Key principles of Integrated Water Resources Management

Course: Integrated Water Resources Management

Module 5: IWRM Principles and Policies

Part 1: The concept of IWRM

Manodj Hindori MSc.

August 1, 2023

Content

1. What is IWRM?
2. Where does IWRM come from?
3. The Dublin principles
4. The concept of IWRM
5. The current status of IWRM around the globe
6. Sustainable Development Goal 6 and IWRM
7. Measuring the degree of implementation of IWRM
8. The Water Action Agenda
9. Is IWRM working?
10. Discussion

What is Integrated Water Resources Management?

IWRM is a process which promotes the coordinated development and management of water, land and related resources, in order to maximize the resultant economic and social welfare in an equitable manner without compromising the sustainability of vital ecosystems.

Global Water Partnership, 2000

Another definition of IWRM

Integrated Water Resources Management is the management of surface and subsurface water in quantitative and qualitative environmental sense, with a multidisciplinary and participatory perspective and focus on the needs and requirements of the society at large, with regard to water for now and in the future.

Jaspers, 2003

History of IWRM

The Birth and Spread of IWRM – A Case Study of Global Policy Diffusion and Translation

Jeremy Allouche

Institute of Development Studies at the University of Sussex, Brighton, UK; j.allouche@ids.ac.uk

INTELLECTUAL HISTORY AND CURRENT STATUS OF INTEGRATED WATER RESOURCES MANAGEMENT: A GLOBAL PERSPECTIVE

F.G. Mukhtarov[1], MSc, PhD Candidate

Job position: Ph.D. Candidate

Organization: Central European University, Department of Environmental Sciences and Policy

Postal address: FT 601, Nador 9, H 1051, Budapest, Hungary

E-mail: ephmuf01@phd.ceu.hu

Where does IWRM come from?

- In the early 20th century technological advances, such as concrete and earthmoving equipment, led to large-scale construction projects, like highways, dams for hydro-energy, flood control works, etc.
- In the next decades large water construction projects dominated the water scene. These were mainly driven by technological expertise and were centrally managed.
- Many problems of the management of water resources were grounded in the fragmentation within the water sector, and working in isolation from other sectors.
- Gradually, this led to a plea for a more holistic vision in the water sector.
- The concept of IWRM was brought to life at the Dublin conference on Water and Development in 1992.

The Dublin Statement on Water and Sustainable Development

The Dublin Statement on Water and Sustainable Development

Adopted January 31, 1992 in Dublin, Ireland

International Conference on Water and the Environment

Scarcity and misuse of fresh water pose a serious and growing threat to sustainable development and protection of the environment. Human health and welfare, food security, industrial development and the ecosystems on which they depend, are all at risk, unless water and land resources are managed more effectively in the present decade and beyond than they have been in the past.

Five hundred participants, including government-designated experts from a hundred countries and representatives of eighty international, intergovernmental and non-governmental organizations attended the International Conference on Water and the Environment (ICWE) in Dublin, Ireland, on 26-31 January 1992.

The experts saw the emerging global water resources picture as critical. At its closing session, the Conference adopted this Dublin Statement and the Conference Report. The problems highlighted are not speculative in nature; nor are they likely to affect our planet only in the distant future. They are here and they affect humanity now. The future survival of many millions of people demands immediate and effective action.

The Dublin principles

The basis of IWRM are four principles, the Dublin principles, formulated in 1992 during the International Conference on Water and Environment. Since then, these principles have found universal support amongst the international community as the guiding principles underpinning IWRM.

The Dublin principles are:

1. Fresh water is a finite and vulnerable resource, essential to sustain life, development and the environment.
2. Water development and management should be based on a participatory approach, involving users, planners and policymakers at all levels.
3. Women play a central part in the provision, management and safeguarding of water.
4. Water has an economic value in all its competing uses and should be recognized as an economic good.

Evolution in the IWRM concept

- **First.** Water is one system consisting of various dimensions: surface and groundwater, quantity and quality, all interrelated.
- **Second.** IWRM sees the water system in interaction with other ecosystems, all of which should be managed in an environmental friendly, sustainable manner.
- **Third.** Water should be considered as connected with the broader social and economic development, engaging all stakeholders in a participatory approach in IWRM policies.
- **Fourth.** IWRM is linked to a higher level of strategic, national longterm planning.
- **Fifth.** IWRM has the ambition to manage the water resources of an endangered planet, threatened by overpopulation, scarcity of resources, and climate change.

Analyzing the IWRM concept

International awareness about the importance of water resources management is growing. Originally the approach was very sub-sectoral, mostly in relation to water supply, sanitation and irrigation. There is however, a growing consensus that Integrated Water Resources Management (IWRM) is necessary for sustainable resource use for all the sub-sectors and to protect the environment.

The aim of IWRM is to discard the one-sided management perspective of single interests of one sub-sector by one government agency and to strive for a participatory multi-sided management perspective of all interests in management of water resources. IWRM therefore takes account of all natural aspects of the water resources, all sectoral interests and stakeholders, the spatial and temporal variation of resources and demands, relevant policy frameworks and all institutional levels.

Functions in the IWRM concept

CONSTITUTIONAL FUNCTION	**Establishing laws and policies**—a national strategy for integrated water resources management
ORGANISATIONAL FUNCTION	**River Basin Management** allocating water flows, assimilative capacity, ecosystem maintenance, potential energy
OPERATIONAL FUNCTION	**Water uses and users** using water resources subject to operational rules, to meet demands and needs

Constitutional function (1)

The main purpose of the constitutional function is to create an enabling environment for the IWRM platform with appropriate policy and legal frameworks, which gives the boundary conditions for effective implementation of the organisational and operational functions. Constitutional functions include policy development based on clear principles, development of normative and executive legislation and development of human resources development strategies. An important aspect to be arranged at this functional level is the degree level of participation of the private sector in all three functional levels.

Constitutional function (2)

IWRM requires from the constitutional function a system that:

- enables effective development and implementation of laws and regulations,
- enables effective constitution and development of relevant institutions,
- regulates decision making based on interests of all stakeholders,
- enables all stakeholders to participate in decision making,
- provides quantitative and qualitative standards for use,
- provides quantitative and qualitative standards for effluents,
- enables and regulates effective control and sanctioning of violations,

Organisational function (1)

The organisational function is integrated water resources management. The ultimate goal of the management process is to allocate water in quantity and quality terms for different purposes. The process involves resource assessments, planning, decision making, implementation and policing on allocations and use of water resources with and based on the interest of stakeholders. These processes are time and location specific. The activities are highly multidisciplinary, involving engineers in hydrology, hydraulics, construction, water supply, sanitation, hydropower, irrigation, and non-engineers such as: environmentalists, ecologists, lawyers, economists, sociologists, agriculturists, politicians and representatives of interested parties, pressure groups, and water users.

Organisational function (2)

The development of an integrated water resources management capacity and capability is both a top-down and bottom-up process. The top-down process is a result of the execution of the care function of government. Government has to impose measures and regulations to protect the interest of society through protection of resources, ecosystems and socio-economic well-being of the people. Government executes this task through policy development and creation of legal and institutional frameworks for use and management of water resources.

The bottom up approach originates from the operational level where different and sometimes conflicting use and control interests need to be protected. This bottom up process is to be carried out in the enabling environment as created by government. As this is a process of learning, correcting and adjusting, the frameworks as imposed by the constitutional level should leave enough room for refining and adjusting. This means that only main policies and major concepts are regulated in law and the interest groups are given the opportunity to formulate their own way of co-ordination and operation. This, of course, should be done under tutelage of government.

Operational function (1)

In IWRM a distinction is to be made between the management of the water resource and the delivery of water services, both of which are necessary in each country. Usually the planning, development and management of the water resource must be a government responsibility to ensure that public interests are served. In contrast, specific water services are generally best delivered by autonomous and accountable public, private or co-operative agencies with scope for increased private sector participation.

Operational function (2)

Water management is the manipulation of surface or subsurface flows, levels and quality of water to serve either one or a combination of the following purposes:

- water supply for agriculture, domestic, municipal and industrial use, recreation and environmental protection;
- drainage of urban and rural areas;
- flood protection for urban and rural areas;
- control or maintenance of water quality.

Key element: Participatory approach

Another clear consensus is the need for adequate participatory approaches to planning and management, and mechanisms for accountability and democratic control. This is closely related to the principle of decision-making at the lowest appropriate level (subsidiarity), which also implies that some decisions (for instance, on the sharing of international waters) should be taken at the highest level. In that case, mechanisms of democratic control and stakeholder participation clearly operate at the highest level of government.

Key element: Stakeholders

Stakeholders are people or groups of people with a legitimate interest. Legitimate interests are formulated in the by-laws of the interest group where the stakeholder is regarded as a private entity/body. Stakeholders are not the same as interest groups. Interest groups represent all kind of interests: public, private, environmental, social etc. If they are organised and have statutes or by-laws they represent legitimate interests (GO's, NGO's, professional organisations, commercial organisations, users associations) and as such become stakeholders.

In IWRM the stakeholders can be classified as follows:

- water users — consumptive and non-consumptive uses
- water polluters — agriculture, industry, domestic etc.
- water managers — organisational and operational level
- water policy and law makers — constitutional level
- society — general interests represented by government and specific interests represented by NGOs

Key element: Interests

Interests can be classified as those of the first and second order. Interests of the first order are essential conditions for life (human, animal and plant) in that water system. Interests of the second order are those that can be prioritised after being weighed on their economic, ecological and social values.

Government has the "care function" as for management of water resources. First-order interests are interests of society and therefore require to be represented by government. Second-order interests are interests of individuals, groups, or parts of society, and can best be represented by their stakeholders.

First and second order interests are different in place because of different physical, hydrological, cultural and socio-economic conditions. As development goes on, especially second-order interests will change. This means that interests are site-specific and time-specific, and site-specific approaches are therefore warranted.

Key element: Platform

IWRM is a process of assignment of functions to water systems, the setting of norms, enforcement (policing) and management. It includes gathering information, analysis of physical and socio-economic processes, weighing of interests and decision making related to availability, development and use of water resources. This means that IWRM requires:

- a platform for weighing of all relevant interests and decision making on use of water and water systems in the river basin;
- this platform should represent all interests and be under governance of government to protect the interest of society at large;
- this platform should have decision, control and sanctioning powers;

The development efforts should be focussed at the creation of a platform for weighing interests and decision making on water use and control. To be successful this platform should have the support of the stakeholders. A consultation process before establishment of such platform is warranted.

Key element: River basin

The river basin is the logical unit for water resources management. In many cases this has led to the decentralisation of management to river basin level. But one should not forget the role of central government. River basin management is largely an operational matter, whereby water allocation, water quality management, cost recovery and stakeholder involvement are essential components. However, the river basin authority is not a legislator and not responsible for policymaking and the setting of objectives and constraints to operational management.

Central government has an important role in IWRM in policymaking, legislation, strategic planning, establishment of the appropriate legal and institutional framework, capacity building, and supervision of decentralised and privatised institutions in water resources management. In addition, government should provide the protocols for information exchange (on water resources, water use and infrastructure), should provide adequate databases required for strategic planning and should prepare integrated river basins plans in response to its policy guidelines and constraints.

Key element: Data availability

An effective IWRM system requires reliable information on the availability, use and quality of surface and groundwater in the basin. Databases, observation networks and inspection systems are to be made accessible, improved or developed. Good access to these data allows analysis of various options or scenarios for interventions in development and use of water. Sufficient capable and motivated people with the appropriate tools are required to meet these IWRM demands for planning, management, control and development. Identification and development of people and tools for management are part of the development process of the platform that also requires consent and support from the different stakeholders as important cost can be involved.

The process of implementing IWRM

- Assessment of the present situation and trends,
- Formulation of a desired IWRM situation based on an "ideal" or eventual IWRM situation,
- Formulation of interventions to arrive at the desired IWRM situation,
- Establishment of a monitoring system to see whether the interventions are being carried out properly and whether they really contribute to the achievement of the IWRM goals.

The IWRM Planning Cycle

Steps in the IWRM process

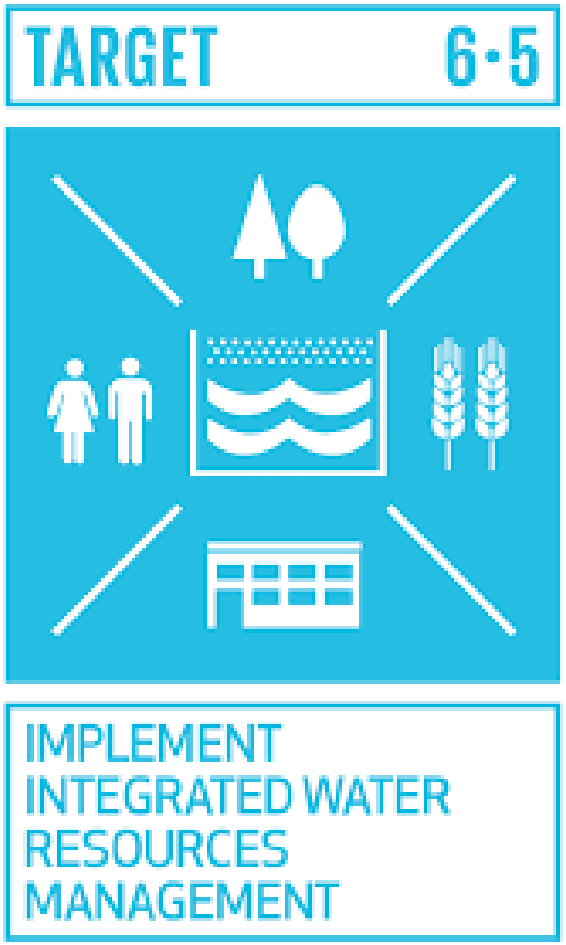
Current status of IWRM around the globe

- Currrently, the IWRM concept is globally the most popular concept for integrated water management.
- Sustainable Development Goal 6 'Clean Water and Sanitation', refers to IWRM, in particular in Target 6.5 'Fully implement IWRM'.
- IWRM is embraced by multilateral and international organizations like UNDP, UNEP, World Bank, World Water Council, Global Water Partnership, etc.
- 185 countries are in various stages of implementation of IWRM.

Sustainable Development Goal 6

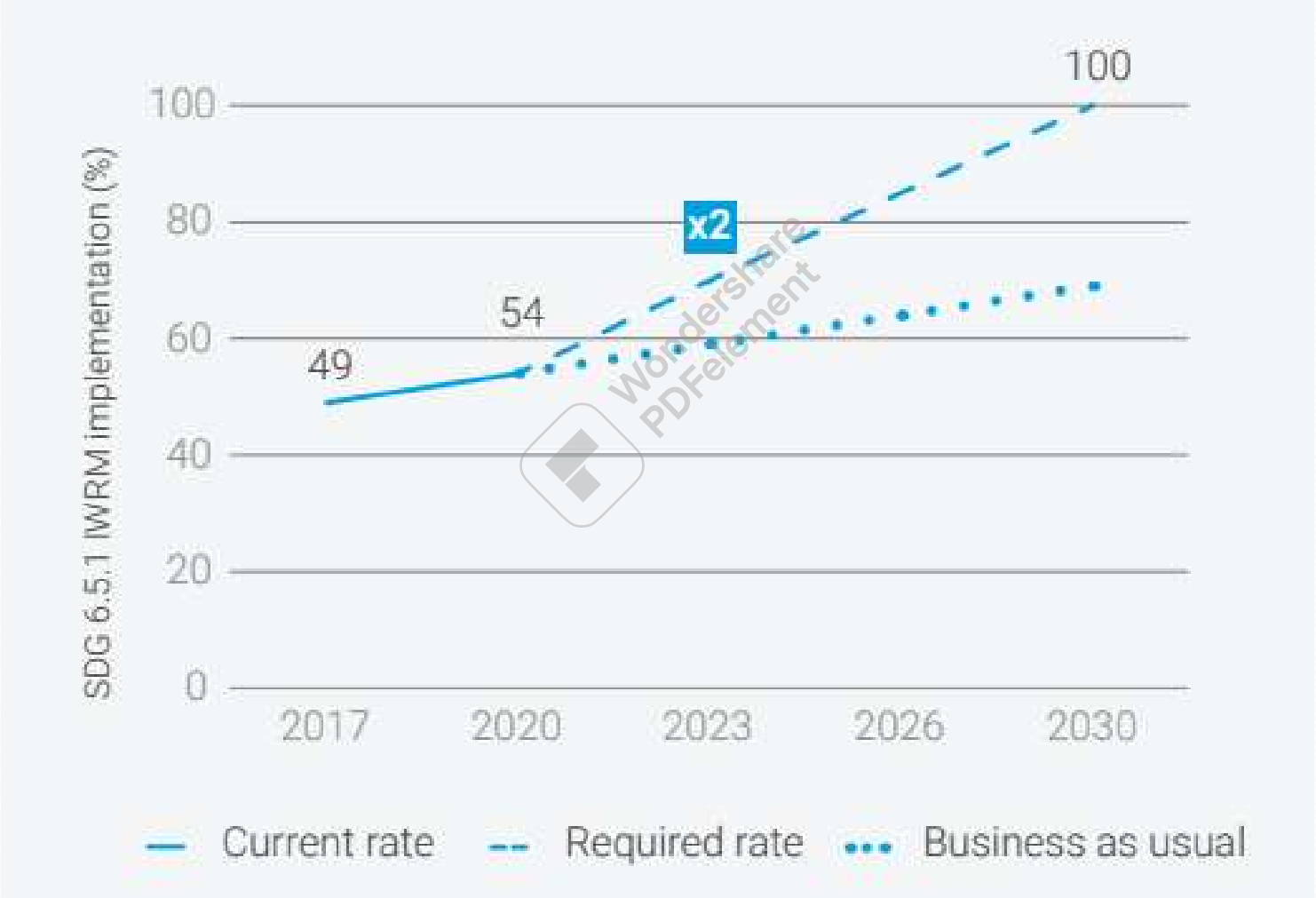
SDG 6 Target 6.5 Implement IWRM

Indicator 6.5.1
Degree of implementation of IWRM



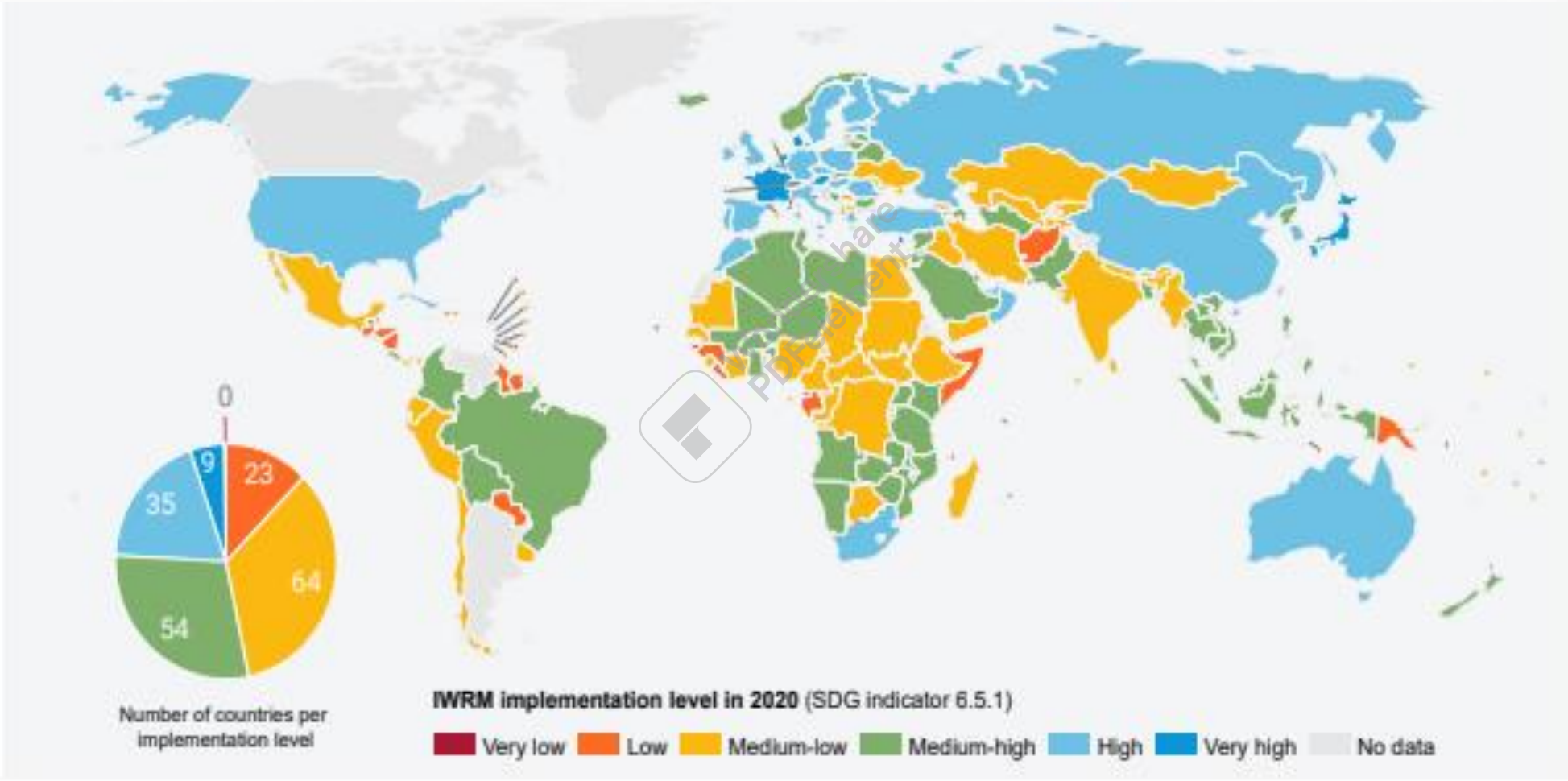
Degree of implementation (0 – 100)	
Very high (100)	Objectives consistently achieved, and **periodically reviewed and revised**.
High (80)	Policy **objectives consistently achieved.**
Medium-high (60)	**Being used by the majority** of relevant authorities to guide work.
Medium-low (40)	**Based on IWRM, approved** by government and **starting to be used** by authorities to guide work.
Low (20)	Exists, but **not based on IWRM**.
Very low (0)	Development **not started** or not progressing.

Current global IWRM implementation rate



Global Progress Report on IWRM 2021

IWRM implementation level by country



Global Progress Report on IWRM 2021

Indicator 6.5.1
Degree of implementation of IWRM

Degree of implementation (0 – 100)	
Very high (100)	Objectives consistently achieved, and **periodically reviewed and revised**.
High (80)	Policy **objectives consistently achieved.**
Medium-high (60)	**Being used by the majority** of relevant authorities to guide work.
Medium-low (40)	**Based on IWRM, approved** by government and **starting to be used** by authorities to guide work.
Low (20)	Exists, but **not based on IWRM**.
Very low (0)	Development **not started** or not progressing.

Framework for measuring degree of implementation

The framework consists of four key components of IWRM. These key components are:

- **Enabling environment**, which is about creating the conditions to support the implementation of IWRM. It includes the most typical policy, legal and planning tools for IWRM.
- **Institutions and participation**, which is about the range and roles of political, social, economic and administrative institutions that support the implementation of IWRM. It includes some of the most typical institutions at different levels of society for IWRM. It includes institutional capacity and effectiveness, cross-sector coordination, stakeholder participation and gender equality.
- **Management instruments**, includes the tools that enable decision-makers and users to make rational and informed choices between alternative actions. It includes management programs, monitoring water resources and the pressures on them, knowledge sharing and capacity development.
- **Financing**, this concerns the adequacy of the finance available for water resources development and management from various sources.

Instrument for degree of implementation of IWRM

Country Survey Instrument for SDG Indicator 6.5.1

Degree of integrated water resources management implementation (0 – 100)

Submission Form	
Country	Suriname
Date this document was submitted	
Date(s) any earlier versions of this document were submitted	*(for initial and revised submissions, as required)*
National SDG 6.5.1 Focal Point information	
Name	
Organisation	
Title	
Contact email	
Contact phone	
Are you the national Focal Point for any other SDG indicator (apart from 6.5.1)? **If yes, please insert 'X' for all that apply:** __6.1.1 __6.2.1 __6.3.1 __6.3.2 __6.4.1 __6.4.2 __6.5.2 __6.6.1 __6.a.1 __6.b.1 __Other SDG indicator(s) (please specify here):	
SDG 6.5.1 in-country data collection and reporting process overview *(Please provide further details on the consultation process in Annex E)*	
Were other institutions/stakeholders involved and consulted in the reporting process for this indicator? __Yes __No	
If yes, please indicate the mode(s) of consultation (please provide further details in Annex E): __Phone calls __Email exchanges __In-person meetings __Dedicated stakeholder workshop(s) __Other (please specify):	
Contact person regarding further questions/clarifications relating to this submission	
__SDG 6.5.1 Focal Point listed above __Other (please specify contact details here):	

Instrument for degree of implementation of IWRM

Country: Suriname

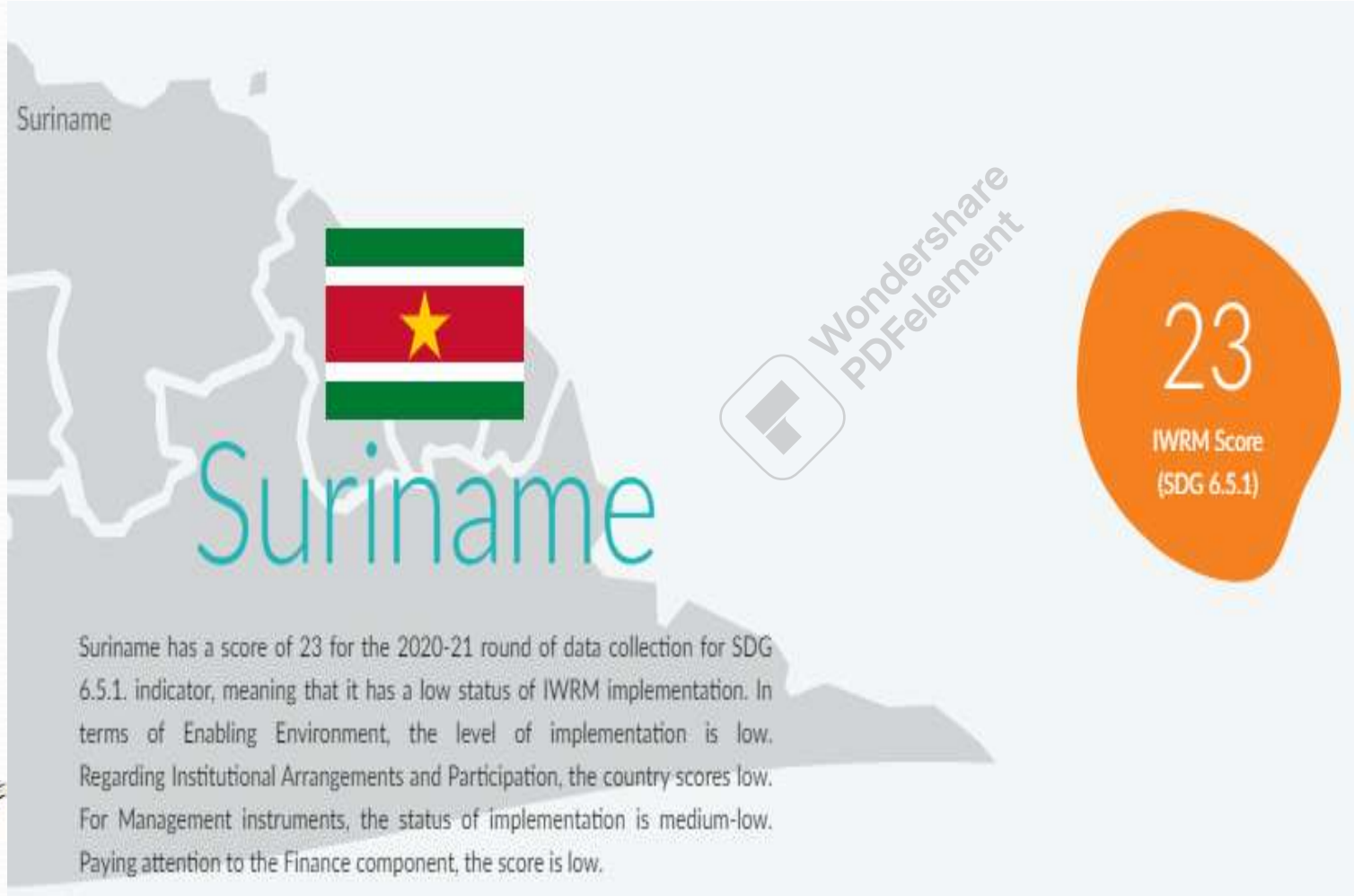
1. Enabling Environment						
	Degree of implementation (0 – 100)					
	Very low (0)	Low (20)	Medium-low (40)	Medium-high (60)	High (80)	Very high (100)
1.1 What is the status of policies, laws and plans to support Integrated Water Resources Management (IWRM) at the national level?						
a. National water resources **policy,** or similar. Score	Development **not started** or not progressing.	**Exists**, but not based on IWRM.	Based on IWRM, **approved** by government and starting to be used by authorities to guide work.	Being **used** by the majority of relevant authorities to guide work.	Policy objectives consistently **achieved.**	Objectives consistently achieved, and periodically **reviewed** and revised.
Status description: There is no formal policy regarding IWRM in Suriname. In the Development Plan 2017-2021 ("Ontwikkelingsplan 2017 - 2021") it is stated that an 'Integrated Water Resources Management System for Suriname' will be developed. This will be the starting point of determining a national IWRM policy. In this Development Plan 2017-2021 priorities concerning WRM are given to: • Conservation of the estuary coastal zone. Stimulating water transport, deep in the inland of Suriname, where there are no roads and the waterways function as roads; • Obtaining energy from small-scale hydropower. This is not applied yet; • Availability of clean drinking water. The Suriname Water Company (SWM) is moving on with more clean drinking water projects. Also some NGO's are contributing in this; • Mapping and planning of existing and to be exploited Water Resources • Drainage of urban and rural areas. There are no government owned and operated wastewater recovery plants in Suriname; • Pollution control. Much more awareness is needed towards the mass public society concerning littering. [E.g. policy(ies), key years, examples of how the policy is being used to guide work, and which policy objectives are monitored/achieved. Also reflect on progress since baseline.]						
Way forward: Prepare and approve by the Government a National Level IWRM Policy Framework with an outlook of 15-20 years at Policy Level. Set up a multi-stakeholder IWRM committee to prepare the IWRM policy. A strategy with a step by step plan is needed to implement IWRM. [E.g. planned or recommended activities to advance implementation of policies; barriers and enablers; draft interim targets where appropriate.]						

Instrument for degree of implementation of IWRM

Average score of Suriname (2021)

Section	Average Scores (all values rounded to nearest whole number)
Section 1 Enabling environment	21
Section 2 Institutions and participation	22
Section 3 Management instruments	33
Section 4 Financing	17
Indicator 6.5.1 score = Degree of IWRM implementation (0-100)*	23

Degree of implementation of IWRM in Suriname (2021)



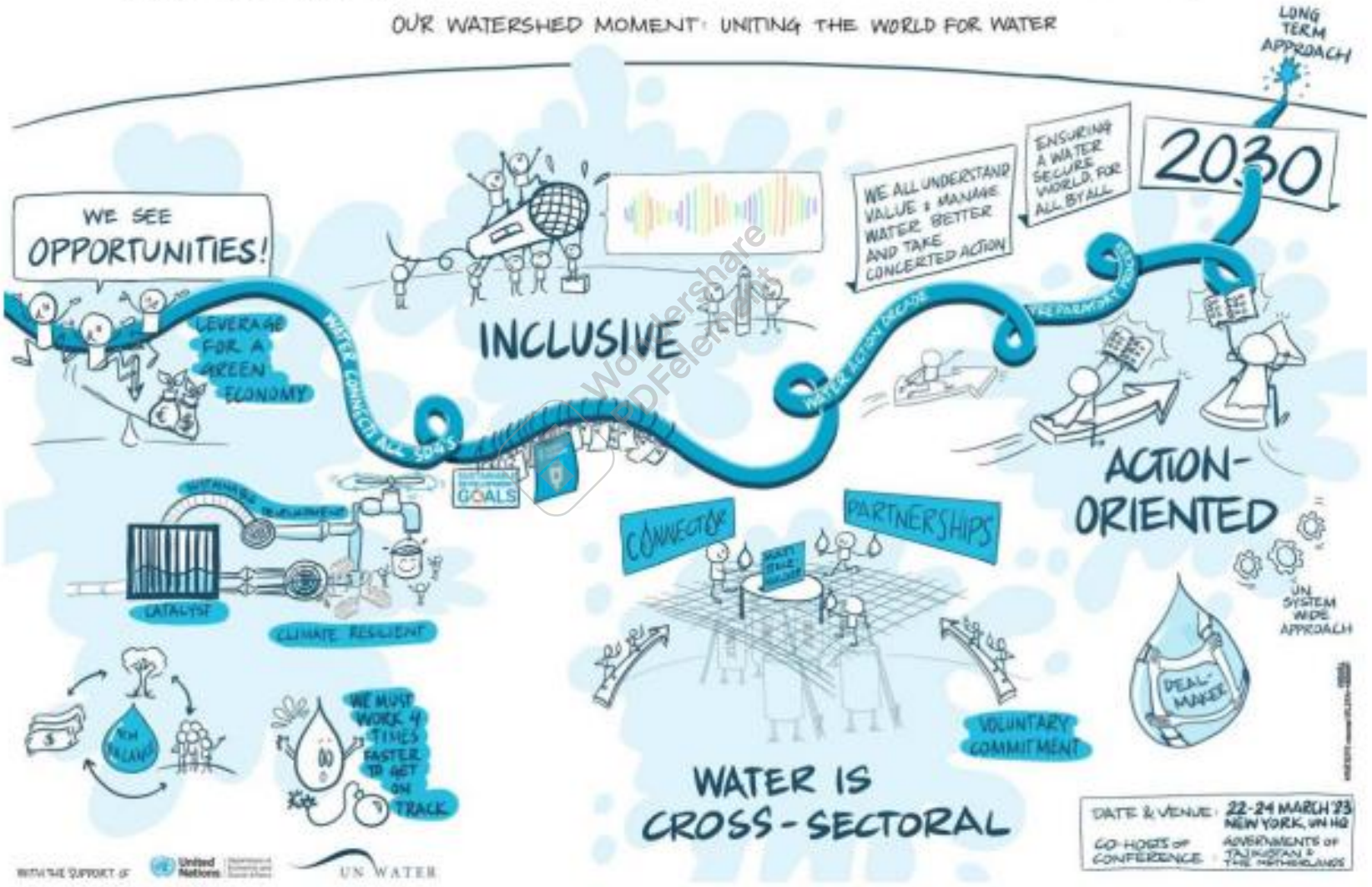
UN Water Conference, New York, March 2023

The UN 2023 Water Conference is a once-in-a-generation opportunity to bring all stakeholders together to raise public awareness of and mobilise political leadership to address the global water challenges[1] and the other global water-related crises (e.g. food, energy, climate) through water action. It is the first UN conference on water since 1977, and it will in a similar fashion shape the way we work better together in decades to come.

Building on the UNGA modalities resolution, the vision statement defines three principles to guide the Conference and its preparatory process.

- Inclusive: both in terms of (a) the Conference processes and in terms of (b) the results (leaving no-one behind).
- Action-oriented: leading to real impactful results through concrete actions and plans on the ground.
- Cross-sectoral: mobilizing all other water related sectors to improve the way they manage and utilize water resources. These sectors need to bring their plans and actions to the Conference.

VISION STATEMENT UN 2023 WATER CONFERENCE



Water Action Agenda 2023 - 2030

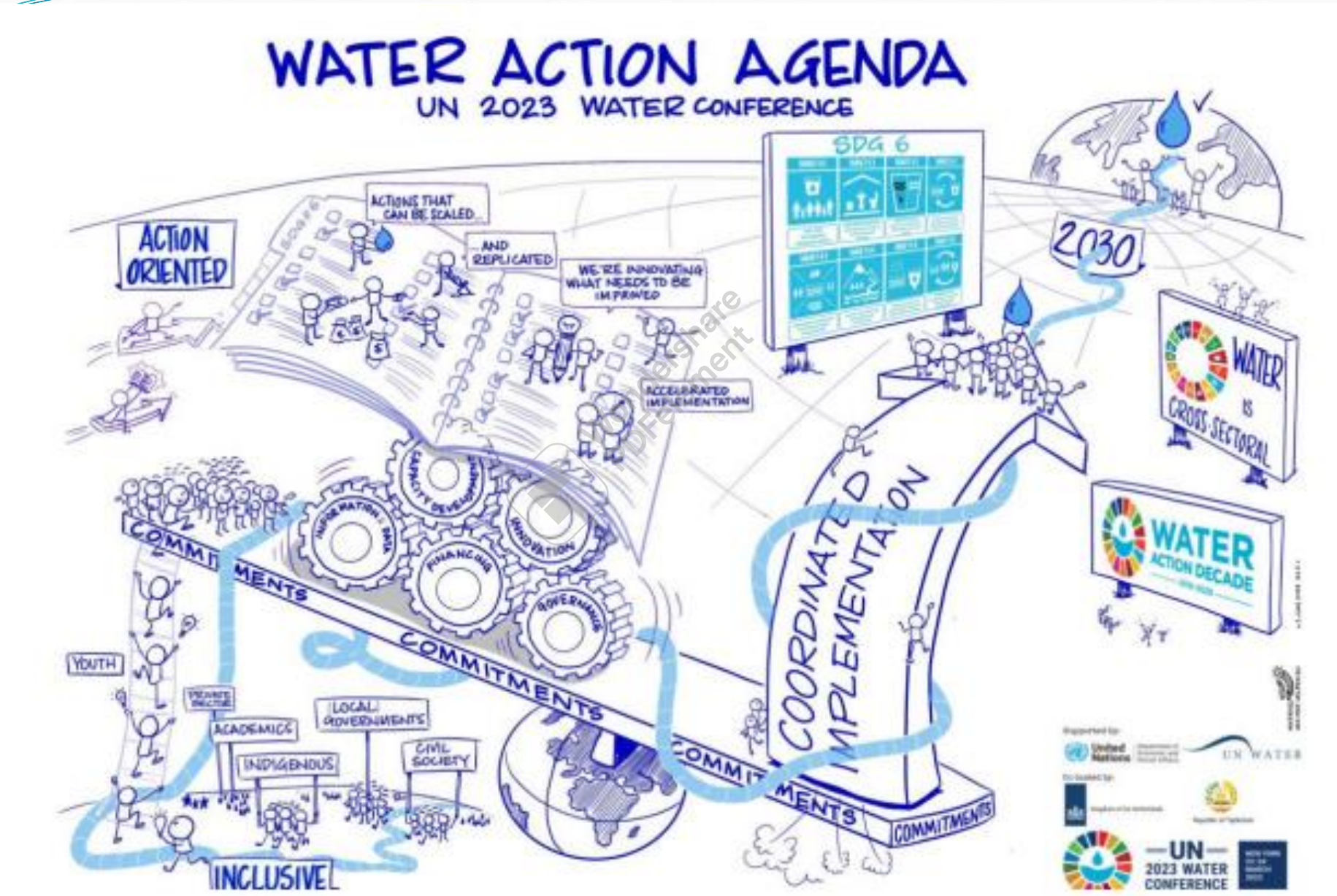
In the same way as "1.5 degree Celsius" enshrines the global community's commitment to fight climate change, the Water Action Agenda aims to manifest the political ambition to address the global water challenges. The Conference aims to ensure acceleration of progress (through speeding and scaling up implementation) towards SDG 6 as well as all other global water-related goals and targets. We need to ensure that our global effort and approach on water is better coordinated, less fragmented, and contains clear tangible action in order to deliver and track our results.

As outlined in the 2018 Ministerial Declaration of the High-Level Political Forum on Sustainable Development, **political leadership, concrete actions and cooperation from all stakeholders are essential to address the global water challenges**. In response, the Water Action Agenda will utilize the political attention and public awareness created by the UN 2023 Water Conference to mobilize concrete, transformative and unified action across countries, sectors and stakeholders to meet the global water and sanitation related goals and targets. As such, the Water Action Agenda is unifying all water-related voluntary commitments to accelerate progress in the second half of the Water Action Decade 2018-2028 and second half of the 2030 Agenda, leading to more coherent and effective implementation and less fragmentation.

Building blocks of the Water Action Agenda

The key building blocks of the Water Action Agenda are:

1. **Commit to action:** Mobilizing voluntary commitments to action across countries, sectors and stakeholders, aimed at accelerated implementation and improved impact towards achieving SDG 6 and other water-related goals and targets. Voluntary commitments will be gathered, showcased and tracked on a dedicated platform.
2. **Sustain and scale up implementation**: All stakeholders have a role to play to drive the implementation of the Water Action Agenda and to ensure follow up with partners on what works for replication and scaling up.
3. **Follow-up and review processes**: Showcasing successes and learning from what works and what does not. The High-level Political Forum for Sustainable Development (HLPF) and inter-governmental, private sector and NGO fora across key sectors will be utilized. Analyses of water-related progress across sectors and other SDGs and global frameworks will be done annually.



Suriname-Contributions from Member States to the 2023 Water Conference concept papers

Suriname vertegenwoordigd op historische VN-waterconferentie

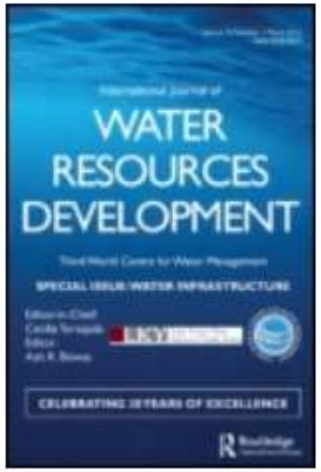
Een missie van het ministerie van Natuurlijke Hulpbronnen heeft Suriname vertegenwoordigd gedurende de VN-waterconferentie 2023 in New York. Bij deze conferentie is de "Water Action Agenda" aangenomen waaraan alle lidstaten zich committeren, actie te ondernemen om de watercrisis aan te pakken.

Tijdens de conferentie die van 22 tot en met 24
watercrisis een mondiale aanpak vereist om de
verder aan dat vooral ontwikkelingslanden allee
voornamelijk in rurale gebieden. Er is op dit vlak
ondersteuning in de vorm van technologie en ir
internationale organisaties gingen in op hun fin
landen zodat meer dan ooit actie ondernomen
watercrisis.

Ambassadeur Sitaldin: "Toegang tot veilig en gezond drinkwater is een collectieve verantwoordelijkheid"

March 30, 2023

Suriname heeft in de periode van 22 tot en met 24 maart 2023 geparticipeerd aan de water conferentie van de Verenigde Naties (VN) in New York. Deze internationale conferentie, onder auspiciën van de VN, werd georganiseerd door Nederland en Tajikistan en handelde over de 'UN Sustainable Development Goal no. 6 (SDG 6)' in 2030 met schoon en veilig drinkbaar water voor iedereen. Ongeveer 2,2 miljard mensen leven zonder toegang tot veilig en drinkbaar water. Middels de verschillende statements van landen is kenbaar gemaakt om actie te ondernemen om de watercrisis wereldwijd aan te pakken.



Routledge
Taylor & Francis Group

International Journal of Water Resources Development

ISSN: 0790-0627 (Print) 1360-0648 (Online) Journal homepage: https://www.tandfonline.com/loi/cijw20

Integrated Water Resources Management: Is It Working?

Asit K. Biswas

To cite this article: Asit K. Biswas (2008) Integrated Water Resources Management: Is It Working?, International Journal of Water Resources Development, 24:1, 5-22, DOI: 10.1080/07900620701871718

To link to this article: https://doi.org/10.1080/07900620701871718

IWRM: is it working?

The definition that is most often quoted at present is the one that was formulated by the Global Water Partnership (GWP, 2000), which started to champion integrated water resources management as a major component of its technical programme shortly after its inception. GWP defined it as:

> a process which promotes the coordinated development and management of water, land and related resources, in order to maximize the resultant economic and social welfare in an equitable manner without compromising the sustainability of vital ecosystems.

Unfortunately, for a variety of reasons, a fundamental question that has never been asked, let alone answered, either by the GWP or the promoters of this paradigm who have uncritically accepted the GWP definition as the gospel, is that whether this well-intentioned and good-sounding definition has any practical value in terms of its application and implementation to improve existing water management, or is it just an aggregation of trendy words which collectively provides an amorphous definition which does not help water planners and managers very much in terms of the application of the concept to solve the real water-related problems that are being faced in different parts of the world.

IWRM: is it working?

There is no question that in the water area, integrated water resources management has become a powerful and all-embracing slogan during the past 15 years. This is in spite of the fact that operationally it has not been possible to identify a water management process at a macro- or meso-scale which can be planned and implemented in such a way that it becomes inherently integrated, however this may be defined, right from its initial planning stage and then to implementation and operational phases. For all practical purposes, most international institutions have endorsed this concept, either explicitly or implicitly, without seriously analysis of its usability and implementability. This is in spite of the facts that there is no agreement at present among the various international institutions that endorse it as to what exactly is meant by integrated water resources management, or

IWRM: is it working?

What is most likely happen in the coming years is that both the donors and the developing countries will finally appreciate the non-implementability of this concept. Based on past experience, its promoters are unlikely to admit that the concept has not worked in the past, is not working at present, and is highly unlikely to work in the future for a rapidly changing world. Accordingly, the most likely scenario of the future will be that its past and present promoters will gradually start downplaying the strong rhetoric of integrated water resources management, and start focusing on the 'ends' of water management rather than exclusive emphasis on only one of its 'means', as has been the case in recent years. A careful analysis indicates that a few international and national institutions, which have actively promoted this concept earlier, have already started to downplay it. This trend is likely to accelerate in the future.

LAC: Integrated Water Resources Management: towards a water secure future

In Latin America, just like in other parts of the world, the economy, health, ecosystems and food production all rely on this one precious resource: enough and good quality water, now and in the future. The COVID pandemic has made the need for a water secure environment even more urgent. The climate, meteorological phenomena like El Niño o La Niña, socio-economic diversity and the rich landscape of Latin American countries, make water management a real challenge.

Deltares, 2023

Discussion

On a scale of 1 – 5 how useful do you think is the concept of IWRM

A: for global water management?

B: for water management in Suriname?

1	2	3	4	5
Not useful at all	Not very useful	In the middle	Somewhat useful	Very useful

Why?

Thank you

Question and Answers

Discussions

Key principles of Integrated Water Resources Management

Course: Integrated Water Resources Management

Module 5: IWRM Principles and Policies

Part 2: IWRM in Suriname

Manodj Hindori MSc.

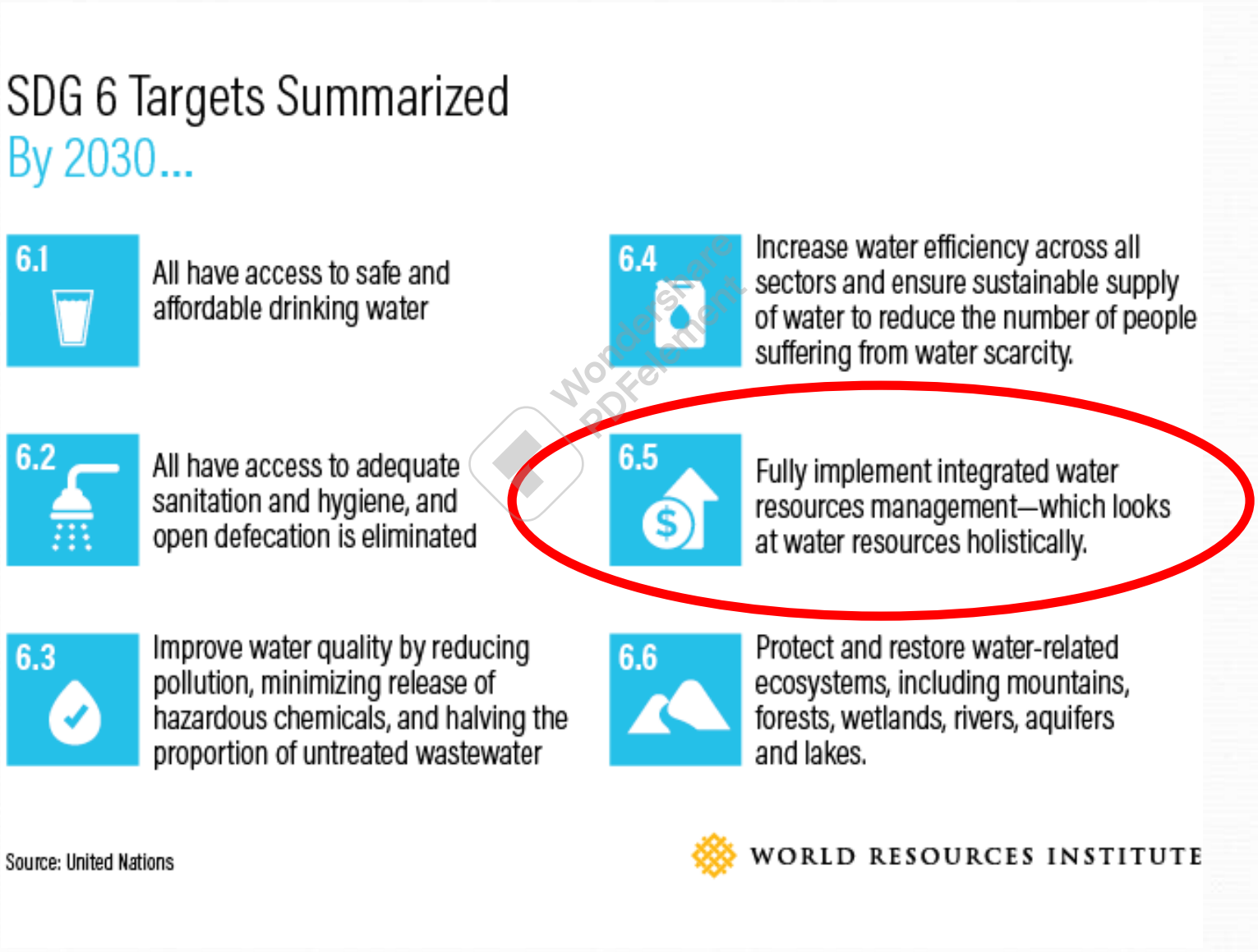
August 4, 2023

Content

1. SDG 6 and IWRM
2. Degree of implementation of IWRM in Suriname
3. Capacity building in IWRM in Suriname, phase 1 project
4. Capacity building in IWRM in Suriname, phase 2 project
5. Surface water quantity and quality *(by Ravi Patandin)*
6. Surface water regulatory framework
7. Coordination of the water sector
8. Current capacity of water professionals
9. Awareness strategy on IWRM
10. Challenges and the way forward

Sustainable Development Goal 6

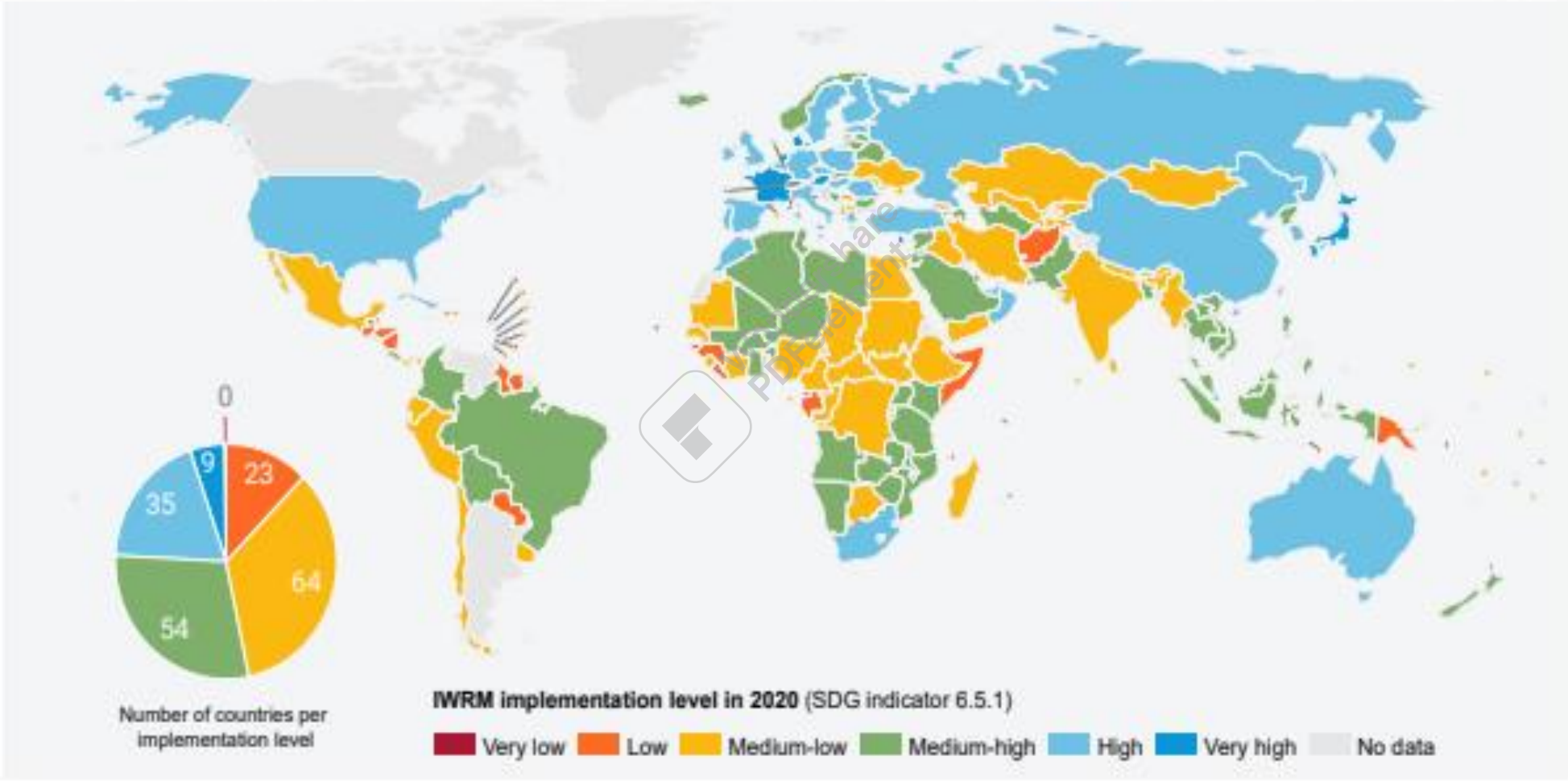
SDG 6 Target 6.5 Implement IWRM



Indicator 6.5.1
Degree of implementation of IWRM

Degree of implementation (0 – 100)	
Very high (100)	Objectives consistently achieved, and **periodically reviewed and revised**.
High (80)	Policy **objectives consistently achieved.**
Medium-high (60)	**Being used by the majority** of relevant authorities to guide work.
Medium-low (40)	**Based on IWRM, approved** by government and **starting to be used** by authorities to guide work.
Low (20)	Exists, but **not based on IWRM**.
Very low (0)	Development **not started** or not progressing.

IWRM implementation level by country



Global Progress Report on IWRM, UN Water 2021

Framework for measuring degree of implementation

The framework consists of four key components of IWRM. These key components are:

- **Enabling environment**, which is about creating the conditions to support the implementation of IWRM. It includes the most typical policy, legal and planning tools for IWRM.
- **Institutions and participation**, which is about the range and roles of political, social, economic and administrative institutions that support the implementation of IWRM. It includes some of the most typical institutions at different levels of society for IWRM. It includes institutional capacity and effectiveness, cross-sector coordination, stakeholder participation and gender equality.
- **Management instruments**, includes the tools that enable decision-makers and users to make rational and informed choices between alternative actions. It includes management programs, monitoring water resources and the pressures on them, knowledge sharing and capacity development.
- **Financing**, this concerns the adequacy of the finance available for water resources development and management from various sources.

Instrument for degree of implementation of IWRM

Country Survey Instrument for SDG Indicator 6.5.1

Degree of integrated water resources management implementation (0 – 100)

Submission Form	
Country	Suriname
Date this document was submitted	
Date(s) any earlier versions of this document were submitted	*(for initial and revised submissions, as required)*
National SDG 6.5.1 Focal Point information	
Name	
Organisation	
Title	
Contact email	
Contact phone	
Are you the national Focal Point for any other SDG indicator (apart from 6.5.1)? **If yes, please insert 'X' for all that apply:** __6.1.1 __6.2.1 __6.3.1 __6.3.2 __6.4.1 __6.4.2 __6.5.2 __6.6.1 __6.a.1 __6.b.1 __Other SDG indicator(s) (please specify here):	
SDG 6.5.1 in-country data collection and reporting process overview *(Please provide further details on the consultation process in Annex E)*	
Were other institutions/stakeholders involved and consulted in the reporting process for this indicator? __Yes __No	
If yes, please indicate the mode(s) of consultation (please provide further details in Annex E): __Phone calls __Email exchanges __In-person meetings __Dedicated stakeholder workshop(s) __Other (please specify):	
Contact person regarding further questions/clarifications relating to this submission	
__SDG 6.5.1 Focal Point listed above __Other (please specify contact details here):	

Instrument for degree of implementation of IWRM

Country: Suriname

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 policies, laws and plans to support Integrated Water Resources Management (IWRM) at the national level?						
a. National water resources **policy,** or similar. Score 20	Development **not started** or not progressing.	**Exists**, but not based on IWRM.	Based on IWRM, **approved** by government and starting to be used by authorities to guide work.	Being **used** by the majority of relevant authorities to guide work.	Policy objectives consistently **achieved.**	Objectives consistently achieved, and periodically **reviewed** and revised.

Status description: There is no formal policy regarding IWRM in Suriname. In the Development Plan 2017-2021 ("Ontwikkelingsplan 2017 - 2021") it is stated that an 'Integrated Water Resources Management System for Suriname' will be developed. This will be the starting point of determining a national IWRM policy. In this Development Plan 2017-2021 priorities concerning WRM are given to:

- Conservation of the estuary coastal zone. Stimulating water transport, deep in the inland of Suriname, where there are no roads and the waterways function as roads;
- Obtaining energy from small-scale hydropower. This is not applied yet;
- Availability of clean drinking water. The Suriname Water Company (SWM) is moving on with more clean drinking water projects. Also some NGO's are contributing in this;
- Mapping and planning of existing and to be exploited Water Resources
- Drainage of urban and rural areas. There are no government owned and operated wastewater recovery plants in Suriname;
- Pollution control. Much more awareness is needed towards the mass public society concerning littering.

[E.g. policy(ies), key years, examples of how the policy is being used to guide work, and which policy objectives are monitored/achieved. Also reflect on progress since baseline.]

Way forward: Prepare and approve by the Government a National Level IWRM Policy Framework with an outlook of 15-20 years at Policy Level. Set up a multi-stakeholder IWRM committee to prepare the IWRM policy. A strategy with a step by step plan is needed to implement IWRM.

[E.g. planned or recommended activities to advance implementation of policies; barriers and enablers; draft interim targets where appropriate.]

Instrument for degree of implementation of IWRM

Country: Suriname

b. National water resources **law(s).** Score 20	Development **not started** or not progressing.	**Exists**, but not based on IWRM.	Based on IWRM, **approved** by government and starting to be applied by authorities.	**Being applied** by the majority of relevant authorities.	All laws are being **applied** across the country.	All laws are **enforced** across the country, and all people and organizations are held accountable.

Status description:

Water related legislation in Suriname is out of date and does not comply with current social requirements. Some shortcomings in the current legislation are the lack of rights and obligations of the water user, lack of control mechanisms, no clear division of responsibilities and powers (no integration), lack of water quality standards, etc. Adjustment or renewal is therefore an urgent necessity.

At this moment four draft legislation documents on water management have been prepared, namely: (1) draft act on the extraction of groundwater, (2) draft act on groundwater protection, (3) draft act on water supply supervision and (4) draft act Surinamese water authority. These laws concern mainly ground and drinking water legislation. These draft laws were initially approved by the council of Ministers in 2019, but sent back for revision. However, on the 9th of March 2020 these revised legislations were approved again by the Council of Ministries. These new legislations should replace part of the old legislation (some of which are more than 50-60 years old).

Another important law has been recently (March 2020) approved in the Parliament: Environmental Framework Act. This legislation is important when it comes to pollution control.

There is also a need for legislation regarding Surface water protection. The process of drawing up this law has not started yet.

Also, the act on Nature is of importance in relation to all other laws and regulations concerning water.

[E.g. reference to law(s), when it was created, mechanisms in place to apply/enforce the law, or examples of the law being applied.]

Way forward: Submit the approved the four draft water laws to the Parliament. Developing surface water protection legislation and other related IWRM legislation. In addition to adoption of legislation, it is key that awareness regarding IWRM is increased on all levels of the population In addition, institutional capacity to implement IWRM will need to be built simultaneously.

Make a scan of all relevant laws and regulation regarding water and make a crosscheck if they cover all issues or there any lacks and/or any double coverage from different angles.

[E.g. planned or recommended legislation, or activities to advance implementation of existing laws; barriers and enablers; draft interim targets where appropriate.]

Instrument for degree of implementation of IWRM

Country: Suriname

	Very low (0)	Low (20)	Medium-low (40)	Medium-high (60)	High (80)	Very high (100)
c. National integrated water resources management (IWRM) **plans**, or similar. Score 30	Development **not started** or not progressing.	**Being prepared**, but not approved by government.	**Approved** by government and starting to be implemented by authorities.	Being **implemented** by the majority of relevant authorities.	Plan objectives consistently **achieved**.	Objectives consistently achieved, and periodically **reviewed** and revised.

Status description:

The Foundation Waterforum Suriname (WFS), an NGO formed by a pool of experts with different disciplines in the water sector in Suriname received in 2019 a grant from the UNDP – Suriname (United Nation Developing Program – Suriname) to carry out the project "Capacity Building for Integrated Water Resource Management in Suriname" with the ultimate goal to develop an Integrated Water Management Plan for Suriname through a participatory and consultative process. Within this project, a situation analysis study was first carried out, after which an Action Plan as well as a Monitoring and Evaluation plan was developed.

This plan was handed over to the Ministry in July 2019 by the WFS. The Ministry will use this plan to further implement IWRM in Suriname.

Awareness should a constant point on the IWRM agenda in the length of days.

[E.g. reference to plans, progress reports, status of implementation of activities by relevant authorities.]

Way forward: Increasing awareness by organizing workshops/seminars for the government. Suriname is in a transition to a new government. WFS will provide the new government with the necessary information so that the path taken can be pursued by the new government. The next government is to prepare an IWRM Plan at national level, with a concrete implementation strategy and steps to be taken.

[E.g. planned or recommended activities to advance implementation of plans; barriers and enablers; draft interim targets where appropriate.]

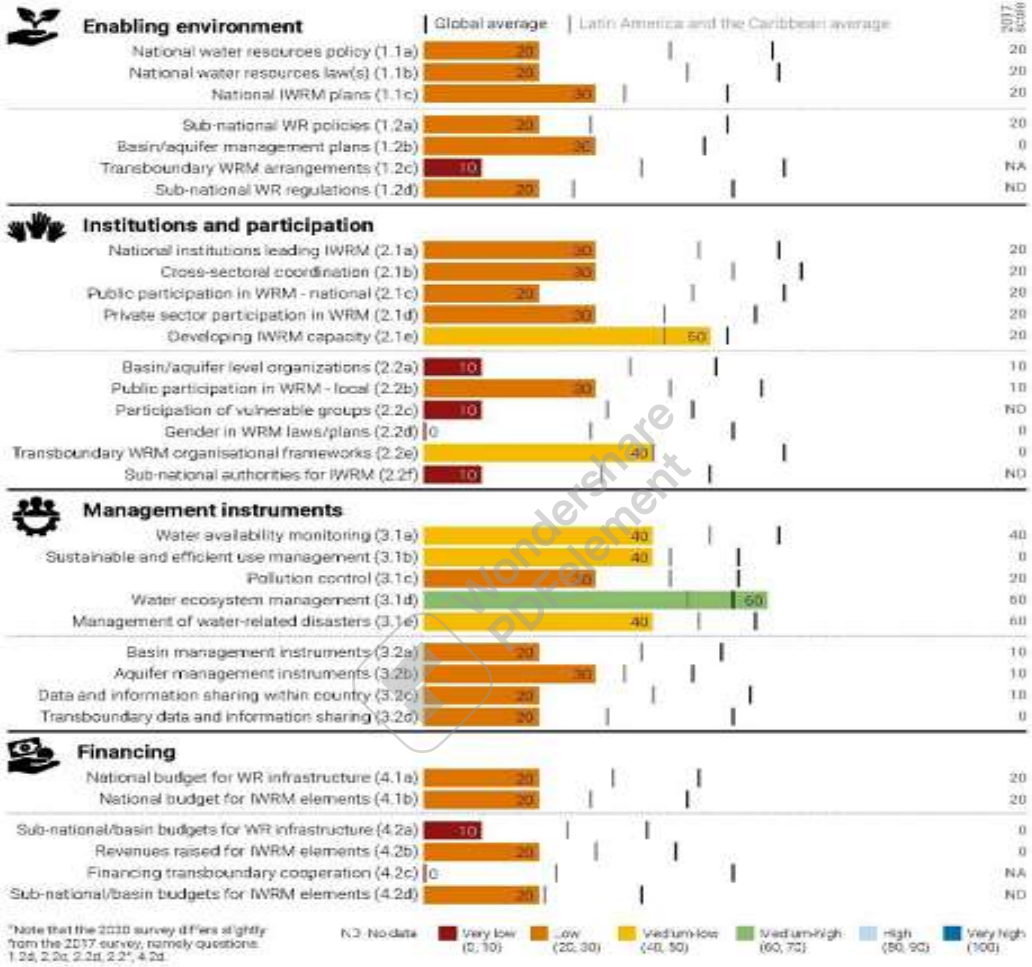
Instrument for degree of implementation of IWRM

Average score of Suriname (2021)

Section	Average Scores (all values rounded to nearest whole number)
Section 1 Enabling environment	21
Section 2 Institutions and participation	22
Section 3 Management instruments	33
Section 4 Financing	17
Indicator 6.5.1 score = Degree of IWRM implementation (0-100)*	23

Suriname

SDG INDICATOR 6.5.1 NATIONAL SCORES BY SURVEY QUESTION



On country progress since 2017

For some countries, the 2020 reporting process may have involved a more comprehensive stakeholder consultation process. Changes in scores between 2017 and 2020 may therefore be more of a reflection of the more robust process, rather than changes on the ground.

Further information and support

Visit the IWRM Data Portal to download country, regional and global results and reporting materials, including the country summaries in other languages: http://iwrmdataportal.unepdhi.org

Further support on advancing IWRM through action planning and implementation is available through the SDG 6 IWRM Support Programme: https://www.gwp.org/en/sdg6support/

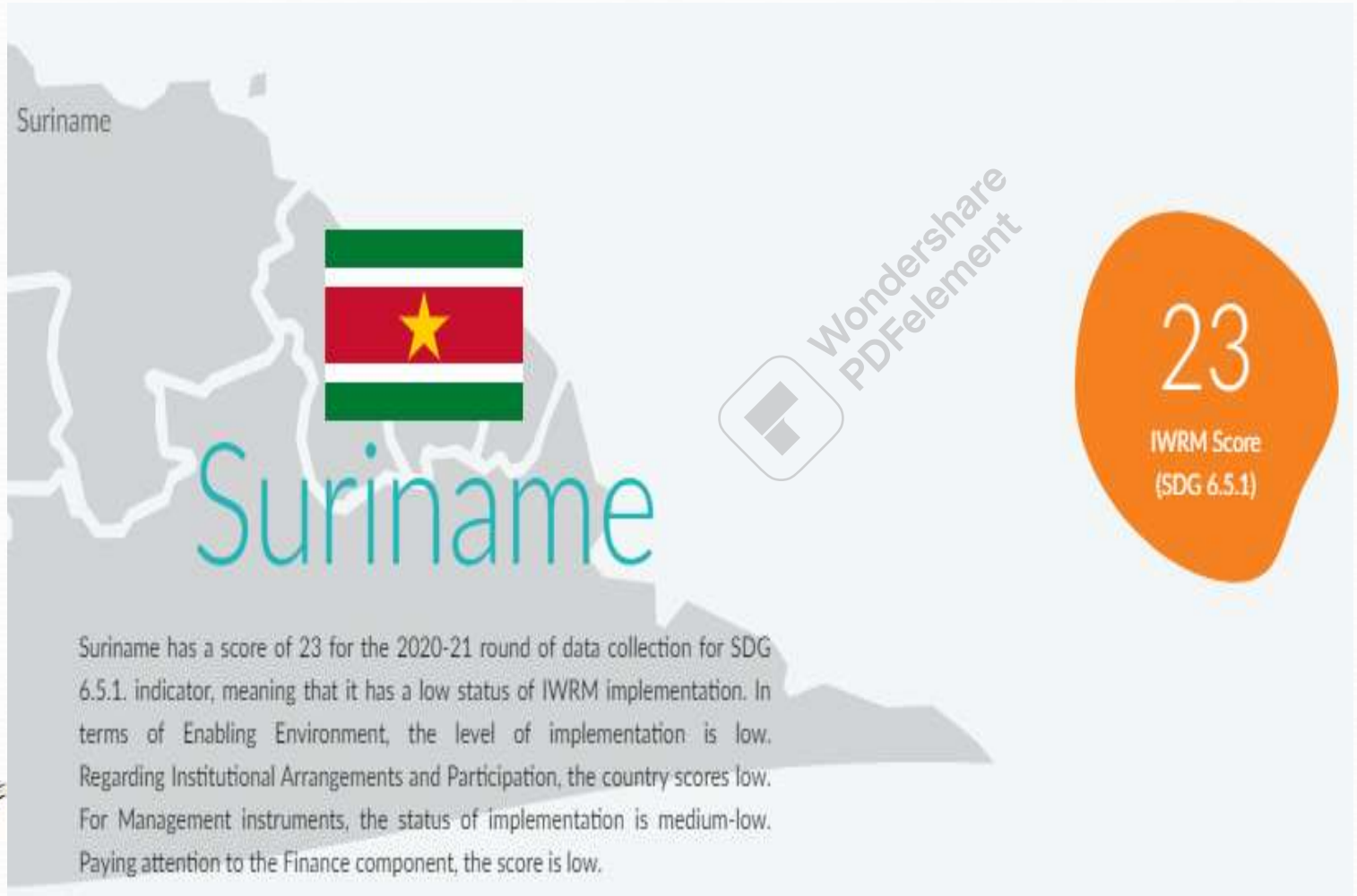
SUSTAINABLE DEVELOPMENT GOALS

UN environment programme

Global Water Partnership

UNEP-DHI CENTRE

Degree of implementation of IWRM in Suriname (2021)



Building capacity in IWRM in Suriname, phase 1

2018-2019

- Project title: *"Capacity building for Integrated Water Resources Management in Suriname"*
- Project components:
  - *Awareness*
  - *Capacity building*
  - *IWRM Plan*
- Project deliverables:
  1. *Situational analysis*
  2. *Action Plan and Monitoring Plan*
  3. *Comprehensive report on the way forward*

Conclusions from IWRM phase 1

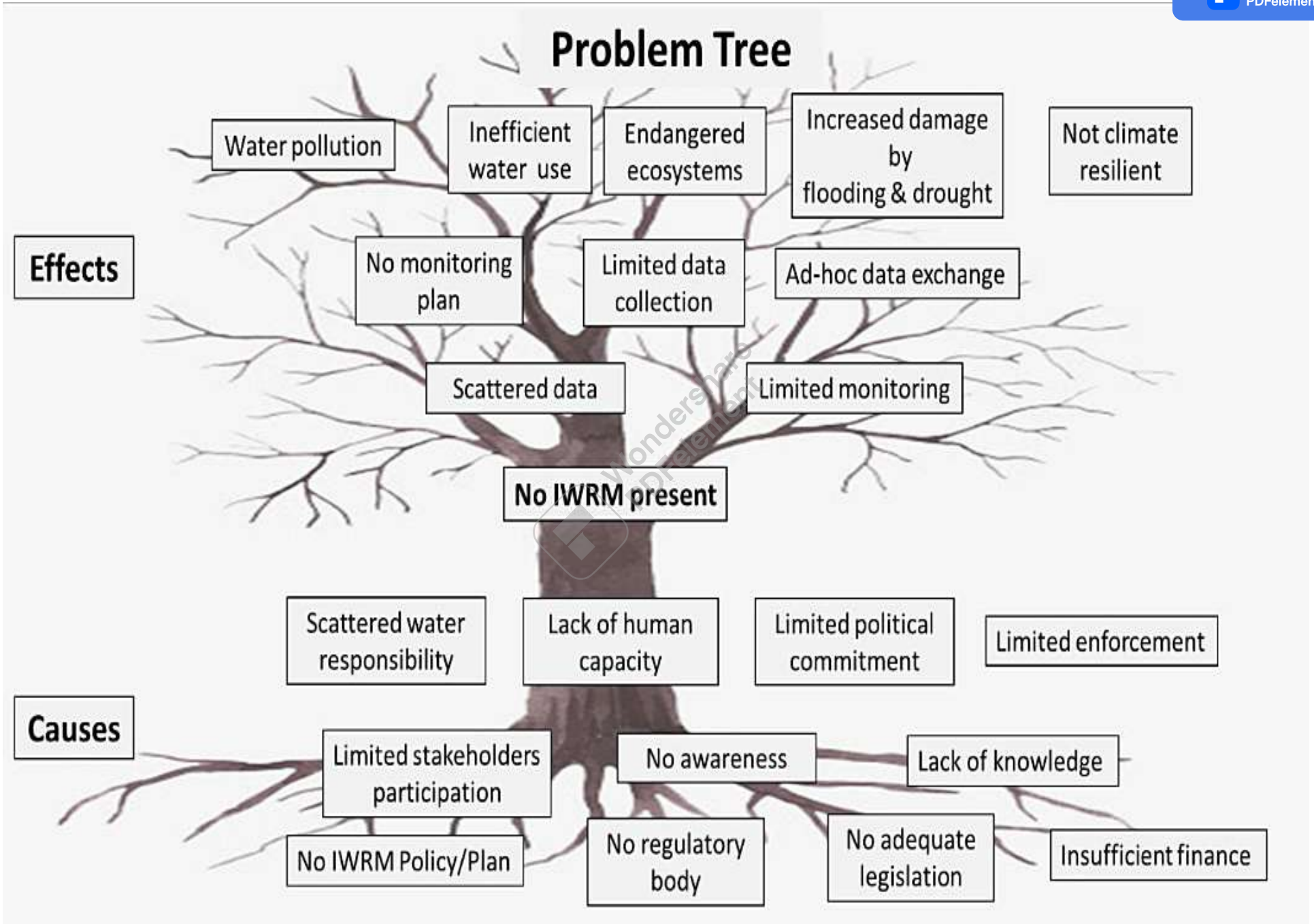
- Lack of awareness on sustainable use of water;
- Water legislation not up to date;
- No national water policy plan;
- No coordination among governmental departments;
- Not enough data to support management actions;
- Limited knowledge on IWRM;
- No national monitoring of water availability;
- Insufficient budget for investments in IWRM.

→ IWRM is marginally implemented in Suriname!

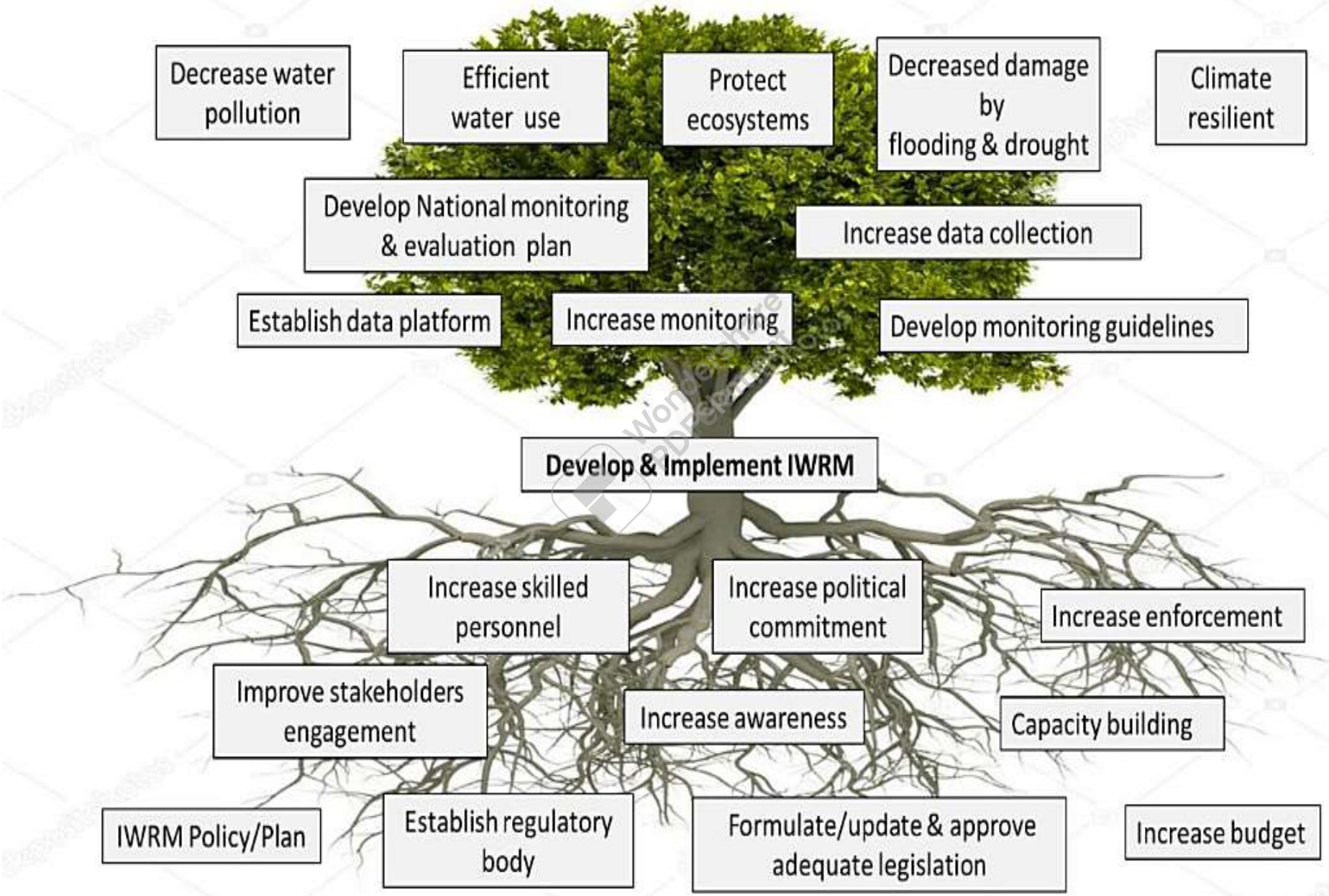
Recommendations from IWRM phase 1

- Develop an IWRM plan, to be incorporated in the National Policy Plan of Suriname;
- Increase awareness on the importance of IWRM, which will lead to increased political commitment;
- Increase IWRM knowledge through capacity building programs;
- Increase stakeholders engagement;
- Allocate sufficient budget for implementation of IWRM.

→ From analysis to actions!



Solution Tree

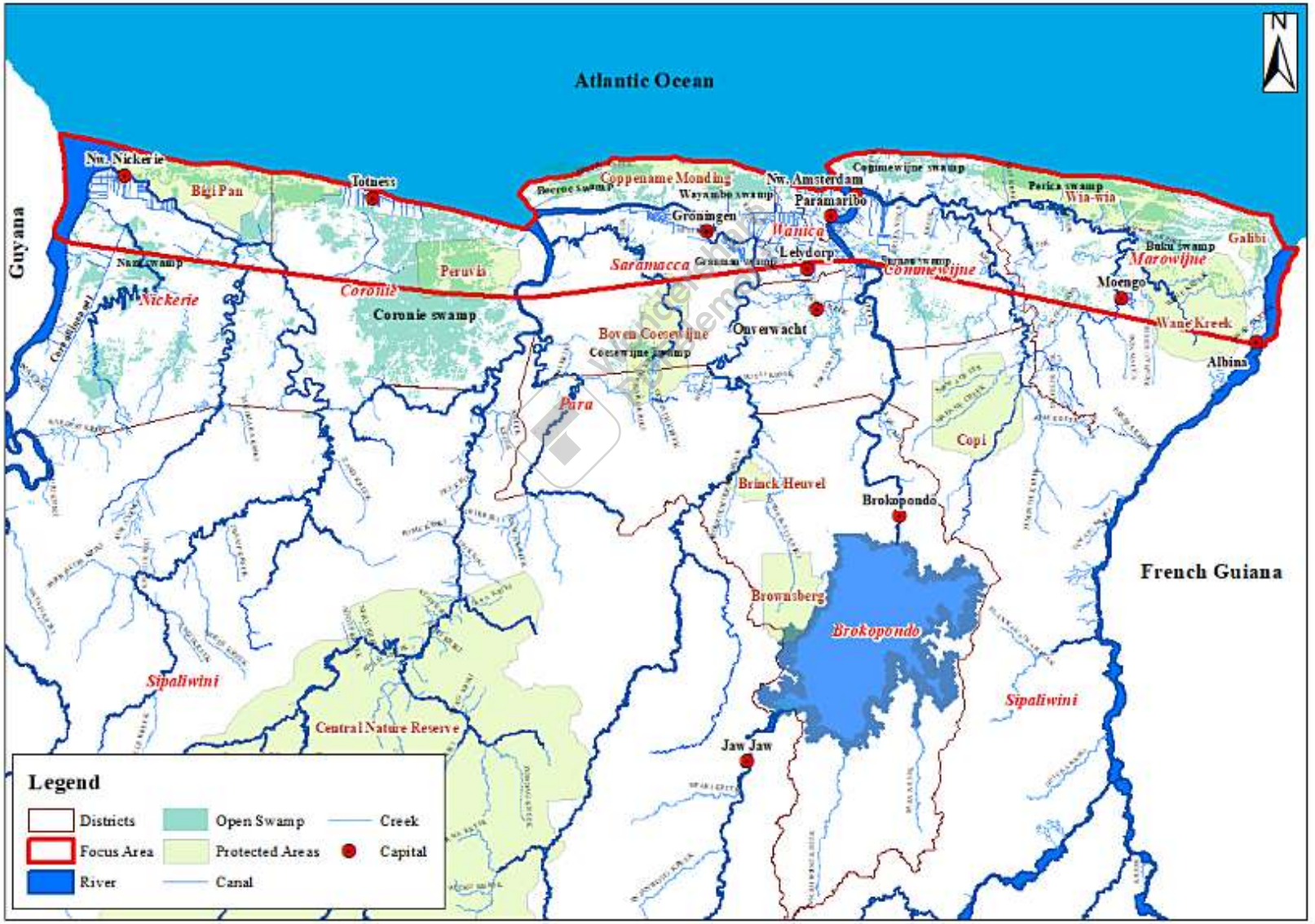


Building capacity in IWRM in Suriname, phase 2 2022-2023

- Project title: *"Capacity building for Integrated Water Resources Management in Suriname, phase 2"*

- Project components:
  1. *Surface water quantity and quality*
  2. *Legislation on surface water*
  3. *National water coordination body*
  4. *Increased capacity of water professionals*
  5. *Improved awareness and knowledge of policy makers*

1. Surface water quantity and quality



Surface water quantity

River	Catchment (km^2)	Discharge (m^3/s)	Remarks (data from 1968 /1999)
Marowijne	68,700	1,780	Large (catchment and discharge)
Commewijne	6,600	120	Small
Suriname	16,500	426	Average/medium
Saramacca	9,000	225	Small
Coppename	21,700	500	Average/medium
Nickerie	10,100	178	Small
Corantijn	67,600	1,570	Large

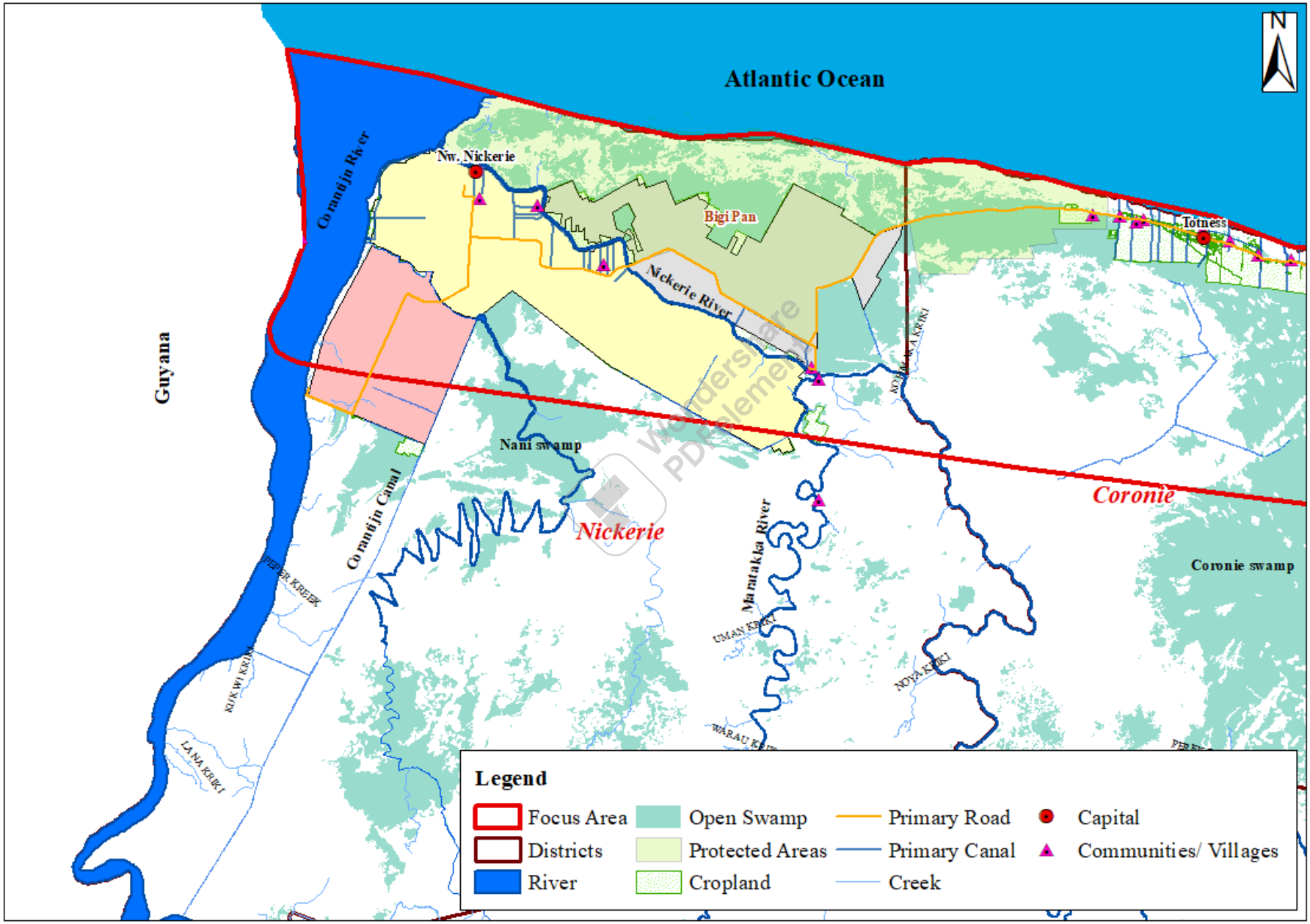
Findings surface water quantity and quality

From the desktop study conducted until now, it can be concluded that there is limited information available on water quality. The water quantity is not up to date as most figures are more than 20 years old and it is not known how climate change and inland developments (wood logging/mining) has impacted on the flows and catchments.

The in-situ water quality measurements in Coronie and Nickerie (approx. 6 months) show that the water bodies in general appear to have good quality (fresh) water.

From the stakeholder engagement the following can be concluded:

- There are settlements located along the fresh waterways who still the use the water for daily livelihood (household use, transportation and fishing).
- It is mentioned that the water down streams of the waterways are more turbid due to small scale mining activities which can also have a negative impact on the fish population.
- In Nickerie the freshwater from Nani Swamp is very important for irrigation towards the rice field. The rice cultivators believe that the dark colored water from the Nani Swamp has more nutrients compared to the light colored water which is pumped from the Corantijn River.
- Besides the importance of freshwater for agriculture purposes in Coronie, it is strongly believed that the water from the Coronie Swamp is important to preserve the mangrove population along the coast. A right balance of fresh and salt water is required for the mangroves.
- Recreational activities within and along waterways should have appropriate sanitation facilities so that it can be properly processed and do not impact the quality of the water.


Atlantic Ocean
N
Guyana
Corantijn River
Nw. Nickerie
Bigi Pan
Nickerie River
Totness
Nani swamp
Corantijn Canal
Nickerie
Coronie
Coronie swamp
Mantakka River
PEPPER KREEK
KAKWI KREEK
LANA KREEK
UMAN KREEK
NOYA KREEK
WARAU KREEK
Legend
Focus Area
Districts
River
Open Swamp
Protected Areas
Cropland
Primary Road
Primary Canal
Creek
Capital
Communities/ Villages

Surface water use

Surface water	Use
Nickerie rivier	Navigation Transport Domestic use (vaatafwaas; wassen van kleding; etc.) Agricultural use (irrigatie en afvoeren) Fisheries
Maratakka rivier	Domestic use (vaatafwaas; wassen van kleding; etc.) Agricultural use (irrigatie en afvoeren) Fisheries
Corantijn rivier	Transport Agricultural use (irrigatie en afvoeren)
Nanni Zwamp	Agricultural use (irrigatie en afvoeren) Fisheries Recreational (zwemmen)
Bigi Pan (MUMA)	Fisheries Recreational (toerisme, vogels bekijken, zwemmen)
Primairy waterways (irrigation)	Agricultural use (irrigatie en afvoeren)

Surface water quality (in situ only)

Type waterlichaam	R = Regen tijd D = Droge tijd	Gemm. Temp (°C)		Gemm. pH		Gemm. DO (mg/L)		Gemm. EC (µS/cm)		Gemm. TDS (mg/L)		Gemm. Salinity (ppt)		Gemm. Turbidity (NTU)		Gemm. Secchi (cm)	
	Meet locatie	R	D	R	D	R	D	R	D	R	D	R	D	R	D	R	D
Rivier	Maratakka River (WQ9)	27.75	28.87	5.41	5.2	1.11	1.91	50	53	32	33	0.01	0.01	7	15	57	81
	Nickerie River Upstream (WQ10)	28.75	30.5	6.17	5.77	1.58	2.54	59	64	38	41	0.02	0.02	11	11	49	44
	Nickerie River Downstream (WQ12, WQ15, WQ16,)	29.09	29.58	6.28	6.09	2.67	3.54	68	245	43	553	0.02	0.12	48	716	40	42
	Corantijn River (WQ17)	29.6	30.8	6.32	6.34	11.91	18.98	39	45	25	29	0.01	0.01	141	264	34	26
Zwamp	Nanni swamp (WQ18A)	-	28.98	-	6.39	-	19.38	-	95	-	61	-	0.03	-	13	-	70
Kreek	Nanni creek (WQ14B; WQ18B)	29.73	29.8	5.67	5.93	2.33	6.8	40	79	26	195	0.02	0.03	0	128	3	61
Primaire kanalen	Van Wouw canal (WQ14A)	29.01	29.32	6.23	6.95	0.65	0.92	44	45	28	26	0.01	0.01	4	0	55	65
	Canal at Middenstandspolder (WQ11)	29.96	30.13	6.86	6.34	2.63	7.37	456	365	296	237	0.17	0.14	165	95	6	11
	Bombay canal (WQ7)	26.79	28.5	6.24	6.19	16.52	1.75	265	311	265	202	0.08	0.1	1	46	-	10
	Corantijn canal (WQ13)	32.8	30.76	6.3	6.18	4.51	7.3	33	38	21	28	0.01	0.01	0	45	60	55
	Irrigation canal at Wageningen Polder (WQ8A)	29.83	30.93	6.56	6.39	9.8	1.71	260	370	180	240	0.1	0.14	38	57	19	13
	Drainage canal at Wageningen Polder (WQ8B)	28.62	28.43	6.49	6.54	1.88	3.02	459	481	298	320	0.16	0.18	150	123	16	15

Recommendations surface water quantity and quality

Recommendations

The following initial recommendations are provided:

- To continue with the water quality monitoring program as to collect more data also over longer periods of time. This activity can be carried out by WLA, in close cooperation with other organisations like OWMCP in Nickerie.
- To collect samples to analyze (in laboratory) on organic and inorganic compounds. The current water quality parameters may not be sufficient to assess the water quality in certain locations. For example, the impacts of the recent rat plague and the use of chemicals on water quality in Nickerie. Testing can be done in available laboratories in Suriname. This activity can also be carried out by WLA with support of third parties.
- It is recommended that WLA is provided with capacity support and institutional strengthening. The additional key activities should be embedded in their regular operations. WLA may need extra resources in terms of staff, equipment and financial sources for daily activities (fluids, calibration etc).

Findings surface water quality indicators

The measured onsite water quality parameters are mostly within the limits of the USEPA standards for freshwater and the FAO standards for irrigation. A few measured values are outside the limits, but can be explained due to specific incidental conditions in the field (such as non functioning sluice gates causing high EC).

Dissolved oxygen (DO) appears to be often very low, below the required freshwater standard for 6. The DO is one of the physical parameters that also depends on the flow rate, temperature, depth and aquatic life. A low DO is therefore not necessarily an immediate high risk, but should be compared together with other parameters.

The drainage canal can be considered as collectors of "waste water", because used water from agriculture areas is drained through these canals. It is therefore strongly recommended to conduct a larger scale water quality testing to determine other parameters such as pesticides, COD/BOD_5, and other potential substances.

Surface water quality standards (proposed)

Parameter	Irrigation water (agricultural) (FAO)	Freshwater (USEPA)
pH	6 -8.5	5-9
Dissolved oxygen (DO)	-	> 6 mg/L
Electrical conductivity (EC)	<3000 uS/cm	0 – 1500 uS/cm
Total Dissolved Solids TDS)	<2000 mg/L	<500 mg/L

Other Parameters to be considered):		
Temperature (^oC)	-	-
Turbidity (NTU)	-	-
Sodium adsorption ratio (SAR)	<15 me/l	-
Suspended Solids (SS)		<25 mg/l
Nitrogen (NO_3-N)	<30 mg/l	
Phosphate ($PO4^{3-}$)	< 2 mg/l	

Recommendations surface water quality indicators (1)

Recommendations

The following recommendations are made:

- Although it can be seen that the measured are near or within the limits of WQ standards, it is recommended to continue with the water quality monitoring program and to collect more data also over longer periods of time. This data can used to validate if the proposed standards need to be adjusted for Suriname.
- The proposed international standards include also the chemical parameters. It is recommended to collect water quality samples for laboratory testing on organic and inorganic compounds. This data can also validate if there are minerals in higher concentration present in the drainage canals.

Recommendations surface water quality indicators (2)

It is common practice to prepare a Risk Assessment of each water shed or major water body as part of IWRM and to prepare more specific guidelines and WQ standards based on the Risk Assessment. Nickerie and Coronie supply water for irrigation purposes, hence the risk for human health is considered high. Using only onsite measured data, does not provide the potential risks associated with chemicals or toxic substances in the water. A more detailed Risk Assessment is recommended.

Traditional approach to monitor water quality can be costly, time-consuming and intensive. It is therefore recommended to prepare a Water Quality Index (WQI) for each major water body. The WQI is a single number that describes the water quality status of each water body based on its specific use, and is therefore a very useful tool for policy makers and monitoring. The WQI is mathematically derived from data of generally between 8 and 15 water quality parameters, each with a weight depending on the importance for the designated water use.

Both the Risk Assessment and WQI require a larger set of water quality data, including laboratory tested parameters. It is recommended to address these aspects in the near future for the selected water bodies in Nickerie and Coronie.
The results of Nickerie and Coronie can be subsequently used as blue print for other areas.

2. Surface water legislation

The review of the water legislation has shown that it is outdated and scattered. It mainly concerns legislation that contains provisions to protect water resources in an ad hoc manner, rather than as a water system. It appears that there are a number of laws that aim to protect surface waters, but the laws are not aligned with each other. In addition, several government agencies are charged with enforcement. By way of illustration, reference can be made to the Harbour Decree, which prohibits the dumping of waste and ballast water in the rivers by ships, both the Penal Code and Police Criminal Code protecting health and life of persons against deliberately pollution of surface waters and the provisions of Environmental Framework Act aimed at regulating pollution of the environment. But also, the provisions in the Pesticides Act aim at the protection of water resources against littering of empty pesticides bottles. The marine sea area is protected by both the Environmental Framework Act, Act on Maritime Zones as well as the State Order "Mining Installations. They all prohibit dumping of waste and hazardous substances in the sea.

Review of the surface water legal framework

The review revealed that the existing legal framework for water management covers a collection of legislation that have been developed in one or more of the various fields of law somehow with a connection with water. However, these are either not aligned and overlap, or they pose gaps.

It is therefore recommended to formulate an overarching legislative framework for water management for Suriname, which considers the existing legislation while provides for addressing the gaps.

The need for a surface water law

There are 2 ways to address the current gaps and shortcomings in the law.

1. Through ***an overarching law for water management*** in general, whereby water will be regulated as a system, thus covering surface and groundwater water laws. This option was brought up during the workshop. Such an overarching law would aim to protect, use, develop, conserve, manage and control water resources as a whole. Rivers, dams, wetlands, the surrounding land, groundwater, as well as human activities that influence them, would be managed as one cycle. However, this would entail much longer participatory process and input from technical experts, which is not available in current consultancy. This option could still be considered in the near future.

2. Through a ***surface water law*** aimed at regulating the protection, use, development, conservation, management and control of surface water considering both quantity and quality. This surface water law must provide for a connection with current legislation already regulating surface water aspects, while at the same time addressing the gaps and shortcomings. This law should provide a legal basis through general commands and prohibitions, while the detailed elaboration will take place through more specific regulation

Draft surface water law

Concept v1 jkj 12jul23

Wet van .....

houdende bepalingen over het beheer

van oppervlaktewateren

(Wet Oppervlaktewateren)

==========

ONTWERP

DE PRESIDENT VAN DE REPUBLIEK SURINAME,

In overweging genomen hebbende, dat het nodig is regels betreffende het beheer van oppervlaktewateren vast te stellen.

Heeft, de Staatsraad gehoord, na goedkeuring door De Nationale Assemblée, bekrachtigd de onderstaande wet:

Algemene Bepalingen

Artikel 1

In deze wet en de daarop berustende bepalingen wordt (mede) verstaan onder:

a. beheer: beheer van oppervlaktewateren omvat mede het gebruik, de verdeling, de ontwikkeling, het behoud, de afwatering, de monitoring van de kwaliteit en de kwantiteit, de bescherming en de controle van en het toezicht op oppervlaktewateren en watervoorraden ongeacht waar die zich in Suriname bevinden of onder welke benaming dan ook;

3. Coordination of the water sector

- Leadership and responsibility to set up a coordination mechanism for the water sector is with the Ministry of NH *(article 15 sub j of the act on tasks of departments).*
- The name selected for the water coordination body is the Water Platform.
- The Council of Ministers (RvM) approved the appointment of the Water Platform for 3 years, as per March 1, 2023.
- The installation of the Water Platform was on April 5, 2023 by the Minister of NH.

Members of the Water Platform

- Ministry of Natural Resources (Chair)
- Ministry of Natural Resources (NH)
- Ministry of Public Works (OW)
- Ministry of Spatial Planning and Environm. (ROM)
- Ministry of Agriculture (LVV)
- Ministry of Health (VG)
- Ministry of Regional Development (ROS)
- Ministry of Education (MINOV)
- AdeK University of Suriname (ADEKUS)
- Medical Mission (MZ)
- Waterforum Suriname (WFS)

Installation of the Water Platform on April 5, 2023

Vision and mission of the Water Platform

- The vision of the Water Platform is to have sustainable intersectoral cooperation in the water sector of Suriname.
- The mission of the Water Platform is to be the main advisory body for the water sector of Suriname.

Tasks of the Water Platform

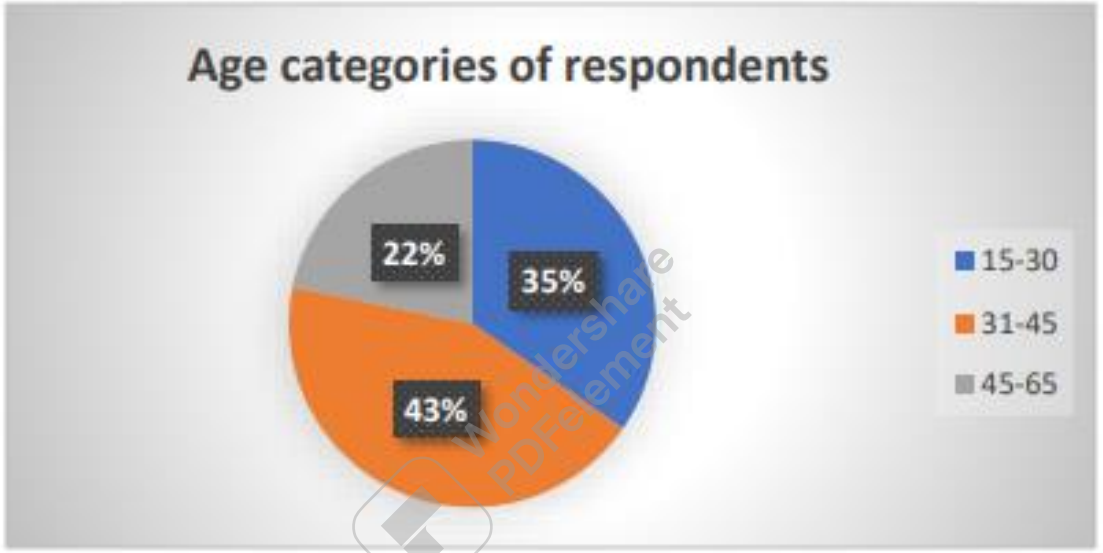
1. Give advice regarding the national water policy plan and related strategy.
2. Give advice and guidance of the implementation of the national water policy plan by the involved ministries and other stakeholders.
3. Stimulate exchange of water information and water knowledge.
4. Observe developments in water, both nationally and internationally.
5. Defend the interests of the national water sector.
6. Promote capacity building in the water sector.
7. Stimulate water awareness and water education for both policy makers and citizens.
8. Support fundraising for the water sector.

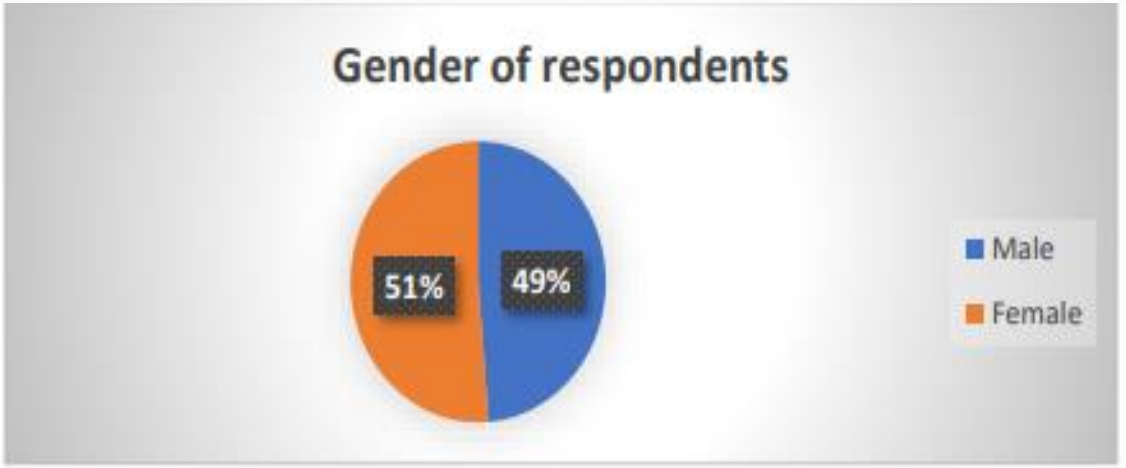
4. Survey to assess current capacity of water professionals

The survey of the current capacity of water professionals was distributed via email and Whatsapp to the network of water professionals in the database of Water Forum Suriname and the Environmental Department of the University of Suriname. Each professional was asked to further distribute the survey to their respective network of water colleagues and other professionals, and so on.

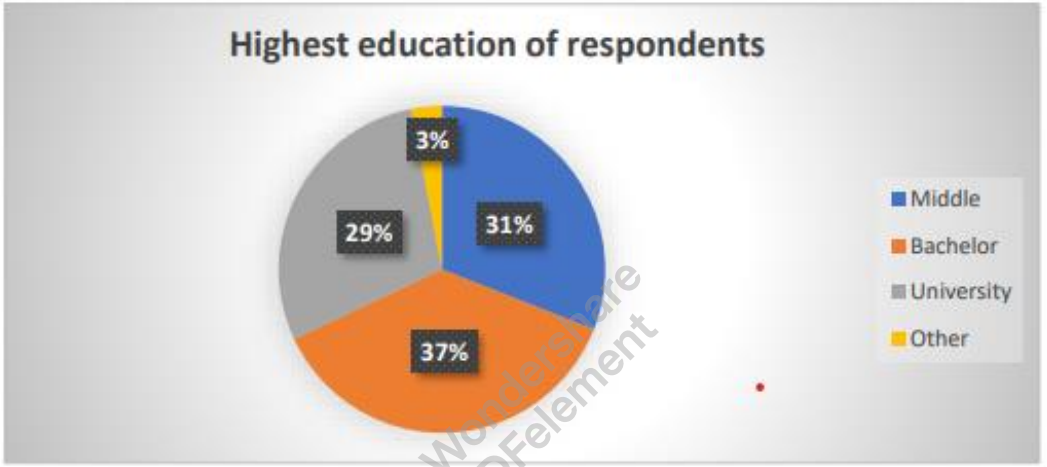
Although difficult to exactly assess, it is estimated that the survey reached approximately 1,000 persons from water related ministries, educational institutes, private sector, NGO's, policy makers, water students, etc. At the end date 214 respondents had responded to the survey. In the next chapters the analysis of the responses of these respondents is presented.

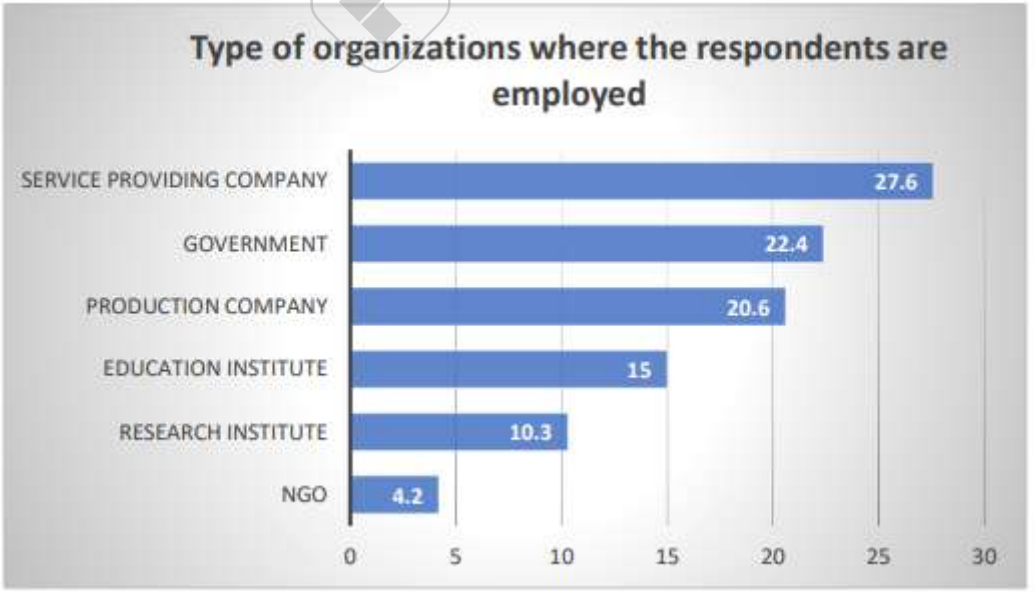
Findings of the survey (n = 214)



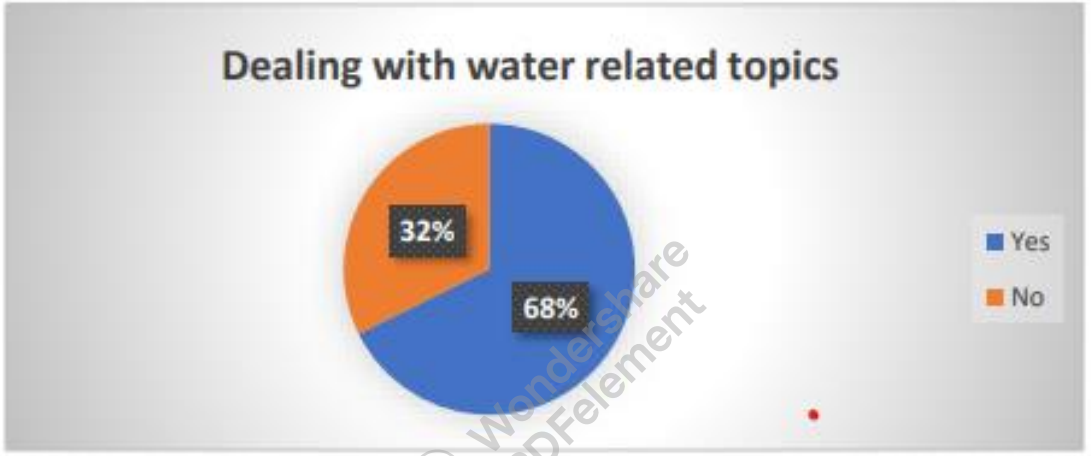


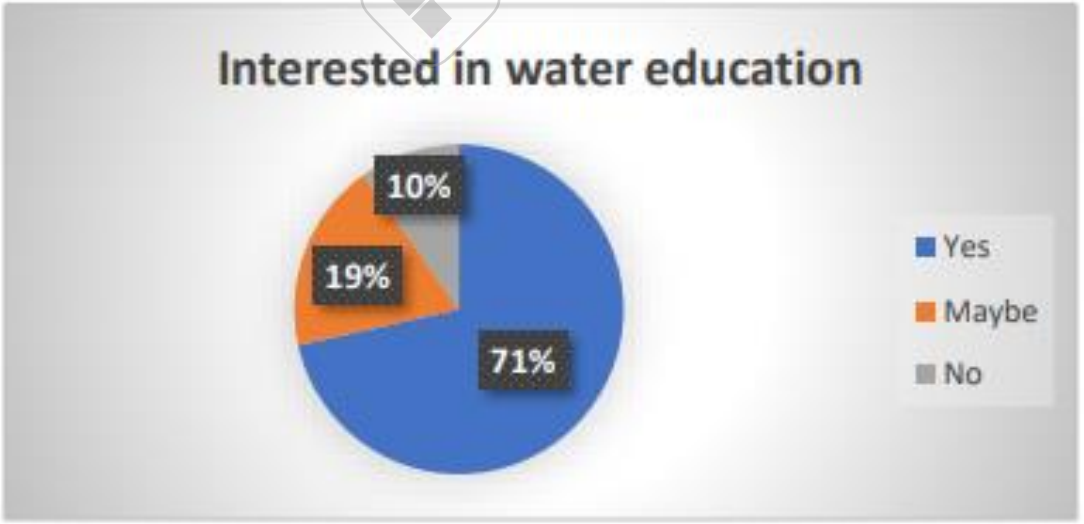
Findings of the survey



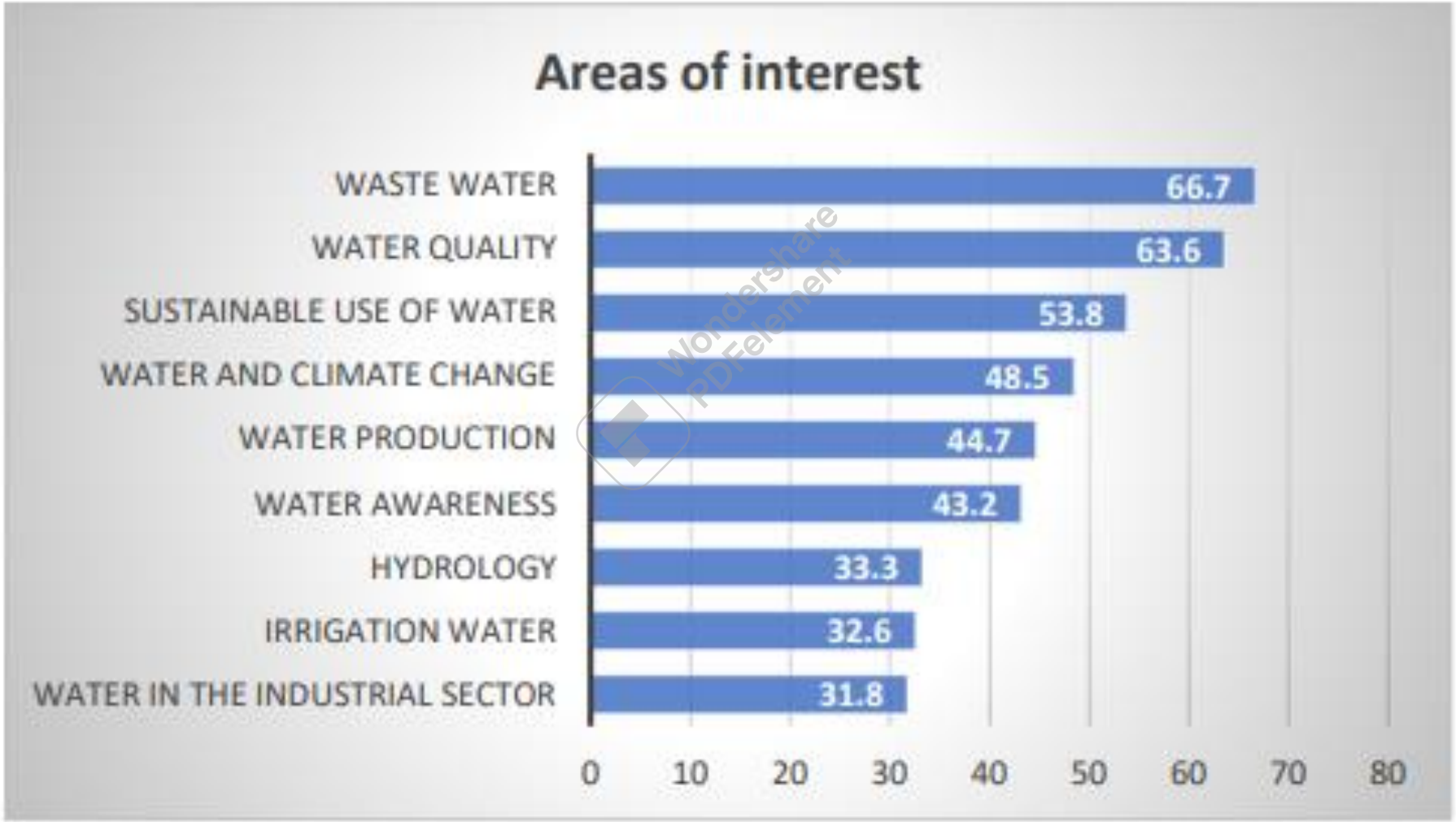


Findings of the survey

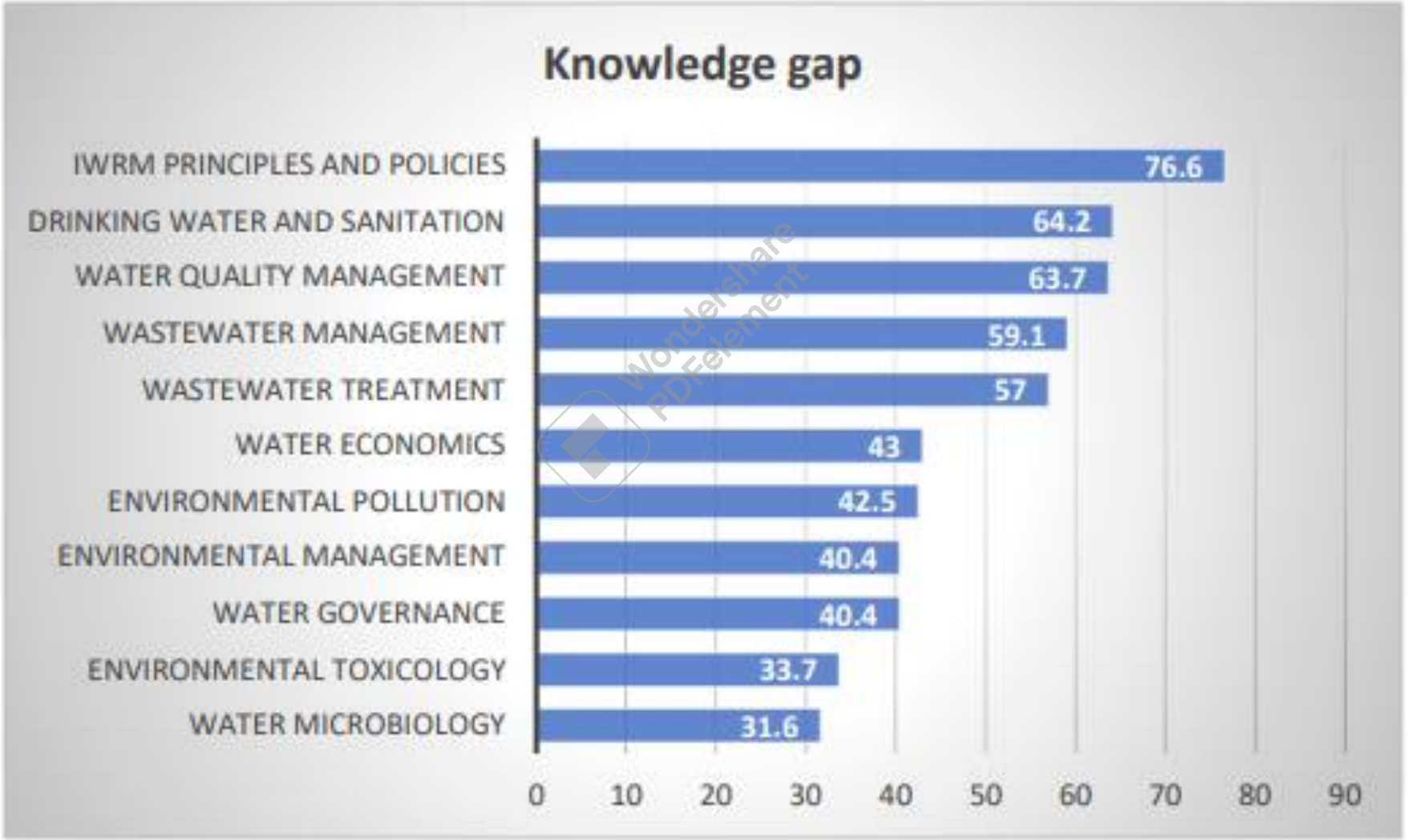




Findings of the survey



Findings of the survey



5. Topics of the IWRM awareness campaign and infographics

1. What is IWRM
2. The benefits of IWRM for the country
3. IWRM and water-related problems
4. IWRM and climate change
5. All stakeholders are involved
6. IWRM and surface water
7. IWRM and water legislation
8. IWRM and coordination of the water sector
9. IWRM and water education

Awareness sessions with policy makers about IWRM

Awareness session with members of DNA

Awareness sessions in the media about IWRM

Still many challenges ahead for IWRM in Suriname

- No national water policy plan, nor water basin plans.
- Official approval of draft water laws delayed for a long time.
- Insufficient coordination among water entities, and no dedicated leading water authority.
- Limited skilled human resources capacity.
- Limited data on water, limited water monitoring network.
- No/limited control of pollution and wastewater.
- Lack of sufficient funding.
- Limited participation of private sector and public.

But … we are moving forward with IWRM in Suriname!

- Better analysis of the water situation.
- Proposed water quality standards.
- Draft legislation for groundwater and surface water.
- Directorate of Water at the Ministry of Natural Resources, and a special unit for Integrated Water Management (IWB).
- Installation of the Water Platform.
- Survey among water professionals.
- IWRM education program.
- IWRM awareness strategy.
- More attention from policy makers for an integrated approach in the water sector.

Question

On a scale of 1 – 5 how useful do you think is the IWRM concept for water management in Suriname?

1	2	3	4	5
Not useful at all	Not very useful	In the middle	Somewhat useful	Very useful

Why?

Thank you

Questions

Discussions