

## Introduction

Integrated Water Resources Management (IWRM) is a process that promotes the development and coordinated management of water, land, and related resources to maximize the resulting economic and social benefit in an equitable manner without compromising the sustainability of vital ecosystems<sup>1,2</sup>. IWRM is an intersectoral policy approach, designed to replace the traditional and fragmented sectoral approach to water resources and management that has led to poor services and unsustainable use of resources. IWRM is based on the understanding that water resources are an integral component of the ecosystem, a natural resource, and a social and economic good<sup>1</sup>.

## Research Questions & Objectives

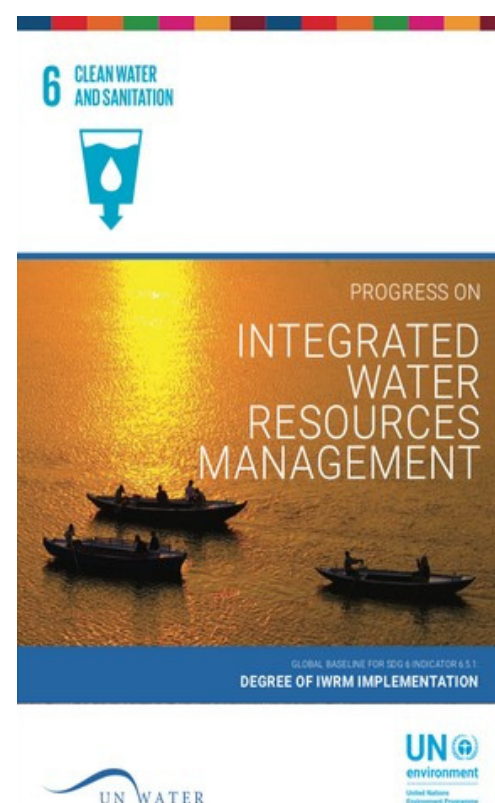
This paper focused on measuring the fulfillment of target 6.5 under Goal 6 of the United Nations Sustainable Development Goals, specifically for the Santiago-Guadalajara River watershed, by:

1. Analysing the degree and the success of Integrated Water Resources Management (IWRM) implementation.
2. Identified the challenges and areas of improvement for implementation, which could be used by decision-makers to make better decisions regarding the management of water on a watershed level.

## Degree of IWRM implementation on a watershed level

**Target 6.5:** "By 2030, implement integrated water resources management at all levels.

Many authors have emphasised the importance of water management on a watershed level. They argue that over-centralization of water management has failed and must be replaced with local systems that are appropriate to local conditions at the watershed level

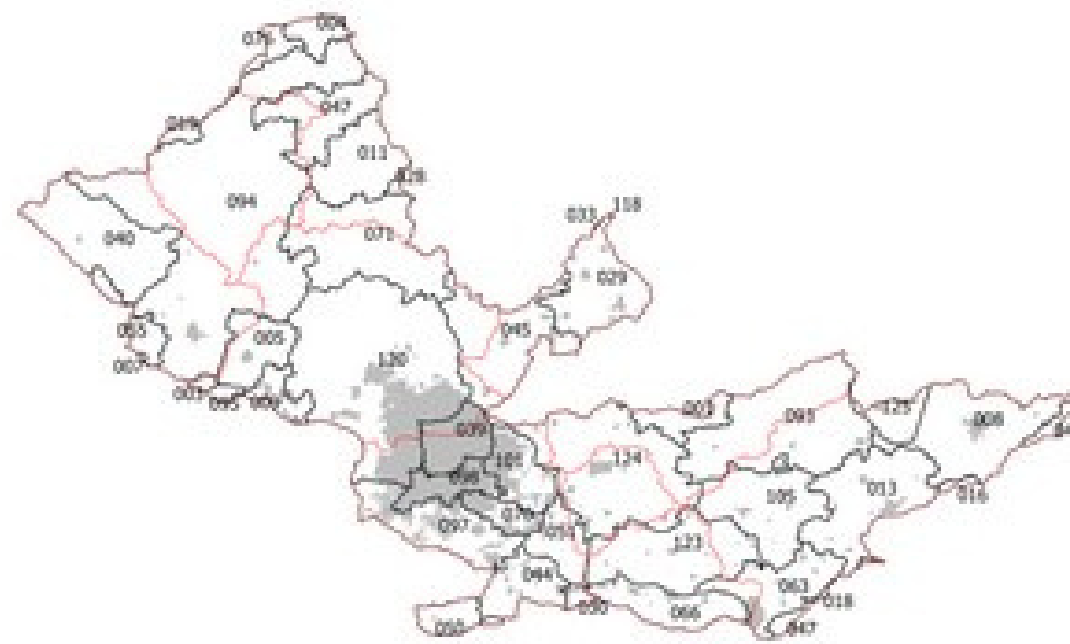


## Methodology

Based on the questionnaire proposed by UNEP (2018a), a questionnaire containing 30 questions was created and adapted to measure indicator 6.5.1 that is the degree of implementation of the strategies aimed at meeting SDG 6 target 6.5 at the Santiago-Guadalajara watershed level. The questionnaire was distributed to representatives from three levels of government (federal, state, and municipal). The status or degree of IWRM implementation at each level of governance was evaluated.



Figure 2. Basic map of the Santiago-Guadalajara watershed.



The questionnaire included four sections:

1. **Enabling environment:** Creation of the conditions that contribute to support the implementation of IWRM, which includes the most representative legal, policy, and strategic planning tools for IWRM.
  2. **Institutions and participation:** The variety and roles of political, social, economic, and administrative institutions and other interest groups that support or relate to the implementation of IWRM.
  3. **Management Instruments:** The tools and activities that allow decision-makers and users to make rational and informed choices between alternative actions.
- Finance:** Budgets and financing available from various sources, used for the development and comprehensive management of water resources.

Category	Score Range	Color
Very low	0	
Low	> 0 ≤ 20	
Medium-low	> 20 ≤ 40	
Medium-high	> 40 ≤ 60	
High	> 60 ≤ 80	
Very High	> 80 ≤ 100	

Table 2. Categories to evaluate the degree of implementation of each section of IWRM

## Results & Discussion

Sections of the IWRM	Average score			Average score for the three levels of government per section	Category per section
	SIAPA (Municipal)	SGIA-CEA (State)	CONAGUA (Federal)		
1. Enabling Environment	80	44	28	51	Medium-High
2. Institutions and Participation	62.9	56	18	46	Medium-High
3. Management Instruments	25	37	27.5	30	Medium-Low
4. Finance	0	35	12.5	16	Low
<b>Overall score for Indicator 6.1.5</b>	<b>42.5</b>	<b>43</b>	<b>21.5</b>	<b>36</b>	
<b>Category per level of government</b>	Medium-High	Medium-High	Medium-Low	<b>Medium-Low</b>	

1. Enabling Environment						
Degree of implementation (0-100)						
	Very low (0)	Low (20)	Medium-low (40)	Medium-high (60)	High (80)	Very high (100)
1.1. What is the status of the legal, regulatory, normative and planning instruments framework that make up the state policy on water resources?	1.1.1. Development not started or delayed.	1.1.2. Exists, but not necessarily based on IWRM.	1.1.3. Based on IWRM, approved by most authorities and starting to be used to guide work.	1.1.4. Being used to guide work.	1.1.5. Policy objectives consistently achieved	1.1.6. Objectives consistently achieved, and periodically reviewed and revised.
Comments:	Initially there was no consensus, it was between 2 and 4 since: It involves various ministries since they intervene in the water scheme in the state: <ul style="list-style-type: none"> <li>-Secretary of Integral Water Management</li> <li>-Secretary of Environment and Territorial Development</li> <li>-Secretary of Agriculture and Territorial Development</li> </ul> Federal law is implicit in state law. The modification of the state water law should be reviewed to modify it according to the creation of the SGIA. The legal framework cannot be a working guide, as it is mandatory.					

## References

1. GWP (2018). What is IWRM? Retrieved from <https://www.gwp.org/en/GWP-CEE/about/why/what-is-iwrn/>
2. UNEP (2018a). Progress on integrated water resources management. Global baseline for SDG 6 Indicator 6.5.1: degree of IWRM implementation. United Nations Environmental Programme. ISBN: 978-92-807-3710-3. 108. <https://www.unwater.org/publications/progress-on-integrated-water-resources-management-651/>
3. Map prepared by Ing. Luis Casillas. Source: INEGI. Conjunto de Datos Geográficos de la Carta Hidrológica de Aguas Superficiales, 1:250,000. CEA Jalisco. Sistema de Información del Agua