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**Promotion and protection of human rights: human rights questions, including alternative approaches for improving the effective enjoyment of human rights and fundamental freedoms**

### **Risks and impacts of the commodification and financialization of water on the human rights to safe drinking water and sanitation**

#### **Note by the Secretary-General**

The Secretary-General has the honour to transmit to the General Assembly the report of the Special Rapporteur on the human rights to safe drinking water and sanitation, Pedro Arrojo Agudo, in accordance with Human Rights Council resolution [45/8](#).

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\* [A/76/150](#).



## **Report of the Special Rapporteur on the human rights to safe drinking water and sanitation, Pedro Arrojo Agudo**

### *Summary*

Water should be considered a public good and should be managed in a way that guarantees the human rights to water and sanitation and the sustainability of freshwater ecosystems. However, the commodification of water prioritizes commercial interests and leads to progressive private appropriation that endangers the function and value of water as a resource that supports life, human rights and the public interest. The growing financialization of the economy is leading to the management of water as a financial asset. A worrying example is the recent entry of water into futures markets, where speculative logic reigns. The experience of food management in futures markets demonstrates the frequent occurrence of speculative peaks and bubbles and of price volatility, with catastrophic consequences for the poorest. If the speculative dynamics of futures markets were to have an impact on the price of water in the water markets in the territory, as was the case with food, the costs would be passed on in the form of charges for water and sanitation, increasing the risk of non-payment and of water cuts for the most impoverished. Notwithstanding these foreseeable impacts, the commodification of water and speculation are suggested as ways to manage water scarcity better and are presented as a tool to cope with drought shortages due to climate change. Against this backdrop, the Special Rapporteur on the human rights to safe drinking water and sanitation proposes the development of democratic water governance from a sustainable human rights-based perspective and the implementation of participatory climate change adaptation strategies instead of promoting commodification and financial speculation associated with water.

## I. Introduction

1. Pursuant to Human Rights Council resolution [45/8](#), the Special Rapporteur on the human rights to safe drinking water and sanitation, Pedro Arrojo Agudo, is mandated to identify challenges in and obstacles to the full realization of those rights, as well as protection gaps, good practices and enabling factors for their effective implementation. In the present report and consistent with the concerns, reflections and recommendations of the previous report of the then Special Rapporteur to the General Assembly in 2020 ([A/75/208](#)), the Special Rapporteur aims to identify the risks and impacts of the commodification and financialization of water, to propose ways to mitigate and prevent them, and to promote a broad debate on these issues.

2. In preparation for the report, on 31 May and 1 and 3 June 2021, the Special Rapporteur convened an online expert consultation and on 14, 15 and 17 June, he convened public consultations to further discuss the issues relating to the report. In addition, the Special Rapporteur received 97 submissions in response to a call for input.

3. The Special Rapporteur wishes to clarify the meaning of the terminologies frequently used in the report, namely, “privatization”, “commodification” and “financialization” in relation to water management.

4. “Privatization”, in line with the report of the then Special Rapporteur, Léo Heller ([A/75/208](#)), refers to the delegation of public water and sanitation services management to for-profit actors, whether private companies or public-private partnerships. Privatization can refer also to the private ownership of water as a resource or of the infrastructure required to manage water and sanitation services.

5. The “commodification” of water refers to water as a resource, insofar as it is handled as a commodity under supply-and-demand dynamics as a way of setting the price of market transactions between users. Although, in some cases, water may be privately owned, in most cases, this commodification operates from the water trading markets regarding water concessions (water use rights or licences), with water formally being publicly owned.

6. The term “financialization”, as a global phenomenon that dominates the economy as a whole, is used to refer to water management as a financial asset whose value is managed in the financial markets, in particular in futures markets, under the speculative logic and strategies that dominate this type of market, with large banks and institutional investors as the main players. It is also used to express the growing influence of these financial actors in the development of infrastructure for water, sanitation and hygiene services and in the shareholding of the private operators that manage these services, thereby imposing the speculative and financial engineering logic that predominates in the financial world.

7. Water is one of the key elements of life, along with oxygen. For this reason, it has traditionally been considered a common good. With the increasing role of the State, water, as with other common goods, came to be considered a public good ([E/C.12/2002/11](#), para. 1) to be managed in the public interest.

8. However, from the neoliberal perspective that emerged in the 1970s, water is considered an economic good that must be managed, according to the logic of the market, as a commodity. This approach has led to the promotion of privatization strategies for water and sanitation services management, as well as the commodification of water. Lately, this vision has led to water management becoming a financial asset in the Wall Street futures markets.

9. Water is a public good, but the commodification of water use rights is leading to the de facto progressive private appropriation of water through the management of it as if it belonged to those who received only the right to use it, weakening the rules and priorities established in the concession systems (i.e., legal framework for allocating water use licences). This development puts at risk the exercise of human rights, especially for those living in poverty, as well as the sustainability of aquatic ecosystems.

10. In the context of the increasing financialization of the economy, the recent entry of water into the futures markets as a financial asset to be managed through the dominant speculative logic in these markets is a worrying example of this. In addition, the gap in public finances to cover the necessary investment in water, sanitation and hygiene services in the face of climate change is presented as an argument to justify strategies for the financialization of infrastructure regarding water and sanitation services.

11. The increasing risks of water scarcity due to climate change threaten all water uses, but especially those linked to the enjoyment of the human rights to safe drinking water and sanitation of the most impoverished. In this context, the commodification of water and speculation are presented as ways to better manage water scarcity. However, the truth is that they increase the vulnerability of the most impoverished and aggravate the unsustainability of the aquatic ecosystems – the two key factors in understanding the global water crisis. The Special Rapporteur advocates the need to promote a holistic approach to water management – using “systems thinking” – that integrates the diversity of water functions and uses, with a focus on water and sanitation services. In this integrated approach, restoring the health and sustainability of aquatic ecosystems is key to achieving the human rights to safe drinking water and sanitation of the most impoverished. On the basis of this approach, the Special Rapporteur proposes that water scarcity be addressed effectively through the practice of democratic water governance from a human rights-based approach and the implementation of climate change adaptation strategies instead of promoting commodification and financial speculation with water.

## **A. Valuing water from a historical perspective**

12. The Special Rapporteur, in his upcoming report to the Human Rights Council ([A/HRC/48/50](#)), explained his position on the consideration of water as a public good:

Water is a common good, which has a public character due to its essential functions for ecosystems and social well-being in today’s complex society. Therefore, the State must ensure that water continues to fulfil these functions under democratic and participatory management. From this approach, the Special Rapporteur assumes the consideration made by the Committee on Economic, Social and Cultural Rights (CESCR) in its General Comment 15 (para. 1) on water as a public good fundamental for life and health. However, in the case of indigenous peoples and rural communities that keep community management of water alive, this may remain in the hands of these communities and the State should empower the communities in its management, including by providing the necessary support for the protection of water and associated ecosystems.

13. To better understand the values that are at stake in the various uses and functions of water, it is useful to have a brief historical overview of how these values have been understood from the dominant lines of thinking regarding water management in the world over the past few centuries. The shift in paradigms, from Mother Nature, which prevailed in all ancestral cultures, to the domination of nature that developed from

the seventeenth century onward in Europe with the Renaissance and scientific empiricism, meant that the productive uses of water, which were undoubtedly always appreciated, came to dominate its valuation as a resource.

14. The paradigm of the domination of nature developed in water management when civil engineering made possible the construction of artificial rivers in the eighteenth century, in the form of large canals for the transport of goods, and later, large dams to regulate huge flows and divert them to where they would be useful for a range of productive activities and services.

15. In Western Europe, the liberal approaches prevailing in the nineteenth century shifted the responsibility for financing and management to the private sector. However, the magnitude of the investment and the difficulties in recovering the costs meant that the State took over both the investment efforts and the management of the infrastructure. The United States of America led, to a large extent, this model of public management through the creation of large public institutions such as the Bureau of Reclamation and the United States Army Corps of Engineers, which were in charge of financing, building and managing thousands of large dams and hydraulic infrastructure. The use of the resulting water resources was shared through the concession (granting or licensing) of water use rights. In this framework, water belongs to the State, but its use is awarded to private or public actors (e.g., farmers, companies and municipalities) for long periods of time, with generally low rates. The State assumes responsibility for ensuring that the use of the available water supply, thanks to the economic efforts of all stakeholders, is in the public interest.

16. Throughout the twentieth century, this management model, which extended from Western countries to a large part of the rest of the world, underwent notable perversions and biases that favoured powerful economic interests organized into various lobbies. From the beginning, the development of the so-called supply-side approaches to water management was favoured, according to which the State was to finance water works, as well as subsidize them, as projects declared to be of public interest, insofar as they promoted productive development, but without economic studies that would even compare costs and benefits. Although those public efforts were always justified in the name of the public interest, the benefits ended up being skewed in favour of the most powerful lobbies, while the impacts, such as the flooding of villages and inhabited valleys, fell on marginalized and impoverished populations. Those biases, together with the increasing environmental impacts, ended up casting doubt on the public interest benefits of such strategies, as clearly shown in the global assessment developed by the World Commission on Dams.<sup>1</sup>

17. From the 1970s onward, the emerging neoliberalism was a critical counterpoint to the public management model in force throughout the twentieth century. Neoliberalism understands water as an economic good that can be divided, appropriated and commodified, avoiding as much as possible the ecosystem approach derived from the sustainability paradigm, while defending the rationality of the market against the inefficiency of the State in water management.

18. In Chile, for example, with the approval of the Water Code in 1981, water rights, appropriated for the most part by powerful economic sectors, could be freely bought and sold. Later, the former Prime Minister of the United Kingdom of Great Britain and Northern Ireland, Margaret Thatcher privatized water and sanitation infrastructure, as well as the management of services. New privatization management strategies emerged through contracts, as well as public-private partnership business models promoted by the major multinationals in the sector. Through this approach, water as

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<sup>1</sup> See World Commission on Dams, *Dams and Development: A New Framework for Decision-making* (London and Sterling, VA, Earthscan Publications Ltd, 2000).

a resource and basic infrastructure are not usually privatized but are managed through long-term contracts signed between the municipalities responsible for the service and private operators.

19. The previous Special Rapporteur studied those privatization processes and warned of the risks that they posed to the effective realization of the human rights to safe drinking water and sanitation, in a context where corporate profit tends to be the dominant factor.

## **B. Valuing water today**

20. There is currently an unprecedented water global crisis, as serious as it is paradoxical, on the Water Planet, the Blue Planet. This is the vision that the Special Rapporteur addressed in [A/HRC/48/50](#).

21. Recently, on the occasion of the World Water Day on 22 March 2021, UN-Water invited everybody to reflect on the value of water. On that day, the Special Rapporteur published his reflections on the need to set legal priorities for the different uses and functions of water on the basis of the following ethical aspects: water for life; water for public interest functions, uses and services; water for economic development; and water in uses that put life and public health at risk.

22. In the view of the Special Rapporteur, the highest priority must be given to water for life, in uses and functions that sustain life in general and, in particular, the life and dignity of people. A second level of priority should be water in functions, services and activities in the public interest. The economic development of water must be managed as a third level of priority. Lastly, water uses that put life and public health at risk should be outlawed.

23. The Special Rapporteur understands that many of the values and functions of water go beyond the logic of the market. Some values linked to the uses and functions of water are not consistently exchangeable for money, such as the value of health, social cohesion, the sustainability of a wetland or the fulfilment of human rights. Economic approaches that force the monetary valuation of a range of values and consider nature to be a “natural capital” in order to manage it from the logic of the market are, in the Special Rapporteur’s view, inconsistent. In raising these considerations, the Special Rapporteur does not intend to criticize the market per se, but to question it as an inappropriate tool for managing values that it cannot recognize.

## **II. Water commodification**

### **A. Increasing private appropriation of water**

24. It is recognized in the first principle of the Dublin Statement on Water and Sustainable Development of 1992 that water is essential to sustain life and the environment. On the other hand, it is mentioned in its fourth principle that water should be recognized as an economic good – an approach that serves as a basis for its consideration as a financial asset, as has been done with economic goods in general, within the dynamics of the financialization of the economy.

25. Public management has certainly suffered from rigidity, opacity and bureaucracy over the decades, and the droughts of the late twentieth century have highlighted these problems in several countries. This has provided arguments for promoting reforms that allow the purchase and sale of water concession rights, with the aim of making the concession system more flexible to better manage scarcity.

26. The different water trading markets that emerged were initially subject to regulatory conditions, linking the duration of contracts to drought cycles, establishing environmental restrictions or providing compensation for impacts on third parties. In general, the influence of powerful actors and unequal access to information have led to increasing problems of opacity, while regulatory measures have been relaxed or have disappeared, favouring the growing private appropriation of water.<sup>2</sup> In this context, the management of water as a commodity has weakened consideration of it as a public good and the role of the State as guarantor of the public interest, of the enjoyment of the human rights to safe drinking water and sanitation and of the sustainability of aquatic ecosystems, to the extent that the logic of the market does not take into account these values and rights.

27. In the context of this commodified approach, in a number of countries where water trading markets have been legalized, the allocation of water to guarantee the sustainability of aquatic ecosystems has also tended to be managed through the market, thereby treating the environment as just another user, and not as the basis of life. This is the case in the state of California in the United States, where, between 2003 and 2011, water purchased for environmental needs accounted for 20 per cent of the total volume traded on water markets.<sup>3</sup> This is despite the country's public trust doctrine – according to which certain natural resources, such as water, are considered public property – and rulings such as on Mono Lake, which require water use to be “beneficial to the public interest” and include ecology among the purposes of the public trust.<sup>4</sup> European Union water legislation (Water Framework Directive 2000/60/EC), in line with the United States public trust doctrine, is clearer and considers ecological flows as restrictions on productive uses, thus avoiding competition between environmental needs and productive demands.

28. In addition, the priority for personal and domestic uses recognized by the Committee on Economic, Social and Cultural Right in its general comment No. 15 (2002) and established by law in many countries, has tended to be relegated and replaced by the purchase of rights, which carries the risk of exorbitant and unaffordable prices for people living in poverty. Returning to the example of California, cities are the main recipients of traded water, especially during periods of drought (some 40 per cent between 2003 and 2011).<sup>3</sup>

29. The development of water trading markets has, in fact, led to the circumvention of the possibilities provided by concession systems to adjust and adapt the actual water supply to the availability of water at any given time. Any concession establishes a use licence for a specific amount of water, but if there is less water available owing to drought, the institution responsible reduces the water supply foreseen in the concession according to the water available. In addition, this water supply must respect the priorities of use established by law, such as domestic supply or ecological flows. These concession systems provide for the possibility of reviewing water rights and eventually resizing or expropriating concession of licensing rights if the public interest so requires, with fair compensation provided for by law.

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<sup>2</sup> N. Hernández-Mora and L. Del Moral, “Developing markets for water reallocation; revisiting the experience of Spanish water *mercantilización*”, *Geoforum*, vol. 62 (June 2015) 143–155.

<sup>3</sup> See Ellen Hanak, “A California postcard: lessons for a Maturing Water Market”, in *Routledge Handbook of Water Economics and Institutions*, K. Burnett and others (eds.) (Routledge, 2015).

<sup>4</sup> See Supreme Court of California, *National Audubon Society v. Superior Court of Alpine County*, 33 Cal. 3rd 419 (1983).

## B. Experiences of water trading markets around the world

30. The Water Code promoted by the former leader of Chile, Augusto Pinochet, in 1981 meant the de facto privatization of water and its commodification. In Chile, as in many other countries, most water rights were rights to irrigate water for land. The law decoupled water rights from land in order to facilitate their commodification. In addition, much of the river flows were assigned to large hydroelectric companies, which have since been able to use or sell them. To date, Chilean water legislation has been the most extreme expression of the privatization and commodification of water; today, the drafting of a new Constitution, which should be ready within a year, will make it possible to modify the Water Code.

31. In the late 1980s, and representing a less extreme form of market logic, in the face of prolonged drought in Spain and in California, as well as overallocation crises in the Murray Darling Basin in Australia, other water trading markets were approved. In the case of Australia, the market evolved slowly throughout the 1990s as a tool for reallocating water through the purchase and sale of rights but grew rapidly in the 2000s as the process of deregulation took place. In California, water trading was presented as a way to incentivize savings, but mostly to transfer water concessions on the traditional “first in time, first in line” principle (the legal doctrine that the first to take water for a “beneficial use” is entitled to continue to use it for that purpose) to the most productive users who could pay more for those rights in the market. In Spain, in 1999, two market options for concession rights were introduced: trading centres and cession contracts. The trading centres, which replicate in large part California’s water banks, are institutions through which public agencies responsible for basin management can recover concession rights in anticipation of possible droughts by offering financial compensation for doing so. The cession contracts are agreements between private parties. Both options were limited initially to the management of shortages in drought cycles and were subject to regulatory rules that have been progressively relaxed.

32. While Australia, Chile, Spain and the United States are not the only countries where water trading markets have been legalized, they are the ones with the most developed experiences of this type of practice. According to a 2016 report by the Nature Conservancy, 37 countries have water trading.<sup>5</sup> By focusing on those four countries, however, the aim is to identify trends that characterize the commodification of water and to assess their human rights implications.

33. Two of the most serious problems that should be treated as scarcity problems through water trading markets are the overexploitation of aquifers and the overallocation of water rights above the actual sustainable availability of flows in ecosystems. Both problems have been created by unsustainable management approaches and will undoubtedly be aggravated by climate change. In the case of many aquifers, the consideration of groundwater as a private asset has facilitated individualistic and excessive exploitation. In the overallocation of public water use rights (i.e., when water agencies allocate water rights in excess of the actual availability in rivers or aquifers), the responsibility lies with the managing institutions. In both cases, water trading markets do not solve the problems but rather complicate them insofar as it is necessary to distinguish what are known as “paper rights”, which provide no real guarantee of available water, and “wet rights”, with water available. In any case, the market approach does not address unsustainability as the root cause of the problem and does not recognize the essential priority of human rights, ecological flows and public interest uses over private interests.

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<sup>5</sup> The Nature Conservancy, “Water share: using markets and impact investment to drive sustainability”, p. 12.



34. Although the different water trading markets have developed historical and political contexts, in the four countries considered they have common elements, which can be summarized as follows:

- (a) Separation of water from land to allow water commodification;
- (b) Deregulation of water rights trading between users and between different uses;
- (c) Transition from publicly regulated pricing, usually for non-profit cost recovery, to market water pricing;
- (d) Increasing de facto private appropriation of water, marginalization of vulnerable users and disregard for affected third parties and non-productive values;
- (e) The environment tends to become just another market actor, forcing the State to purchase water rights to ensure the sustainability of ecosystems.

### **C. Way forward: managing scarcity through democratic water governance**

35. From the Special Rapporteur's point of view, while many of the criticisms of the dominant public management model throughout the twentieth century are justified, the neoliberal alternative is not the right one. Certainly, the unsustainability of the supply-side approach makes it necessary to redefine the public interest in the twenty-first century on the basis of the paradigm of sustainability and the priority of guaranteeing human rights to safe drinking water and sanitation and reinforcing the consideration of water as a public good. It is also necessary to overcome the lack of an economic rationale for supply-side approaches by promoting a new sustainable economic rationale based on an ecosystem approach. That is, rivers can no longer be managed as mere water resource channels but as living ecosystems. In short, it is necessary to develop democratic governance of water that guarantees human rights and environmental sustainability, with transparency and public participation as the keys to combating bureaucratic opacity and promoting efficiency.

36. In cases of the overexploitation of aquifers where groundwater is privately owned, it is necessary, first and foremost, to establish public control over these aquifers to promote management plans and review existing water rights in order to ensure sustainability, priority of the potable water supply and the fulfilment of the human rights to drinking water and sanitation, with the participation of the entire affected population. In cases of the overallocation of public water rights, it is necessary to clearly state that these rights will be exercised in proportion to the actual water availability, or to promote a process of review of concession rights through transparency, broad public participation and fair compensation, in order to ensure, one way or the other, sustainability and the prioritization of the human rights to safe drinking water and sanitation.

37. Beyond ensuring respect for sustainability limits and prioritizing human rights, economic tools, institutions and strategies are needed to promote responsible, efficient and sustainable water use and management. In this regard, it is necessary to remember that market logic is not the only possible economic logic; there are multiple economic tools based on lines of thought such as ecological economics or institutional economics that can and should be used to integrate human rights and environmental sustainability into the democratic governance of water as a public good.

38. An example of such economic tools could be the pricing strategy of water and sanitation services through consumption blocks that have varying prices. The basic block, adjusted to what is considered the amount necessary for a dignified life and in

compliance with the human rights to safe drinking water and sanitation, should be affordable and even free in specific circumstances. The second consumption block could have a cost-recovery rate. The higher consumption blocks should have much higher prices, generating a cross-subsidy from luxury to basic uses. Market logic would do the opposite, charging less for the higher consumption blocks to incentivize consumption and ultimately increase profits. However, from the Special Rapporteur's point of view, water and sanitation services should not be a profit-making business but a service of public interest, universally accessible and with minimal environmental impacts. Such a pricing strategy can be a good example of the many economic tools that, without responding to the logic of the market, can induce efficiency and good practices, while being coherently integrated into the framework of sustainable democratic water governance under a human rights-based approach.

39. Water banks in California or the trading centres in Spain could be also good examples. The fact that economic compensation for recovering the concession rights is set by the public institution responsible and not by a free market dynamic allows for the maintenance of effective control over water as a public good, thereby avoiding exorbitant prices and promoting adequate regulation, one that must ensure the human rights to safe drinking water and sanitation of those who live through droughts in situations of greater vulnerability, as well as transparency, sustainability and compensation for impacts on third parties and territories. Therefore, the Special Rapporteur considers that these types of institutions can be appropriate to improve the management of scarcity in drought cycles from the perspective of democratic water governance.

### **III. Financialization of water**

40. Over the past decades, banks and large financial institutions have been increasingly occupying spaces in the economy and in people's lives, evolving from institutions that provide lending and savings services to companies and people, to ones that govern and dominate the economy as a whole under the financialization process. From being institutions at the service of productive activity, they have come to direct it from a speculative logic based on the principle of maximizing short-term profits, which often disturbs productive development and the public interest. In this regard, it would be good to recall the impacts on household economies and on the world economy of the real estate bubble and food price bubble in 2008. This process of financialization transforms debt into financial securities that multiply in the hands of banks and financial institutions, which thus become issuers of new financial products amid scarce and ineffective regulatory measures. In short, this complex and powerful network of financial institutions ends up issuing debt and financial products as if they were currency, without effective control by the corresponding States and central banks and with no guarantee of real wealth to back them up. In 2014, the consulting firm McKinsey & Company estimated global debt at \$199 trillion, or 287 per cent of global gross domestic product.<sup>6</sup>

41. In this context, the entry of water into the futures markets is highly significant and worrying, as is the financialization of water, sanitation and hygiene infrastructure. Both issues are assessed in the report, especially with regard to compliance with the human rights to safe drinking water and sanitation of the most impoverished.

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<sup>6</sup> McKinsey & Company, "Debt and (not much) deleveraging" (February 2015), p. 25.

## **A. Futures markets**

### **1. Water in the futures markets**

42. Futures markets are spaces in which producers, large distributors and consumers negotiate and sign futures contracts for agricultural products and a range of raw materials. Traditionally, in these futures markets, both distributors and producers seek to reduce the risks associated with the uncertainties of the future, in order to establish futures prices and to stabilize those prices. These futures contracts can be traded or bought and sold, as is the case of equities, on markets where speculative processes are fuelled.

43. On 7 December 2020, for the first time in history, a tradable water price futures index was launched on the Chicago Stock Exchange on the Nasdaq Veles California Water Index (NQH2O). Nasdaq developed the NQH2O Index in partnership with Veles Water Limited. The data used are provided by WestWater Research, an economics consulting firm focused on advisory services on water rights transactions. Nasdaq Veles California Water Index futures are touted as an innovative tool for managing climate change by providing transparency, price discovery and risk transfer.

44. Given that this is the first water futures market, no data are available. However, given that there have been futures markets for food commodities, the Special Rapporteur will follow up on what this has entailed in order to better understand what can be expected from these futures markets when managing commodities on which human rights and basic needs of the population depend.

### **2. Historical evolution of the futures markets**

45. Throughout history, the expectation of shortages of specific products has given rise to speculative operations to buy rights in advance, with the prospect of rising prices, which the speculator could even encourage in proportion to his or her hoarding capacity. The bid to increase a price is part of what is called price discovery and is considered a positive function of speculation, insofar as it allows economic actors to prepare for what the future holds. Futures markets until the 1990s had performed the functions of risk reduction, price discovery and price stabilization reasonably well. Since the 1990s, substantial changes have occurred, including two factors that favour the financialization of commodities, including agricultural products.

46. First, there is the inclusion, since the mid-1990s, of commodities in the portfolios of major investors. At that time, the evolution of commodity prices did not have a significant connection to the value of stocks and bonds on stock exchanges. Therefore, investment in commodity futures could offset the risks of falling stock and bond values. In addition, long-term returns on commodities were comparable to equities on the stock market. Moreover, commodities allowed investors to hedge against inflation owing to their positive correlation, so that if inflation rose, so did commodity prices, increasing profits in those markets in periods of high inflation. Commodity futures contracts became part of complex financial products, alongside other assets that had nothing to do with them, such as stocks, bonds and currencies, in order to offset risks for investors.

47. Second, financial deregulation opened ample space for shadow trading without regulatory control and allowed banks and other powerful financial players to undertake commodity speculation. The passage of the Commodity Futures Modernization Act in 2000 in the United States exempted energy and food futures contracts (and other derivatives) from official oversight. Important transactions (e.g., so-called swaps) could be traded without any control, outside the stock exchanges, in shadow spaces (e.g., the “over-the-counter” markets). Since the early

1990s, the Chicago Board of Trade (CBOT) has increased the limits on speculative options in its agricultural markets, from the limit of 600 contracts per commodity, in force for decades, to 22,000, 10,000 and 6,500 for corn, soybeans and wheat, respectively, in 2005. In 2004, the United States Securities and Exchange Commission allowed banks to use borrowed funds to expand their activities in agricultural markets. In that context, even regulated banking institutions ended up operating in the so-called shadow banking space.

48. It should be borne in mind that, whereas prior to about 2004, farmers, food-processing industry, distributors and traders of agricultural products dominated the share of futures contracts, with those changes, institutional investors, driven by speculative logic, came to control food futures markets. As a result of this, the logic of short-term speculation and profit maximization for speculators came to dominate.<sup>7</sup>

### 3. Speculative food price bubble in 2008

49. In the early 2000s, a speculative strategy began to take hold in which institutional speculators started to systematically buy futures contracts, which they rolled over at increasing prices when the contracts expired. In this way, they established what is known as a “contango market”, in which futures prices are higher than those in the spot markets, where physical commodities can be bought and sold. Under this dynamic, investors bought at increasingly higher prices on the expectation that prices would continue to rise and that they could make more money, while industrial consumers of raw materials also bought, driven by the fear that prices would be higher in the future.

50. On the basis of this complex, opaque and unregulated set of financial instruments, the speculative strategy was based on the strength of the market, that is, on the strength generated by expectations of a rise in specific values, induced by powerful speculative strategies that overshadowed price signals from direct commodity markets. Thus, in 2008, this vicious circle of rising prices took hold and generated the aforementioned speculative bubble.

51. Studies were published on the 2008 food crisis that justified the accelerated growth of agricultural prices on the increasing demand for raw materials from China and the diversion of foodstuffs, such as corn, to produce ethanol. However, the former Special Rapporteur on right to food, Olivier De Schutter, had a different assessment.<sup>8</sup> According to him, although the causes were multiple, the accelerated rise in food prices and their volatility could be explained only by speculation on the futures markets, with the consequent appearance of a speculative bubble. In fact, speculative investment in commodity index funds (baskets of commodities) increased from \$13 billion in 2003 to \$317 billion in 2008.

52. Since then, a growing consensus has emerged in line with the assessment by Mr. De Schutter, both in international institutions, including inside and outside the United Nations system, and in the international scientific community, calling for

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<sup>7</sup> See V. Shanmugam and P. Armah, “Impact of U.S. financial market deregulation on commodity derivatives market: an overview”, *SSRN Electronic Journal*, 10.2139/ssrn.2975264 (2017).

<sup>8</sup> Olivier De Schutter, “Food commodities speculation and food price crises: regulation to reduce the risks of price volatility”, Office of the United Nations High Commissioner for Human Rights Briefing Note No. 02 (September 2010), p. 3.

oversight and transparency in commodity markets and suggesting a conscious effort to intervene to deflate and avoid speculative bubbles.<sup>9</sup>

53. In 2008, the speech by a renowned expert on financial markets, Michael W. Masters, to the United States Senate Committee on Homeland Security and Governmental Affairs was particularly interesting, clear and pedagogical: “Commodity prices have risen more ... than at any time in U.S. history ... But today ... supply is ample: there are no queues at gas stations and there is plenty of food on the shelves ... What we have experienced is a demand shock from a new category of participants in the commodity futures markets: institutional investors”.<sup>10</sup>

54. Moreover, what is empirically established and worrying is that, when speculators drive up futures prices, the effects are felt immediately in spot commodity prices, as demonstrated by a growing number of studies in prestigious scientific publications.<sup>11</sup>

55. In short, in 2005, the prices of agricultural commodities began to rise and, in just three years, increased by 83 per cent. According to the United Nations Conference on Trade and Development, from 2005 to 2008, the price of maize tripled, wheat rose by 127 per cent and rice by 170 per cent.<sup>12</sup>

56. The consequences of this food price evolution have been catastrophic, in that it has undermined food sufficiency and the human right to food of the most impoverished. According to the World Bank, the price rises of 2007 and 2008 pushed between 130 million and 150 million more people into extreme poverty. The consequences were particularly severe in the poorest countries, with serious riots in reaction to those price increases.<sup>13</sup>

#### 4. Similarities and differences between water and food markets

57. Existing markets in which food and water futures contracts are traded are certainly different, but they also have similarities.

58. The water rights markets that underlie futures markets that have existed in California for several decades are notably different from direct food markets. Food markets can move in global contexts, from one country to another or between continents. Transfers of water rights, however, owing to the high costs involved, take place between users or actors within the same basin or basins connected by water transfer infrastructure. Bottled water and virtual water, in all kinds of consumer products, are exceptions that are not addressed in the present report. On the other hand, water depends to a much greater extent on the natural water cycle in the territory, which requires an ecosystem management approach that runs counter to its

<sup>9</sup> See United Nations Conference on Trade and Development, “Price formation in financialized commodity markets: the role of information”, UNCTAD/GDS/2011/1 (2011); United Nations, “Experts stress need for political will to end excessive speculation in commodity markets as General Assembly holds thematic debate on price volatility”, GA/11223, 11 April 2012; Food and Agriculture Organization of the United Nations, Extraordinary Joint Intersessional Meeting of the Intergovernmental Group on Grains and the Intergovernmental Group on Rice, final report of the Committee on Commodity Problems (2010), available at [www.fao.org/fileadmin/templates/est/COMM\\_MARKETS\\_MONITORING/Grains/Documents/FINAL\\_REPORT.pdf](http://www.fao.org/fileadmin/templates/est/COMM_MARKETS_MONITORING/Grains/Documents/FINAL_REPORT.pdf).

<sup>10</sup> See Michael W. Masters, “Testimony before the Committee on Homeland Security and Governmental Affairs”, United States Senate, 20 May 2008.

<sup>11</sup> Camille Ait-Youcef, “How index investment impacts commodities: a story about the financialization of agricultural commodities”, *Economic Modelling*, vol. 80 (August 2019), pp. 23–33.

<sup>12</sup> United Nations Conference on Trade and Development, “The 2008 food price crisis: rethinking food security policies”, G-24 Discussion Paper Series, No. 56 (June 2009), p. 1.

<sup>13</sup> World Bank, *Global Economic Prospects 2009: Commodities at the Crossroads* (Washington, D.C., 2009), p. 49.

management as a commodity. In addition, water rights are often subject to regulatory standards as a public good, as well as ethical and legal priorities, making their commodification difficult. In any case, as has been noted, the commodification and financialization of water weaken concession systems, promote the dissociation of water from any other value at stake, blur ethical, social and environmental priorities, and relegate non-productive values and functions in order to facilitate the commodification and financialization of water.

59. In terms of similarities, the framework in which water and food futures markets operate is the same global framework. Futures markets are not the markets that are widely known and used every day. As with food futures, water futures, embedded in complex financial products, are traded through automated and hyper-technical processes in which powerful investors often operate opaquely, beyond official control. Under these conditions, the talk of price discovery transparency for less powerful investors is a chimera; they will simply be guided by the signals derived from the speculative strategies in force. Water futures contracts, as with food futures contracts, are subject to the same speculative strategies, so similar phenomena and dynamics can be expected. Lastly, water and food are linked to the human rights and basic needs on which the lives and dignity of billions of impoverished people depend. Therefore, the mere possibility that the management of water in futures markets could generate price spikes and volatility similar to those generated in food should, at the very least, raise concerns and motivate preventive measures in the application of precautionary principles.

60. Taking into account the differences outlined between the water and food markets, the very limited territorial framework in which the water markets can operate with annual rainfall variability can generate interferences that dissociate the trends established by the futures markets and what happens in the markets on the territory. This and other problems may make this first attempt to introduce water into futures markets fail, but it is not the intention or mission of the Special Rapporteur to assess these risks but rather those that actually affect the human rights to water and sanitation if water is managed from speculative strategies. Without a doubt, such risks, even if they are not certainties, are as serious as they are unacceptable.

## **5. Lessons from food futures markets**

61. Water futures contracts, as with food futures contracts, could be packaged with other commodity futures contracts<sup>14</sup> into what is called an index (a basket of futures contracts), alongside carbon offset futures, biodiversity offset futures and others, to be traded as a nature-based solutions climate change fund. Subsequently, the trading volume of water futures could increase significantly. Investors who would not invest in a water futures contract, which is politically controversial and has little turnover behind it, could invest indirectly in water futures through the nature-based solutions index fund, conveniently promoted by a climate change marketing campaign that would be attractive to large investment funds. If this were to happen, the dynamics that such investment would impose on the nature-based solutions index would drive the evolution of water prices, as has happened with food. In the world of index fund investing, the underlying reality of supply and demand, in this case for water in the territory, is less important than the money invested in the fund in which the water futures contract is embedded.

62. In this context, although the scope of the water rights market is limited, in this case, to California, the framework in which the water futures contracts will operate is global. What the experience of recent decades in the futures markets for food and

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<sup>14</sup> Steve Suppan, "Futurizing water prices: how, why and who may benefit?", Institute for Agriculture and Trade Policy, 9 March 2021.

other commodities has shown is that the prevailing speculative dynamics, which have emerged since deregulation, far from stabilizing prices tend to increase their volatility and generate speculative bubbles. This is due to a dynamic that has little to do with well-founded expectations of availability or scarcity of the products in question, but rather with trends dictated by the strength of the market under the strategies of speculators most able to profit from price volatility, to absorb trading losses and to promote new strategies.

63. If the speculative dynamics of the futures markets were to have an impact on the price of water on the ground, as has been happening with food, these costs would be passed on to water and sanitation charges, increasing the risk of non-payment and water cuts among the poorest and, therefore, violations of the human rights to water and sanitation. In the agricultural-to-urban transactions that often occur, in this case in California, especially during periods of drought, price increases could range from the \$0.07 per m<sup>3</sup> that California farmers can pay currently to more than \$1 per m<sup>3</sup>, taking the cost of desalination as a benchmark.

64. Strategies based on the conceptualization of water as a commodity and the justification of the free market as a driver of the public interest have paved the way for the speculative logic that presides over the financialization of the economy to be applied also to water. Although this question has not yet been sufficiently interrogated in our society, the recent exercise conducted by UN-Water on the occasion of World Water Day captured a broad and explicit rejection of the commodification and financialization of water. The Special Rapporteur believes that it is important to promote this debate and open a space for reflection before taking further steps in this direction.

65. In the context of such debate, reflecting on the lessons that one can draw from the experience of food in futures markets, it is important to remember that the arguments that were used at the time to liberalize food speculation are used today to justify the entry of water into futures markets. Given the effects that speculative strategies have had and are having on the human right to food for the most impoverished, the Special Rapporteur believes that it is essential to take this experience into consideration in order to prevent what may happen with water futures markets, especially with regard to the human rights to safe drinking water and sanitation.

## **6. Way forward: strategies to cope with climate change-related scarcity risks**

66. The entry of water into the futures markets is justified as a way to better manage scarcity in the drought cycles that climate change is exacerbating. While droughts affect all uses and all of society, they put at particular risk the human rights to safe drinking water and sanitation for the most impoverished. The Special Rapporteur will therefore summarize some key recommended measures to effectively prevent and manage drought scarcity and will clarify that these measures have nothing to do with speculative strategies, which, moreover, induce unacceptable risks to the fulfilment of human rights, as demonstrated by their impacts on world hunger.

67. States have the obligation to prevent the risks arising from ongoing climate change and to minimize the vulnerability of society as a whole, especially the most impoverished. The measures proposed by experts and leading international institutions are not based on speculation in the futures markets but focus on promoting participatory climate change adaptation strategies, in the context of democratic governance, that allow for a human rights-based approach., and include measures such as the following:

(a) Design and promote hydrological, territorial and urban planning in order to strengthen environmental and social resilience in the face of drought;

- (b) Restore aquatic ecosystems to a healthy state;
- (c) Put an end to the excessive exploitation of aquifers and enable them to be used as strategic natural reserves that will allow future droughts to be managed;
- (d) Promote public consultation processes to build the basis for adapting the concession rights to the new realities imposed by climate change;
- (e) Develop modular strategies to produce quality water in a flexible way, adapted to drought cycles, thanks to new technologies and using renewable energies, such as the desalination of seawater in coastal areas through reverse osmosis plants;
- (f) Strengthen the concession system by way of transparent public institutions (e.g., water banks) to negotiate the recovery of water rights with fair compensation and reallocate them during periods of drought, under adequate social and environmental regulations;
- (g) In terms of an issue that is often forgotten or taken for granted, effectively prioritize the human rights to water and sanitation in these difficult circumstances, especially for those living in the greatest vulnerability.

## **B. Financialization of water, sanitation and hygiene infrastructure**

### **1. Financialization of water, sanitation and hygiene infrastructure during the coronavirus disease pandemic**

68. The financialization of water, sanitation and hygiene infrastructure is another area of concern. As explained above, traditionally, investment in large-scale water infrastructure has been viewed as a State obligation, involving public budgets and low-cost public loans. Today, however, there is increasing pressure on financial players and water-based investment funds to buy, build and/or manage water infrastructure. In fact, this trend is having a negative impact on water and sanitation services because it tends to make them more expensive and because it leads to the prioritization of short-term speculative strategies that benefit investors more than they do households, casting aside the human rights of the most impoverished. This appears to have happened with Thames Water when Macquarie Bank took control of this large British operator in 2006, borrowing 2.8 billion pounds to make the 5.1 billion pounds purchase. While the company's debts soared and maintenance and service delivery deteriorated, shareholder returns soared. Macquarie management used Thames Water to borrow 2 billion pounds for the benefit of the bank and its investors. When Macquarie sold Thames Water in 2017, the financial engineering left an indebted company and the highest rates in the United Kingdom for its 15 million users.<sup>15</sup>

69. The Special Rapporteur recalls that, in 2008, after the bursting of the financial real estate bubble and the consequent economic crisis, the strategy that prevailed in the world was to rescue the largest financial firms with huge public funds (e.g., \$29 trillion in ultra-low rate United States Federal Reserve Bank emergency loans). Governments, having given unconditional credit to the primary authors of the crisis, subsequently implemented "austerity" strategies that weakened public capacities to meet the basic needs of the population. The impact of those strategies was particularly felt by municipalities almost everywhere in the world, which were subject to veritable financial "anorexia". The crisis in municipal finance opened a space for the privatization of water and sanitation services. Large private operators, beyond managing those services for long periods of time, began to cover credit functions for the municipalities when the latter were restricted by law from borrowing money from

<sup>15</sup> Maude Barlow, *Blue Future: Protecting Water for People and the Planet Forever* (Toronto, House of Anansi Press, 2013), p. 114.



banks. The payment required from private operators, as a concession fee when signing the management contract, in fact represents a credit for the municipalities that is charged to the users throughout the concession period.

70. Today, in the midst of the current economic crisis aggravated by the coronavirus disease (COVID-19) pandemic, the idea that there is insufficient public funding available to develop the infrastructure that climate change adaptation plans demand leads to the so-called financial gap argument – an argument that is intended to justify private financing strategies to address socio-environmental challenges linked to human rights in the framework of what are known as green climate change strategies.

71. The risks arising from climate change, in particular to the human rights to safe drinking water and sanitation, are undoubtedly real, as analysed by the Special Rapporteur in [A/HRC/48/50](#). However, what is debatable, to say the least, is the argument that a public financial gap should be filled by private financial capital in water, sanitation and hygiene services, on which the human rights to drinking water and sanitation and the costs for these services depend.

## **2. Way forward: learning from the coronavirus disease pandemic to address climate change**

72. Today, after the failure (never explicitly acknowledged) of the austerity strategies implemented in the wake of the 2008 financial crisis and their tragic consequences (i.e., worsening poverty and inequality), the strategies on the table are very different. What was anathema in 2008 is today the key to overcoming the current crisis: the availability of huge public funds to relaunch national economies and the world economy in what the United Nations Conference on Trade and Development characterized as the financing of a Global Green New Deal.<sup>16</sup> How to justify in this context the argument of the financial gap in basic services of public interest such as water, sanitation and hygiene services in the face of the challenges of climate change? Is it not considered a priority to use part of these public funds to finance climate change adaptation strategies and thus guarantee the human rights to drinking water and sanitation?

73. In this regard, the Special Rapporteur has been proposing the following reflection on one of the lessons that the COVID-19 pandemic is leaving the world: the general consensus on the need to strengthen public health systems, as a collective not-for-profit effort, with the aim of protecting the health of everyone. In this regard, no one talks about a public financial gap. The world is facing a democratic challenge that affects everyone and that requires such a public effort. In this context, it is important to remember that water and sanitation services are the cornerstone of public health and deserve to be integrated into this consensus and approach. It is thus necessary and feasible for national budgets and international public financial institutions to prioritize funding for the investment necessary in water, sanitation and hygiene services, both to adapt to climate change and to strengthen public health systems. A multi-year public investment plan, with specific attention given to local institutions, should resolve the financial gap in water, sanitation and hygiene services and infrastructure to achieve Sustainable Development Goal 6. It will be necessary to integrate this approach into the ongoing global debate on fiscal systems, to be promoted in a context in which public finances, in particular local finances, need to be strengthened as part of the challenge in developing democratic water governance.

<sup>16</sup> See Richard Kozul-Wright, “How to finance a Global Green New Deal”, United Nations Conference on Trade and Development, 7 November 2019.

## IV. Conclusions and recommendations

74. Water, as a key factor for life in general and, in particular, for human life and dignity, should be considered as a public good, as stated in general comment No. 15 (2002) of the Committee on Economic, Social and Cultural Rights, and should be managed under a human rights-based approach that ensures the sustainability of aquatic ecosystems.

75. Water has multiple functions and uses that generate values linked to ethical categories of different levels of priority, which must be aligned with legal priorities for those uses and functions. Water for life, linked to functions and uses that sustain life and human dignity, must have the highest priority; water for activities and services of public interest should be managed as a second level of priority, above private interests; water for economic development, which generates legitimate profits, is a third level of priority; and the uses of water that put life and public health at risk should be outlawed.

76. The complexity and nature of the values at stake, the ecosystem-based approach to ensure environmental sustainability, the ethical priorities that must be aligned with appropriate legal measures and the effective fulfilment of human rights go beyond the capacities of market logic and call for democratic water governance.

77. Productive uses of water must be integrated into the general framework of water management, through the use of economic tools, rate strategies and institutions that encourage responsible and efficient use, in consideration of the fundamental elements of the democratic governance of water, namely, sustainability, priority of human rights, the public interest and public participation. Viewing and managing water as a commodity or as a financial asset casts doubt on its consideration as a public good and favours its progressive privatization, runs counter to the logic of the public interest, marginalizes the sustainability of aquatic ecosystems and puts at risk the life, dignity and human rights of those in vulnerable situations and living in poverty.

78. The increasing variability of rainfall, the risk of longer and more intense droughts and the decrease in available flows due to ongoing climate change pose a serious threat to the human rights to safe drinking water and sanitation of the most impoverished. In this context, sustainable and human rights-based climate change adaptation strategies are needed. Favouring the commodification of water and prioritizing productive uses over the fulfilment of human rights, ecosystem sustainability and the public interest is not the way forward.

79. Futures markets are also not an adequate tool to improve the management of future droughts exacerbated by climate change. In fact, they would worsen the vulnerability of those living in poverty and increase the risk of non-compliance with their human rights to safe drinking water and sanitation. Futures markets were introduced years ago as a tool to discover prices in advance for food products and to stabilize them. After two decades of experience, it has been empirically demonstrated that the speculative strategies that govern futures markets trigger price volatility and produce speculative peaks and bubbles with catastrophic consequences for the most impoverished.

80. The speculative strategies that govern food futures markets will also govern water futures markets; the financial indices into which water futures will be packaged will be similar to those that operate for food; and both are socially sensitive goods on which the human rights, lives and dignity of billions of impoverished people depend. The experience of food futures markets is therefore a significant benchmark for anticipating what may happen with water.

81. Since the end of the twentieth century, those who have dominated these futures markets are banks and powerful financial actors who are neither producers nor traders, nor consumers; and, as far as water is concerned, they are neither public water agencies nor farmers, nor industrialists, nor municipalities, nor water rights holders. They are powerful financial corporations that simply invest in futures contracts and take advantage of the price volatility that their own speculative strategies fuel, with ample room to operate in the shadows. The risk in the case of water, as has happened with food, is that speculative dynamics will fuel price spikes, bubbles and volatility, with serious impacts on the most vulnerable economies, on the sustainability of ecosystems and, especially, on the human rights to drinking water and sanitation by affecting the prices that many impoverished families find difficult to pay.

82. The harsh experience of the COVID-19 pandemic has resulted in a general consensus on the need to strengthen public health systems, a democratic challenge that must be faced by undertaking an unprecedented not-for-profit public effort that leaves no one behind and that must integrate water and sanitation services as a cornerstone of public health. In this context, the Special Rapporteur welcomes the change in socioeconomic strategy that is being embraced. Unlike the austerity strategy that was imposed in 2008, a large amount of public funds is available to address the pandemic and what is presented as the Global Green New Deal of the twenty-first century. In this context, the priority of public funds to strengthen public health systems and water and sanitation services is a democratic imperative. Continuing to speak of a financial gap in water, sanitation and hygiene services is not acceptable and can be understood only as a dangerous argument to justify strategies for the financialization of water, sanitation and hygiene infrastructure, which would make services unaffordable for the 2.2 billion impoverished people who lack drinking water and the 4.2 billion without sanitation.

83. In terms of the increasing pressure to commodify and financialize water management and the management of water and sanitation services, it is more necessary than ever that all countries explicitly recognize drinking water and sanitation as human rights, manage water as a public good and promote comprehensive water legislation on the basis of the principle of sustainability and a human rights-based approach.

84. Lastly, faced with the logic of the market and financial speculation, in which those who decide are those with the greatest economic capacity, and faced with ongoing climate change, the challenge is to develop democratic water governance with the human rights to drinking water and sanitation and the sustainability of aquatic ecosystems as a priority.

**85. The Special Rapporteur therefore recommends that States adopt and strengthen regulatory frameworks on water concession agreements to manage water as a public good that is fundamental for life and health, rather than as a commodity that can be traded.**

**86. Such regulatory frameworks should:**

- (a) Be aligned with human rights;**
- (b) Promote the sustainability of aquatic ecosystems;**
- (c) Be established and implemented in a transparent manner, with public participation;**
- (d) Strengthen the system of concession rights with public institutions, such as water banks, to recover water use with fair compensation and reallocate them in drought crises to people who find themselves in emergency situations.**

87. In countries where water trading markets (free sale and purchase of water or water use concessions) do not exist, the Special Rapporteur recommends that States avoid their implementation and promote the management of water as a public good, under systems of democratic public governance, which are transparent and open to public participation, prioritizing the human right to safe drinking water and sanitation, the sustainability of ecosystems and the public interest.

88. In countries where water trading markets are used as a water management tool, States should convene public consultation processes, in order to assess whether these markets are serving the public interest and determine whether they should be abolished or more strictly regulated.

89. Such assessment should pay attention to:

(a) The impacts on the affordability of gaining access to water and sanitation services and facilities for impoverished people;

(b) The sustainability of aquatic ecosystems;

(c) Transparency and public control through public registration systems of contracts, buyers, sellers, resource origin and prices, among others, to avoid speculative practices and exorbitant prices.

90. Given the alleged justification of futures markets as a tool to cope with water shortages in periods of drought caused by climate change, the Special Rapporteur not only rejects this argument, but also recommends that States uphold their obligations under the United Nations Framework Convention on Climate Change and immediately plan, design and implement climate change adaptation strategies with a human rights-based approach as an effective way to address water scarcity in the midst of ongoing climate change.

91. Such strategies should include elements such as, but not limited to:

(a) Participatory process in which all affected persons and groups are consulted;

(b) Updating and adapting concession rights of use to water availability under expected climate change scenarios;

(c) Effectively ending the excessive exploitation of aquifers so that they can operate as strategic drought reserves;

(d) Promoting territorial and hydrological planning that limits future demands on foreseeable availability and reserves the best-quality water as a priority in order to comply with the human rights to drinking water and sanitation;

(e) Promote public water banks in water-stressed river basins.

92. The Special Rapporteur further recommends that States report on projects and investment in water, sanitation and hygiene infrastructure to adapt to climate change with a human rights-based approach in their annual national adaptation plan submissions to the United Nations Framework Convention on Climate Change secretariat.

93. The Special Rapporteur recommends that States take urgent legal measures to prevent water, as a public good, from being managed in the futures markets as a financial asset under the speculative logic that presides over these markets, thereby avoiding the risks of price volatility and speculative bubbles that threaten the human rights to drinking water and sanitation of those living in

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conditions of poverty and vulnerability, the sustainability of aquatic ecosystems and the most vulnerable economies.

94. At a key moment when accelerated efforts are needed to achieve Sustainable Development Goal 6 and when a lack of public funding for investment in water, sanitation and hygiene services (i.e., the financing gap) is apparent, the Special Rapporteur recommends that all States, especially the most powerful, and the World Bank, within the framework of the new strategies for socioeconomic recovery after the COVID-19 pandemic, give priority to public funds that make it possible to make the investment in water, sanitation and hygiene necessary to achieve Goal 6, paying special attention to empowering local and community institutions responsible for water and sanitation services.

95. After the painful lessons of the COVID-19 pandemic and in line with the recent proposal by the former Special Rapporteur on the right to food and the current Special Rapporteur on extreme poverty and human rights (see [A/HRC/47/36](#)), the Special Rapporteur recommends the creation of a global fund for social protection to protect the entire world population from future pandemics, which would include financial protection for ensuring drinking water and sanitation in populations in situations of greater vulnerability and poverty as a cornerstone of public health.