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Monitoring Transboundary Water Cooperation in SDG 6.5.2: How a Critical Hydropolitics Approach Can Spot Inequitable Outcomes

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Abstract: This article contributes to critical sustainability studies through an interrogation of the Sustainable Development Goals (SDGs) and their action towards improving access to water and sanitation. This is done through an analysis of 'SDG 6: Ensure access to water and sanitation for all', specifically focusing on Target 6.5: 'By 2030, implement integrated water-resources management at all levels, including through transboundary cooperation as appropriate', and its related Indicator 6.5.2, 'Proportion of transboundary basin area with an operational arrangement for water cooperation'. While on paper Target 6.5 might seem relatively unproblematic, this article shows that its implementation could have some unintended practical implications for countries sharing transboundary waters. This article fine-tunes SDG 6.5.2 by suggesting two additional qualitative steps to improve the indicator. These qualitative dimensions are deemed extremely important for two reasons: the first one is the need to unfold and tackle inequitable water agreements; the second reason is to assess, recognize, and promote the role of civil society, NGOs, and technical and informal cooperation as a positive path toward the actual achievement of formal cooperation. The two steps that we propose are deemed essential if the United Nations (UN) is going to include SDG 6.5.2 as a proactive tool in the achievement of "implementing integrated water-resources management at all levels, including through transboundary cooperation as appropriate", as declared in the 2030 agenda.

Keywords: SDGs; transboundary water; hydropolitics; sustainability; water cooperation; SDG6.5.2

1. Introduction

In 2000, the largest gathering of world leaders in history took place at the United Nations (UN) headquarters in New York City. The agenda to be discussed was indeed a compelling one: what role would the UN play in the 21st century? Such high-level and ambitious discussions culminated in the 'United Nations Millennium Declaration' adopted by the UN General Assembly on 8 September 2000. Among the various issues discussed, the declaration resolved to stop, by the year 2015, "the unsustainable exploitation of water resources by developing water-management strategies at the regional, national, and local levels, which promote both equitable access and adequate supplies" [1]. This commitment, together with other time-bound targets aimed at globally bettering the human condition by halving the proportion of people living in extreme poverty or without access to safe

drinking water, became known as the eight Millennium Development Goals (MDGs). According to the UN, fifteen years after their adoption the MDGs produced the most successful antipoverty movement in history [2]. And yet, the world's biggest promise, as it was termed by Hulme [3], raised criticisms for its ambiguity and vagueness, the way in which it sidelined alternative global policy approaches, and the difficulties in effectively measuring the results achieved [4–8].

In 2016, a new set of global measures, the UN Sustainable Development Goals (SDGs), replaced the MDGs, introducing 17 new goals and 169 targets. While the SDGs did indeed follow up on the MDGs, they also brought in a few considerable novelties. They are, for instance, more ambitious, in that they are aimed at reaching a zero target of people needing to develop sustainably by the year 2030 rather than halving it. They are also more comprehensive, as they encompass a wider range of issues, including human rights, social justice, public–private partnerships, and institutional development. Furthermore, just like the MDGs etymologically reproduced paradigmatic policy trepidations over the turn of the millennium, the SDGs further consolidated topical and global concerns over sustainable growth and development. The introduction of the word 'sustainable' was indeed significant. On the one hand, this emphasizes the fact that our society needs to develop the ability to sustain itself over time, raising a series of environmental concerns with which it is hard to disagree. On the other hand, the notion of sustainability can also be seen as an empty signifier [9,10] "meaning everything and nothing" [11] (p. 1), one that conceals a technomanagerial framing, and one that advances economic and technological fixes, rather than politically challenging the way in which we manage and consume the planet's natural resources [12]. While economic growth and environmental protection were seen as incompatible until a few decades ago, the notion of sustainable development has reconciled economic growth with green growth, under the auspices of unelected global governance institutions [13,14]. And yet, despite this conceptual renewal, the 17 SDGs and their numerous targets also appear to be vague, "fuzzy, ambitious, often unimplementable, and contradictory" [15] (p. 187).

This article contributes to critical sustainability studies (among others, [10,16–20]) and to critical hydropolitics through an interrogation of the SDGs and their action towards improving access to water and sanitation and through examining what kind of transboundary water cooperation SDG 6.5.2 promotes. This will be done through an analysis of 'SDG 6: Ensure access to water and sanitation for all', specifically focusing on Target 6.5, 'By 2030, implement integrated water resources-management at all levels, including through transboundary cooperation as appropriate', and its related Indicator 6.5.2, 'Proportion of transboundary basin area with an operational arrangement for water cooperation'. Indicator 6.5.2 is monitored by two UN agencies, the United Nations Economic Commission for Europe (UNECE) and the United Nations Educational Scientific and Cultural Organization (UNESCO), which collect data provided by relevant ministries from all countries sharing transboundary waters (most of the world's water resources are shared by two or more countries), and thus keep track of operational arrangements for water cooperation signed globally. This, however, raises questions over diverging definitions that each of these countries can give to 'arrangement for water cooperation', overestimates the effectiveness of token cooperation, and loses sight of the inherent power dynamics and power asymmetries that can influence transboundary water relations. While on paper Target 6.5 might seem relatively unproblematic, this article shows that its implementation can have some unintended practical implications for countries sharing transboundary waters. By doing so, this article also expands the initial methodological critique of the indicator recently developed by McCraker and Meyer [21], and it also contributes to the literature on critical hydropolitics that explored the deceptive nature of cooperation [22], and the role of power asymmetries in the sharing and allocation of water resources [23–25].

This article's contribution to critical hydropolitics and core argument is two proposals to improve Indicator 6.5.2: (1) to make informal, formal, and technical talks count by adding a preoperational arrangement phase; and (2) to introduce qualitative measurements to uncover whether cooperative arrangements are producing positive or negative outcomes.

The rest of the paper is organized as follows. The next section presents the theoretical framework and the relevant literature in which this article is situated. The third section analyzes SDG Target 6.5 and Indicator 6.5.2, including analysis of relevant case studies, while the fourth section suggests recommendations on how to improve SDG Indicator 6.5.2. The final section summarizes and provides some concluding remarks.

2. Critical Hydropolitics: A Brief Overview

This article sits within the strand of critical hydropolitics literature, which has been developed mainly by the London Water Research Group (LWRG) in the past decade (for a comprehensive review, see [26]). Stemming from a dialogue between realism and neo-Gramscian theories of international relations [27], critical hydropolitics advanced a critique of the apolitical paradigm of the classical hydropolitical tradition revolving around the technical principles of "Integrated Water Resources Management" (IWRM), which tended to present cooperation among coriparian states as a goal per se and at any cost. Critical hydropolitics gave politics and political power center stage in water issues. Scholars associated to the LWRG [23] claimed that politicians and policy-makers are the key actors in transboundary water interactions, and that power operates in different and not always overt ways. What is relevant to the present study is the view that not all forms of cooperation lead to better or more equitable forms of water allocation for basin riparian states [22]. By building on, and situating itself in, the literature of critical hydropolitics, this article acknowledges that conflict and cooperation coexist and are not exclusive [26]; that conflict can be useful [22] (p. 300) and that cooperation can have detrimental forms [22] [28] (p. 22); [29,30]; power, both in terms of its soft and hard forms, is key in shaping outcomes and relations on shared water resources [22]; and power is relevant at different scales [31,32].

3. Results: Analysis and Critique of SDG Target 6.5 and Indicator 6.5.2

The "step-by-step monitoring methodology for Indicator 6.5.2" underlines that "specific agreements or other arrangements concluded between coriparian countries are a key precondition to ensure long-term, sustainable cooperation" [33] (p. 1). This sentence reflects the spirit of the indicator, which promotes operational arrangements for water cooperation in transboundary basins. The methodology overview for Indicator 6.5.2 [33] (p. 3) explains the meaning of "arrangement for water cooperation":

> A bilateral or multilateral treaty, convention, agreement, or other formal arrangement, such as memorandum of understanding, between riparian countries that provides a framework for cooperation on transboundary water management. Agreements or other kind of formal arrangements may be interstate, intergovernmental, interministerial, interagency, or between regional authorities.

This arrangement, however, needs to be 'operational', since it needs to meet the following four criteria:

- there is a joint body, joint mechanism, or commission (e.g., a river organization) for transboundary cooperation;
- there are regular (at least once per year) formal communications between riparian countries in the form of meetings (either at the political or technical level);
- there is a joint or coordinated water-management plan(s), or joint objectives have been set;
- there is a regular exchange (at least once per year) of data and information.

This section analyzes and provides a critique of Indicator 6.5.2, illustrating how the indicator is not able to account for the quality of an operational arrangement, and which kind of cooperation is resulting out of it; it is not able to capture instances of pre-cooperation, as it only looks at official cooperation.

3.1. Are Operational Arrangements Always 'Good'?

We argue that the spirit of the indicator is problematic because, as mentioned in the theoretical framework section above, cooperation is not always good per se, and it can coexist with conflict [22]. A simple quantitative indicator aiming at counting the number of operational arrangements for water cooperation is not, therefore, useful, as it is not able to capture the quality of said arrangements. This indicator does not explain if the arrangement is reproducing power asymmetries and an unfair allocation among the riparian countries in the basin or not. Moreover, Indicator 6.5.2 singles out agreements and arrangements as the key to ensuring sustainable cooperation [33] (pp. 1–3). However, an agreement or operational arrangement could also be the reason for the reproduction and maintenance of conflictive relations, as further elaborated in the next section, and therefore the cause of unsustainable hydropolitical cooperation. The indicator does not consider if the operational arrangement is equitable and reasonable to all riparian countries, meaning, for instance, if it is in line with the core principles of international water law.

The spirit of considering and assuming that all operational arrangements are always good also emerges in the four criteria defining operational arrangement. In fact, the four criteria illustrate that the arrangement for water cooperation should envision a joint committee (or similar structure), with at least yearly meetings and exchange of data or information, with joint plans or objectives. Nevertheless, what is missing in the four criteria is consideration of power asymmetries. They are not addressed, and so is the fact that hegemonic dynamics among riparian countries may be reinforced by an agreement or operational arrangement, reproducing the conflictive relations rather than increasing cooperative hydropolitical relations while reducing conflictive relations. In other words, the four criteria are not enough to define a positive and equitable operational arrangement able to reduce conflictive and increase cooperative hydropolitical relations.

For instance, the Oslo II Agreement, signed in 1995 between Israel and the Palestine Liberation Organization, is a clear example of formal cooperation in the form of a treaty, which codified and cemented asymmetric power relations and a nonequitable share of water resources between the two parties. Having an agreement, a joint water committee (JWC), regular meetings, and exchange of information is not enough to have equitable cooperation on shared water resources. Thus, the World Bank [34] (p. ix) observed that the joint water committee "has not fulfilled its role of providing an effective collaborative governance framework for joint resource management and investment." "The JWC does not function as a "joint" water-resource governance institution because of fundamental asymmetries—of power, of capacity, of information, of interests—that prevent the development of a consensual approach to resolving water-management conflicts" (ibid.). Research on the functioning of the JWC has also shown that, during the 1995–2008 period, the Palestinian Water Authority approved all Israeli applications for new water-supply facilities for the illegal Israeli settlements in the Occupied Palestinian Territories (West Bank), while Israel denied authorization to all Palestinian requests for new wells using the Western Basin of the Mountain Aquifer [29,30]. Selby has described the JWC as "dressing up domination as 'cooperation'" [29], while Zeitoun [35] argued that cooperation is not always good, showing that today's hydropolitical issues between Israel and Palestine find in the Oslo Agreement an obstacle rather than a tool for reducing conflictive relations.

Another example comes from the 1959 Agreement for the Full Utilization of the Nile Waters signed by Egypt and Sudan. As Menga [36] (p. 103) noted, this colonial-era agreement "is not recognized by the other Nile riparians who had been, de facto, excluded from regional water politics". Indeed, even though the agreement established a joint technical committee that meets every year, riparian states perceive this as an obstacle to the equitable and reasonable management of the river [24,25]. Rather than solving an existing dispute, a narrow-minded and not-inclusive agreement such as this one further exacerbates tensions and polarizes diverging positions, cementing and codifying power asymmetries in the basin.

3.2. Either Operational Arrangement or Nothing?

The fact that SDG Indicator 6.5.2 only considers and counts operational arrangements without considering and counting any form of preoperational arrangements is problematic. In fact, any nonformalised arrangement is not counted as cooperation for SDG 6.5.2. Therefore, SDG 6.5.2 does not take into consideration significant events such as informal talks, political statements, analysis of discourse, media and government storytelling, NGOs activities, and civil-society actions. Apart from nonstate entities, even formal and informal bilateral or multilateral governmental meetings are not always taken into account in the range of cooperation activities. Equally important, even in the presence of a formal agreement that follows all the required four criteria, those agreements that are nonoperational will not be considered in the final calculation.

Nevertheless, in practice, the promotion of technical cooperation to foster political steps forward is actually in place. For instance, when it comes to transboundary groundwater resources, there is no formal agreement on the groundwater aquifer between Botswana, Namibia, and South Africa, but technical cooperation, promoted also by the UN through UNESCO, is very active and promising [37]. Similarly, the Guarani Aquifer System (GAS), a groundwater basin shared between Argentina, Brazil, Paraguay, and Uruguay, shows that even before the ratification of the GAS agreement, bilateral cooperation at the local level was successfully happening, for instance, in the case of the municipalities of Concordia (Argentina) and Salto (Uruguay) [38]. Regardless of the GAS preratification of the agreement, Botswana, Namibia, and South Africa would have all scored zero according to the SDG 6.5.2 Indicator. Instead, the case of the Yarmouk River and of the bilateral treaty between Jordan and Syria is likely to be counted, scoring one, according to the indicator of this SDG. Nevertheless, Jordan has accused the Syrian government of not respecting the agreement several times, and of not providing the agreed share to Jordan [39–42].

How and why did the UN decide to frame and phrase the SDG indicator this way? It could be argued that complex indicators are difficult to measure, and they therefore need to be simplified in order to be able to capture and measure cases in over 190 countries. It seems easier to lower the bar and use mainly quantitative methodologies, as these are the ones generally used to compare or generalize information extensively between different cases; nevertheless, one shortcoming is that quantitative methodologies are generally not able to capture nuances and different shades, forcing towards fixed and set categorizations. In fact, inclusion of qualitative analysis in SDG target monitoring is a recurrent problem.

4. Discussion: Two Proposals for Improving Indicator 6.5.2

The two proposals that this article makes to improve Indicator 6.5.2 are: (1) to make informal, formal, and technical talks count by adding a preoperational arrangement phase; and (2) to introduce qualitative measurements to uncover whether the cooperative arrangements are producing positive or negative outcomes.

4.1. Making Informal, Formal and Technical Talks Count by Adding a Preoperational Arrangement Phase

The following structure is an example of how a preoperational arrangement phase could be accounted for and subsequently evaluated in the calculation of the indicator. There is extensive literature in critical hydropolitics regarding how nonformal activities such as technical meetings, communication among the scientific community, political meetings of government authorities (both formal and informal, in public or behind closed doors), have effectively contributed to water cooperation and to the subsequent birth of water agreements. For instance, informal technical meetings behind closed doors known as the picnic-table talks between Israeli and Jordanian officials before the 1994 peace treaty are an example of informal pre-cooperation; these talks contributed to the subsequent official water cooperation after 1994 [43,44]. An instance of informal cooperation at the municipal level is the Salto-Concordia case of the GAS, where informal cooperation continued even after the GAS project was officially concluded [38,45];

in the GAS case, the regional treaty and GAS project were initiated by communication among the scientific and epistemic communities in the region. In the case of the Disi Aquifer, which is shared between Jordan and Saudi Arabia, informal political meetings of governmental authorities used to take place regularly in the past decades [46], and brought the two governments to signing the 2015 Disi Agreement; even if it is not yet fully operational although signed and ratified [47,48], the Disi Agreement is an example of informal cooperation in the preoperational arrangement phase.

In the same way, NGOs and the civil society of transboundary water bodies, when involved in the promotion of positive cooperation outcomes among countries, can pave the way to effective formalization of water agreements, such as in the case of WWF International concerning the promotion of the UN Water Convention and promoting its entry into force [49,50].

Examples of cases in which a treaty has not yet been signed but informal cooperation was fundamental in the production of an agreement are: the Jordan/Saudi Arabia bilateral talks over the shared Disi aquifer, held between 2009 and 2014 by respective governments behind closed doors; technical cooperation over the identification and evaluation of the Stampriet Aquifer between Botswana and Namibia, promoted publicly by technical committees under the auspices of UNESCO IHP; the GAS case, where cooperation and communication among the scientific community first, and then international organizations, were key in bringing the states to cooperate in the GAS project, and to conclude a formal agreement.

The preoperational arrangement phase could be accounted as a positive step between the two options currently provided by the UN: existence or nonexistence of a formal operational arrangement. The preoperational arrangement phase can be considered as existing if at least one of the three following points are met: (1) technical meetings and technical communication are in place; (2) political meetings of government authorities are in place, formally and informally, behind closed doors or in public; and (3) NGOs and the civil society of transboundary water bodies are involved in the promotion of positive cooperation outcomes among the countries, with regular meetings and events.

4.2. Uncovering Bad Cooperation

Bad cooperation happens when, despite the existence of a water agreement or of formal cooperation, the operationalization of the agreement gives different benefits caused by an asymmetric balance of power among the signatories. This is because, while all countries are formally on the same level and have the same rights when they are engaging in international negotiations, each of them has a different weight in terms of influence and this needs to be taken into account [51]. Usually, asymmetric outcomes of water agreements are found when one of the parties is not satisfied with the quality and quantity of water, abstraction rates, allocation, and other general water-management issues. Allegations of misconduct regarding the respect of the agreement are also a signal of bad cooperation. Finally, the condition of belligerence among water-treaty signatories means that cooperation should not be considered a positive one.

This article argues that the operational agreement can be considered as positive cooperation when all three of the following criteria are met: (1) government authorities and technical institutions declare satisfaction regarding the quality and quantity of water management, abstraction/allocation; (2) there are no pending allegations of misconduct; and (3) diplomatic relations are nonbelligerent among states.

5. Conclusions

Following the analysis of transboundary water interactions in different cases, this article proposed two additional qualitative steps to improve SDG Indicator 6.5.2, which stem directly from the critical hydropolitics literature presented in Section 2.

Indicator 6.5.2 might be considered as fostering cooperation because it shows less cooperation compared to what is really happening in reality. All countries that have technical cooperation and formal/informal talks between their governments in place would score zero according to SDG Indicator 6.5.2. In order to improve this aspect of the indicator, an intermediate step between lack of operational

arrangement and operational arrangement is proposed. The intermediate step could be called the preoperational arrangement phase.

Moreover, the overall assessment produced by SDG 6.5.2 in the calculation/scoring of operational arrangement is dangerously missing the capacity to release a realistic picture of cooperation at play. This is due to the lack of assessment of the qualitative aspects of the cooperation. As there is good cooperation but also bad cooperation, this article promotes the idea that each mechanism/agreement in place should be tested against additional criteria. In fact, where there is an agreement, there is not always the promotion of peace [22]. There are good agreements and bad agreements, where hegemonic entities prevail over weaker countries [22,25,35]. This could be clearly grasped with the introduction of a qualitative assessment of all agreements that are considered operational.

These qualitative dimensions are extremely important for two reasons: the first one is the need to unfold and tackle inequitable water agreements; the second reason is to assess, recognize, and promote the role of civil society, NGOs, technical and informal cooperation (or pre-cooperation) as a positive part toward the actual achievement of formal cooperation. Both of these proposed steps are deemed essential if the UN is going to include SDG 6.5.2 as a proactive tool in the achievement of implementing integrated water-resources management at all levels, including through transboundary cooperation as appropriate and as declared in the 2030 agenda.

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