SDG 6.5: By 2030, implement integrated water resources management (IWRM) at all levels, including through transboundary cooperation as appropriate

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BACKGROUND

SDG 6 **Ensure availability and sustainable management of water and sanitation for all**

Target 6.5 of SDG 6 aims to implement integrated water resources management (IWRM) at all levels

IWRM is based on the three principles: **social equity, economic efficiency and environmental sustainability**

Definition of IWRM is the one made by GWP (2000):

„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”.

BACKGROUND

The main participants in the IWRM process include:

- state structures, ministry offices responsible for the economy of water in a strategic dimension;
- organizations, agreements, agencies operating at the river basin level or thereof parts;
- local governments and their authorities;
- unions of communes, catchment unions;
- water user associations;
- non-governmental organizations;
- citizens.

SOURCE OF KNOWLEGE

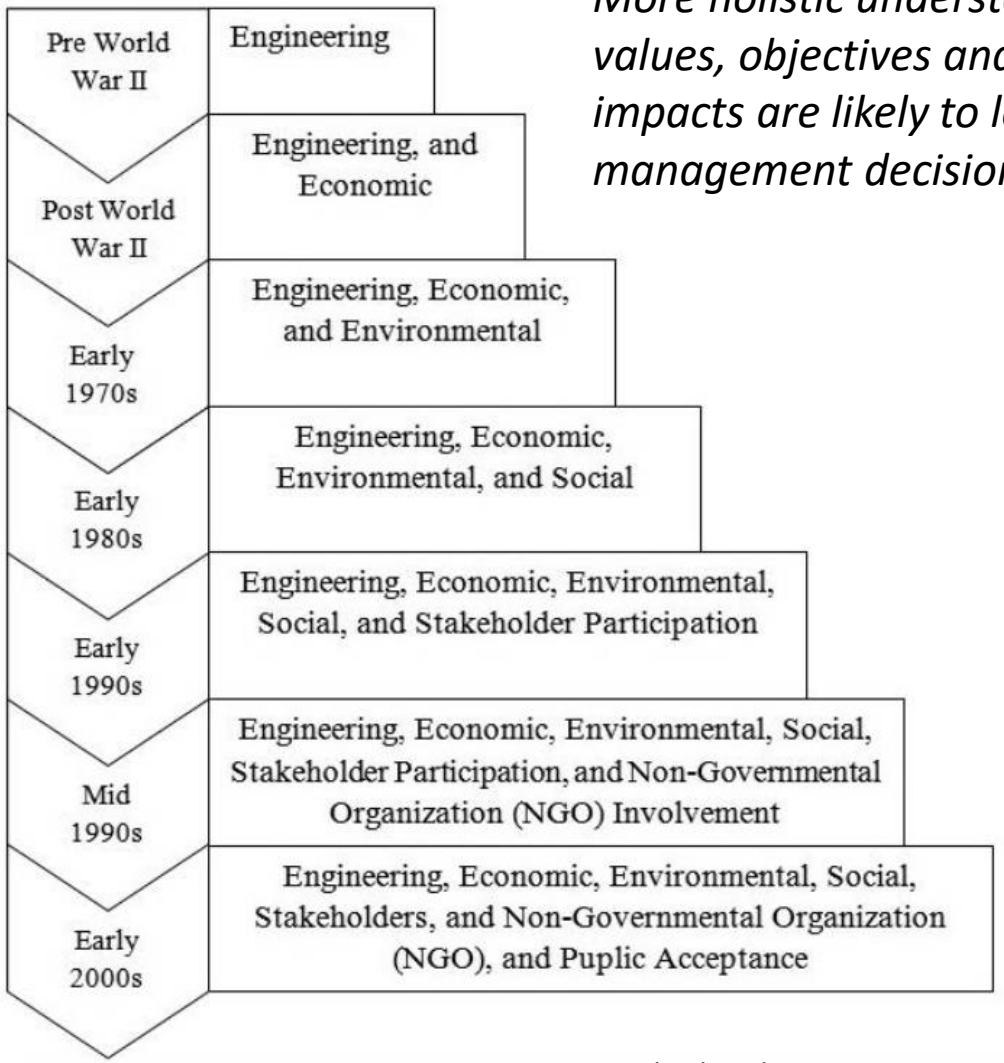
The best guidance related to IWRM: THE HANDBOOK FOR INTEGRATED WATER RESOURCES MANAGEMENT IN TRANSBOUNDARY BASINS OF RIVERS, LAKES AND AQUIFERS March 2012

Published in 2012 by the International Network of Basin Organizations (INBO) and the Global Water Partnership (GWP)

https://www.gwp.org/globalassets/global/toolbox/references/the-handbook-for-integrated-water-resources-management-in-transboundary-basins-of-rivers-lakes-and-aquifers-inbo-gwp-2012-english.pdf

EVOLUTION OF WATER RESOURCES MANAGEMENT

towards multi-disciplinary and integrated approach



Source: Ali Mirchi, 2013

More holistic understanding of watershed systems, consideration of multiple stakeholder values, objectives and behavior, and improved abilities to predict and plan for future impacts are likely to lead to more sustainable water resources planning and management decisions.

Increasing water pressure brought by population growth, economic development, and environmental pollution forced a changed on isolated and uncoordinated fragmented water management methods (surface water management, groundwater management, and basin water management).

Since the 1980s, the concept of “Integrated Water Management” (IWM) has evolved especially after the summit in Dublin and Rio de Janeiro in 1992.

In the 1990s, water resources management added sustainable feature on the basis of IWM and the need for public participation.

The significant impact of climate change it become necessarily to deal with the uncertain changes of water resources and improve the adaptability and flexibility of water management.

DETAILS OF THE TARGET 6.5

Two indicators of the target 6.5:

- 6.5.1 **Degree of integrated water resources management**

  SDG indicator 6.5.1 score is based on 33 survey questions and is calculated as an average of the four IWRM dimension scores.

  The degree of implementation is measured on a scale of zero to 100, using a self-assessed country questionnaire.

  The questionnaire contains questions at national, subnational, basin/aquifer, local and transboundary levels.

- 6.5.2 **Proportion of transboundary basin area with an operational arrangement for water cooperation**

https://www.sdg6data.org/

DETAILS OF THE TARGET 6.5.1

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Dimensions of indicator 6.5.1 Degree of integrated water resources management implementation

- **Enabling environment**: creating the conditions that help to support the implementation of IWRM, which includes the most typical policy, legal and strategic planning tools.
- **Institutions and participation:** it refers to the range and roles of political, social, economic and administrative institutions and other stakeholder groups that help to support implementation.
- **Management instruments:** the tools and activities that enable decision makers and users to make rational and informed choices between alternative actions.
- **Financing:** budgeting and financing made available and used for water resources development and management from various sources.

Status and progress ENABLING ENVIRONMENT

1.1 What is the status of policies, laws and plans to support IWRM (IWRM) at the national level?

1.1 a National water resources policy, or similar:

- National Environmental Policy 2030
- National Energy and Climate Plan for the years 2021-2030
- Polish Energy Policy
- The Nature Conservation Act

Way forward – projects:

- Water scarcity prevention program for the years 2023-2027 with a perspective until 2030
- Management of water resources in Poland - to improve the effectiveness of the implementation of activities planned in the six-year planning cycle

1.1 b National water resources law(s).

Water Law Act of 20 July 2017

THE 2030 NATIONAL ENVIRONMENTAL POLICY

ENERGY POLICY OF POLAND UNTIL 2040

1.1 c. National integrated water resources management (IWRM) plans, or similar.

- River Basin Management Plans
- Flood Risk Management Plans
- The Drought Effects Counteracting Plan

- National Municipal Wastewater Treatment Programme

Status and progress ENABLING ENVIRONMENT

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1.2 What is the status of policies, laws and plans to support IWRM at other levels?

1.2 a Sub-national water resources policies or similar
River Basin Management Plans; Flood Risk Management Plans; The Drought Effects Counteracting Plan

1.2 b Basin/aquifer management plans or similar, based on IWRM.

River basin management plans for following basins Oder, Vistula, Dniester, Danube, Banówka, Elbe, Neman, Pregola and Świeża rivers

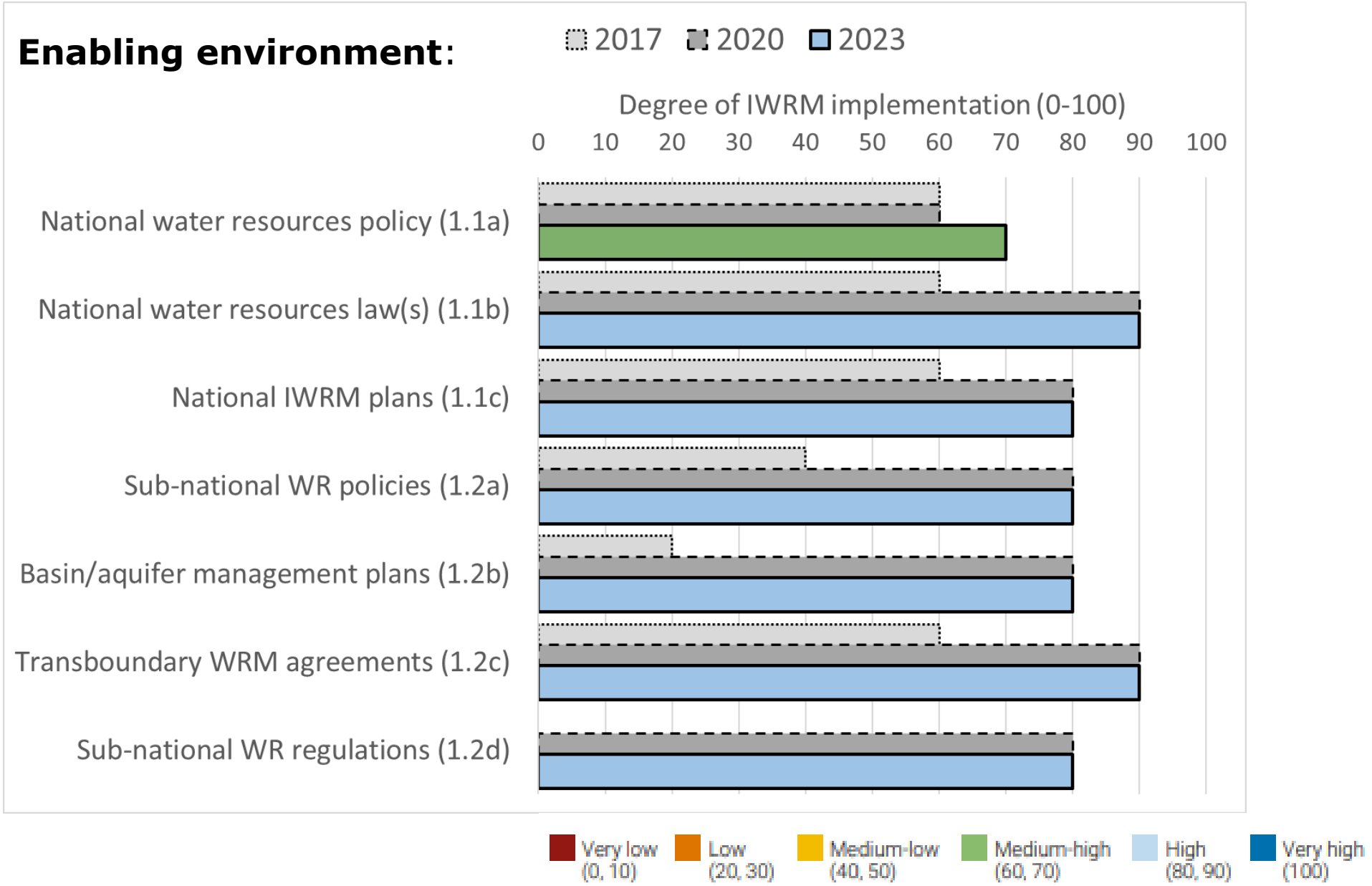
1.2 c Arrangements for transboundary water management

Six bilateral agreements with Germany, the Czech Republic, Slovakia, Ukraine and Lithuania and Belarus, one international agreement for the Oder basin, with Germany and the Czech Republic, and has observer status in the International Commission for the Protection of the Elbe.

1.2 d Sub-national water resources regulations (laws, decrees, ordinances or similar).

Levels of water resources management: local (water supervision), catchment area (catchment management), water region (regional water management board) and river basin (National Water Management Board, minister responsible for water management).
Regulations on water intake protection area, water permits.

Enabling environment:



Status and progress INSTIUTIONS AND PARTICIPATION

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2.1 What is the status of institutions for IWRM implementation at the national level?

2.1 a National government authorities for leading IWRM implementation

The competent authorities: 1) the minister in charge of water management; 2) the minister in charge of inland navigation; 3) the President of State Water Holding Polish Waters; 4) the director of Regional Water Management Board of State Water Holding Polish Waters; 5) the director of River Basin Management Board of State Water Holding Polish Waters; 6) the manager of water supervision of State Water Holding Polish Waters; 7) the director of the maritime office; 8) the voivode; 9) the starost; 10) the commune head, mayor or president of the city.

2.1 b Coordination between national government authorities representing different sectors on water resources policy, planning and management.

Planning documents are adopted by ordinances are the subject of the process of interministerial arrangements

2.1 e Developing IWRM capacity

Planning documents within water management were prepared including abstracts in non-specialized versions.
Educational and promotional activities regarding water resources (a.o. website, conference, advertising spot on TV and the Internet, brochures, activity in social media).

2.1 c Public participation in water resources policy, planning and management at national level.

Each of the policies, laws and plans is subjected to public consultations

2.1 d Private sector participation in water resources development, management and use

Public consultations includes dialog with private sector

Status and progress INSTIUTIONS AND PARTICIPATION

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2.2 What is the status of institutions for IWRM implementation at other levels?

2.2 a Basin/aquifer level organizations for leading implementation of IWRM.

Organizational units responsible for IWRM on different levels:
- National Water Management Board based in Warsaw;
- 11 Regional Water Management Boards (RZGW) with headquarters in Białystok, Bydgoszcz, Gdańsk, Gliwice, Kraków, Lublin, Poznań, Rzeszów, Szczecin, Warsaw and Wrocław;
- 50 Catchment Boards and 330 Water Supervision Units.

2.2 b Public participation in water resources policy, planning and management at local level.

Public consultations of legislative acts on local levels (voivodship, poviat or district)

2.2 e Organizational framework for transboundary water management

Poland leads active cooperation in transboundary waters with five neighboring countries, i.e. Ukraine, Germany, Slovakia, the Czech Republic and Lithuania, within bilateral commissions and the International Commission for the Protection of the Oder River against Pollution.

2.2 c Participation of vulnerable groups in water resources planning and management

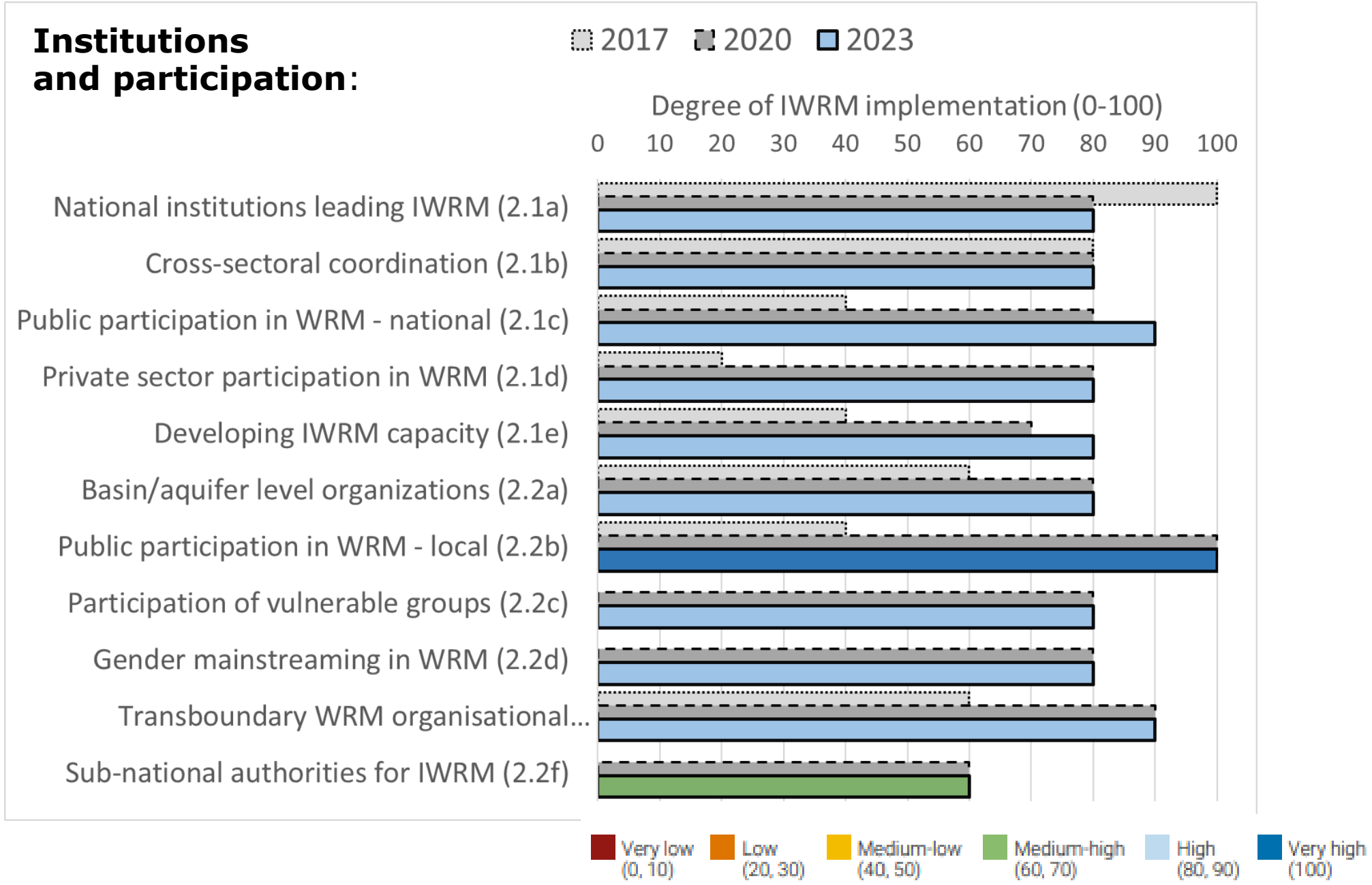
2.2 d Gender mainstreaming in water resources management

The equal participation in public consultation is guaranteed by the Constitution of the Republic of Poland and Convention for the Protection of Human Rights and Fundamental Freedoms, ratified by Poland in 1993

2.2 f Sub-national authorities for leading IWRM implementation

Sub-national level authorities have the capacity to lead periodic monitoring and evaluation of the IWRM plan(s)

Institutions and participation:



Status and progress MANAGEMENT INSTRUMENTS

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3.1 What is the status of management instruments to support IWRM implementation at the national level?

3.1 a National monitoring of water availability (includes surface and/or groundwater, as relevant to the country).

National monitoring of water availability including surface waters and ground waters is perfomed on regular basis by IMWM NRI and PGI NRI respectivly.

3.1 b Sustainable and efficient water use management from the national level, (includes surface and/or groundwater, as relevant to the country).

Implementation of new legal instruments regarding charges for water services conducive to sustainable use of water resources in industry, agriculture and households.

3.1 c Pollution control from the national level.

The assessment of surface and groundwater quality status is the result of diagnostic monitoring for assessment of reaching the environmental objectives.
Poland updated the Action programme to reduce and prevent further pollution of water by nitrates from agricultural sources (the so-called Nitrate Action Programme) in 2022.
In 2022 the 6th update of the National Municipal Wastewater Treatment Programme was adopted.

3.1 d Management of water-related ecosystems and biodiversity from the national level.

Water related ecosystems are being monitored and included in RMBPs.
There are planning documents for Natura 2000

3.1 e Management instruments to reduce impacts of water-related disasters from the national level.

Flood: flood hazard, flood risk maps and flood risk management plans.
The Odra-Vistula Flood Management Project (OVFMP)
Drought: The Drought Effects Counteracting Plan

Status and progress MANAGEMENT INSTRUMENTS

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3.2 What is the status of management instruments to support IWRM implementation at other levels?

3.2 a Basin management instruments

River Basin Management Plans are being developed and periodically reviewed and updated

3.2 b Aquifer management instruments

River Basin Management Plans includes aquifer level and are being developed and periodically reviewed and updated.

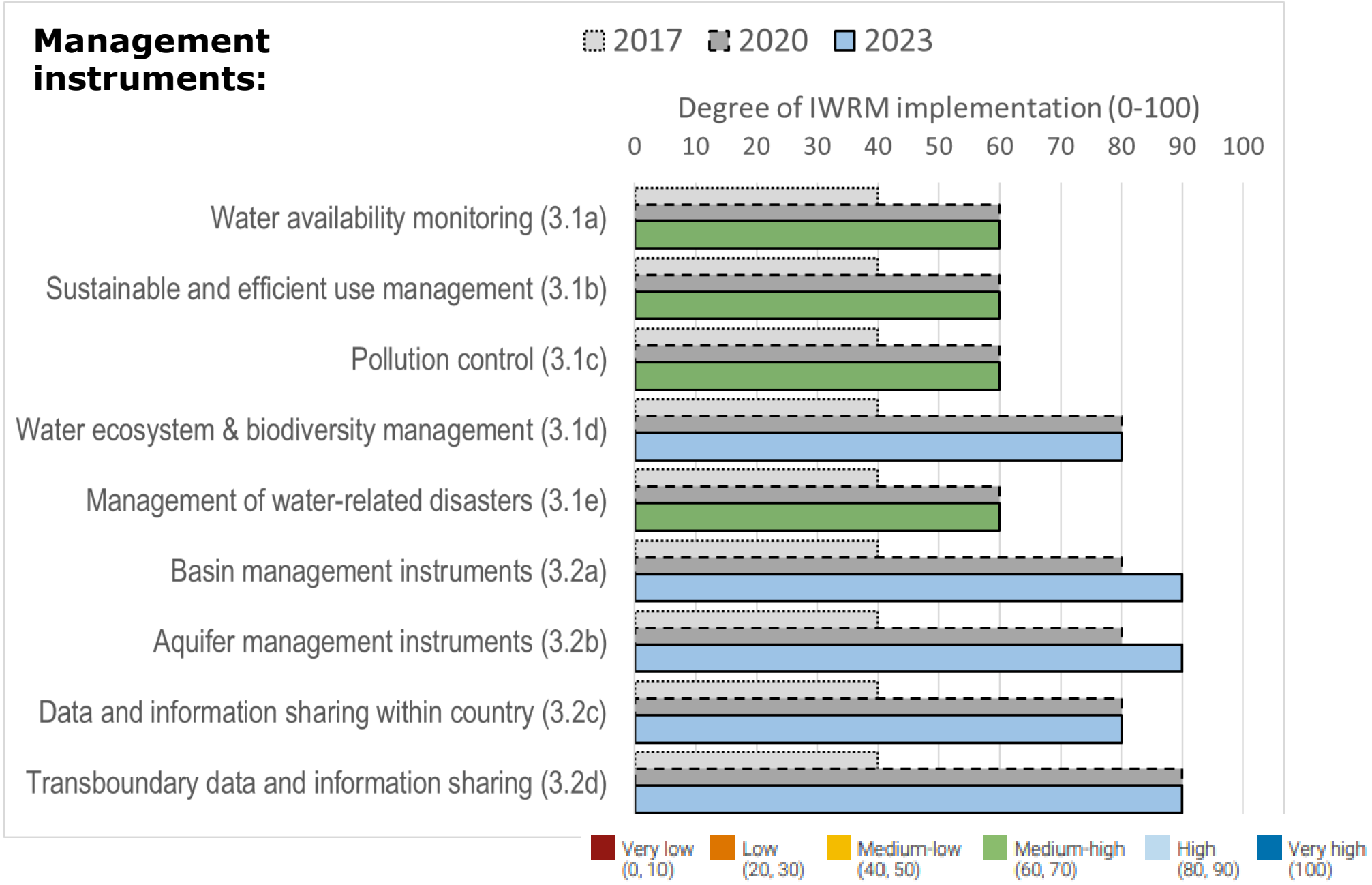
3.2 c Data and information sharing within countries at all levels

Data sharing obligations and accessibility is regulated under the Water Law Act

3.2 d Transboundary data and information sharing between countries.

Arrangement with European Environmental Agency to submit results of monitoring of surface and groundwaters from State Environmental Monitoring (PMŚ) operated by Chief Inspectorate of Environmental Protection (GIOŚ)
Data exchange within bilateral and multilateral transboundary water working groups
Provision of selected data to EUROSTAT

Management instruments:



Status and progress FINANCING

4.1 What is the status of financing for water resources development and management at the national level?

4.1 a National budget for water resources infrastructure (investment and recurrent costs).

4.1 b National budget for IWRM elements (investments and recurrent costs)

State Water Holding Polish Waters is financed i.a. with funds from Poland's state budget, the EU projects , the World Bank, Council of Europe Development Bank;

National Fund for Environmental Protection and Water Management contributes to the implementation of projects

4.2 What is the status of financing for water resources development and management at other levels?

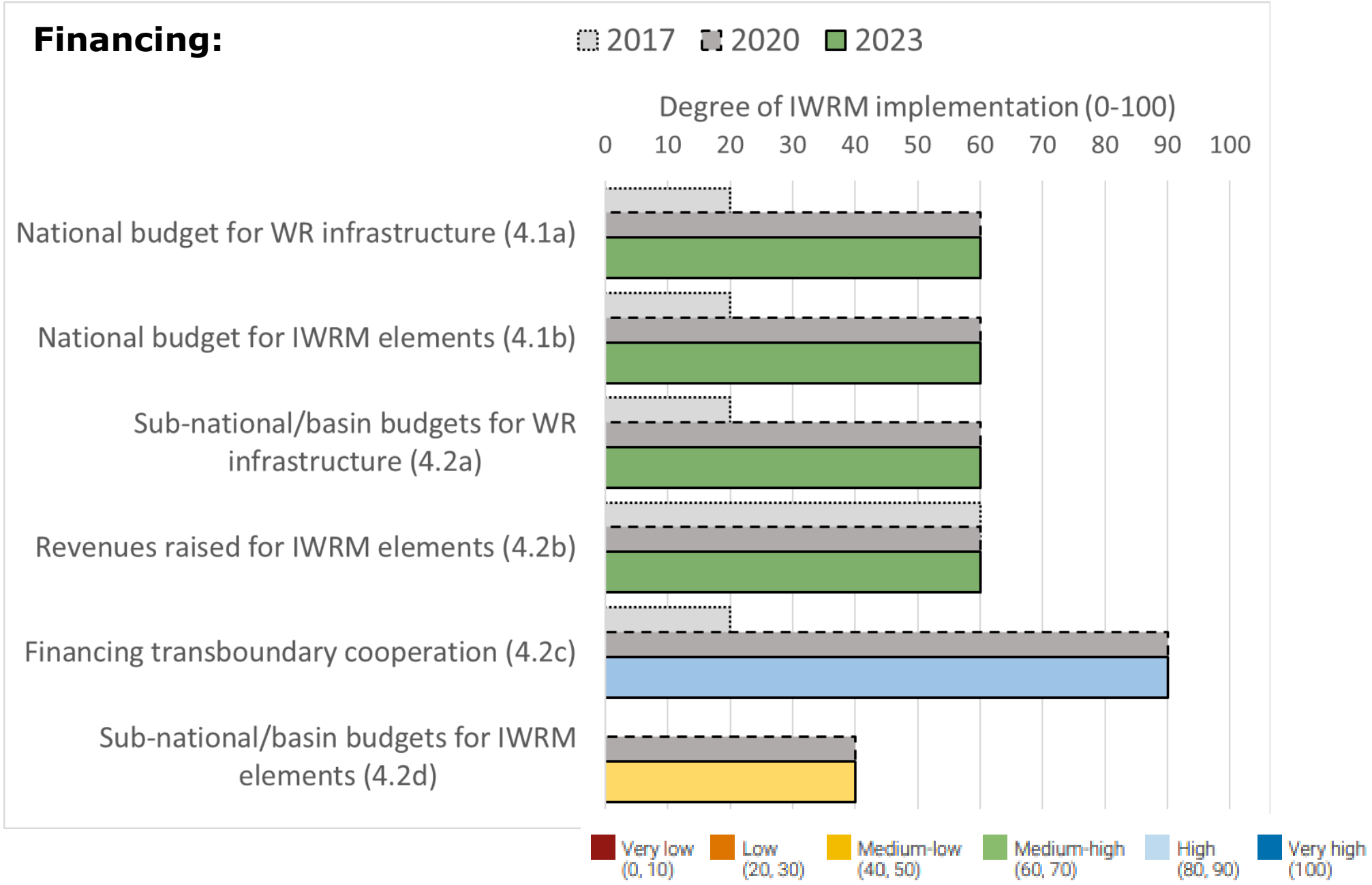
4.2 a Sub-national or basin budgets for water resources infrastructure (investment and recurrent costs).

Financial resources are often not sufficient to implement all the measures indicated in respective plans

4.2 b Revenues raised for IWRM elements

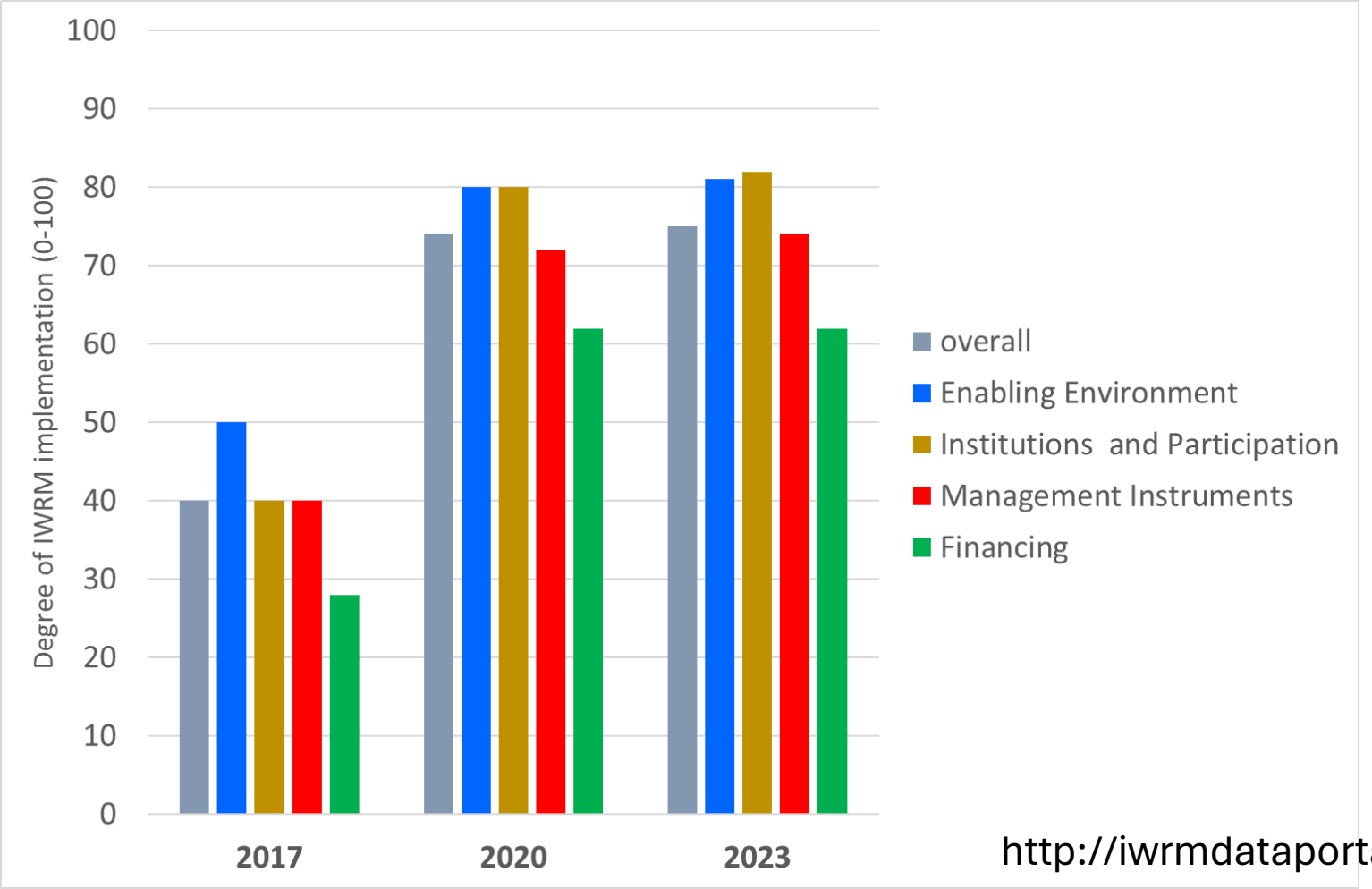
Water Law (Dz.U. 2022, poz. 2625) introduces a list of fees for the use of water services which covers activities of State Water Holding Polish Waters

Financing:


2017
2020
2023
Degree of IWRM implementation (0-100)
0
10
20
30
40
50
60
70
80
90
100
National budget for WR infrastructure (4.1a)
National budget for IWRM elements (4.1b)
Sub-national/basin budgets for WR infrastructure (4.2a)
Revenues raised for IWRM elements (4.2b)
Financing transboundary cooperation (4.2c)
Sub-national/basin budgets for IWRM elements (4.2d)
Very low (0, 10)
Low (20, 30)
Medium-low (40, 50)
Medium-high (60, 70)
High (80, 90)
Very high (100)

OVERALL RESULTS 6.5.1 Poland

Degree of integrated water resources management implementation (0-100) in Poland



Note the 2020 & 2023 surveys differ slightly from 2017 questions
1.2d, 2.2c, 2.2d, 2.2f, 4.2d
in 2023, “climate change considerations” were included as freetext fields for questions 1.1c, 2.1b, 2.1e, 3.1e, 4.1b.

http://iwrmdataportal.unepdhi.org/

PROGRESS OVER TIME OF INDICATOR 6.5.1 Poland

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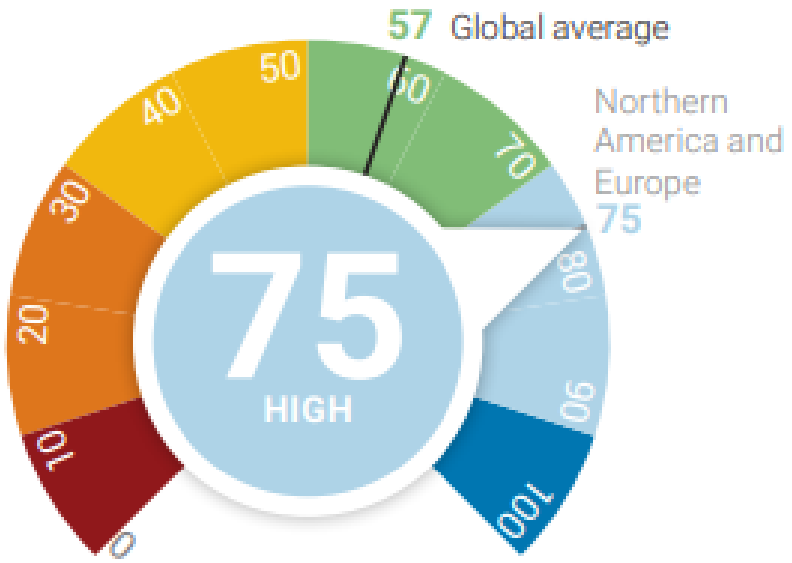
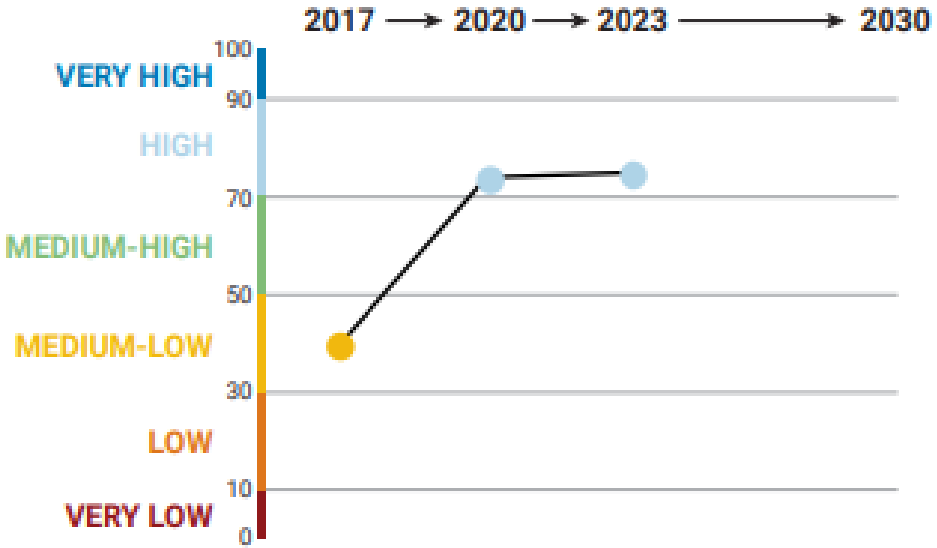
STATUS



IWRM IMPLEMENTATION

PROGRESS



Global target for SDG 6.5.1 is "very high" implementation by 2030. Countries may set their own national target*.

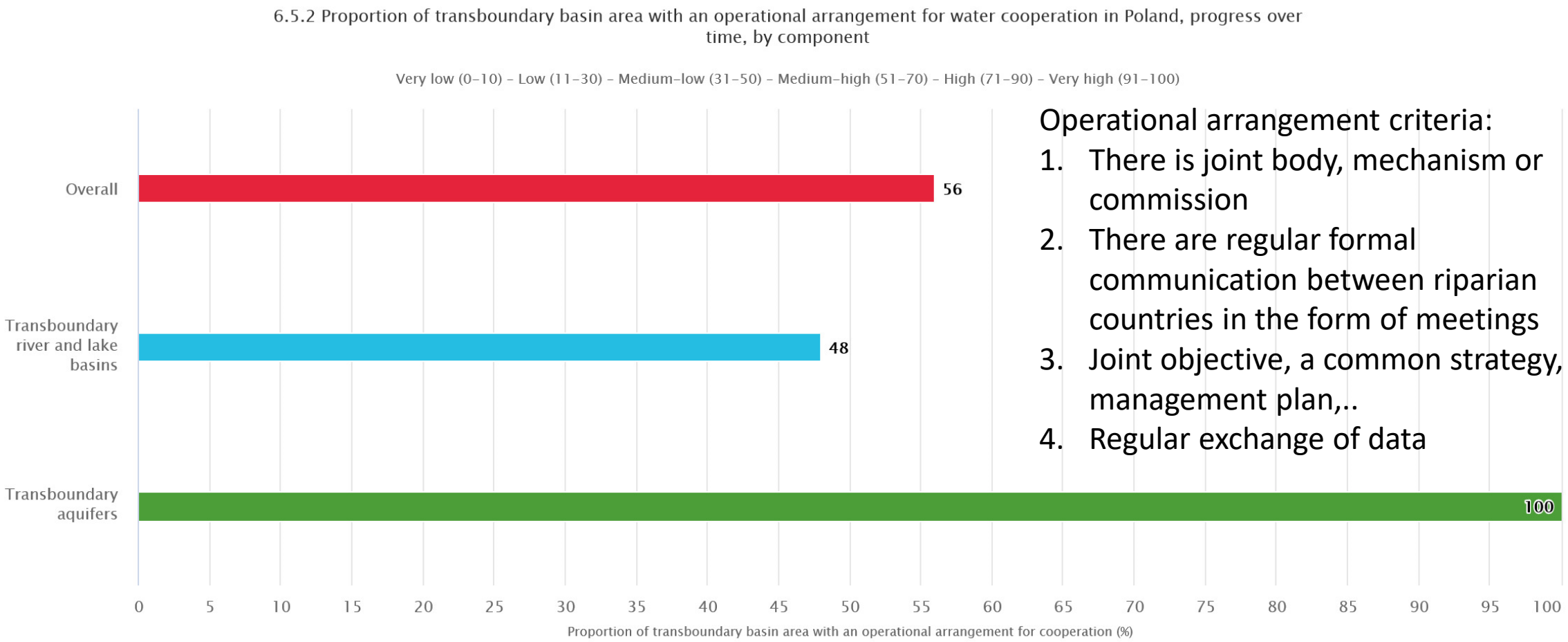
Medium-low (31-50) Capacity to implement IWRM elements under long-term programmes generally adequate

Medium-high (51-70) Capacity to implement IWRM elements under long-term programmes generally adequate

High (71-90) **Objectives of programmes generally met, stakeholder engagement generally good**

Very high (91-100) Vast majority of IWRM elements fully implemented and objectives consistently achieved.

RESULTS 6.5.2 Poland



Operational arrangement criteria:

1. There is joint body, mechanism or commission
2. There are regular formal communication between riparian countries in the form of meetings
3. Joint objective, a common strategy, management plan,..
4. Regular exchange of data

Data provider: UNESCO, UNECE
Exported from UN-Water https://www.sdg6data.org on 04 March 2024

SUMMARY: What is important?

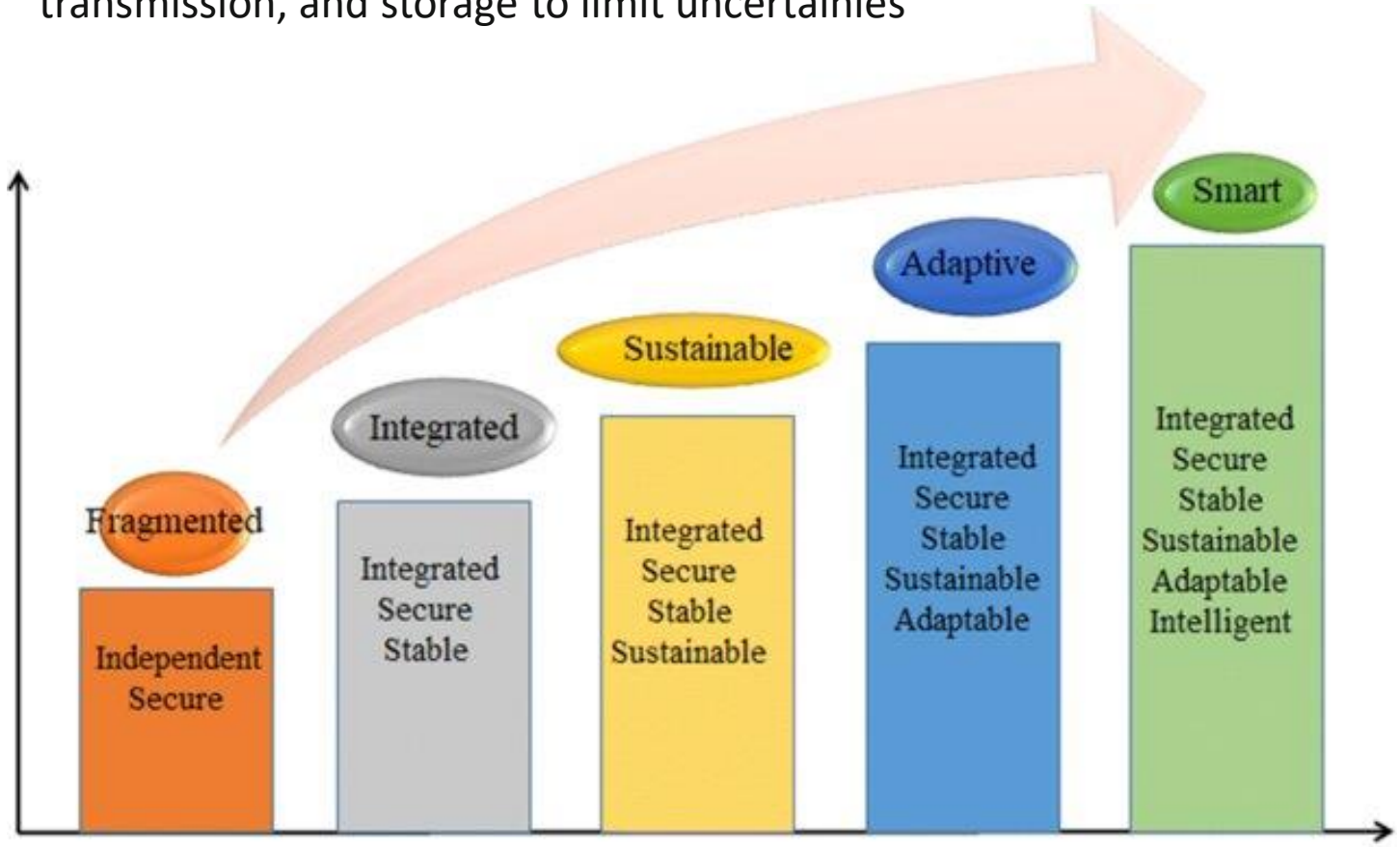
Factors ensuring implementation success of IWRM include:

- human, technical and financial resources at all levels;
- skills and knowledge;
- access to information;
- compliance with the assumed schedule of activities;
- effective management and coordination structures;
- knowledge of legal requirements;
- monitoring of implementation and the system of sanctions and penalties;
- motivation and conviction of the management process participants as to the validity of the process of adopted actions.

Future challenges

Stable - water resource system has a strong ability to maintain the ideal state under given changing conditions

Secure - reflected in the process of data collection, transmission, and storage to limit uncertainies



Source: Su et al., 2020

- **Adaptive Water Management** refers to reducing the uncertainty of water caused by climate change and the vulnerability of water-related hazards by initiation of adaptation measures that improve societal and ecosystem resilience

- **Smart water management** approach refers to an integrated, intelligent water system that helps to better understand, improve and manage water by using big data and information communication technology (ICT)

Future challenges

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approach	objectives	principles
IWM	Ecological sustainability; Economic efficiency; Social equity; Cost-benefit analysis;	• Managing water resources at the lowest possible cost level • Optimizing supply and managing demand providing equitable access to water resources • Establishing improved and integrated policy, regulatory and institutional frameworks • Utilizing an inter-sectoral approach to decision making • Integrating management to receive multiple benefits • Public participation
AWM	Vulnerability evaluation; Risk and uncertainty;	• Polycentric governance, determine whether the water governance of the organization is centralized, or decentralized, and also to discover the level of interaction in the organization externally • Organizational flexibility, the different water strategies in the region for understanding the adaptability of the strategies and how they could adjust to the changing situations
SWM	Water monitoring and analytics; Water information visualization; Rapid, efficient and intelligent response;	• Comprehensive and detailed data collection • Intelligent and real-time data processing • Specification and coordination of dynamic water allocation and management

Source: (Agarwal et al. 2000; Delavari Edalat and Abdi 2015; Yuanyuan et al. 2017)

Thank you for your attention !

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