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OPORTUNIDADES E DESAFIOS PARA A LOCALIZAÇÃO DO ODS 6: UMA EXPERIÊNCIA NA REGIÃO METROPOLITANA DE SÃO PAULO

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ABSTRACT

The localization of the Sustainable Development Goals (SDGs) within municipalities has emerged as an opportunity for the evolution of multi-level governance processes. In this article, the objective was to analyze a practical experience of environmental policy decentralization in the "bottom-up" localization of SDG 6, through the water management actions of the Programa Municipal Verde Azul (Green-Blue Municipality Program, GBMP). Four municipalities were selected from the São Paulo Metropolitan Region that are located within areas of springs or water sources of extreme importance for the water supply of the local population therein. As the method, participatory action-research was adopted with consultation of municipal reports and plans for situational analysis, in addition to workshops and interviews being undertaken. The principal findings showed that the SDG localization process, analyzed with the support of the SDG Synergies tool, allowed public managers clearly to visualize other SDGs that might be impacted by the GBMP's actions, as well as by the intensity of these interactions and the importance placed on multi-level governance. Conversely, despite the region boasting a significant institutional arrangement, there was a notable lack of synergy amongst the main bodies involved, with difficulties in structuring a more effective and efficient model of multi-level governance persisting. In this context, the SDGs are at risk of becoming merely another filler field in municipal and regional plans and programs, rather than inspiring effective and necessary policy changes.

Keywords: 2030 Agenda; Municipalities; Multi-level Governance; Sustainable Regional Development.

RESUMO

A localização dos Objetivos do Desenvolvimento Sustentável (ODS) nos municípios tem se configurado como uma oportunidade para a evolução dos processos de governança multinível. Neste artigo, o objetivo foi analisar uma experiência prática de descentralização da política ambiental com a localização do ODS 6 "de baixo para cima", a partir das ações de gestão das águas, do Programa Município Verde Azul (PMVA). Foram selecionados quatro municípios da Região Metropolitana de São Paulo que se encontram em área de mananciais de extrema importância para o abastecimento de água da população local. Como método, foi adotada a pesquisa-ação participativa com consulta a relatórios e planos municipais para análise situacional, além de realização de workshops e entrevistas. Os principais resultados mostraram que o processo de localização do ODS, analisado com o apoio da ferramenta Sustainable Development Goals Synergies, permitiu que os gestores públicos visualizassem claramente também outros ODS que podem ser impactados pelas ações do PMVA, bem como a intensidade dessas interações e importância da governança multinível. Por outro lado, apesar da região contar com arranjo institucional significativo, verificou-se desarticulação entre as principais instâncias, persistindo a dificuldade de estruturar um modelo mais efetivo e eficiente de governança multinível. Nesse contexto, os ODS podem tornar-se apenas mais um campo de preenchimento nos planos e programas municipais e regionais, ao invés de inspirar mudanças políticas efetivas e necessárias.

Palavras-chave: Agenda 2030; Municípios; Governança multinível; Desenvolvimento regional sustentável.

INTRODUCTION

The Sustainable Development Goals (the SDGs), included in the 2030 Agenda, marked an advance in the guidelines for the economic, social and environmental development of the Agenda's signatory nations (United Nations, 2015). The initiative is global, but the internalization of the 2030 Agenda within local and regional contexts is gaining relevance and a growing number of studies have been demonstrating the importance of this process as an opportunity for municipalities to deal with the main environmental issues; to possess strategic tools for planning and evolving multi-level governance; to be able to build networks of cities – which allow collective learning from settlement to settlement, although this potential has not yet been achieved; and to retain guidelines for the monitoring of public policies (Fenton; Gustafsson, 2017; Torres *et.al.*, 2018; Valencia *et.al.*, 2019; United Nations Development Program, 2021; Tremblay *et.al.*, 2021; Gustafsson; Krantz, 2021; Fox; Macleod, 2021).

In Brazil, important measures have been taken at the federal level for the implementation of the SDGs, such as the creation of the National Commission for the Sustainable Development Goals (NCSDG), and the process of adapting the goals established by the United Nations (UN) to the priorities of the country, considering the national strategies, plans and programs.

However, Ribeiro (2020) highlights that the Decrees which reformed the socio-environmental management structure, at the federal level, in the period from 2019 to 2021, such as the dismantling of national governance structures – the NCSDG and the National Water Resources Council (NWRC), with the consequent draining of society's presence at this level – have had negative impacts on the advancement of the SDGs, as well as distancing the country from the human right to water.

In recent years, at the municipal level, planning instruments such as the Multi-Year Plan,[1] Sector Plans and Target Plan;[2] and public policies, programs and actions have been increasingly integrating the SDGs into their guidelines for elaboration and implementation, such as the Green-Blue Municipality Program (GBMP), created in 2007 by the government of São Paulo State, with the objective of decentralizing environmental policies and providing local efficiency in the management of environmental matters.

The central proposal of this program is to encourage the 645 municipalities of São Paulo State in the development and implementation of an environmental agenda that contributes to sustainable development.

Given the above, the question arises, what improvements are required in the structure and dynamics of a program of environmental management decentralization, which provides municipalities with the opportunity to localize and contribute toward achieving the SDGs? Which challenges may be identified in the process of localizing the SDGs "from the bottom up" or with a bottom-up approach?

Thus, this article aims to analyze, based on multi-level governance, how the water management actions of the Green-Blue Municipality Program (GBMP), in municipalities inside the metropolitan

1 Provided for in article 165 of the Federal Constitution, and regulated by Decree 2,829, of October 29, 1998, the Multi-Year Plan, or PPA, establishes the measures, expenses and objectives to be followed by the Federal, State or Municipal Government over a period four years. This plan envisages government action during the aforementioned period, in ongoing programs already established or to be established in the medium term (Brasil, 1988).

2 This is a document that consolidates the electoral campaign proposals and presents the main commitments of the municipal administration with the provision and improvement of equipment and services offered to the population.

region of São Paulo, in the Greater ABC, can contribute to the achieving the targets of SDG 6, based on a practical experience of “bottom-up” localization.

Therefore, with the participation of those public officials (managers) who put into operation the GBMP and other programs and actions for environmental management and sustainability at the municipal level, the proposed analysis contributes to an understanding about how the SDGs may be aligned with strategies and processes that are already in existence in the municipalities, as well as about bottlenecks in localization practices.

The following section addresses this movement towards localizing the SDGs with a focus on the principal elements of the process, mainly on the role of multi-level governance. Section 3 describes the methodological procedures used to identify the process of localizing the GBMP’s water management directive, based on a participatory research approach with municipal public managers. In section 4 the results are presented and discussed. Section 5 presents the conclusion with some suggestions for future research.

THE LOCALIZATION OF THE SDGs AND MULTI-LEVEL GOVERNANCE

The 2030 Agenda is a global program and its implementation is the responsibility of national governments; however, the importance is recognized of the participation of other levels of government together with non-state actors and civil society for its implementation, the local level (municipal) being the most important of these, since it represents the level of government closest to the population, is most likely to produce measurable results, and is considered an essential actor for sustainability (Kanuri *et al.*, 2016; United Nations Development Program, 2017a; Zinkernagel; Evans; Neij, 2018; Torres *et al.*, 2018; Regions4 Sustainable Development, 2018; De Carvalho; Nahas; Heller, 2020; Tremblay *et.al.*, 2021).

Multi-level governance is, therefore, fundamental when it designs policies for local/regional circumstances and particularities, since it mainly emphasizes the cooperative aspects of intergovernmental relations, based on principles of democracy, participation, cooperation, integration and solidarity, in addition to those of planning, effectiveness and efficiency (Carneiro; Frey, 2018; Abrucio; Sydow, 2018).

The distribution of authority and responsibilities is a precondition for the establishment of multi-level governance (Fiorino, 2014; Organization for Economic Co-operation and Development, 2019; Tremblay *et.al.*, 2021). In decentralized policies, vertical integration materializes through the division of competencies and responsibilities between the national government and subnational governments, through legislative or contractual means. Horizontal integration also represents movement both internally and externally with regard to the state structure, with the social movements and organizations that are increasingly involved in the public policy cycle (Monteiro; Horta, 2018).

In this context, the SDGs may serve as a mechanism to convene dialogues and address power imbalances among different interests and priorities, particularly in a context of tensions such as the management of water resources, as well as facilitating network participation and collaboration, promoting production of collective knowledge with the potential to progressively transform institutions and support the evolution of multi-level governance processes (Jacobi; Cibim; Souza, 2016; Bilsky; Moreno; Tostosa, 2021; Fox; Macleod, 2021).

Frey *et al*. (2020), when analyzing the challenges of Sustainable Development Goals (the SDGs) in the context of the Macro-metropolis of São Paulo, highlight the need for multi-level governance, shared between local governments and the state level, with support from the Union, and fundamentally, from civil society, to progress towards the implementation of the SDGs and sustainability at a regional level. The authors reinforce that there is not, and that there should not exist, any single, unique model to advance regional sustainable development, and that progress depends mainly on experimenting with new arrangements and practices, which serve as the basis for a continuous process of social learnings.

In this direction, the particular focus on the regional/territorial perspective presupposes the need for strategic actions such as strengthening governance bodies – Intermunicipal Consortia and Municipal Development Councils – and intensifying the dissemination of the SDGs, to improve performance in fundamental dimensions: economic, social, institutional, and environmental and to contribute to facing the challenges associated with the implementation of the 2030 Agenda and the promotion of sustainable regional development (Tartaruga *et al*., 2024).

The integrated approach to the SDGs also induces a paradigm shift in the evolution of development plans and strategies at all levels. It deals with contributing to the creation of a global and

shared vision and working towards facing the challenge of the intersectoral management of efforts and policies. Thus, the SDGs and their targets can constitute a normative framework. Given the inability of cities, on the whole, to implement all the goals, the use of approaches and tools to determine priorities is essential (Allen; Metternicht; Wiedmann, 2018; Krantz; Gustafsson, 2021; Tremblay *et al*., 2021).

Conversely, Reinar and Lundberg (2023) indicate that the selective approach can prioritize goals that broadly support existing policies, while more challenging ones are lost in the localization process, requiring a deepening process in order to deal with the more challenging goals, if the SDGs should be used to promote real and necessary changes in public policies.

Incorporating them into local thinking and actions involves an adaptation that reaches beyond the mere raising of awareness (Fox; Macleod, 2021). For the process to be efficient, concrete mechanisms, tools, innovations, platforms, and processes are necessary, as well as the involvement of institutions beyond local governments, with the inclusion of other actors, through a systemic and territorial approach. (United Nations Development Program, 2014, 2016; Messias et al., 2018; Tremblay *et al*., 2021).

Localizing the SDGs is a complex task that requires coherence – this being dependent on aspects such as the structure, leadership and coordination of ongoing processes – but simultaneously, flexibility (balance between projects and processes), learning, and lastly but no less importantly, time and opportunity (Krantz; Gustafsson, 2021).

In addition to the challenges of the systemic approach and multi-level coordination, Valencia et al. (2019), Fox and Macleod (2021) and Richiedei and Pezzagno (2022) have highlighted that monitoring change at the municipal level is fraught with conceptual and practical challenges, since the strategies needed to achieve sustainable development are obviously specific to each municipal location, but it is necessary to maintain common metrics for performance in relation to the 2030 Agenda. Municipalities may leverage existing monitoring mechanisms when available, and new approaches to local monitoring can be scaled up for global comparison and evaluation.

In this context, some tools are being built and utilized by institutions and researchers for the SDG localization process, with the incorporation of guidelines and elements for efficient planning, based on synergies between the SDG targets, as an indivisible whole, from a systemic approach, such

as the Cross Impact Matrix – SDG Synergies, which can be used to prioritize actions and identify the most effective cross-sector partnerships and collaborations, based on an understanding of real-world interactions between objectives in a given context.

Based on these findings, there is a requirement for advances in research on the bottom-up localization process, with the use of existing tools and practices, considering their legitimacy, the effectiveness of political capacity and the environmental performance in subnational/regional/local contexts. These should be based on an understanding as to how the distribution of authority occurs within, through and between spheres and levels of governance in proposing rules that may guide the practices of a set of actors and organizations with different levels and forms of authority involved in the environmental arena, in particular for the management of water resources.

Understanding these aspects of governance in the localization process is fundamental for defining decision-making in management processes and the construction of public policies, programs and actions that aim to implement SDG 6, and consequently, to contribute to sustainable regional development.

MATERIALS AND METHODS

This section details the geographic scope of the research – highlighting the municipalities selected – as well as the analysis categories and methods used to locate the SDGs, in the GBMP's Water Management Directive.

SELECTION OF MUNICIPALITIES AND ACTIONS OF THE GREEN-BLUE MUNICIPALITY PROGRAM (GBMP)

Four municipalities were selected: Santo André, São Bernardo do Campo, Mauá and Ribeirão Pires. These municipalities are located in the territory denominated Greater ABC, in the São Paulo Metropolitan Region (SPMR).

The region is characterized by the presence of an industrial complex focused mainly on the automobile, metallurgical and petrochemical industries with the existence of road and railway axes of significant importance for the entire SPMR and for the flow of production from the interior of the state

of São Paulo (SEBRAE – SP, 2020). The petrochemical hub[3] holds an important economic and social role for the region – made up of 14 companies that operate from oil refineries to gas bottlers, which feed hundreds of other chemical and plastic industries.

Another relevant characteristic of this region, according to the Alto Tietê Committee, is the existence of areas focused on the water supply system, such as the Billings Reservoir, responsible for supplying 1.5 million ABC residents. Furthermore, most cities are located in areas with springs, which is why the region is considered to be a water producer. After the severe water crisis in the Cantareira System, in 2014, Billings also began serving part of the Eastern Zone of the São Paulo megalopolis.[4]

Inside the municipality of Santo André is the main source that forms the Rio Grande – an important river for the Metropolitan Region of São Paulo, which, in addition to running through the limits of the municipality, feeds the Billings Reservoir and contributes to the origin of the Pinheiros River, inside the municipality proper of São Paulo.[5]

On the other hand, according to information made available in the Sustainable Cities Development Index – an initiative by the Sustainable Cities Institute, in these municipalities there are still challenges to be overcome, as none have attained SDG 6.[6]

This finding reinforces the importance of the Green-Blue Municipality Program (GBMP) for this region, as it prioritizes actions related to the preservation of springs and general water supply, in the Water Management Directive, as presented in Table 1.

3 COFIP ABC. Economic Profile of the Petrochemical Complex. Available at: https://www.cofipabc.com.br/conteudos.asp?ID=26. Accessed on: 11 Oct. 2022.

4 ALTO TIETÊ WATER BASIN COMMITTEE. General Characterization. Available at: https://comiteat.sp.gov.br/a-bacia/caracterizacao-geral/. Accessed on: 11 Oct. 2022.

5 ALTO TIETÊ WATER BASIN COMMITTEE. General Characterization. Available at: https://comiteat.sp.gov.br/a-bacia/caracterizacao-geral/. Accessed on: 11 Oct. 2022.

6 SUSTAINABLE CITIES INSTITUTE. Available at: https://idsc.cidadessustentaveis.org.br/. Accessed on: 10 Feb. 2023.

Table 1 | GBMP Water Management Actions

Action Code	Action Description
GA1	Spring Municipal Model: the municipality must take action to protect a spring.
GA2	Rational Use of Water: the municipality must carry out action that promotes rational use of water.
GA3	Water Treatment Plant Performance: the municipality must present a management performance report providing information about at least one Water Treatment Plant.
GA4	Visit to the Water Treatment Plant: the municipality must present a report with photographic records of such monitoring.
GA 5	Municipal Public Supply System, in the National Water Quality and Surveillance System (SISAGUA): the municipality must enter the data monthly.
GA6	Environmental recovery of springs: the municipality must promote action to recover springs.
GA7	Environmental education: the municipality must present an environmental education action focusing on "protecting springs."
GA8	Water Quality Index (IQA): the municipality must present a report with the Balanced IQA.
Pro-activity: Actions related to water management, which the municipality has carried out and do not fit into any previously mentioned.	

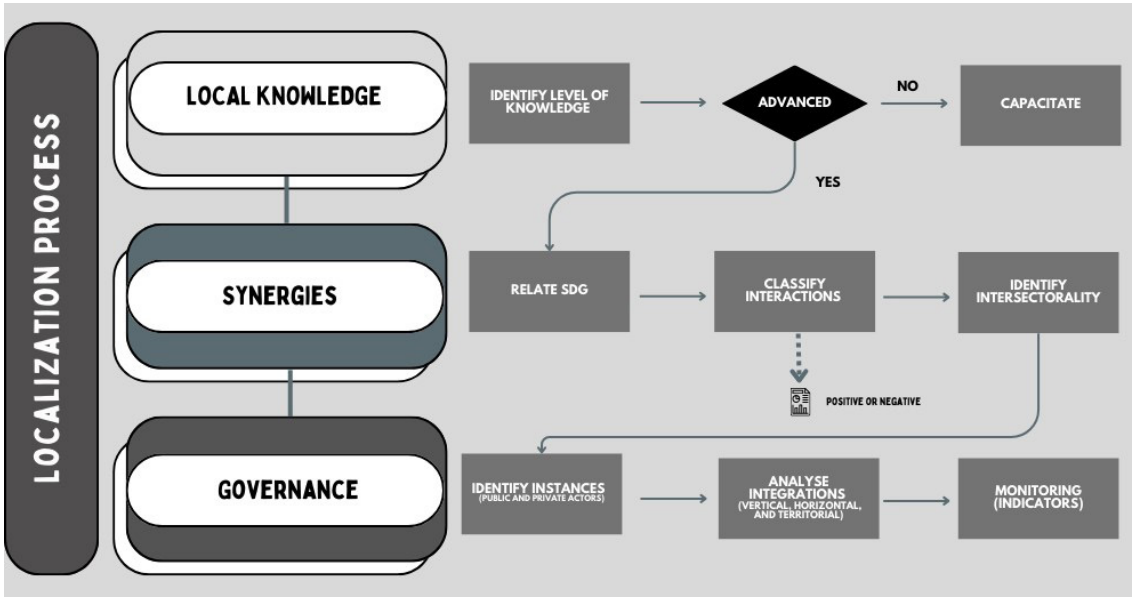
Source: prepared based on Resolution No. 81 of the Green-Blue Municipality Program (2021).[7]

ANALYSIS CATEGORIES AND METHODS

The flow of methodological procedures for defining the three categories of analysis is shown in Figure 1. It is based on a systemic approach inspired by the tools used by Tremblay et al. (2021), in SDG Synergies, from the Stockholm Environment Institute (SEI) and in the "Roadmap for Localizing the Sustainable Development Goals: Implementation and Monitoring at the Subnational Level," prepared by the Global Taskforce of Local and Regional Governments and adapted for Brazil by UN (2016).

7 SÃO PAULO (State). Secretariat of Infrastructure and Environment. *SIMA* Resolution 081/21. Available at: https://www.infraestruturameioambiente.sp.gov.br/legislacao/2022/07/resolucao-sima-081-21/. Accessed on: 13 Mar. 2022.

Figure 1 | Analysis Categories of the SDG Localization Process



Source: adapted from Tremblay *et al.* (2021) and United Nations Development Program (2016).

It is noteworthy that there is no formula or ready-made recipe that rigorously defines the path to be taken in a process of localizing the SDGs; however, we seek to encompass the categories and stages presented in the official documents of the UN, UNDP, and literature on the subject, which will be detailed in the following topics.

The awareness, mobilization and training stage has been important for the SDG localization process (Tremblay *et al*., 2021; United Nations Development Program, 2016). In this study, the knowledge of public managers responsible for the GBMP was verified, through the application of a form – on the level of knowledge regarding the SDGs, the localization process and whether the manager has already participated in any SDG implementation activities, within the municipality.

Afterwards, a workshop was held to pass on essential knowledge about the concepts of sustainability and sustainable development; the 2030 Agenda and its importance for the local level and the SDG localization process; and the systemic approach and multi-level governance.

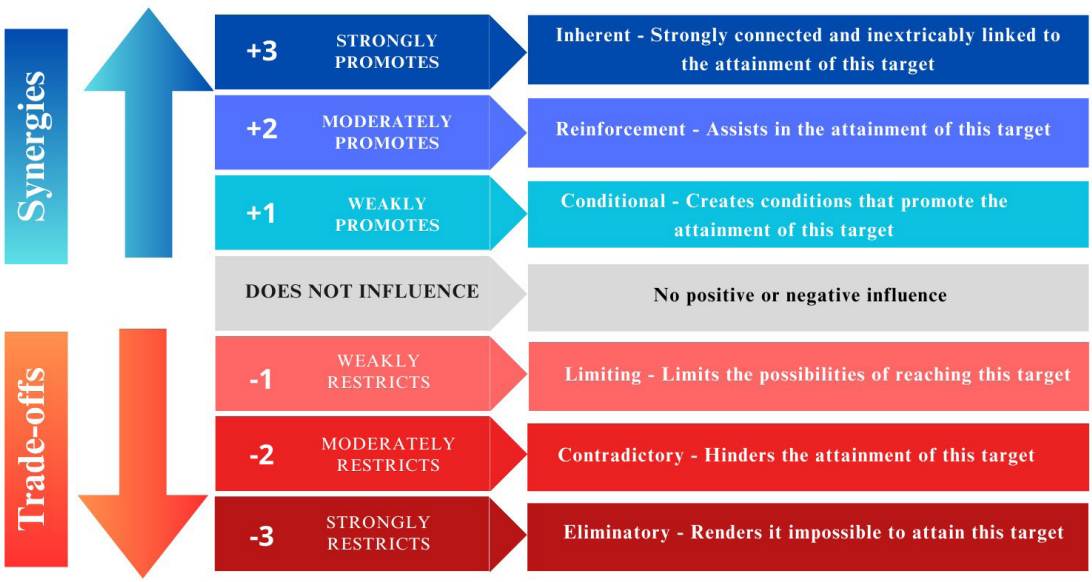
For the second category of Synergies and Trade-offs, the SDG Synergies tool was adapted in order to verify how the actions of the Water Management directive interact with the SDGs and with what intensity, positively or negatively. Furthermore, it was possible to identify the municipal departments that should

be involved in the planning and execution of GBMP actions, as an intersectoral strategy.

To this end, the actions developed by the municipalities in the GBMP were related to SDG 6 based on an intuitive classification carried out by managers, considering their technical knowledge, and subsequently, with the other the SDGs, based on the report for the adaptation of the established global SDG targets to the Brazilian context developed by the Institute for Applied Economic Research (IPEA), which correlates the targets of SDG 6 with those of the other SDGs (IPEA, 2018).[8]

The guiding question for classifying each interaction was: "If there are advances and/or progress in the GBMP action/task, how does this influence progress towards the SDG targets in the municipality?" The responses were classified according to the score shown in Figure 2.

Figure 2 | Classification of Interactions between the GBMP Actions and SDGs



Source: adapted from Nilsson, Griggs and Visbeck (2016); Weitz et al. (2017); Weitz, Carlsen and Trimmer (2019); Allen, Metternicht and Wiedmann (2018); and *SEI* (2021).

To analyze the role of multi-level governance, some elements and guidelines were utilized from the "Reference for Evaluating Multi-Level Governance in Decentralized Public Policies" structured by the Federal Court of Auditors and published in 2021 with the aim of improving external control of decentralized public policies, with an emphasis on the challenges brought to multi-level governance,

8 It is important to highlight that managers were free to insert other targets that might not have been considered by the *IPEA* teams.

considering responsibilities and attributions, vertical coordination, horizontal coordination, engagement, transparency, and monitoring mechanisms.

The collection of information was carried out by consulting legislation and official documents, using the content generated in discussions with public managers in the previous stages, as well as holding two workshops on the role of governance in the implementation of the SDGs and by the public managers completing a questionnaire on *Google Forms* with open questions.

It is important to highlight that the public managers participating in the research were formally appointed as interlocutors or as being responsible for the GBMP, in addition to others appointed by the Municipal Governments who were aware of or had already been involved with the GBMP in the municipality. Furthermore, all stages of the research followed the requirements of Resolution CNS 466/12 and its complements, being approved by the Ethics Committee for Research involving Human Beings, of the School of Arts, Sciences and Humanities (EACH/USP).

RESULTS AND DISCUSSION

KNOWLEDGE OF PUBLIC MANAGERS

In this topic, the level of knowledge of the eight public managers[9] involved with the GBMP on the 2030 Agenda and the SDGs is presented, as shown in Table 2.

Table 2 | Knowledge Levels of Public Managers about the SDGs

Managers	Knowledge about Agenda 2030/SDGs	Knowledge about the localization of SDGs	Participation in SDG initiatives
Manager 1	Basic	Basic	NO
Manager 2	Intermediary	Basic	YES
Manager 3	Intermediary	Basic	YES
Manager 4	Advanced	Intermediary	YES
Manager 5	Basic	Basic	NO
Manager 6	None	None	NO
Manager 7	Basic	None	NO
Manager 8	Advanced	Intermediary	YES

Source: prepared by the author.

9 The group was formed of eight managers from the following municipalities: three from Mauá, one from Santo André, two from Ribeirão Pires, and two from São Bernardo do Campo.

According to the responses, basic and intermediate knowledge predominates both for the 2030 Agenda and for the SDG localization process. Only two managers classified their knowledge in the "advanced" category for the 2030 Agenda, while for the localization process, there was no classification in this category. Despite having participated in SDG initiatives, some managers classified their knowledge about SDG location as "basic."

It is recognized that the empowerment of local governments promotes regional development (Oliveira, D.; Oliveira, A., 2023), justifying the emphasis on the importance of subnational actors as drivers of SDG progress (Weitz *et al.*, 2023). Therefore, there is a need to promote technical training on the concepts, importance and methodologies for implementing the SDGs at all levels of municipal employee, from mayors, to secretaries, coordinators, directors and other public managers who participate in the planning and execution processes of public policies, programs and actions of their municipalities.

The localization process is driven with political support and involvement of the municipal mayor with a team of leaders mobilized in all administrative units of the municipality and trained in sustainable development themes. This mobilization of the highest levels facilitates awareness of efforts and actions, and disseminates awareness among other employees, through a process of knowledge dissemination, facilitating the horizontal and vertical integration of the process (Tremblay *et al.*, 2021).

Another relevant aspect identified is the lack of knowledge about the systemic and intersectoral approach to topics related to sustainability. Participants believe that whenever demands related to sustainability arise, as in the case of the SDGs, there is automatically a requirement for the municipality's Department of the Environment to be responsible, demonstrating that they understand sustainability merely as an environmental strategy.

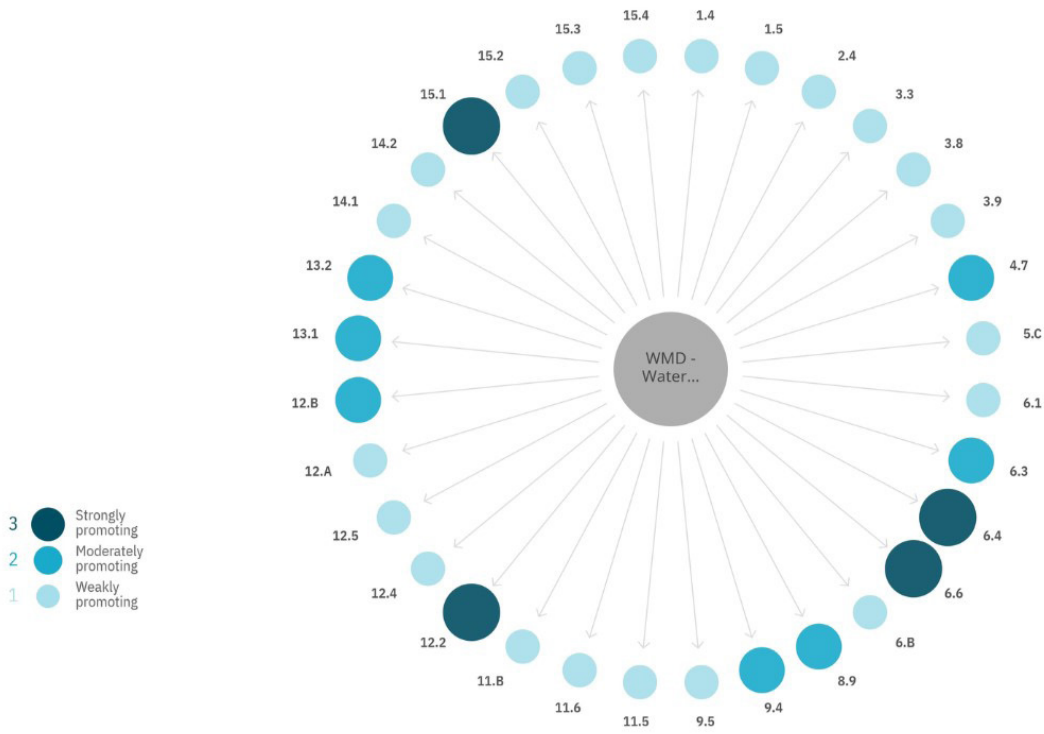
Localizing the SDGs requires an integrated commitment of trained financial and human resources (Tremblay *et al.*, 2021). In the municipalities studied, managers demonstrated extensive technical knowledge regarding local and regional environmental characteristics and proposed solutions to local problems for each GBMP action; a backlog exists, however, in the development of every activity, with a lack of programs and documents with the steps that condition the training and development of local teams as a whole associated with the 2030 Agenda and other policies, programs, and actions for sustainable development.

SYNERGIES AND TRADE-OFFS

At this stage, for each of the municipalities, we connected the GBMP actions that had reports sent with the SDG targets that might be positively or negatively impacted by the Water Management Directive, in addition to mapping the potential intersectorality arising from the interactions, based on classifications made by the managers in the SDG Synergies tool, which presented an impact perspective on 32 potential positive interactions, with different intensities, as shown in Figure 3.

It should be noted that this construction is necessarily unique, depending on the actors involved, local and/or regional context in terms of natural resources, economic conditions, available technologies, current policies and practices, and predominant ideologies (Weitz; Carlsen; Trimmer, 2019).

Figure 3 | Possible Interactions between the Water Management Directive and the SDG Targets



Source: prepared by the author, using the SDG Synergies tool.

The SDG Synergies tool was most useful, as it allowed the public managers clearly to visualize the SDG targets that might be impacted by any GBMP actions, as well as the intensity of these interactions. By considering interactions, it is possible to create a more robust basis for defining the plans, strategies, and concentration of efforts in intersectoral collaboration between actors, and consequently, for achieving the 2030 Agenda (Weitz *et al*., 2017).

Throughout the workshops and discussions held to carry out every stage of the localization process, it was identified that the interactions of the GBMP's actions with SDG targets, without the use of that tool but based only on thematic or intuitive proximities, would have been restricted merely to the targets of SDG 6; meaning that the use of SDG Synergies significantly expanded our shared vision regarding the possibilities of impacts and intersectorality.

According to the managers, with regard to SDG 6, four targets may be affected with differing intensities. Furthermore, the managers identified targets 15.1 and 12.2, with actions related to the protection and recovery of springs (GA1 and GA6), and promotion of the rational use of water (GA2), respectively, as being the main ones responsible for this classification. That is to say, the actions of the water management directive are inherent in achieving the targets related to the environmental dimension of the SDGs (SDG 6, SDG 12, and SDG 15), but they can assist or create the conditions for achieving other dimensions, such as the social (SDG 1, SDG 2, SDG 3, SDG 4, and SDG 5), and the economic (SDG 8, SDG 9, and SDG 11).

This finding reinforces the need for intersectorality, which can manifest to different degrees within the policies: in the process of formulating public policies, considering the integration of themes in planning; in coordinated action within the implementation process; and/or in the process of the joint monitoring of different actions related to the same theme, territory, or population (Lotta; Favareto, 2016).

Given this scenario, it is possible to verify the need for coordinated action in the process of implementing and monitoring the GBMP's actions with the involvement of municipal departments in the social, health, education and economic development areas, in addition to planning and finance. This is applicable, for example, in the case of achieving target 9.4, since policies and actions for the rational use of water, within the scope of the GBMP, might be designed between the departments of environment and economic development, considering the economic characteristics of the region with a strong industrial

presence demanding water for its production processes.

This overview of interactions shows that the actions of the water management directive are relevant to achieving several SDG targets, from the perspective of the public managers, even if some adjustments are necessary. It is worth mentioning that we applied a practical systemic approach to the SDGs based on a simple and intuitive analysis of interactions, which had not been envisaged by the managers of the municipalities studied, for the enactment of the GBMP's actions and other local programs and actions.

MULTI-LEVEL GOVERNANCE AND MONITORING

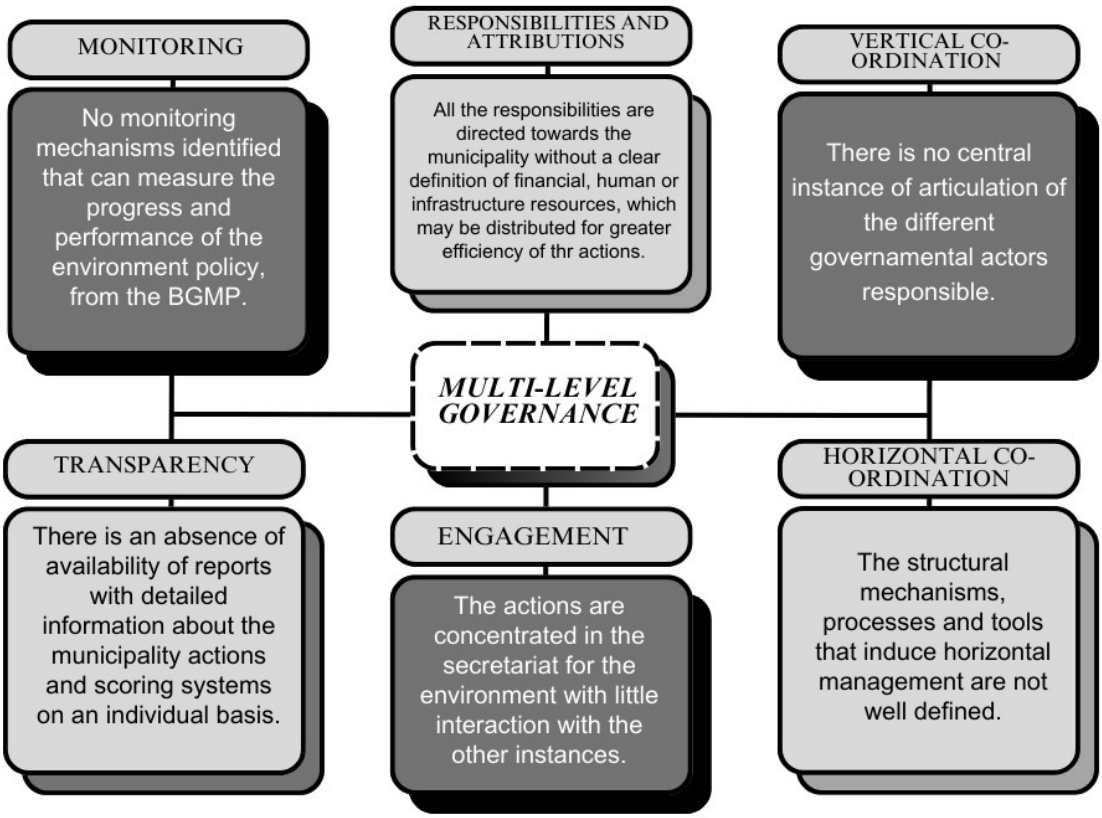
The Greater ABC region has two multi-level governance modalities that are extremely important for environmental and/or water resources management, the River Basin Committee – a consultative and deliberative body, with the participation of governmental and non-governmental actors for water management – created by state legislation (Law No. 7,663/91, which established the State Water Resources Policy in São Paulo state) and the Intermunicipal Consortium of the Greater ABC created with the objective of promoting the planning and articulation of actions of a regional nature.[10]

The consortium has thematic working groups (WGs), such as the Environmental WG, which seeks sustainable development in the region, through regional actions to protect specially protected environmental areas, transversal actions with the Consortium Program Committees and discussion with the State Government on the management of the Billings Reservoir and integrated environmental inspection.

In this scenario, the potential governance for action in the process of localizing the GBMP's Water Management Directive may be consolidated in six instances: municipal secretariats; state secretariats; the Alto Tiete Hydrographic Basin Committee; the Intermunicipal Consortium of the Greater ABC; civil society; and private companies. After identifying the instances, aspects of the institutional integration of these instances with the GBMP's Water Management Directive were analyzed, based on coordination, cooperation and coherence of purposes for the three integrations: vertical, horizontal and territorial, as shown in Figure 4.

10 Initially constituted as a civil association under private law to act as a coordinating body for sectoral public policies, including those related to the disposal of solid waste. In 2010, the consortium became multisectoral under public law and autonomous in nature, being the first in the country with this legal constitution, which provided executive power for the municipality to sign agreements between administrations and open bidding processes for works in favor of the seven municipalities; to receive resources from the federal and state spheres, as well as from international organizations; and to boost regional projects originating from the Consortium's Working Groups.

Figure 4 | Vertical, Horizontal and Territorial Integration of Multi-Level Governance in the Water Management Directive



Source: prepared by the author.

Open and empowered multi-level governance is essential to localize the SDGs horizontally, vertically and territorially within an integrated approach (Trembaly *et al*., 2021). The municipalities possess a significant institutional arrangement, with the presence of the Intermunicipal Consortium of the Greater ABC and the Hydrographic Basin Committee; however, a lack of synergy is notable between these bodies and the Water Management Directive of the GBMP, with the difficulty of structuring a more effective and efficient model of multi-level governance persisting.

There is, therefore, a pressing need for changes in institutional behavior and interaction with local communities throughout the SDG implementation process: in multi-level government coordination, in the joint implementation of different actions and in monitoring progress. These processes are at the heart of the concept of transforming institutional capabilities, which, in turn, is fundamental to accelerating the achievement of the SDGs (Bilsky; Moreno; Tortosa, 2021).

Another important ascertainment was the absence of monitoring actions throughout the process of implementing the GBMP's actions, with information that supports decision-making, identifies lessons learned and corrected routes, and provides indicators that display, in relation to each action, the current municipal realities and in which direction they wish to go. There are no historical records of all the actions carried out by municipalities since the emergence of the GBMP. Currently, with great difficulty, it is possible to request reports from 2016 onwards, which are delivered via the System.

For the SDGs to be incorporated into the Water Management Directive and for the actions to be planned, implemented and monitored with a systemic and multidisciplinary approach, within the municipalities studied, it is therefore necessary that there be a strengthening process of the local institutional capacities, with exchanges of experiences, a collective learning process, articulation, and engagement between the various public and private actors.

FINAL CONSIDERATIONS

The use of the systemic approach in the process of the "bottom-up" localization of SDGs, with the knowledge and experiences of municipal public managers, who are involved in carrying out the actions and are closer to the local environmental and socioeconomic problems and reality, can contribute to expanding the vision of the 2030 Agenda and make it recognizable, urgent and meaningful for municipalities and regions, since the incorporation of the SDGs in policies, programs and actions reaches beyond the simple inclusion of the colored logos of the 17 objectives. On the other hand, the location of the SDGs in environmental policy decentralization policies faces numerous obstacles such as the lack of trained human resources for the 2030 Agenda and sustainability issues; lack of awareness and involvement of mayors as leaders of the localization process in municipalities; limited political and public debate; and mainly, a lack of vertical coordination with clear guidelines on the distribution of responsibilities, it not being sufficient to simply create programs that transfer the responsibility for executing tasks to municipalities, without the required support, whether structural or financial, in their implementation.

Such challenges would be minimized, and the integrated approach facilitated, initially, with the strengthening of intermunicipal bodies, such as the Intermunicipal Consortium of the Greater ABC, in the role of regional leadership and political articulator in promoting a production network and exchange of knowledge for sustainability between the municipalities. Furthermore, by aligning the SDG targets with regional planning, through the Consortium, which considers local specificities and needs, mainly related to equitable access to water and sanitation, policymakers can create the necessary conditions for development. In addition, an important point, which remained unaddressed and a proposal for future research, is the development of studies using systemic approach tools with local communities, integrating their knowhow and knowledge, as well as with the sector private sector with its ESG strategies, to build more integrated and efficient strategies, plans and actions to implement and achieve the 2030 Agenda.

Finally, the lack of involvement of all strategic parties, whether at the vertical or horizontal level, with a genuine commitment to the GBMP actions and vision of sustainable development, compromises the proc São Paulo Macro Metropolis ess of locating and achieving the SDGs.

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