations cannot be siloed in specific rights. Further exemplification on this point will be made in Section 4.1 with the South Africa case study.

An enabling environment is needed for the state to be a duty-bearer that can be held accountable. This involves regulation, enforcement, monitoring, education and awareness-raising. It is particularly important for groundwater, the management of which is often neglected compared to surface water. Self-supply or 'individual on-site solutions' are commonplace. For this reason, for the state taking a HRBA, meeting its obligations signifies developing capacity that aids both the duty-bearer and rights-holders. The state can therefore provide advice on the appropriate installation and management of wells and boreholes, training on groundwater data and on water quality standards, water quality testing and guidelines as well as education and awareness-raising (Grönwall and Danert, 2020).

Even when mechanisms are established, continual efforts are required. For example, in Kenya, a HRBA guided the development of national strategies, regulatory measures and target setting after the establishment of the 2002 Water Act. An initial evaluation considered it a success, citing the comprehensive tools including participatory mechanisms and funding that would enable the urban poor to access water (GIZ, 2009). However, in 2014 the Kenya National Commission on Human Rights reported failures in government obligations. Consequently, further training and policy and legislation reviews were undertaken (KNCHR, 2014).

Some fundamental principles concerning participation can strengthen the relationships between the state as the duty-bearer and rights-holders. For example, the well-established notion of free prior informed consent (FPIC) has been applied to various development processes, including dam construction (Cariño and Colchester 2010) and in the extractive sector (MacInnes et al. 2017). This principle is buttressed by the rights of indigenous peoples, most notably clarified in the UN Declaration on the Rights of Indigenous Peoples that sets out their 'minimum standards for the survival, dignity and well-being' (Article 43). This FPIC principle ensures that participation is not merely tokenistic and seeks to consult and achieve consent in the context of customary practices of indigenous peoples. States, therefore, need to recognise customary laws and rights to ensure an enabling environment.

Innovation in public participation mechanisms can benefit duty-bearers and rights-holders. However, the governance context needs to be robust. Participatory budgeting and social audits by citizens towards service providers are often employed. However, issues such as corruption can impact all three obligations. Corruption is widely recognised as a major problem in the water sector, with losses of finance from 20 % to 40 % (Stålgren, 2006). Petty corruption by officials towards water users obstruct the obligation to respect. Moreover, this type of corruption usually disproportionately affects the poorest. The obligation to protect is unmet when governmental authorities neglect their duties, as in the case of water pollution of the Milano aqueduct in Costa Rica. Impacts on drinking water from a commercial pineapple plantation were left unaddressed until a supreme court intervention. Without effective legislative measures that tackle corruption, it is not possible to meet obligations to fulfil (Baillat, 2013).

Further work is required to establish an enabling environment for the water-food-energy nexus challenges driven by large-scale agriculture and industry. The reliance on transboundary rivers and aquifers calls for enhanced international cooperation and implementing key international water law principles following

frameworks such as the Convention on the Law of the Non-navigational Uses of International Watercourses ('UN Watercourses Convention') and the Convention on the Protection and Use of Transboundary Watercourses and International Lakes ('UNECE Water Convention'). Water diplomacy and international cooperation efforts have fallen short in addressing equity (Zeitoun et al., 2020). This weakens the foundation for a state to realise the human right to drinking water. In cases of hydropower development in international transboundary rivers, there is currently insufficient attention paid towards the intersections of human rights, investment law and international environmental law. Regulatory measures can help provide clarity on expropriation and set expectations on project impact assessments (Rieu-Clarke, 2015).

Regarding LSLA projects, there are political and economic reasons that impede an enabling environment. First, a hosting government may undervalue water, taking its availability for granted or as a free good, as in the case of irrigation projects by foreign investors in Office du Niger, Mali (Hertzog et al., 2012). Second, agricultural and development policies, rather than water strategies, can drive investments. The rapid expansion of LSLA in Ethiopia was promoted by the government actively pursuing foreign investment under the national Growth and Transformation Plan. If all deals are realised, water use for projects with foreign investment will rival existing use (Bossio et al., 2012). While there is legislation to regulate water and foreign investment, it is not enforced, and, in some parts of the country, LSLA is a means of political control (Bossio et al., 2012; Seide, 2016; Gebresenbet, 2016). Consequently, the existing rights of communities are not necessarily considered when investments are made. Third, the opaque and complex nature of LSLAs driven by companies makes direct action challenging for states. While it is a strong approximation, EU involvement in LSLA is exemplified by the 323 land deals struck by companies in 52 countries across Africa, Asia and Latin America. However, it involves a significant network of financial investors, commercial banks, food companies, including multilateral financial institutions and development agencies. Nevertheless, it has been critiqued that the EU response 'has fallen short on all three aspects of human rights obligations, namely respect, protect and fulfil. The EU has been reluctant to acknowledge its extraterritorial obligations in this regard and at times even tends to obstruct efforts at international level to regulate and hold corporations accountable through binding regulations' (Borras et al., 2016: 7).

States can terminate concessions and permits to businesses under their obligation to respect and to protect (CESCR, 2002: para.44(a), para. 25). This can lead to international investment arbitration, which has been brought to the International Centre on the Settlement of Investment Disputes (ICSID). However, most of them concern privatisation of water services, which is excluded from the scope of the IDA (Schreiber, 2008; Chen, 2015; Kriebaum, 2018). Regarding water contamination that affects drinking water, it has been discussed in the context of expropriation of investment. The case of *Methanex v. United States* was brought to arbitration under the provisions of Article 1119 of the North American Free Trade Agreement (NAFTA). The award of this case indicated that public interest needs to be considered with non-discriminatory measures that meet due process requirements and that regulations can be in place without violating investment protection standards (Kriebaum, 2018). This case provides grounds for states to extend regulatory measures to ensure the enjoyment of the right to water, compared to the previous arbitration of *Metalclad v. Mexico* over wastewater treatment (Schreiber, 2008). In other cases, national mining law, without referring to the human right to drinking water, was used in the ICSID arbitration of the *Pacific Rim v. El Salvador* dispute over a gold mining permit following public concerns of water pollution (Kriebaum, 2018). Overall, the outcomes of tribunals have provided limited insight on measures states can take to respect and protect the human right to drinking water in situations where international investment agreements exist (Schreiber, 2008).

The state also has responsibilities to provide justiciable remedies to ensure justice in case of human rights violations. This is especially important to protect vulnerable groups and states will have to start by first addressing the obstacles to justice in the first place: 'the people whose human rights to water and sanitation are most likely to be violated are rarely in a position to access complaint mechanisms' (de

Albuquerque, 2014: 40). The state's role in providing remedies becomes even more important when businesses are involved owing to power asymmetries between them and citizens, as will be explained below. Here, the state can support civil society organisations working on human rights and empower community organisations (de Albuquerque, 2014). This can be reinforced by civil society organisation networks and advocacy organisations actively employing a HRBA to raise awareness and empower rights-holders and engage in a process of decision-making with duty-bearers (e.g. FAN Global, 2020; WaterAid, 2011, 2017).

3.3 Role of businesses: Identifying and addressing human rights impacts

General Comment No. 15 by CESCR, UN General Assembly Resolution 64/292 and UN Human Rights Council Resolution A/HRC/15/L.14, which recognise the human rights to water and sanitation, do not set out direct obligations for companies. However, they indicate the role of businesses through their relationship with the state. As a result of state obligations, businesses cannot enter agreements that violate and abuse the human right to drinking water. In addition, states provide legislation such that companies cannot interfere with equal access to adequate water. Companies are subject to human rights principles and good practice of non-discrimination, transparency, participation, accountability and sustainability (de Albuquerque, 2014).

The UN *Protect, Respect and Remedy Framework*⁵ endorsed in 2008 and the subsequent Guiding Principles on Business and Human Rights ('Guiding Principles') (2011) help define corporate responsibilities. This framework specifies that: states have a duty to protect against human right abuse by companies; companies need to respect human rights by carrying out due diligence and following the 'do no harm' principle; judicial and non-judicial means of remedies need to be in place (Human Rights Council, 2008).

Applying the 'respect' principle to the human right to drinking water is exemplified in corporate water stewardship practices. A UN global compact initiative, the CEO Water Mandate sets out practical guidelines and pointers on good practices of water stewardship (CEO Water Mandate, 2015). Water stewardship that respects the human right to drinking water entails development of policy commitment, assessment and addressing of impacts on the human right, tracking of responses and communication to affected stakeholders and devising grievance mechanisms (CEO Water Mandate, 2015). The CEO Water Mandate and water stewardship are voluntary mechanisms. In the food and beverage sector, Coca-Cola developed a water stewardship programme based on a HRBA (CEO Water Mandate, 2021). In the retail sector, Gap. Inc stated that their water stewardship programme focuses on empowering women and girls to secure their rights to water, in addition to efforts towards sustainable water use and pollution reduction (Gap. Inc, 2021).

Private investments in the water sector or other sectors that rely on water can employ corporate water disclosure as an essential tool of water stewardship. The development of the Global Reporting Initiative, an independent international organisation that provides standards for sustainability reporting, is particularly notable for monitoring corporate practice. The CEO Water Mandate established the Corporate Water Disclosure Guidelines in 2014. While voluntary in nature, these efforts are expected to enhance social and political expectations and form an international understanding of the role businesses play, their corporate obligations and human rights responsibilities (Tignino, 2018).

Notably, there are developments on corporate due diligence and corporate accountability to ensure rigour in meeting business responsibilities. The recent EP resolution emphasises that 'the Union should urgently adopt binding requirements for undertakings to identify, assess, prevent, cease, mitigate, monitor, communicate, account for, address and remediate potential and/or actual adverse impacts on human

⁵ Alternatively known as the Ruggie Framework after John Ruggie, the Special Representative of the Secretary-General on the issue of human rights and transnational corporations and other business enterprises.

rights, the environment and good governance in their value chain' (EP, 2021). Furthermore, the EC is strengthening its non-financial reporting standards, proposing 'mandatory common reporting standards to ensure that information is comparable and that all relevant information is disclosed', including on human rights (EC, 2021). The move towards binding, mandatory requirements shows that voluntary schemes on their own are insufficient.

The Guiding Principles state that businesses should not only refrain from causing human rights abuses but also prevent any potential impacts. This 'respect' extends beyond their own activities and includes business relationships or, 'relationships with a business partner, entities in this value chain, and any other non-state and state entity directly linked to its business operations, products or services' (OHCHR, 2011: 15). This point about extended business relationships is relevant, especially in dealing with corporations that have international operations and substantial supply chains and value chains. The CEO Water Mandate offers examples of apparel companies applying policy commitments and impact assessment to business relationships (CEO Water Mandate, 2015).

There are multiple motivations and reasons for corporations to apply the principle of 'respect'. For example, it could be prompted by direct legislative or regulatory measures set out by the state. There are also business management reasons such as sufficient water supply for operation continuity, reputation or divestment concerns if positive action is not taken (Chowdhury et al., 2011). Increasingly, businesses are seeing the water, sanitation and hygiene (WASH) sector as an impetus for economic development and growth such that positive actions to support the human right to drinking water are part of business opportunity. In other words, companies seek to alleviate poverty for those at the 'bottom of the pyramid' (BoP) who have been previously excluded from access to WASH whilst also generating profit (Rudebeck, 2019).

Conversely, stakeholders have expectations on companies to practise the principle of 'respect'. These include investment in water-efficient measures; an onus on businesses to engage with other relevant actors to share knowledge and problem-solve collectively; and for businesses to champion the realisation of the human rights to drinking water and sanitation (CEO Water Mandate, 2012). In this way, companies are bound by a social license to operate (OHCHR, 2011). Thus, corporate responsibilities to 'respect' are relational to stakeholders, their expectations and the social context.

However, there is significant power asymmetry between businesses and local communities that pose serious challenges. Even if businesses 'respect' the human right to drinking water by acquiring water use licenses and permits, there are often conflicts with local communities. For example, in the case of gold mining in Peru, compensation by the company was regarded as local users validating and recognising its water use right (Sosa and Zwartveen, 2012). In the case of gold mining in Mexico, foreign investors resorting to NAFTA to resolve environmental permits meant that their rights were prioritised over local, traditional rules. Local communities are put at a disadvantage because they cannot directly dispute this claim, taking the decision of public interest out of their hands (Stoltenborg and Boelens, 2016). In cases of LSLA, such as planation investment in Ghana, investors provided drinking water to local communities when they acquired water use rights for large-scale agriculture. The investors saw no problem with such an 'exchange' for their water use, especially when no one complained. This case also saw grave problems of public participation that lacked information and gaps in informed consent (Adams et al., 2019). States may also set significantly lower water fees for companies compared to local water users, based on the fact that companies provide a service of land and infrastructure development, as in the case of Mali (Hertzog et al., 2012). This results in cases where 'water was transformed from a universal right upheld by the state to a (symbolically, culturally, and spatially limited) *palliative* provided by a company [emphasis added]' (Marston, 2016: 5).

Moreover, in cases of large-scale investments, financial arrangements are highly complex and also not easy to discern in the public domain. The boom in dam-building in southeast Asia on the Mekong River has

given rise to many projects in which a range of private actors are involved. This includes regional and international energy companies, export credit agencies, commercial banks, in addition to construction companies. Problematically, financial arrangements are concluded in an opaque fashion with little public disclosure, raising questions around accountability (Merme et al., 2014). Added to this complexity is the transboundary nature of these dam projects, where impacts are not limited to one state. With many businesses involved in the finance, construction, operation and maintenance, the burden on seeking information and transparency ends up with citizens, who may not necessarily have specialised knowledge on financial mechanisms and corporate arrangements.

There are broader concerns as well. First, the CEO Water Mandate acknowledged that if not done well, policy engagement may in fact constrain the aims and scope of water policy. Policy capture may occur when corporate influence hampers other stakeholders' interests and the public good. States may be compelled to curb regulatory measures favouring such influence, resulting in regulatory capture and ineffective mechanisms (CEO Water Mandate, 2010). Second, the BoP model targets underserved areas, which also become important new markets for companies to operate. From a business strategy perspective, it is essential to provide WASH, aid development and increase consumer spending. Nevertheless, WASH is not treated as 'core' business and does not extend beyond reputational reasons (Rudebeck, 2019). Third, and related to the above point, there is criticism that corporate engagement deems the state without capacity to fulfil its obligation as a duty-bearer. Instead, the market is assumed to better fill this gap 'as the more suitable arbiter of water-related entitlements than the incompetent state' (Karunanathan, 2019: 249).

These concerns underscore that 'the responsibility to respect is a *baseline* expectation, a company cannot compensate for human rights harm by performing good deeds elsewhere [emphasis added]' and independent of the state's obligation (Human Rights Council, 2008). Business responsibility extends beyond local communities directly affected by human rights abuse. Therefore, companies need to engage a wide range of stakeholders, including credible proxies that can give insight into the local context, such as civil society organisations, trade unions and researchers; and human rights experts, including human rights defenders, lawyers and academics (CEO Water Mandate, 2015). Corporations cannot simply be water users with minimal responsibilities but must actively work towards the realisation of human rights.

3.4 Good practices and potential solutions to safeguarding the human right to drinking water

3.4.1 Operationalising 'do no harm'

The notion of 'do no harm' is developed as the principle of no significant harm in international water law that guides state actions. This principle ensures that harm caused by a state does not affect another. The principle of no significant harm is widely recognised and part of customary international law. It is particularly advantageous for the progressive realisation of the human right to drinking water; in other areas of environmental agreements, no harm is overshadowed by other principles such as common but differentiated responsibility and the precautionary principle (Gupta and Schmeier, 2020). The negotiation of large-scale projects in transboundary rivers benefits from leveraging international water law principles and offers advances in water diplomacy, which support an enabling environment for the state to realise the human right to drinking water (Zeitoun et al., 2020).

There are arguments that this principle is limiting as it appraises impacts only on other sovereign states. However, the consideration of the human right to drinking water extends it to extraterritorial application, thus protecting more people (Spijkers, 2020). Ensuring no harm is important especially for hydropower development led by private companies in international transboundary rivers. Current legal understanding suggests that states need to regulate companies to avoid negative transboundary impacts from water use,

with due regard given to individuals and communities, including indigenous peoples. Environmental impact assessments (EIAs) are an effective tool to identify and mitigate harm. Domestic legislation in many countries already covers EIAs. To enhance the effectiveness, further guidance is needed on the scope and content for transboundary contexts to bolster the obligations of the state (Rieu-Clarke, 2020).

The principle of do no harm also applies to business responsibilities. The UN *Protect, Respect and Remedy Framework* states that companies should consider do no harm as a way to incorporate positive steps to actively fulfil the responsibility to respect (Human Rights Council, 2008). Such positive steps may be taken internally or externally, with other actors. For example, guidance by the CEO Water Mandate highlights that even if a company has not caused a direct negative impact, it can use its influence, or business leverage, towards its suppliers and other corporations in the same sector to mitigate impacts. This practice requires extending impact assessment beyond company activities and scrutinises operations, products, and services involving supplies and other counterparts (CEO Water Mandate, 2015). However, these efforts need to be couched in corporate due diligence and corporate accounting as binding, mandatory requirements as mentioned in Section 3.3.

3.4.2 Voluntary principles and standards

There are numerous non-binding voluntary principles, standards, certification schemes and advisory documents in water, food/land, extractive and energy sectors. While it is impossible to cover exhaustively all good practices suggested in these documents, this section highlights some of the salient developments. In general, a good practice utilises various indicators, criteria, assessment methods, compatibility with industry standards that guide both state and businesses. Some explicitly mention the human right to drinking water, though many are framed within broader governance efforts and sustainability initiatives.

The *International Water Stewardship Standard* was established by the Alliance for Water Stewardship (AWS) in 2014. This AWS Standard complements the CEO Water Mandate efforts as well as sustainability standards of the International Social and Environmental Accreditation and Labelling Alliance (ISEAL Alliance). A key feature is an emphasis on collective action that engages stakeholders and extends water governance consideration across national and transboundary scales. Utilising criteria, indicators and mechanisms for verification of assessment, it also allows for a useful comparison of corporate water stewardship (Tignino, 2018). Similarly, there is the *Statement of Principles and Recommended Practices for Corporate Water Stewardship* by the Interfaith Centre on Corporate Responsibility (ICCR) that explicitly encourages investors to respect and develop policies on the human rights to water and sanitation (ICCR, 2012).

In light of LSLA concerns, several advisory documents have been developed for both state and businesses. For example, Voluntary Guidelines on Responsible Governance of Tenure of Land, Fisheries and Forests in the Context of National Food Security ('VG Land') (2012) were published by the UN Food and Agriculture Organization (FAO). This document does not explicitly mention water and water use rights. However, it provides a HRBA and lays out state responsibilities on legal and regulatory frameworks, safeguards and dispute resolution. Performance Standard 5 on Land Acquisition and Involuntary Resettlement (2012) by the International Finance Corporation (IFC) is part of the eight performance standards which underscore risk consideration on water and human rights. In both, there is recognition of indigenous peoples and their customary rights. This point reflects a set of core principles and measures set by the UN Special Rapporteur on the right to food, who pointed out the dispossession of indigenous people and their historical marginalisation. The core principles and measures on the right to food are minimum expectations for the state and investors (Human Rights Council, 2009).

There are many guidance documents, certification schemes and standards developed by the extractive sector. Many of these highlight the need to avert impacts on clean drinking water (Schoderer et al., 2020). The International Council on Mining and Metals (ICMM) has been the forerunner in developing environmental standards, with its 2017 *Position Statement on Water Stewardship* referencing the human

rights to drinking water and sanitation and presenting a comprehensive understanding of ‘social, cultural, environmental and economic value’ (ICMM, 2017: 4). Involving stakeholders in identifying and addressing negative impacts is mentioned in ICMM, *Standard for Responsible Mining* by the Initiative for Responsible Mining Assurance (2018) and *Environmental, Health and Safety Guidelines for Mining* (2007) by the IFC and World Bank. Furthermore, organisations such as the IFC and the World Bank have also established standards and frameworks concerning environmental and social sustainability (IFC, 2012; World Bank, 2017b) and the OECD provides *Due Diligence Guidance for Meaningful Stakeholder Engagement* (2017) (Schoderer et al., 2020). It can be said that a feature of voluntary schemes in this sector is the importance placed on stakeholder engagement.

The International Hydropower Association developed the *Hydropower Sustainability Assessment Protocol* (HSAP) in 2010. The HSAP is regarded as an important reference point for this sector that implements the ‘do no harm’ principle. It also sets out guidance on EIA, including those at the transboundary scale (Rieu-Clarke, 2015). By following the HSAP, companies also comply with broader principles of risk management under the *Performance Standard on Environmental and Social Sustainability* of the IFC (Tignino, 2018).

These examples demonstrate that stakeholder engagement is standard practice, providing steps towards identifying rights-holders and developing decision-making processes that benefit them. However, there are weaknesses with voluntary schemes in general. The voluntary nature can compromise stringent standards and allows for omissions or gaps, resulting in uneven coverage of risks, impacts and remedial measures. For example, there is a critique that HSAP is not robust enough and may not bring about long-term change. There are limitations to engaging with those affected by the dam, making the criteria and assessments industry-led. So far, 16 case reports have been published with 10 cases from Europe, prompting critiques that HSAP has ‘considerable symbolic power’ in showcasing best practices and is instead weak in an actual application (Schulz and Adams, 2019: 15). Agribusinesses have made progress in impacts to water, but the water-risk assessments tend to be narrow. The scope is limited to water quantity and discounts other ecological or socio-economic dimensions (Ceres/WWF, 2020). It is reported that including water rights in the VG Land was highly sensitive despite LSLAs and water being deeply connected. This issue was subject to political negotiation with countries taking diverging positions, resulting in no explicit mention of water. It weakens not only the effectiveness of the VG Land but also diminishes the role of water in situations of devising agreements and guiding corporate practice (Brüntrup et al., 2014).

3.4.3 Human rights impact assessment

The UN *Protect, Respect and Remedy Framework* suggests that human rights impact ought to be assessed as part of due diligence. A human rights impact assessment (HRIA) draws on international law and has a normative foundation that carries ‘both moral legitimacy and legal accountability’, thus distinguishing it from environmental and social impact assessment (Nordic Trust Fund and The World Bank, 2013). While voluntary, HRIAs are widely utilised as a way to conduct human rights due diligence by states, corporations, intergovernmental organisations and NGOs.

HRIAs systematically account for key tenets of human rights such as participation, equality, transparency and accountability. They use jurisprudence to evaluate these key principles in a particular context (Nordic Trust Fund and The World Bank, 2013). Furthermore, they comprehensively survey various human rights as they are interlinked. For example, a HRIA for trade and investment agreements will need to ensure that states do not impinge on interlinked human rights of food, health and water (Human Rights Council, 2011). A HRIA for fracking projects should include not only the human right to drinking water but also air, health, freedom of expression and the right to a fair trial, among others (Short et al., 2015). The methodology of a HRIA involves steps to identify rights-holders and duty-bearers and to employ public participation methods for assessment, mitigation and other measures. While many HRIAs are *ex post*, *ex ante* assessment

can be used preventatively and foster stakeholder engagement (Nordic Trust Fund and The World Bank, 2013).

A specific guide for companies, *Guide to Human Rights Impact Assessment and Management* (2010), has been developed in cooperation with The International Business Leaders Forum, IFC and the UN Global Compact. The CEO Water Mandate highlights HRIAs to be integrated into business planning cycles (CEO Water Mandate, 2015). ICMM developed its own sector guide for human rights due diligence as part of corporate risk management (ICMM, 2012). Oxfam reported that in contrast to company-led HRIAs, which emerge out of due diligence concerns, community-based HRIAs offer more meaningful ways to address human rights concerns and devise corporate action. For example, in the case of gas extraction in Bolivia, community-based HRIAs enabled locals to better identify claims to be made in response to actual impacts and violations and to understand their concerns of water pollution were unfounded (Watson et al., 2013). It is noted that company-led HRIAs have a particular onus to get stakeholder engagement right, as 'credibility of the whole process is far more strongly threatened by inadequacies in relation to acceptable standards of consultation and participation' (Harrison, 2013: 110).

Several considerations are required for a successful HRIA. First, there needs to be robust baselines and datasets. In a case of palm oil plantation in Liberia, the assessment found that a lack of data made it difficult to identify causal links between corporate action and water pollution (Salcito and Wielga, 2018). Second, capacity is required not only to carry out HRIAs but also to evaluate them. States can use HRIAs as part of 'harder forms of state-based conditionality...for instance, export credit guarantees, investment assurance or development assistance conditional on human rights due diligence processes' (Harrison, 2013: 111). However, there are questions on the extent to which states have the capacity to evaluate the robustness of HRIAs. Third, a HRIA is politically charged with its normative assumptions, thereby presenting risks of it being politicised. There can be cases where utilising a HRIA can be co-opted to promote favourable outcomes in showcasing either respect or abuse of human rights (Nordic Trust Fund and The World Bank, 2013). Furthermore, stakeholder engagement can challenge and disrupt the status quo of power relations, causing resistance towards consultations and even putting individuals at risk (IBLF, IFC and UN Global Compact 2010).

3.4.4 Strengthening human rights obligations in EU trade agreements/arrangements

In the EU trade framework, water-related provisions to uphold the human right to drinking water can be considered in i) trade agreements and ii) specific trade arrangements. First, as regards EU trade agreements, human rights can be included in 'essential elements' clauses. Such human rights conditionality allows for legal, restrictive measures, including suspension, in the face of grave violations. The EU has a right, though not an obligation, to apply human rights conditionality (Zamfir, 2019). Second, trade agreements may include Trade and Sustainable Development (TSD) chapters which require adherence to commitments and standards of multilateral environmental agreements. For example, the Stockholm Convention on persistent organic pollutants, Rotterdam Convention on international trade in hazardous chemicals and pesticides and the Convention on Biological Diversity can guide agricultural and industrial activities relying on water or those that impact water bodies. Third, provisions can be included which specifically address access to water. For example, against a backdrop of highly controversial negotiations of the Transatlantic Trade and Investment Partnership (TTIP) and the Trade in Services Agreement (TiSA), in 2015 the EP 'urge[d] the Commission to grant a legally binding exclusion for water services, sanitation services and wastewater disposal services in the ongoing negotiations for the Transatlantic Trade and Investment Partnership (TTIP); stresses that all future trade and investment agreements should include clauses on genuine access to drinking water for the people of the third country to which the agreement pertains in line with the Union's long-lasting commitment to sustainable development and human rights, and that genuine access to drinking water for the people of the third

country to which the agreement pertains must be a precondition for any future free trade agreements' (EP 2015). Reacting to public concern about water privatisation, which may jeopardise realising the human right to drinking water, the EU included reservations of market access and national treatment for drinking water supply in its EU-Canada Comprehensive Economic and Trade Agreement (CETA) signed in 2017 (see Kynast 2019, Kishimoto 2015). Concerns about privatisation notwithstanding, it has been critiqued that while there might be several environmental provisions in an agreement, only a handful are legally enforceable, leading to a situation of 'legal inflation' and questions remain on their effectiveness (Bellora et al. 2020). Moreover, it has been pointed out that 'on the whole, existing EU bilateral trade agreements address different areas of environmental cooperation in isolation from each other and make no explicit reference to human rights' (Morgera 2020: 38).

When it comes to specific trade arrangements, these can require compliance with international conventions that can help realise the human right to drinking water. The generalised system of preferences (GSP) is a well-established mechanism to prevent human rights violations in developing countries. The current system involving everything but arms (EBA), standard GSP and GSP+ provide incentives of tariff concessions and preferential trade access to the EU market. GSP+ is notable as it requires compliance, reporting and monitoring of ICESCR, which implies the human right to drinking water, along with 26 other international conventions on human rights and labour rights as well as further conditionalities pertaining to environmental obligations.

Sanctions are rare and instead incentives to realise the human rights are preferred (Zamfir, 2019). There are only three cases of suspension of GSP preference. Indeed, EU human rights conditionalities do not work alone and its specific effectiveness is difficult to evaluate within the many factors relating to reform and regime change. However, the EP has argued for stronger human rights conditionality and more measures to be taken. This will require interinstitutional cooperation with the Commission, which has shown a more conservative attitude towards implementing sanctions (Zamfir, 2018).

Under the WTO framework, there is no scope for the EU to leverage tariffs without renegotiations. The tariff rate quota can restrict imports and therefore discourage products that may be traded at the expense of environmental degradation, such as biodiversity loss. However, it is limited in its use, making it ill-suited as a means to put in place environmental provisions (Bellora et al. 2020). Instead, non-tariff measures and non-tariff barriers are used to enhance or restrict trade. For example, there are regulations regarding imports under the existing EU biofuel policy, requiring fulfilment of sustainability criteria by the suppliers, which are regarded as setting out a non-tariff barrier. It is argued that in places like Malawi, providing proof that products meet the criteria is too onerous with high data requirements and complex data analysis, such that it deters biofuel production and misses economic development opportunities. Furthermore, the sustainability criteria do not explicitly consider biofuel crops displacing food crops (Schuenemann and Kerr 2019). This case highlights that even if biofuel exports are pursued with high costs to meet the sustainability criteria, there is a risk that impacts on the human right to drinking water may be difficult to identify within a complex set of analyses and challenges in identifying causal links. As the above has shown, the water provisions in the EU trade framework are limited and existing environmental provisions are too general or indirect to substantially support the human right to drinking water.

Human rights obligations can be further enhanced at various points of trade agreements. While there are impact assessments (IA) during inception and a sustainability impact assessment (SIA) during negotiations, they can be complemented with the above mentioned HRIA. HRIA helps assess how trade interests intersect with state obligations; SIA focuses on economic opportunities via trade and their impacts (Velluti, 2016). The European Commission has put in place specific guidelines on the human rights impact to be analysed as part of the SIAs for trade agreements (EC 2015), accompanied with an updated SIA methodology (EC 2016).

Nevertheless, the EU is increasingly being pressed to enhance its measures towards human rights in trade policy. In 2021, the European Ombudsman opened a case to inquire the European Commission's human rights clauses in trade agreements and their implementation (European Ombudsman 2021). This follows two cases of maladministration regarding trade agreements between Vietnam over HRIA implementation (case 1409/2014/MHZ) and between South American countries over timely SIA finalisation (case 1026/2020/MAS). In the former case, complainants argued for the need of an in-depth HRIA that covers, amongst others, potential impacts to access to water from trade agreements (European Ombudsman 2016). The Commission laid out that human rights impacts need to be examined 'throughout the entire policy cycle of an initiative' and thus also include ex-post assessments (EC 2015:1). This is particularly important as there are challenges of accurately anticipating negative impacts, making it difficult to embed in trade agreements at the point of negotiation (Zerk, 2019). Consequently, the practice to conduct both *ex post* and *ex ante* assessments is essential. A review of the GSP preference mechanism has shown that countries made progress towards establishing legal and institutional frameworks to comply with the human rights conditionalities, but implementation is wanting (Zamfir, 2018). The inclusion of 'sunset clauses' in trade agreements was advocated by the Special Rapporteur on the right to food so that there is active evaluation of human rights abuses and possibility of agreement re-negotiation (UN 2009). To improve monitoring, a human rights committee involving civil society is one of the proposals made by civil society and academics (Zamfir, 2019).

3.4.5 Behaviour change of consumption

Water footprint is a useful tool to raise awareness of the impact of an individual as well as national consumption. Water footprint calculations are increasingly part of lifecycle assessments of products, with the ISO 14046:2014 providing guidelines. There are many free water footprint calculators allowing individuals to become more familiarised with the concept. In theory, widely available information and improved awareness have some potential for behaviour change, which would then ease pressure on production elsewhere, reduce virtual water 'flows' and relieve water stress.

Behaviour change policy could target food consumption. Virtual water analyses show that rather than water-conserving actions such as turning off the tap when brushing teeth, diet change yields far bigger impacts on water sustainability. Policy for behaviour change can consider how food choices can be adjusted through a variety of tools to move away from water-intensive crops and food products such as meat and dairy. The water footprint of a vegetarian diet is approximately half of a meat-based one. Campaigns such as 'meat-free Monday', 'meatless Monday' and 'veganuary' can raise awareness and reduce water footprint, even though they address health, animal welfare or broader environmental and climate change concerns. To aid consumer choices, water labelling could enhance product transparency. A water label could provide detailed product information or quality certification and be integrated into other existing labels (Hoekstra, 2019). A water label prototype has been developed to provide quality indicators so that consumers can have a comprehensive understanding of impacts. This could encourage a 'new water ethic' that allows 'knowing what impact the sale of a certain good containing virtual water has on local communities... and become part of a new awareness of this common good' (Greco and Antonelli, 2015: 99). Considering that goods are traded, in order for water labels to be successful, there is further need for an internationally agreed labelling scheme that is cohesive with WTO rules (Hoekstra, 2019) as well as taking into consideration the burdens on farmers and small-scale producers (Greco and Antonelli, 2015).

However, it has been pointed out that better awareness does not necessarily translate to actions that change behaviour. There is a critique that products and services may become more sustainable or efficient but such changes do not actually reduce consumption itself (Moloney and Strengers, 2014). There is evidence that changing meat consumption is riddled with multiple challenges such as a lack of impact awareness, low prioritisation of environmental impacts and resistance to change. These factors are also

couched in deeply ingrained cultural, socio-economic and gendered practices, habits and influences (Stubbs et al., 2018; Wright, 2015). Furthermore, behaviour change can be indirect to the safeguarding of the human right to drinking water. It is not easy to identify causal relationships between consumer choice and fulfilment of state or company human rights obligations and responsibilities.

This calls for wider, holistic policy approaches, not only looking at consumer choice but also issues such as reducing food waste. It is reported that there is approximately a 50 % loss or waste in the process of field to fork (Lundqvist et al., 2008). Other figures suggest that it amounts to a third of food produced throughout the world in weight (FAO, 2011b). Moreover, in the Global North there is a high level of waste of perishable items such as fruit and vegetables by consumers (Lundqvist et al., 2008). Food wasted in places such as North America and Oceania is ten times that of South and Southeast Asia at 115 kg and 11 kg respectively (Kibler et al., 2018). In the Global South, field losses as well as post-harvest losses are notable. Consequently, in addition to water-efficiency technologies introduced in farming, better identification of food waste throughout the whole food chain is needed (Lundqvist et al., 2008).

Moreover, it is suggested that cheap food prices that have been maintained for many decades do not serve society to value water, food and soil. In other words, by ensuring a system where cheap food is provided to the consumer, costs of environmental stewardship are not reflected. Farmers are left in vulnerable positions to meet the demands of the market. Better accounting of water as a value in the production of commodity is needed (Allan, 2019). The first step in this regard would be to strengthen corporate accounting practices and non-financial reporting. While indirect, broader policy discussions to reconsider the value of food may help underscore the impact on the human right to drinking water and the opportunities to safeguard it.

3.5 Limitations of the HRBA for drinking water

Among the evidence of good practices, some tensions and challenges need to be acknowledged. First, the inherently normative nature of a HRBA may be contentious in countries where there is little recognition of human rights in the first place. Such an approach may be regarded as unwelcome and treated perfunctory at best. Even if countries may subscribe to human rights principles, it does not mean that the conditions for implementation are readily available. In general, it is said that assessing and evaluating the effects of a HRBA are made difficult because of the lengthy process to realise human rights goals and outcomes. Not only does it require time but also appropriate ways to identify and measure qualitative change (Filmer-Wilson, 2005).

Second, a HRBA can *only* be political. A HRBA does not operate in a vacuum and requires constant awareness and engagement with power relations. As the UN Special Rapporteur on the right to water repeatedly emphasised, the implementation of the human right to drinking water is deeply contextual (Human Rights Council, 2020a). Both states and companies must understand existing power relations and how activities in water, food, energy and extractive sectors impact such relations. There are anticipated changes to power relations but also unintended, perverse changes. For example, company responsibility towards human rights may be regarded as problematic and changing the status quo of existing power relations within society, even if the company had attempted to fulfil its 'social license to operate' (Kemp et al. 2010). This risk of conflict and upsetting existing power relations also applies to states in their HRBA efforts through trade agreements and investments, for example.

Third, regardless of good practices, states and companies may end up shirking away from making hard choices on trade-offs between upholding human rights principles and the political, diplomatic, economic relations with the host state or community. Experience from the WASH sector shows that the organisational mandate for service delivery can be incongruent with the comprehensive nature of a HRBA and pose tensions with the governments as duty-bearers it serves (Gosling, 2014). In the case of the mining

sector, it is argued that maintaining good relationships with the state is important for their licenses such that companies will not raise human rights inadequacies of the state (Kemp et al., 2010).

Fourth, some of the good practices suggested the role of civil society organisations in mediating relations between communities, states and corporations. While such actors are an asset, they may have their own set of agendas and interests at stake. States and companies need to further bear in mind the political nature of a HRBA and constantly review their roles and responsibilities in a dynamic interactive process. This once again underscores the point that a HRBA requires an understanding of existing power relations that shape how, when, for whom and by whom rights are realised. While toolboxes and checklists may be developed, to address human rights abuses there is a need to carefully examine their unique context including power dynamics between duty-bearers and rights-holders.

4 Case studies

4.1 South Africa

4.1.1 Context

South Africa has been recognised as a water-scarce country due to a mixture of both physical and socio-economic factors (Mnisi, 2020). High demand for water is one of the main factors. On the one hand, it is driven by population growth and rapidly developing metropolitan areas. On the other, it has to be seen through a wider water-food-energy nexus, with food and energy sectors competing with water for drinking purposes (Simpson and Jewitt, 2019). Analysis of virtual water ‘flows’ shows that South Africa is a net virtual water (NVW) exporter, especially through exports ‘of horticultural products to BRIC countries and non-agricultural goods to non-BRIC regions (Africa, the USA, and EU)’ which exceed ‘the steadily growing NVW in imports of non-agricultural goods, especially from Asia and ROW’ (Hassan and Thiam, 2015).

South Africa is one of six countries that collectively contribute one third of the world’s unsustainable irrigation water consumption, and such consumption is driven by demand for export production (Rosa et al. 2019). The agriculture sector uses the most water and, while it is challenging to estimate, water consumed by irrigated agriculture varies from 51 % to 63 % of the total water available (Bonthuys, 2018). Irrigation supports between 25 % and 30 % of the country’s agricultural production, including up to 90 % of high-value crops (e.g. potatoes, vegetables and fruits) and between 25 % and 40 % of industrial crop production (e.g. sugarcane and cotton) (Bonthuys, 2018; FAO, 2016). Past data shows that South Africa has been a net exporter of blue water with oranges, grapes and maize accounting for high proportions of total annual exports (Dąbrowski, 2014). Irrigation practices between provinces differ *inter alia* in terms of land coverage, intensity and permanence, resulting in, for example, Western Cape having the largest area under irrigation and yet using less water than the second largest area, Limpopo. There are increasing concerns about the need for wastewater treatment by industry (Kretzmann et al., 2021) against the backdrop of double-digit growth in the intensity of pesticide use in recent years (FAO and IWMI, 2017). As many wastewater treatment plants in South Africa do not meet the required standards, they struggle to address the increased contamination of water from pesticides, which contributes to the decreasing surface water quality, especially in more impoverished areas (FAO, 2016). Other physical factors significantly impacting water availability include the country’s climate with frequent droughts and below-average annual precipitation, exhibiting both spatial and temporal variability.

Water scarcity also results from the unique historical political context that affects socio-economic factors. After years of apartheid, the country is still battling deep and systemic inequalities which translate into different levels of availability and quality of water for different groups in society (Mnisi 2020). With the end of apartheid in 1994, as many as 12 million people did not have access to piped water. While this has improved, poverty and dilapidated, underinvested infrastructure still hinder the availability of water, especially that of good quality. The 2019 General Household Survey by Statistics South Africa showed that between 2002 and 2019 access to drinking water recorded the slowest progress over the review period compared to other indicators, with access to water declining in provinces such as Mpumalanga, Limpopo and Free State (Jegede and Shikwambane, 2021). In 2019, piped water was available in less than 50 % of households and as many as 31 % of households still had to collect water from outside sources, such as rivers, streams, etc. (Jegede and Shikwambane, 2021). Such inequality is exacerbated by land tenure, which disadvantages landless or land-poor people who find it difficult to access water (Van Koppen et al., 2017).

Yet, South Africa is one of the countries where the right to water was enshrined in the constitution. The country has also adopted a comprehensive legal framework related to water encompassing laws and executive acts. This, in turn, resulted in both policy and institutional adjustments. However, as suggested

by some, enjoying the right to water has been hindered by problems related to legislation implementation and institutional bottlenecks (Addaney et al., 2018).

4.1.2 Role of the state

South Africa has been praised for its developed, comprehensive legal framework related to water, involving constitutional and lower-level legal guarantees, underlined by a HRBA. Yet, evidence suggests that many factors, such as institutional capacity, political will and historical backlogs, have often negatively affected the implementation.

The right to water was enshrined in Chapter 2 of the Constitution of the Republic of South Africa (Bill of Rights), 1996. In Article 27 (1)(b), the constitution provides that everyone has the right to have access to sufficient food and water. According to Article 27 (2), the state must take reasonable legislative and other measures to achieve the progressive realisation of the right to have access to sufficient food and water. The power of these guarantees has been weakened through their interpretation by the Constitutional Court. In the *Mazibuko* case, the court noted that these obligations do not ‘confer a right to claim “sufficient water” from the state immediately’ (Addaney, 2018). However, the constitutional grounding means that the right is justiciable and South African citizens can take their cases to court. South African courts do, in fact, function as a last resort for people when other state authorities fail to ensure the human right to drinking water (see Box 1).

Box 3: Silobela and Carolina in the Mpumalanga province (SAHRC, 2014)

Silobela and Carolina litigation over mining pollution (*Federation for Sustainable Environment and Others v Minister of Water Affairs and Others*)

When fish started to die in the Boesmanspruit Dam in 2012, Carolina residents realised that there was a problem with their water supply. The mining operations located around the dam’s tributaries leaked manganese, aluminium, iron and sulphate into the town’s main water source. A survey of water quality conducted by the local municipality revealed that the water was not fit for human or animal consumption by South African and WHO standards. While the municipality responded by providing some water tanks, it was far from enough and was not replenished. Many felt the response was inadequate and disproportionate to the scale of the problem. The situation escalated with protests erupting in May 2012 over water service delivery. With tensions increasing and protesters being arrested, the Lawyers for Human Rights and the Legal Resource Centre launched court proceedings arguing that the minimum legal standards for the supply of water had not been met. As a result, in July 2012, the North Gauteng High Court ordered the Gert Sibande District Municipality to provide temporary drinking water to the residents of Silobela, Caropark and Carolina within 72 hours of the order. While the municipalities applied for leave to appeal against the decision, the applicants were successful in asking that the original order be executed pending the appeal process. Nevertheless, the municipalities did not sufficiently engage with the residents afterwards, which led to the case being brought to the attention of the South African Human Rights Commission in 2014. While some improvements have been made, heavy pollution from mining activities persists and the conflict continues, with local environmental rights defenders, including e.g. female activists from the Women Affected by Mining in Action (WAMUA), continuously advocating for its solution⁶.

South Africa has also adopted lower-level legislation and sectoral regulations relevant to the human right to drinking water⁷. The main water framework was developed during a comprehensive, three-year participatory process of water law review, which involved numerous stakeholders, including vulnerable populations (de Lange, 2004). The National Water Act 36 of 1998 (NWA) and the Water Services Act 108 of

⁶ The case is continuously documented here: <https://ejatlas.org/conflict/water-pollution-from-acid-mine-drainage-in-carolina-south-africa>

⁷ In addition to legislative developments, there were also important policy developments, e.g. two national water resource strategies. The second one was adopted in 2013. The 2018 National Water and Sanitation Master Plan or the National Development Plan also recognise the importance of secure and equitable access to water and sanitation as catalysts for socio-economic development

1997 (WSA) are its two main pillars. They provide the state with measures to protect water resources and give further effect to principles such as equitable access to water and redress the results of past racial and gender discrimination. However, critics claim that disadvantaged populations which inherited the burdens of apartheid have not benefited enough, leading to conflicts and tensions over water use. Among many elements, the NWA allows the state to exert control over water use through registrations and different levels of authorisations, e.g. general authorisations and licences (for large volumes). Yet, the progress of registering and implementing authorisations has been subject to criticism, partly due to its disadvantaging micro and small-scale users and accessibility of licences to many South Africans (Schreiner, 2017).

Owing to a HRBA, the Free Basic Water policy (FBW) strengthens state obligations, which comprise a minimum quantity of potable water of 25 litres per person per day or six kilolitres per poor household per month. However, according to some experts, 'the FBW has progressively been targeting the poor, in that only indigents registered with their local municipality can apply to receive free water. Recent research suggests that, despite their official goals, these water interventions do not improve the material conditions of the poor. Instead, in practice, they lead to a deterioration of their lives. Post-interventions, the water remained under landowners' control, while impoverished citizens needed to rely on precarious water supplies or even relocate due to water scarcity (Marcatelli and Büscher, 2019).

Adoption of the NWA and WSA provoked institutional and policy reforms. Water-related laws and policies are implemented under the auspices of the Department of Water and Sanitation (DWS), but water management competencies were devolved to municipal and local administrative levels. However, implementation of the institutional changes has been slow, local-level administration has experienced shortages of financial and human resources, and the lack of clarity around administrative functions have not made the state more effective in addressing challenges.

To protect the right to water, South Africa also imposes direct obligations on businesses through sectoral legislation, such as the Mineral and Petroleum Resources Development Act 28 of 2002 and the National Environmental Management Act, 107 of 1998. For example, before obtaining mining rights, companies have to conduct an environmental impact assessment and submit an environmental management plan, and restrictions and conditions related to environmental preservation are imposed within the mining licence itself (Mostert, 2016). Licenses are a particularly important regulatory tool and operate on a 'polluter pays' and 'user pays' principle to manage quality and quantity (Van Koppen et al., 2017).

However, concerns can be raised as to the authorities' ability and capacity to monitor the mining and extractive industry. As reported by the media, 2019 statistics made public in parliament show that '118 mines around South Africa are polluting rivers, inadequately testing for contamination or otherwise dirtying South Africa's waterways', as many as 115 operate without proper permits, and many do not comply with their water-use licences (Olalde and Matikinca, 2019). The Mintails SA gold mines on the West Rand illustrate some of the difficulties involved in monitoring the mines and terminating their activities which requires addressing and bearing the cost of their environmental implications (Oxpeckers Reporters, 2018).

4.1.3 Role of businesses

In South Africa, businesses impact the human right to drinking water in various ways, e.g. by competing for the vital resource with people and by negatively affecting the quality of the available water through direct or indirect pollution. Agribusinesses are increasingly playing a part in extending large-scale production, spurred by the government's land reform programme, which aims to address rural poverty (Rusenga, 2021). Amidst these developments, a recent study funded by the Water Research Commission and the Department of Agriculture, Forestry and Fisheries, showed that no 'new' water can be allocated to the sector. So, if ambitions expressed in strategic documents such as the National Development Plan (e.g. 50 % growth in the irrigated agricultural area by 2030) are to be achieved, this would entail saving water

and increasing efficiency, as recognised by agricultural sector representatives themselves (Bonthuys, 2018). This raises questions on how the business obligation to 'respect' will be achieved and whether simply technical solutions will be enough.

Water quality concerns draw attention to the concrete steps required by businesses to meet their responsibilities. Livestock farms are believed to have poor practices which leak wastewater, effluents and manure into surface water sources and soil, which can then impact groundwater (Verlicchi and Grillini, 2020). For example, evidence of pollutants exceeding acceptable standards in 37 dairy farms in the free states showed that there were systemic problems of compliance (Esterhuizen et al., 2015). There are calls to leverage the human rights to water and sanitation to seek ecological sustainability and better protect ecological infrastructure that ensures water supply and quality (Takacs, 2016). In 2018, the state launched the Strategic Integrated Plan on Ecological Infrastructure for Water Security. While the project's results are yet to be fully assessed, the National Business Initiative reports that, based on limited research, companies' ecological infrastructure is being considered as part of water stewardship and embedded in supplier development and investment planning, among other interventions (McNamara, 2020). Extending this commitment to more businesses and through a sector-wide approach will be needed.

The mining and extractive industries have had the most significant negative impact on water in South Africa. The National Water Resource Strategy of 2013 recognised mining (with acidity and increased metal content) as one of the main contributors to water quality problems. While the sector is responsible for the country's economic development and job creation, its influence on water has been met with social outrage and resistance, sometimes with tragic consequences⁸, but the authorities' reactions have been lacking. This demonstrates the failures of both the state and the business sector to deliver on their obligations and responsibilities.

Moreover, the legacies of these mining activities are felt over extended periods and require a significant amount of resources to address. The gold tailings dumps have been discharging polluted waters for decades. Water pumped from closed gold mines was released to local rivers after treatment, further polluting the waterways. The process of decanting from closed gold mines is ongoing and its extent is not fully predictable. The high salinity of the Vaal River – one of the main sources of water in the country – and the necessity to dilute its waters to decrease it illustrate the consequences of intensive mining activities. Coal mining has had an even worse impact on the tributaries of the Olifants River and a dam in the region. The extraction of coal through opencast mining can cause additional destruction of the natural groundwater regime and alter the nature of groundwater-surface water interactions (McCarthy, 2011).

The extractive sector in South Africa was impacted by the discriminatory practices of colonialism and apartheid, so there is an expectation that it will pursue a path of greater accountability. As observed by Mostert et al. (2016), 'historical debt certainly is an important consideration in the South African mining industry, in which regulated CSR initiatives are significant'. In addition to *regulated* CSR initiatives, i.e. those compelled by the state's legal and regulatory frameworks, voluntary codes of social responsibility were also developed by the private sector or in collaboration with organs of the state. However, further innovation is needed to make such mechanisms more stringent in assessing impact, especially as 'by the time environmental and socio-economic consequences become noticeable, the mines have typically closed or become insolvent and thus cannot be compelled anymore to contribute to remediation, either financially or through other actions' (Adler et al., 2007).

⁸ Such as the death of four people, killed by police while protesting the lack of access to clean drinking water in Madibeng ('place of water') Municipality in January 2014. Madibeng is situated in the platinum-rich North West province. The mining companies, agribusinesses and tourist industries in the region pay lower kilolitre water fees than poor households, and yet use and pollute more without proper responses from the authorities. See: South African Human Rights Commission, Report on the Right to Access Sufficient Water and Decent Sanitation in South Africa: 2014.

4.1.4 Main achievements and challenges

One of the main achievements in South Africa with respect to ensuring the human right to drinking water is enshrining this right in the country's constitution and then regulating water-related matters at a lower level through a comprehensive and participatory process which mobilised the wider society. It is particularly important, in light of the country's history, that the main principles underlying the water regulation framework include human dignity and equality. Related to this is yet another achievement that citizens can base their litigation on the human right to drinking water and the courts have been sympathetic to these cases, also related to business activities, forcing municipal and local authorities to take concrete actions. However, the fact that such judicial interventions are necessary to counter the authorities' passivity or inadequate responses reveals some of the system's weaknesses and related challenges, e.g. at the institutional level.

Poor black communities, particularly in small towns and rural provinces, are among those that continue to be affected the most in terms of access to safe drinking water (e.g. Jegede and Shikwambane, 2021; Marcatelli and Büscher, 2019), with women and children being exposed to some of the most severe impacts (FAO, 2016). Water scarcity has also impeded people's lives in large metropolitan municipalities, such as during Cape Town's day zero crisis (Ziervogel, 2019) or – more recently – the Nelson Mandela Bay metro crisis (Ellis, 2021). Yet, there too the impact is particularly severe for the poorest inhabitants of informal settlements.

Inequalities in water accessibility and quality have led to many human rights defenders' actions opposing mines, which contribute to pollution of water and impact other local resources. However, social organisations regularly face obstacles on a municipal level, violent blockages of peaceful protest or even threats (HRW, 2019). In March 2021, a local community protested against Ikwezi coal mine in Dannhauser, blaming the mine for contaminating local water sources which caused losses in pasture areas and consequently livestock. Protesters were shot, injured, and arrested by the local police (CER, 2021). Such situations are not isolated incidents. The UN Human Rights Council report notes that South Africa is one of at least 64 countries where between 2015 and 2019, human rights defenders were killed (Lawlor, 2020). This includes two publicised death cases of environmental activists: Fikile Ntshangase and Sikhosiphi 'Bazooka' Rhadebe, whose killings remain unresolved (Rall and Mnqondo, 2021).

The impacts on the poor also highlight the issue of the narrow focus of domestic water use in the interpretation of the human right to drinking water. It has been argued that to better support the poor, this human right can also cover productive use to provide food and generate income and avert hunger and poverty. Currently, small-scale water users, largely made up of black people, bear extra burdens when applying for licenses as the system is set up for large-scale, single-use sectors such as irrigation or mining (Van Koppen et al., 2017). It is argued that impoverished women, who often manage home gardens, could be better protected by enacting the right to drinking water so that growing food is also included (Mbano-Mweso, 2014).

The water resource management was devolved to municipal and local authorities; however, there is still a lack of clarity around the division of roles between different authorities. The sheer number of legislative and executive acts does not facilitate water management and provision, procedures and societal participation. This is compounded by shortages in state resources, both human and financial, as well as expertise and skills. The monitoring of business activities, especially in the mining and extractive industries, appears to be a serious problem. To some extent, this is related to capacity, but possibly also to other factors, including a lack of political will.

4.2 Brazil

4.2.1 Context

Having one of the largest economies in the world, Brazil faces deep inequalities in access to water (Water.org). Home to the Amazon River, the world's largest river in terms of water volume, with 12 large hydrographic basins and 83 sub-basins with waters that cross over international borders, Brazil experienced a severe water crisis in 2012–2015 (Slater, 2019). The numerous reasons behind the crisis and the contentious relations around access to water between the state, businesses and the affected communities include: the climate crisis and environmental degradation caused by the leading sectors, poor urban planning, a lack of maintenance of existing infrastructure, exclusion of rural and small communities from state water companies' services (Global Water Partnership, 2017), limited access to water among street people living in megacities (IACHR, 2021), and corruption and mismanagement of water resources (Slater, 2019).

Brazil ranks in the global top five 'exporters' of virtual water (Da Silva et al. 2016, Hoekstra and Mekonnen, 2012). Commodities that contribute to these virtual water 'flows' are coffee, sugar, beef, chicken and maize. The majority of its virtual water is 'exported' to Europe. During 1996 and 2005, approximately 65 % of all virtual water 'export' by Brazil, Argentina, Paraguay and Uruguay was for the EU, with Brazil leading in green water 'export' of meat (Ricard and Viglizzo 2017). It is reported that sugarcane for the EU market is produced in areas experiencing water stress (Da Silva et al., 2016). While it may be rain-fed agriculture, expansion of soybean production leads to increased land being converted for farming (D'Odorico et al., 2019). Dams that generate hydropower have been the source of controversy with claims to better protect human rights (Riethof, 2017). The production of biofuels for export also illustrates the water-food-energy nexus drivers. Against the backdrop of the nexus, Brazil illustrates obstacles to realising the human right to drinking water and spots signals of a future water crisis. The Pastoral Land Commission (PLC) that deals with the problems of the poor in rural areas reported hundreds of land conflicts recorded in Brazil between traditional settlers (indigenous people, quilombola communities, peasants and small farmers) and private entities. Mostly related to access to land and water, they often result in intimidation, attacks, and the murder of human rights defenders who oppose establishing development projects that would reportedly impact their livelihoods (DIHR and the Ethos Institute, 2016).

4.2.2 Role of the state

Brazil is a signatory of various human rights instruments, including the Universal Declaration of Human Rights and the American Convention on Human Rights with the Additional Protocol in the Area of Economic, Social and Cultural Rights. However, Brazilian law still does not clearly address the question of a fundamental right to water (Benjamín et al., 2005). The Brazilian Constitution of 1988 protects the right to life and the dignity of human beings, however, it does not recognise the right to water as a separate right or an essential element of the right to life (Benjamín et al., 2005). Under the Federal Constitution of 1988, all Brazilian waters are publicly owned – as per the wording of the constitution, 'the lakes, rivers and any watercourses in lands [...] as well as bank lands and river beaches' are the public property of the union (Benjamín et al., 2005). The legal framework in terms of water is complemented by the National Policy Law on Water Resources (Law No. 9.433/1997), which ensures the priority use of water for human consumption, deriving from the recognition of water as a human right (DIHR and the Ethos Institute, 2016). It incorporates the principles of water resource management, water quality, groundwater management and improved water licensing criteria to strengthen the mechanisms for sustainable water allocation (World Bank, 2016a). However, it is unclear how nexus considerations are systematically considered to ensure the normative content of the human right to drinking water.

The legal framework does not necessarily translate into action (Slater, 2019). City, state and national officials often do not enforce the water laws that could help to ameliorate some of the contentious issues

(Slater, 2019) and corruption remains the main internal factor causing the country's water crisis. According to the case study *Water Scarcity in Brazil*, 'human factors are significant to the Brazilian case, where widespread corruption and graft have hindered infrastructure projects and propelled the water supply crisis to unprecedented levels' (Slater, 2019). In addition, human rights bodies and defenders criticise Brazilian politicians for using water resources in a short-sighted manner, undermining public safety in favour of immediate political gain (Slater, 2019).

Groundwater management is also a serious issue. Despite there being legal reforms to nationalise this resource, illegal pumping without licenses is widespread, making it *de facto* a private resource. There are major data and knowledge gaps that also contribute to ineffective management. This results in a *laissez-faire* approach to implementing the law and regulating water use. The human right to drinking water also needs to be applied to groundwater so that actions towards meeting state obligations are further strengthened (Villar, 2016).

Examples of Brazil's – often intentional – failure to address the human right to drinking water and related issues include: the bill PL191/2020 downgrading the protection status of indigenous lands affected by mining activities (Villén-Pérez et al., 2020); little progress with investigating and punishing those responsible for ecologic disasters; impunity among perpetrators of attacks on environmental, indigenous and occupational rights defenders (Human Rights Watch, 2019a); and a lack of adequate prior consultation of local communities directly affected by development projects (IACHR, 2018). In case of the latter, the Inter-American Court of Human Rights highlighted that tribal people 'have a right to hold the collective title of the territory they have traditionally used and occupied, [...] as well as manage, distribute, and effectively control such territory, in accordance with their customary laws and traditional collective land tenure system' (IACHR, 2007). The state, however, does not always respect the customs of tribal people and violates its obligation to consult on large-scale development plans, including those that impact access to water, with tribal communities to obtain their free, prior, and informed consent, according to their customs and traditions (IACHR, 2007; UN, 2003).

4.2.3 Role of businesses

Brazil's leading or rapidly developing sectors of the economy, such as energy generation, agricultural production, and metal and non-metal mining, are the most water-dependent and the worst-polluting sectors in Brazil (World Bank, 2016b; World Bank Group, 2016). The expected growth of these sectors is driven in part by foreign investment, including EU-based entities involved in large-scale land acquisition for various purposes, such as agriculture, biofuels, food crops, and forestry (e.g. for wood and fibre) (Borras Jr. et al. 2016). Based on a development model favouring massive projects and large-scale business activities, it will negatively affect water availability and quality in the country in the upcoming decades and increase the competition for water or other water-related tensions (World Bank, 2016b). Authorities have shown they prefer to provide water to the agriculture sector and industry, causing residents, as in Ceará, northeast Brazil, to have an insufficient quantity of safe water and also driving smallholders off their land (Alexio et al., 2016).

The pressure from pro-development forces to exploit the territories, where indigenous people live and depend on the watershed ecosystem, has already resulted in conflicts and human rights violations. This has included the right to housing, food, water, life, land and cultural integrity, the right to work with dignity, and prior, free and informed consultation on the disputed investments and their impact on water (Human Rights Council, 2018; AIDA, 2016). In the case of the latter, the UN's Special Rapporteur on the rights of indigenous peoples and the Inter-American Commission on Human Rights (IACHR) highlighted the need for consultations with communities impacted by the lifecycle of production and consumption and human rights due diligence processes (AIDA, 2016; UN Human Rights, 2016). The post-disaster experience of the Fundão tailings dam collapse in 2015 shows that while the Samarco Mining Corporation has set up a

participatory, multi-stakeholder organisation to address remedial measures and support victims, action has fallen short of addressing human rights abuses (Maher, 2021).

The review of 2020 disclosed data on water security by companies operating in Brazil shows that the highest-scoring businesses (A or A-)⁹ monitor and follow-up on conflicts with stakeholders and track demands, needs, and expectations of local communities. Such engagement is envisaged in their water-related risk assessments and includes, among others:

- participation in water-related councils, committees, workgroups, forums and competent bodies, and coordinating special programmes committed to working with the main stakeholders to identify water-related conflicts;
- water risk analyses based on water availability and water quality assessments using global or local tools to identify areas of potential conflict and apply projects/procedures for water reuse to increase water safety;
- community workshops and meetings, by special departments devoted to community relationships;
- including NGOs in risk assessments regarding the risks connected to water resource management at a regional level, at the drainage basin level.¹⁰

Yet, anecdotal evidence shows that the applied approaches do not necessarily imply a meaningful consultation process or realisation of human rights. According to a UN working group report, most businesses perceive human rights risks mainly as risks that affect the company's economic activities rather than risks faced by vulnerable rights holders (United Nations, 2009; Vilmondes, 2018). Research shows that these internal mechanisms are sometimes used to justify companies' conduct and show compliance with human rights, even if in practice it is causing adverse potential or actual impacts (Vilmondes, 2018).

Box 4: Kinross gold mine in Paracatu¹¹

The Canada-based Kinross Gold Corporation, one of the largest mining companies in the world, owns a gold open-pit mine near the city of Paracatu. The company has developed a policy commitment to human rights and has designed a human rights due diligence process and operational-level grievance mechanisms in general compliance with the GPBHR and the Brazilian Constitution. It has also been awarded international prizes for its CSR practices. However, despite the firm's due diligence practices and operational-level grievance mechanisms, local communities, that complain about health (water contamination), environmental, and infrastructural issues because of the mine, could not find means of efficiently communicating, receiving feedback and finding common solutions. Kinross, on the other hand, rejected allegations of misconduct, which led to unsatisfactory business-community relations. The literature on this case indicates that in such a contentious situation, 'the biggest matter lies on the inability of affected stakeholders to seek redress from a firm, that tries to excuse itself by showing policies based on internationally accepted procedure' (Türke, 2018).

⁹ Out of 98 results of CDP responses for 2020 from Brazil in the area of water, 19 received scores, of which 5 received A or A- (leadership level). These five best scoring company cases were reviewed for the purpose of this paper. They represent the main sectors responsible for water consumption and pollution, such as metals and mining, food, energy/electric power, and agroforestry. CDP is a not-for-profit charity that runs the global disclosure system for investors, companies, cities, states and regions to manage their environmental impacts. Available at: <https://www.cdp.net/en/companies/companies-scores>

¹⁰ For instance, some of the A or A- scoring companies taking part in the CDP's global disclosure project were involved in serious environmental accidents where the concerns of affected communities about grave environmental impacts of their operations voiced prior to the investments were disregarded (CDP's website: <https://www.cdp.net/en/companies/companies-scores>).

¹¹ The description based on Vilmondes, M., op. cit.

4.2.4 Main achievements and challenges

The case of Brazil illustrates the consequences of state withdrawal from its responsibility 'to protect people's human rights from the violations committed in their territory and/or under their jurisdiction by third parties, including companies' (IACHR, 2018). It also highlights companies' negligence of effectively exercising due diligence (for example, assessing in advance any risks to human rights) and implementing appropriate reparations to the affected people and mitigating any damage due to firm behaviour (IACHR, 2018).

The vulnerable groups most impacted by the water-related challenges associated with large-scale industrial and agricultural production, including extensive land acquisition, include poor, indigenous, and quilombola communities. For instance, the poor local population does not have the capacity to take action at a political level to confront environmental changes that affect them and thus protect themselves from having their access to resources (land, water, forest) blocked (Alier, 2007; Villar, 2016; Borrás et al., 2016). The cases of indigenous people or quilombola communities show that restrictions to the communities' access to water caused by private or public interests is often linked to violations of their rights (e.g. to self-determination, and pursuing their economic, social and cultural development) and to unregulated land titles.

Dam failures that resulted in killing hundreds of people, decimating the livelihoods of millions of local community members and causing grave environmental damage, indicate that the current practice rarely considers the severe implications for the people who rely on the river waterways, including their access to water. As a result, warnings from experts, local leaders and human rights defenders are often dismissed and necessary precautions are not undertaken (Human Rights Council, 2020b). Human Rights Impact Assessments were not undertaken in cases like the controversial Belo Monte dam for hydropower production which shows gaps in national impact assessment procedures (Pereira, 2021).

The right to access drinking water for rural and indigenous populations in Brazil is rarely implemented in a broader context that goes beyond personal consumption. Evidence shows that ensuring water availability is equally essential to income generation and cultural practices and the lack thereof can lead to a loss of identity, autonomy, and freedom (Neves-Silva et al., 2020). The narrow understanding of the right to water disregards water as 'an essential element for their existence as a community, being essential for them to exercise their ancestral practices' and maintains the social and power relations that disable vulnerable communities to exercise their capabilities fully (Neves-Silva et al., 2020).

At the same time, considerable achievements have been made by various local communities in protecting their territories against the impacts caused by the companies in their region (Neves-Silva P. et al., 2020). The main factors behind victories include vast efforts on the part of the community's leaders, support from local and national organisations, and rulings of the Inter-American Court (Jaichand and Sampaio, 2013).

A framework of due diligence and installation of grievance mechanisms in internal company policy does not automatically guarantee respect for human rights. On the contrary, the anecdotal evidence shows that without the senior-level capability to ensure policy, training to local personnel, and moral commitment to the best possible business-community relations, these mechanisms can be used by enterprises to deflect accusations that they do not comply with human rights (Vilmondés, 2018).

Box 5: The situation of human rights defenders in Brazil

The situation of human rights defenders in Brazil is a serious concern. Activists working in areas of land, environment, indigenous peoples, corruption and impunity are particularly endangered, many experiencing death threats, physical attacks, arbitrary arrests and lawsuits. This is against a backdrop of expanding mining concessions in the Amazon basin, increased infrastructure such as roads and extensive deforestation (Bebbington et al. 2018). Between 2015 and 2019, OHCHR recorded 1323 killings of human rights defenders.

The vast majority of those was recorded in Latin America, with Brazil having the second highest record in the region (OHCHR, 2020).

The state authorities are criticised for not doing enough in terms of both protection of human rights defenders and holding perpetrators accountable (Human Rights Council, 2020b). The Brazilian human rights defender, Claudelice da Silva Santos, the finalist of the 2019 Sakharov Prize who also received threats due to her activism, noted that ‘the high number of killings is of particular concern and takes place against a background of widespread impunity’ (Frontline Defenders). Similar claims came from the Special Rapporteur on the implications for human rights of the environmentally sound management and disposal of hazardous substances and wastes, who stated that ‘criminal syndicates, including those connected with exploitation on indigenous lands and territories, carry on their activities with impunity, and perpetrators are glorified as those bringing about development’ (Human Rights Council, 2020b). From 2009 to 2019, over 300 people were murdered in the context of land and resource conflicts in the Amazon only, many by perpetrators of illegal logging, yet only 14 cases went to trial (Human Rights Watch, 2019b). For instance, in November 2019, a representative of quilombola, José Izídio Dias, was murdered after fighting for the right to land and water (Justiça Global, 2019). Another example is the killing of José Cláudio Ribeiro da Silva and his wife Maria do Espírito Santo, Claudelice Silva dos Santos’ family members, who documented cases of human rights violations resulting from land grabbing, logging and crimes against the environment in Amazonia (Frontline Defenders).

4.3 India

4.3.1 Context

India ranks second worldwide in farm output, making it the largest producer of fresh fruits and vegetables, milk, major spices and other crops as well as the second largest producer of wheat and rice. India is the world’s third largest virtual water ‘exporter’ (Hoekstra and Mekonnen, 2012) and one of the significant gross virtual water exporters into the EU (Serrano, 2016). Indian agriculture accounts for 90 % of water use due to extensive groundwater use and poor irrigation systems (Dhawan, 2017). The government has been subsidising rice cultivation in places like northern India (Ghosal, 2021), but such water-intensive crops have dramatically lowered the groundwater table. This has resulted in a situation where almost 60 % of districts have problems either with the availability or quality of water (Suhag 2016). The ‘End of Mission Statement by the Special Rapporteur on the human rights to safe drinking water and sanitation Mr. Léo Heller’ informs that rural populations’ access to water is also affected by large projects that directly or indirectly impact essential water sources used for drinking, domestic uses or livelihood. In Manipur, large infrastructures (dams, railways, roads and industrial projects) impact the water sources of rural villages (Heller, 2017). Serious concerns have been raised about the ‘out of control’ and ‘chaotic’ mining sector in India that has clearly impacted drinking water and ignored the human right to drinking water (Human Rights Watch, 2012). The water-food-energy-nexus drivers intersect with the conditions of a poor water resource management system and climate change, causing India to face a persistent water shortage. It is reported that India will face severe water constraints in the following decades (UN Water, 2021; OECD, 2012) though many individuals already experience water scarcity.

The debate about the right to drinking water in India is a conjunction of a fundamental rights perspective, consideration of water as an economic good (especially in the context of privatisation of water), and general poor management of the resource. India’s Constitution does not have explicit reference to the right to drinking water. However, the right to drinking guarantee is grounded in a broader constitutional right to live (Jain and Lilienthal, 2020). On the other hand, ineffective and highly water-consuming irrigation systems used in agriculture remain in place. This situation has led to tension between water users, including businesses and individual consumers. There are cases, for example in Punjab, where water-intensive paddy cultivation and low levels of groundwater, among other issues, have led to social conflict (Kaur and Kaur, 2021). In 2017, more than one million traders in India announced a boycott of Coca-Cola and PepsiCo after the state of Tamil Nadu saw its worst drought in 140 years and two Indian trade

associations accused the companies of exploiting the nation's water resources with continued operation of its plants in Tamil Nadu during this period of water scarcity (Vidhi, 2017).

4.3.2 Role of the state

The Indian Constitution divides its recognised rights into two broad categories: 'fundamental rights', such as civil and political rights, and 'directive principles of state policy', covering economic, social, and cultural rights (Jain and Lilienthal, 2020). Accordingly, 'while rights in both categories are constitutionally recognised, only fundamental rights, including the right to life and the right to equality, are directly justiciable (Jain and Lilienthal, 2020). Although courts have clearly confirmed the existence of the right to water, they have not offered significant elaboration on its content or application (Cullet, 2021). In the 1988 case of rural litigation and entitlement (Kendra Dehradun and others v State of U.P. and others), elementary rights played a key role in a mining dispute. The court's ruling imposed the pit's closure as they 'destroying an aquifer that was the main foundation of sustenance for the local people' (Jain and Lilienthal, 2020). A parallel conclusion was considered in the 1990 groundwater case of Attakoya Thangal v Union of India. In this case, the Kerala High Court ruled that groundwater resources in the Lakshdweep Islands are endangered by saline intrusion caused by groundwater pumping by prosperous farmers. Community representatives living in area affected by this private ordering claimed that their right to life and livelihood was threatened and in consequence they received a relief under Article 21 of the Indian Constitution (Jain and Lilienthal, 2020).

An Indian Model Bill for the Conservation, Protection, Regulation and Management of groundwater until now exists as a draft dating back to 17 May 2016 but awaits full implementation by the individual states. Karnataka and Maharashtra have both passed modified versions of the bill, but these have not yet been publicly gazetted. Additionally, in case of Maharashtra's Act, it specifically only permits groundwater regulation to protect sources of drinking water, thus suggesting that the fundamental rights only applies to drinking water (Jain and Lilienthal, 2020). The bill has the potential to distinguish large and small-scale water users, and commercial and non-commercial users (World Bank, 2010; Rol, 2016). In Tamil Nadu, its adoption has resulted in abstraction for commercial purposes. The goal of abstraction is to limit unauthorized water pumping and secure water sources for drinking water purposes. Therefore, the textile industry would instead purchase surface water from the New Tirupur Area Development Company, which has a water supply agreement with the local government. However, there are concerns that the textile industry still relies on groundwater (Grönwall and Jonsson, 2017). Thus, how the bill could be fully implemented remains an open issue 'given many privately-held wells already in existence, and the ingrained customary views about individual user rights' (Jain and Lilienthal, 2020). The Central Water Commission and Central Ground Water Board have formulated *General Guidelines for Water Audit and Water Conservation*. These guidelines have been circulated to all the state governments and concerned central ministries and other utilities for framing their own specific guidelines. At regional level, the Maharashtra Water Resources Regulatory Authority is regarded as a good example that has worked towards fairly distributing water and implementing water tariffs in a context where subsistence and commercial agriculture, industry and households rely on groundwater sources (World Bank, 2010, 2019).

While state governments levy a fee for the use of water resources by private companies, many experts consider these charges to be grossly inadequate (Jain and Lilienthal, 2020). There have been a number of conflicts between local communities and companies using large amounts of water for the creation of their products. In a well-documented conflict in Palakkad, Kerala, a Coca-Cola bottling plant was found to have significantly depleted groundwater and the local community, including farmers, lodged protests and legal action over limited water resources (Hills and Welford, 2005). Local councils also known as panchayats took up these complaints and filed a public interest litigation (PIL) in the Kerala High Court. The court ruled in their favour, leading to the Kerala Minister for Water ordering the shutdown of the plant in 2004 (Hall and Lobina, 2012).

Regulatory efforts to manage water quality have also been criticised. One of the problems is inconsistent interpretation of the *Environment (Protection) Fifth Amendment Rules, 2016: Standards for discharge of effluents from textile industry* by the Pollution Control Boards. This can not only lead to low predictability but also to grave implications for the realisation of the human right to drinking water (Grönwall and Jonsson, 2017). The monitoring of water quality by governmental agencies has been a long-standing limitation, which makes it difficult to regulate the mining sector (Human Rights Watch, 2012).

4.3.3 Role of businesses

Companies have responded with different initiatives designed to alleviate their impacts on water resources in general. Much of this involves the use of offsets, where water consumption in one area can be balanced by the provision of water in another area. For example, Coca-Cola claims to aim for 'global water neutrality' and PepsiCo argues that overall it has a 'positive water balance' in India. The companies have financed rainwater harvesting schemes, a drip irrigation system for farmers, and water recharging or replenishment schemes (Hall and Lobina, 2012). Other attempts by large companies are geared towards independence from external water sources. For instance, Nissan's rainwater harvesting and wastewater recycling allow its India site to be independent of external water sources for 130 days. Water-related issues, including water scarcity, are integrated into long-term business objectives, and water scarcity was included as one of four major issues in Nissan's 'Green Program', which helped the company to set an ambitious water management target (CDP, 2020).

There are important sector initiatives such as the Better Cotton Initiative, bringing together actors from across the cotton supply chain to develop more sustainable production, licensing farmers and introducing higher standards of production and promoting water stewardship (Better Cotton Initiative, 2021). Under this initiative, pressure on competing uses can be relieved through innovation in agricultural water use, as seen in the cooperation between M&S and WWF, which led to a 16 % decrease in water use among participating farmers while securing an income increase (WWF, 2014).

Water footprinting is employed by companies such as Tata Steel, which calculated that its facility in Jamshedpur, northeast India, has a blue water footprint of 24.9 million m³/year and its grey water footprint was 15.2 million m³ in 2012 (IFC, Tata Group and Water Footprint Network, 2013). Such assessments are part of corporate water stewardship, which provides some transparency on water impacts. The issue with these approaches is that they do not directly mitigate the local impacts on water resources: local communities remain permanently affected by groundwater depletion in their area, impacting drinking water availability. For the water-stressed areas, recharge schemes in other parts of the country are essentially meaningless. These voluntary schemes have little legal or financial incentives to undertake more significant actions such as reducing their water footprint through more efficient manufacturing processes or partnering with local communities in water-management programmes.

4.3.4 Main achievements and challenges

There is growing recognition that successful water management programmes that achieve equitable water access and protect the right to drinking water must involve local communities and cater to their specific needs and vulnerabilities. Numerous previous water management programmes have had limited success due to their inability to enlist ground-level participation. Government and institution-focused initiatives and policies have only partially responded to the water crisis, focusing mostly on outcomes rather than the root causes of water scarcity. It is argued that 'efforts that increase the aggregated (volumetric) amount or equalise 'supply-demand' gaps will, however, not necessarily disrupt water's unequal distribution and access – a poorly recognised, yet central feature of the water crisis' (Sameer and Narain, 2019). Actions focused primarily on inefficient use of water and water delivery have brought mixed results (World Bank, 2019). In contrast, new initiatives under the Ministry of Jal Shakti (i.e. a ministry created by merging two ministries: Ministry of Water Resources, River Development and Ganga

Rejuvenation, and the Ministry of Drinking Water and Sanitation) have involved local participation at the Gram Panchayat (local village council) level. NGOs and other actors have been guided to 'act as support agencies to enhance community capabilities to take ownership and support programme implementation' (Mehta, R, 2020). Another example of ground-level participation is the Smart City programme conducted in Bhuj in India. It has involved a broad group of stakeholders including NGOs, city officials, community groups, and schools. Strong community involvement has led to providing water security and the long-term sustainability of the programme (Sheth and Iyer, 2021).

India demonstrates that the progressive realisation of the human right to drinking water is deeply related to tackling agricultural water use by empowering farmers. Participation of farmers who rely significantly on groundwater is vital. A community-based groundwater management initiative in Andhra Pradesh, where water is used for both subsistence and commercial agriculture as well as for drinking water, was described as 'arguably a global first in large-scale reductions in groundwater abstraction through community self-regulation of groundwater use' (World Bank, 2010: 28). This involved sharing knowledge, participatory field surveys, and establishing user groups. Importantly, these approaches employed citizen science techniques, which enabled the inclusion and education of non-literate water users. However, such efforts of community-based groundwater management do not replace state responsibility. In this regard, state efforts on reforms to separate land rights and water use rights are needed (World Bank, 2010). As land-use and water-use are closely tied, there is a need to develop a legal framework that acknowledges these two separate yet crucial natural resources. Access to water on owned land in the current status quo is perceived as an additional perk, while land ownership should not conflict with the water rights of local communities (Shah and Vijayshankar, 2021).

On a much larger scale, the development of grossly polluting industries, such as mining mentioned above, has led to surface and groundwater contamination for local communities, requiring policy responses (Arif et al., 2021). Governmental agencies have recognised that environmental impact assessment for mining activities is much too lax (Human Rights Watch, 2012). Challenges of water management in India also include addressing the needs of the vulnerable groups in India. Water shortages in the country have an inevitable gender dimension. Droughts, water shortages, and water contamination can lead to detrimental impacts, especially on women and children. In rural India, household dependency on free water collection has been found to correlate with lower educational outcomes for children, especially boys (Chounhuri and Desai, 2021). Other than health-related negative impacts of water scarcity (Zakar et al., 2020), poor water management can also negatively impact local communities, disadvantaged by their remote location. Water-fetching is primarily women's responsibility in India, forcing local women to carry buckets and travel daily. In extreme cases, water scarcity can lead to dropouts when children, mainly girls, halt their education to carry the burden (Barton n.d.). Therefore, it is crucial to include vulnerability perspectives into water management policies. Unfortunately, as the assessment of water institutions in Eastern India has shown, female inclusion is low, and their voice is not taken seriously (Khandker et al., 2020).

The latest, 2020 follow-up India report of the UN Special Rapporteur on the human rights to safe drinking water and sanitation shows the need for greater inclusion of social issues into water management and of a human rights perspective into India's policies and laws (Human Rights Council, 2020c). Indeed, water quality and accessibility became a vocal social problem, mobilising local societies and activists. In July 2021, Delhi witnessed a protest motivated by water supply lack in almost 40 % of city localities (Singh, 2021). Water is also part of climate change activist's agenda. For example, it was vocalised by Disha Ravi, an activist who has been recently jailed due to support given to the above-mentioned farmers' protest (Biswas, 2021).

5 Opportunities and next steps for the EU and EP

Considering the scale, geographies and levels of development, large-scale agriculture and industry have significant but highly varied impacts on water availability in non-EU countries. There is no 'one size fits all' solution for water availability across these sectors. Supporting the progressive realisation of the human right to drinking water in these countries cannot be reduced to universal, technical approaches that ignore the complex legal institutions and the political economy of water.

Different water, food, energy and extractives sectors have established unique guidance and tools around water sustainability that influence the responsibilities of the state as duty-bearers and of businesses. Any intervention to enhance human rights performance requires – at the very minimum – consideration of these existing practices as well as their historical, socio-cultural and political context. Furthermore, while there has been an emphasis on paying attention to vulnerable, marginalised and previously excluded groups, they should not be treated as a homogenous group of rights-holders. Careful attention needs to be paid to the socio-economic, cultural and institutional conditions and, above all, power relations through which rights are claimed.

It is important to keep in mind that the human right to drinking water necessitates not only addressing negative impacts but also taking positive steps to enhance this right and prevent its violations. With this in mind, this section presents opportunities and directions on how the EP and other institutions of the EU can support non-EU countries and businesses.

Advance the debate on interlinked rights: A HRBA requires identifying and understanding the ways human rights are interlinked. The discussion on the progressive realisation of the human right to drinking water can be embedded in multiple domains of food, land, trade, energy, biodiversity, climate change, technology, gender, development and aid. For the Commission, the EP and EU delegations, the *EU Human Rights Guidelines on Safe Drinking Water and Sanitation* is a useful start to consider the interlinked rights and facilitate dialogue with non-EU governments, businesses, civil society organisations and human rights groups. The Council conclusions on water diplomacy adopted in 2018 is an obvious vehicle to promote discussion on the human right to drinking water but can benefit from the extended scope on interlinked human rights. The EP can expand the examination of biodiversity as a human right (Morgera 2020) to consider synergies with the human right to drinking water, especially in light of developments regarding trade policy for the EU Biodiversity Strategy for 2030,.

Commission a study on the state-of-the-art of EU virtual water 'imports' and identify potential hotspots for the human right to drinking water: The EP could commission a comprehensive study that analyses current virtual water 'import' and dependence on non-EU agriculture and industry. These should be analysed to identify key countries and regions which require support for fulfilling state obligations regarding the human right to drinking water and monitoring business responsibilities. The insights can be foundational for further steps for actors such as the EP, European External Action Service (EEAS) and EU delegations to provide resources and capacity building to non-EU states; to establish platforms, initiatives and dialogue with stakeholders; and to raise awareness within the EP and other EU institutions on human rights performance of these third countries.

Review the 2015 'Guidelines on the analysis of human rights impacts in impact assessments for trade-related policy initiatives': The analysis showed that the EU is dependent on virtual water 'trade', which influences blue, green and grey water in countries with extractive industries and those producing food, energy and industrial goods. Reviewing and updating the 2015 guidelines will be valuable to underscore links between virtual water 'trade' and human rights. Robust tools will become more important, especially with developments of the European Green Deal, which will provide new opportunities and revised strategies and policy around trade.

Commission a study on pathways to sustainable food and water footprint, and identify multi-scale action from the national to the individual level: The EP could commission a study to understand the main pinch points and opportunities around sustainable food consumption in the EU and potential changes to EU water footprint. This study should include challenges in supply chains, measures to address waste and nudge individual consumption behaviour. Such a study will enable insight into i) water footprint labelling of products in the EU and impacts on water sustainability in non-EU countries ii) effectiveness and limitations of educational/awareness-raising campaigns on the link between water footprint and consumption; iii) and actions to be taken by businesses that can better inform consumer choice regarding water sustainability.

Ratify and engage in political dialogue to support international legal frameworks: As the analysis indicated, the UN Watercourses Convention and the UNECE Water Convention are relevant in establishing an enabling environment for the state to realise the human right to drinking water. EU member states should ratify the UN Watercourses Convention as only 12 out of 27 member countries have done so. The EU, through political dialogue, can encourage non-EU states to become signatories and ratify these frameworks. The ratification/accession of the UN Watercourses Convention has stalled, with no new ratification since 2015. The UNECE Water Convention has been open to all UN member states from 2016 and four states have acceded since.

Leverage EU development policy to progressively realise the human right to drinking water: Mechanisms such as the European Fund for Sustainable Development advance investment, often focusing on agriculture and energy projects that have water-food-energy nexus implications. It is essential that the EU ensures HRBA is applied at the project level. Taking a HRBA to development, leveraging such opportunities can give more consideration to the human right to drinking water and state obligations and business responsibilities.

Support investment in WASH: While this may seem obvious, the large-scale operations of agribusiness and other industry activities such as mining are usually in rural areas. These areas often lack basic services for drinking water as well as sanitation. Further infrastructure is required to extend safely managed services to these areas. Progressive realisation of the human right to drinking water requires continued commitment from the EU, including through the Neighbourhood, Development and International Cooperation Instrument, and individual member states to finance investment.

Leverage programming of external finance to strengthen existing institutions and capacity development: The Commission and EEAS can ensure financing goes towards enhancing existing legislative and regulatory frameworks, which are the starting points for non-EU states to fulfil their responsibilities towards their citizens. Robust institutions also offer corporations clarity on policy and remedial measures they can draw on. Countries will need to identify gaps and weaknesses of policies in water, agriculture, manufacturing, energy and other sectors but also integrate across them. Mechanisms for inclusion and participation need to be bolstered to take up a HRBA. Financial cooperation from the EU to invest in these existing institutions will be needed. Technical cooperation including training, technical assistance and advisory services will be beneficial.

Assess direct as well as indirect, latent human rights impacts: The analysis showed that while large-scale agriculture and industry may directly impact the quantity and quality of water, the effects on drinking water at the household level are experienced in variegated ways. This included, for example, extra burdens of labour or cost for different individuals within society. Furthermore, water availability and water quality degradation can manifest over time and may not be immediately visible. Human rights impact assessments (HRIA) and due diligence mechanisms need to give consideration to such indirect, latent impacts. Here, the context of the political economy of water, and the cultural and institutional backdrop of water use and regulation need to be understood well to unpack effects. The Commission needs to demonstrate

improved and consistent practice of *ex post* and *ex ante* HRIA for trade agreements, in particular with a view to trade of water-intensive agricultural products and industrial goods that impact water.

Enhance mechanisms for transparency: The analysis underscored the importance of transparency in multiple dimensions of state obligations and business responsibilities. Transparency is a cornerstone for voluntary mechanisms and HRIA, as well as in establishing a relationship between the duty-bearer and rights-holder.

FPIC: The EP should continue calling on the EU institutions and member states to draw on FPIC as a normative framework constituting a good practice in trade agreements and development projects. As a well-established principle that supports participation and transparency, FPIC is particularly relevant in meeting the needs of vulnerable members of society. It can also advance positive actions that go beyond specific projects or economic activities utilising water.

Strengthen corporate due diligence and corporate accounting: Voluntary mechanisms will only go so far in addressing the impact of businesses on human rights. It is therefore crucial that mandatory mechanisms are put in place for corporate due diligence. Non-financial reporting needs to be improved and given more emphasis. Key tools to be further utilised are the regulation on sustainability-related disclosures in the financial services sector (Regulation (EU) 2019/2088), the Taxonomy Regulation (Regulation (EU) 2020/852) and the Non-Financial Reporting Directive (Directive 2014/95/EU). The current proposal by the EC to enhance sustainability reporting is a welcome move (EC, 2021). The EP should press for the inclusion of virtual water impact measurement and comprehensive methodology on environmental impacts in the Commission's legislative proposal on mandatory human rights and environmental corporate due diligence. There are further progressive steps to be taken in corporate accounting to make evident the costs and burdens on the environment. For example, companies can include the environmental capital required and the material inputs of water in goods used for food processing and manufacturing, so that there is a fuller account of virtual water, which is not limited to virtual water calculations of the final product itself (Allan, 2019).

Demonstrate international leadership in establishing corporate due diligence: The EU should continue its active engagement in the open-ended intergovernmental working group on transnational corporations and other business enterprises with respect to human rights (OEIGWG) set up by the UN Human Rights Council. The EP should encourage member states to engage in negotiations and demonstrate the political will to strengthen corporate accountability, including mandatory measures. The EU can demonstrate its international leadership in seeking international legally binding instruments to regulate transnational businesses and commitment towards due diligence.

Foster networks of human rights experts, civil society organisations and community representatives at all scales: Stakeholder engagement is vital for the progressive realisation of the human right to drinking water. These stakeholders have significant insight into the contexts of human rights abuses as well as opportunities. They also have valuable relationships and social capital with other actors so that inclusion can be enhanced. They can also aid access to justice. Consequently, they can have an individual and collective influence on duty-bearers. To be included in these networks are indigenous groups, water user associations and human rights advocacy groups. Helping to establish networks and platforms can also allow for learning across countries and sectors, as well as resources to seek justiciable remedies. The EP can discuss with third countries to raise the case on developing and sustaining networks and help identify appropriate platforms of engagement.

Support human rights defenders: Human rights defenders can offer unique insight into the struggles relating to access to drinking water and issues of water and sanitation more generally. They have a vital role in giving a voice to those who would otherwise face barriers to accessing justice mechanisms. Importantly, they can advance claims about interlinked human rights, effectively integrating the concerns

around the rights to drinking water, food, health and an adequate standard of living. The recent critiques point to EU's inconsistent practice regarding human rights defenders and its reluctance to protect human rights defenders amidst economic interests (Amnesty International, 2019). This is particularly relevant when there is EU corporate involvement in LSLAs. The EP can devise comprehensive guidance that brings together the *EU Guidelines on Human Rights Defenders* and the *EU Human Rights Guidelines on Safe Drinking Water and Sanitation* such that they are not read in isolation. The EEAS should take proactive steps to engage the EU Special Representative for Human Rights and member states in identifying how best to support human rights defenders. The operational guidelines on human rights defenders need to be put into practice more rigorously, particularly in the monitoring, reporting and assessment of human rights conditions, as well as direct, proactive support to human rights defenders by the EU Missions and delegations.

Support and leverage regional mechanisms on human rights and water: International legal principles and frameworks need to be translated to domestic, local and regional contexts. At the same time, the drivers for water use have spatial dimensions, as demonstrated by, for example, the international nature of virtual water 'trade' and trans-border investments in LSLA. In addition to the EU and its member states supporting national and local institutions, regional human rights systems, including courts and commissions, could be supported. There are several regional mechanisms that can help to implement the human right to drinking water, such as the Inter-American Court of Human Rights, the African Commission on Human and Peoples' Rights, the African Court on Human and Peoples' Rights, as well as those of the Council of Europe. Furthermore, institutions such as the Latin American Water Tribunal have an established track record in promoting water as a human right by providing hearings and advisory opinions. Multiple scales of institutions need to be leveraged for not only remedial measures but for positive action.

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List of consulted stakeholders

No.		Date	Interviewee
1.		July 2021	Interview with a representative of the EC
2.		July 2021	Interview with a representative of the EC
3.		July 2021	Interview with a key informant, under full anonymity

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