6 CLEAN WATER AND SANITATION

2018

Status Report on the

Implementation of Integrated Water Resources Management in Africa

A regional report for SDG indicator 6.5.1 on
IWRM IMPLEMENTATION

Every drop counts Count every drop
AMCOW
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2018 STATUS REPORT ON

THE IMPLEMENTATION OF INTEGRATED WATER RESOURCES MANAGEMENT IN AFRICA

A REGIONAL REPORT FOR SDG INDICATOR 6.5.1 ON IWRM IMPLEMENTATION

2018

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This report is entirely dependent on the substantial efforts and contributions of government officials and other stakeholders from 51 African countries in reporting on SDG indicator 6.5.1. National focal points coordinated the country reporting processes and 17 African countries held multi-stakeholder workshops, which provided invaluable insight into the degree of their integrated water resources management (IWRM) implementation efforts. The workshops were co-facilitated by Country Water Partnerships of the Global Water Partnership (GWP).

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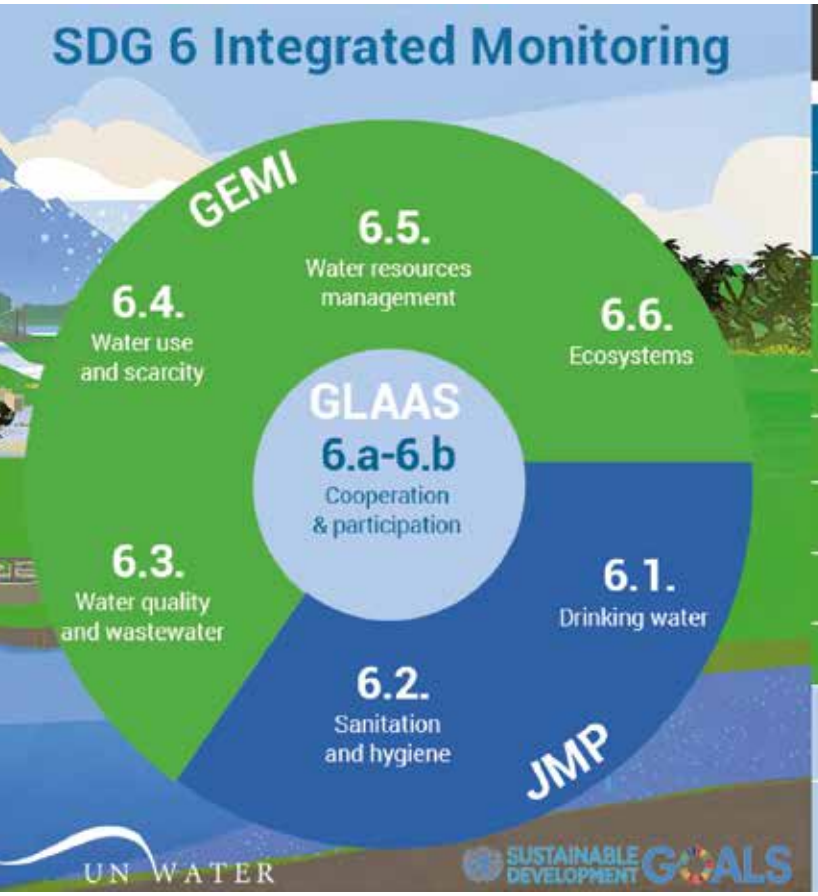
Presenting the UN-Water Integrated Monitoring Initiative for SDG 6



INDICATORS	CUSTODIANS
6.1.1 Proportion of population using safely managed drinking water services	WHO, UNICEF
6.2.1 Proportion of population using safely managed sanitation services, including a hand-washing facility with soap and water	WHO, UNICEF
6.3.1 Proportion of wastewater safely treated	WHO, UN-Habitat, UNSD
6.3.2 Proportion of bodies of water with good ambient water quality	UN Environment
6.4.1 Change in water-use efficiency over time	FAO
6.4.2 Level of water stress: freshwater withdrawal as a proportion of available freshwater resources	FAO
6.5.1 Degree of integrated water resources management implementation (0-100)	UN Environment
6.5.2 Proportion of transboundary basin area with an operational arrangement for water cooperation	UNESCO, UNECE
6.6.1 Change in the extent of water-related ecosystems over time	UN Environment, Ramsar
6.a.1 Amount of water- and sanitation-related official development assistance that is part of a government-coordinated spending plan	WHO, UN Environment, OECD
6.b.1 Proportion of local administrative units with established and operational policies and procedures for participation of local communities in water and sanitation management	WHO, UN Environment, OECD

To learn more about water and sanitation in the 2030 Agenda for Sustainable Development, and the Integrated Monitoring Initiative for SDG 6, visit: www.sdg6monitoring.org

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Foreword

As part of its mandate to monitor progress on the implementation of major regional and global water initiatives, the African Ministers' Council on Water (AMCOW) presents this report on progress towards implementing integrated water resources management (IWRM), as agreed through several international initiatives, including the Africa Water Vision for 2025, 2008 Sharm El-Sheikh Commitments for Accelerating the Achievement of Water and Sanitation Goals in Africa, and Sustainable Development Goal (SDG) target 6.5.

The 51 African country responses to the SDG indicator 6.5.1 questionnaire on implementing IWRM show that progress is mixed.

More than 80 per cent of African countries report having institutionalized most IWRM elements. This is a notable achievement and the result of hard work by governments and subregional bodies across the continent in response to major agreements.

However, 70 per cent of African countries also report that they have inadequate capacity to effectively implement most IWRM elements, and many activities are undertaken on an ad hoc basis with unsustainable financing. Given their current rates of implementation, these countries are unlikely to achieve SDG target 6.5 and should therefore focus efforts on accelerating IWRM implementation.

In the era of the SDGs, Africa now has a tremendous opportunity to transform the work carried out on the enabling environment and institutions into positive social, economic, and environmental achievements through implementing practical water resources management activities.

Africa and the global community are making progress in water management. However, achieving many of the SDGs will require more coordinated efforts at all levels. Implementing IWRM is the single biggest step that can be taken towards achieving SDG 6 and is an ideal starting point for integrated planning across the SDGs. To ensure the success of such planning, the involvement of several stakeholders will be crucial, including those outside the water sector.

The AMCOW Strategy 2018–2030 provides a framework for this integrated planning and implementation. AMCOW, through its close relationship with the African Union (AU), is working to raise the level of political engagement, and will continue to work through its national, subregional and international partnerships to strive towards a water-secure Africa with safe sanitation for all.

Dr. Canisius Kanangire
Executive Secretary, AMCOW

Executive Summary

Decisions about how to allocate and use water in an efficient, sustainable and equitable manner are fundamental to sustainable development. Their significance is captured by Sustainable Development Goal 6 (SDG 6) – ensure availability and sustainable management of water and sanitation for all – and numerous African political commitments and strategies over the last two decades.

More than half of global population growth between now and 2050 will happen in Africa. As demands on water increase in Africa to sustain this population growth and all areas of development, and as pollution levels rise, the goal of implementing effective water resources management remains a priority issue.

Constraints on effective water resources management in Africa include rampant poverty and the lack of water control infrastructure. This latter constraint is particularly critical given Africa's significant variability in rainfall, which is worsening with climate change. The continent's political instability is a key challenge, since water resources management requires strong political will and sustained long-term efforts to build viable water management institutions and legal frameworks. Other constraints include: low levels of funding to the water sector and specifically for governing water development and management; institutional and human resources capacity gaps at all levels; persisting and deeply rooted gender imbalances; and the marginal roles of the private sector and other non-state actors in water-related decision-making processes.

Implementing integrated water resources management (IWRM) not only supports targets for water security, but also targets related to sustainable agriculture and energy production, sustainable and resilient towns and cities, health and gender equality.

This report is based on data submitted by 51 African countries responding to the global survey to establish the SDG baseline for indictor 6.5.1 on the degree of implementation of integrated water resources management (0–100). This regional report for Africa has been prepared at the request of the African Ministers' Council on Water (AMCOW).

This report focuses on the degree of implementation of 30 IWRM elements, from very low to very high implementation. These elements cover the enabling environment of laws, policies and plans, institutional arrangements and stakeholder participation, management instruments for informed decision-making, and financing for sustainable water management.

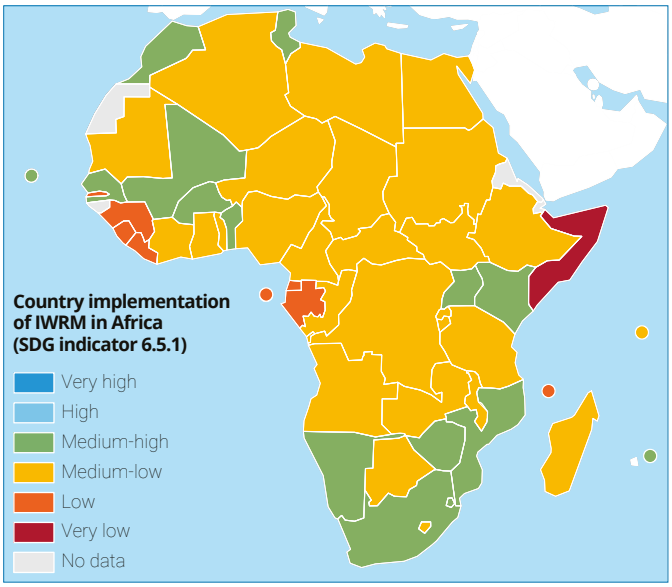
I Current status of overall IWRM implementation in Africa

Africa's overall IWRM implementation score is lower than the global average (41 compared with 49), with country performances ranging from very low (lowest score: 10) to medium-high (highest score: 65).

Most African countries (71 per cent) are in the medium-low to very low categories of IWRM implementation, meaning that their capacity for effective implementation is largely inadequate, with most IWRM-related activities undertaken on an ad hoc basis using unsustainable financing. Considering recent trends and current stages of IWRM implementation, it is projected that almost three quarters of African countries (36 out of 51) will not meet the global SDG target 6.5 – by 2030, implement integrated water resources management at all levels, including through transboundary cooperation as appropriate – unless progress is significantly accelerated.

Such progress may be possible for many African countries, given that 82 percent have institutionalized most IWRM elements, providing them with a solid foundation from which to accelerate implementation at all levels. To ensure that target 6.5 is met, countries should aim to set national or subregional targets based on the country context and (transboundary) basin level targets where appropriate.

Country implementation of IWRM in Africa (SDG indicator 6.5.1)



Subregional differences in implementation

IWRM implementation differs markedly between subregions. On average, Northern and Southern Africa have the highest implementation scores (50 and 49), while the average scores for Eastern and Western Africa are approximately 10 points lower (37 and 42). However, country scores vary significantly within these subregions. The average IWRM implementation score of Central Africa (28) is almost 10 points lower than Eastern Africa, with a relatively even spread of scores across the countries.

Varied implementation of the four IWRM dimensions

Across the four IWRM dimensions, implementation scores for Africa range from 33 for financing to 40 for management instruments, 46 for the enabling environment, and 47 for institutions and participatory processes. These scores are in the medium-low implementation category. Compared with the average global implementation score, Africa is behind by roughly five points for the enabling environment and institutions, eight points for financing, and 11 points for management instruments.

Lagging IWRM elements

A staggering 98 per cent of African countries (50 out of 51) report insufficient funds reaching planned investments in water resources management, including for infrastructure, at the subnational or basin level. At the national level, 86 per cent of African countries are in this position. Furthermore, 44 per cent report no revenue raising from users.

Progress at the basin/aquifer level has been particularly slow in Africa, though there are positive examples. Average scores for institutions (37), plans (34), management instruments for basins (38) and aquifers (30) are among the lowest. This means that, while basin or aquifer institutions may exist, capacity is generally insufficient to effectively develop IWRM plans and the use of management instruments is generally limited and for short-term, ad hoc projects.

Roughly 87 per cent of African countries report that ecosystem management instruments – where they exist – generally have inadequate coverage across different ecosystem types and the country. Furthermore, 71 per cent report that instruments for disaster risk reduction have inadequate coverage for at-risk areas.

On data-sharing arrangements, 68 per cent of African countries report that there is inadequate coverage across sectors and their country. There is a heavy reliance on external and short-term funding for investment in the critical and strategic area of water-related knowledge management.

Overall, Africa scores lower where IWRM implementation relates to practical activities for tackling actual water management problems, such as implementing and financing IWRM compared with establishing an enabling policy, legal and institutional environment, and implementing IWRM at the subnational level (on the ground) compared with at the national level.

Transboundary cooperation leads the way

Transboundary cooperation is hugely important in Africa, with all 48 mainland countries sharing 134 transboundary basins or aquifers. Approximately 80 per cent of African countries report that arrangements have been adopted and that organizational frameworks are in place for the most important transboundary basins and aquifers. However, almost 60 per cent report that funding is less than 50 per cent of agreed contributions and that data- and information-sharing is limited.

Regional and subregional support for accelerating progress

Initiatives and efforts to accelerate IWRM implementation in Africa are supported in several ways. Under the auspices of the African Union (AU) and AMCOW at the continental level, and Regional Economic Communities (RECs) and transboundary river basin and aquifer organizations at the subregional level, strong commitments have been made in recent years at the highest political level to invest in water infrastructure and improve water governance. These commitments are backed by a series of strategies and plans. Since its creation in 2006, the African Water Facility has become a key financing instrument for water management in Africa.

Recommended action areas for accelerating IWRM implementation

To progress with IWRM, African countries should shift their focus from developing national-level policies, laws and strategies to implementing water resources management activities on the ground.

Increase financing for water resources management, including water control infrastructure

1. Initiate and develop consultative processes and awareness-raising efforts at the AU and/or REC levels for a resolution on increased financing for water resources management from government budgets.

2. Document, share, and replicate good practices of implementing approaches and financing investment models for water management from water use and abuse practices (e.g. application of user pays and polluter pays principles).

3. Increase the financial contribution of RECs for water development and management in their respective member countries and river basins.

Strengthen regional capacity to support IWRM implementation

4. Strengthen the capacity of RECs to support IWRM implementation in their respective regions, and foster linkages across SDGs.

5. Launch a ten-year capacity development programme in support of IWRM implementation at all levels.

6. Harmonize water-related information management and reporting systems at the global (SDG-related), regional (AMCOW), subregional (RECs), transboundary basin/aquifer and national levels.

Further develop transboundary cooperation

7. Promote the establishment and operationalization of arrangements for transboundary cooperation where these are lacking.

8. Support existing transboundary organizations to strengthen inter-State cooperation and promote IWRM at the different levels.

Provide targeted support

9. Strengthen the governance of aquifers at the national and transboundary levels.

10. Support IWRM implementation at the subnational level (basin/watershed level, decentralized territories). Target countries include those within the medium-low and medium-high categories of IWRM implementation.

11. Provide concerted and targeted support to selected countries to accelerate IWRM implementation. Target countries include post-conflict countries and/or the 36 countries within the medium-low and lower level categories of IWRM implementation.

This report finishes with practical guidance for countries and transboundary and regional bodies on conducting more detailed analysis at the national level, setting national targets, developing workplans, and budgeting and securing finance, to help accelerate IWRM implementation. Involving government and non-government actors across sectors is critical to the success of most of these activities. Multi-stakeholder processes used in the reporting on SDG indicators 6.5.1 and 6.5.2, can be built on to continue the dialogue and achieve progress in the social, economic and environmental dimensions of sustainable development for the whole of Africa.

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THE SETTING

1

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Determining how to develop, allocate and use water in an efficient, sustainable and equitable manner is fundamental to sustainable development. Such decisions affect all aspects of human and environmental well-being, including health, poverty alleviation, socioeconomic development, gender equality, and quality of life in rural and urban areas. Decision-making processes are complex, requiring the interaction of governments, agencies, organizations, the private sector and citizens at the international, national and local levels. At the same time, pressures on water resources are typically increasing, with greater demand leading to increased water scarcity, pollution levels are generally rising, and water-related conflicts are multiplying and intensifying.

Recognizing this, African nations have committed to adopting integrated water resources management (IWRM), through national, subregional, regional and global initiatives and agreements. Implementing IWRM is a long-term process of establishing and implementing arrangements for the coordinated development and management of water, land and related resources to maximize economic and social welfare in an equitable and sustainable manner.

1.1 African political agreements for better water management

At the turn of the century, the Africa Water Vision for 2025 was developed through a participatory process run in each of the African subregions. The shared vision is for "An Africa where there is an equitable and sustainable use and management of water resources for poverty alleviation, socioeconomic development, regional cooperation, and the environment".[1] The document calls for "adopting and implementing IWRM principles and policies", and includes numerous recommendations in line with IWRM elements on, for example, institutional reform, stakeholder participation and transparency (including gender mainstreaming), data collection, and financing at the local, basin/aquifer, national and transboundary levels.

While the Africa Water Vision for 2025 is not a political commitment, it has led to numerous political commitments through establishing a common understanding and language for the situation at the time, as well as a shared vision. Most subsequent commitments and agreements reference the Africa Water Vision for 2025. Some key African political commitments related to water resources management include:[2]

1. 2004 Sirte Declaration on the Challenges of Implementing Integrated and Sustainable Development in Agriculture in Africa, which includes commitments on basin-level management and transboundary cooperation.

2. 2008 Sharm El-Sheikh Commitments for Accelerating the Achievement of Water and Sanitation Goals in Africa, which includes water management policies, regulatory frameworks, institutional and human capacity, engagement of local authorities and the private sector, and financial instruments.

3. 2017 Durban Political Declaration,[3] which supports the implementation of Sustainable Development Goal 6 (SDG 6) through sharing best practice models, increasing water security and sanitation budgetary allocations, facilitating the development and implementation of financing models by ministers responsible for water and finance, and strengthening national and transboundary water institutions.

Many aspects included in these commitments are covered by the 33 questions in the SDG indicator 6.5.1 questionnaire on IWRM implementation (section 1.2).

The African Ministers' Council on Water (AMCOW) was established by the 2002 Abuja Ministerial Declaration on Water. Its mission is to "provide political leadership, policy direction, and advocacy in the provision, use and management of water resources for sustainable social and economic development and maintenance of African ecosystems". One of AMCOW's tasks is to monitor progress on the implementation of major regional and global water initiatives. In 2016, AMCOW launched the online Africa Water Sector and Sanitation Monitoring and Reporting system (WASSMO), replacing an earlier paper-based system. The online system incorporates indicators from all water-related SDGs (see section 1.2 and chapter 6). Implementing integrated water resources management is relevant to the first three strategic priorities, and all four cross-cutting priorities and actions, in the AMCOW Strategy 2018–2030:

Strategic priorities

1. Ensure water security

2. Ensure safely managed sanitation and hygiene

3. Promote good water governance and transboundary water cooperation.

[1] United Nations Economic Commission for Africa (ECA), African Union Commission (AUC), African Development Bank (2003). *The Africa Water Vision for 2025: Equitable and Sustainable Use of Water for Socioeconomic Development.* Addis Ababa, Ethiopia.

[2] Most relevant political commitments are available at: http://www.amcow-online.org/

[3] Signed on World Water Day, 22 March 2017.

Cross-cutting priorities and actions

1. Enhance water and sanitation resilience to climate change
2. Contribute to adequate and sustainable financing of water and sanitation agendas
3. Improve monitoring, evaluation and knowledge management systems
4. Strengthen gender equality and youth empowerment in water and sanitation.

1.2 Water resources management in the 2030 Agenda

In 2015, the Member States of the United Nations unanimously adopted the 2030 Agenda for Sustainable Development. The 2030 Agenda comprises 17 SDGs and 169 targets addressing social, economic and environmental aspects of development, and seeks to end poverty, protect the planet and ensure prosperity for all. The SDGs include aspirational global targets that are intended to be universally relevant and applicable to all countries.

SDG 6 is to "Ensure availability and sustainable management of water and sanitation for all", and includes targets addressing all aspects of the freshwater cycle (Box 1). The water-related SDGs build on the Millennium Development Goals (MDGs), which focused primarily on water supply and sanitation, to consider a more holistic approach to water management.

The targets agreed upon by Member States aim to improve the standard of water supply, sanitation and hygiene services (targets 6.1 and 6.2); increasing treatment, recycling and reuse of wastewater (target 6.3); improving efficiency and ensuring sustainable withdrawals (target 6.4); and protecting water-related ecosystems (target 6.6), all as part of IWRM (target 6.5). The targets also address the means of implementation for achieving these development outcomes (targets 6a and 6b). Further information on other SDG 6 targets and indicators, and the roles and responsibilities of custodian agencies and programmes is provided in the figure on the acknowledgements page of this report.

Direct and indirect interdependencies connect SDG 6 targets, all 17 SDGs and more than one third of the 169 targets.[4] Implementing IWRM (target 6.5) can help to enhance linkages and address potential trade-offs between SDGs on, for example, sustainable agriculture and food security (SDG 2), health and well-being (SDG 3), gender equality (SDG 5), energy (SDG 7), decent work and economic growth (SDG 8), industry, innovation and infrastructure (SDG 9), reduced inequalities (SDG 10), sustainable cities and communities (SDG 11), responsible consumption and production (SDG 12), climate action (SDG 13), life below water (SDG 14), life on land (SDG 15), and peace, justice and strong institutions (SDG 16).

Two indicators measure progress towards target 6.5:

- 6.5.1 on integrated water resources management implementation (0–100) (see chapter 2)
- 6.5.2 on proportion of transboundary basin area with an operational arrangement for water cooperation.

BOX 1

SDG 6 – ensure availability and sustainable management of water and sanitation for all

6.1 By 2030, achieve universal and equitable access to safe and affordable drinking water for all.

6.2 By 2030, achieve access to adequate and equitable sanitation and hygiene for all and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations.

6.3 By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally.

6.4 By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity.

6.5 By 2030, implement integrated water resources management at all levels, including through transboundary cooperation as appropriate.

6.6 By 2020, protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes.

6.a By 2030, expand international cooperation and capacity-building support to developing countries in water- and sanitation-related activities and programmes, including water harvesting, desalination, water efficiency, wastewater treatment, recycling and reuse technologies.

6.b Support and strengthen the participation of local communities in improving water and sanitation management.

[4] UN-Water (2016). *Water and Sanitation Interlinkages across the 2030 Agenda for Sustainable Development.* Geneva, Switzerland.

The two indicators support each other by addressing the two main aspects of target 6.5. Indicator 6.5.2 has a separate, global level indicator report, though linkages are explored in both this report (chapter 5) and the indicator 6.5.2 report.[5]

Indicator 6.5.1 links to all SDG 6 indicators, such as those on water-use efficiency, water supply, sanitation, wastewater treatment, ambient water quality and freshwater ecosystems. As a process-based indicator, it also closely links to the "means of implementation" indicators: indicator 6.a.1 (water- and sanitation-related official development assistance) and indicator 6.b.1 (procedures for local community participation).

The questionnaire for SDG indicator 6.5.1 includes roughly 30 questions, related to various aspects covered by the aforementioned African political commitments (see section 2.2 for the questionnaire overview).

1.3 Why IWRM?

Implementing IWRM provides a holistic framework for addressing different demands and pressures on water resources, across sectors and at different scales. At its core, IWRM frameworks ensure that water resources are developed, managed and used in an equitable, sustainable and efficient manner.

Though the concept of IWRM is relatively simple, implementation has proved challenging and countries have reported mixed results. With the adoption of the SDGs and recognition of the potential for IWRM to integrate planning across the goals to help achieve multiple targets, the demands on IWRM are now much larger than they were in the past. **As part of the 2030 Agenda, IWRM must deliver more tangible progress at a faster and larger scale than previously achieved.** To achieve SDG 6, there is a need for increased focus on the mechanisms for implementing and using IWRM, including sustainable financing and pragmatic problem solving.[6]

IWRM has sometimes been seen as an end in itself, and as following a one-size-fits-all approach,[7] when it is in fact an extensive, ongoing process that can and should be tailored to individual situations. Various IWRM elements can be applied in multiple ways by a range of actors at different speeds. When implementing these IWRM elements, consideration should be given to the local political, economic and social realities in each country. While adopting the IWRM approach can provide the overarching framework, numerous other complementary approaches and mechanisms can support the implementation of IWRM, acting as catalysts for achieving IWRM objectives. These include, for example:

- programmes and plans related to sustainable agriculture and food security, sustainable cities and developments, and disaster risk reduction
- the nexus approach, which can provide an excellent mechanism for facilitating dialogue between relevant sectors (e.g. food, energy, water, ecosystems) in a given context
- source-to-sea/ridge-to-reef approaches, which are useful for considering upstream and downstream implications and land management impacts on the marine environment
- ecosystems approach/nature-based solutions
- corporate water stewardship
- implementation of water supply, sanitation, wastewater treatment and reuse services
- integrated flood and/or drought management activities.

There are also other governance approaches and measures that complement the IWRM framework, including the Organisation for Economic Co-operation and Development (OECD) Water Governance Principles, which cover the effectiveness and efficiency of and trust and engagement in water governance.[8]

In summary, implementing IWRM should not be seen solely as the task of water ministries, though these will have a coordinating role. Although water governance indicators may not be perfect, an indicator that addresses different IWRM elements will be a useful feedback mechanism for facilitating the implementation of the core aspects of good water management.

1.4 Structure of the report

- **Monitoring and assessment approach:** Chapter 2 describes the data-collection and indicator calculation methodology.
- **Overall status of implementation of integrated water resources management:** Chapter 3 presents the main findings of SDG indicator 6.5.1 at the national

[5] United Nations Economic Commission for Europe (ECE) and the United Nations Educational, Scientific and Cultural Organization (UNESCO) (2018). *Progress on Transboundary Water Cooperation – Global baseline for SDG indicator 6.5.2.*

[6] Smith, M. and Clausen, T. J. (2018). *Revitalizing IWRM for the 2030 Agenda: World Water Council Challenge Paper for the High-Level Panel on IWRM at the 8th World Water Forum.* Brasilia, Brazil.

[7] Shah, T. (2016). *Increasing water security: the key to implementing the Sustainable Development Goals.* Global Water Partnership, TEC Background Papers, No. 22.

[8] Organisation for Economic Co-operation and Development (OECD) (2015). *OECD Principles on Water Governance.*

and subregional levels. It also assesses likely progress towards target 6.5 and related African political commitments.

- **Implementing elements of IWRM:** Chapter 4 details the four main dimensions of IWRM, including results from individual questions in each section.
- **Transboundary implementation of IWRM:** Chapter 5 presents the degree of implementation of transboundary cooperation.
- **Harmonizing African and global level reporting on IWRM:** Chapter 6 compares the status of IWRM implementation as reported through WASSMO, AMCOW's online reporting system, and the global indicator 6.5.1 reporting process. Recommendations are also provided for harmonizing data collection and reporting.
- **Towards full implementation of IWRM:** Chapter 7 analyses some of the main constraints and enablers to implementing IWRM, proposed action areas for advancing IWRM and provides practical guidance for accelerating implementation.

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2

MONITORING AND ASSESSMENT APPROACH

Source: pixabay.com

2.1 Approach to the analysis

The analysis in this report is mainly based on the 51 African responses to the global SDG indicator 6.5.1 data-collection process.[9] It also draws on other sources of information, such as:

- African political commitments and agreements made by African Heads of State and Water Ministers[10]
- AMCOW[11] and AU[12] regional strategies and plans
- WASSMO, AMCOW's online reporting system on water and sanitation.

Throughout the report, boxes are used to illustrate country statuses, drawing on the free-text "justification/evidence" fields for each question in the indicator 6.5.1 questionnaire (section 2.3), as well as workshop reports from 14 countries (section 2.4).

Tables, maps[13] and bar charts are also used to illustrate the report's findings.

2.2 Overview of survey on IWRM implementation and indicator calculation

The survey

SDG indicator 6.5.1 on IWRM implementation is measured on a scale of 0 to 100, based on the degree of implementation using 33 questions in a self-assessed country questionnaire, organized into the four main dimensions of IWRM:

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

Each of these four sections contain questions at the national, subnational, basin/aquifer, local and transboundary levels (see Table 1), addressing target 6.5 on implementing IWRM at all levels.

The five questions on transboundary implementation of IWRM provide information that complements SDG indicator 6.5.2. All survey questions are provided in annex 1.1 and the full survey is available online.[14]

Calculating the indicator score

Each survey question is scored on a scale of 0 to 100, in increments of 10, guided by specific threshold descriptions (see section 2.3). Question scores in each section are averaged to give a section average for each of the four sections, rounded to the nearest whole number. The four section averages are then averaged to calculate the final indicator 6.5.1 score for each country, on a scale of 0 to 100.

National benefits of completing the questionnaire

While a single indicator score is calculated to track progress on target 6.5 at the global level, individual scores and free text for each question are more important at the country level, as these act as a diagnostic tool for identifying key IWRM elements that could be further implemented in line with national priorities. Furthermore, the process of bringing together multiple stakeholders to reach a consensus on the survey responses can provide a valuable mechanism for intersectoral coordination and collaboration. Both aspects are discussed in section 2.4 and chapter 7.

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[9] UN Environment (2018). *Progress on integrated water resources management. Global baseline for SDG indicator 6.5.1: degree of IWRM implementation.*

[10] As summarized in: UNEP-DHI and DHI (2016). *Establishment of a Monitoring and Reporting System for the Water Sector in Africa: Framework and Guidelines.* Available at: www.africawat-sanreports.org/IndicatorReporting/document (accessed 26 August 2018).

[11] AMCOW (2018). *Strategy 2018–2030.*

[12] AUC-AMCOW (2016). *The African Water Resources Management Priority Action Programme 2016–2025 (WRM – PAP).*

[13] In the maps, some country borders, including island countries, have been simplified for visual clarity. These do not express any opinion on the part of AMCOW, contributory organizations or publishers concerning the legal status of any country or territory, the delimitation of its frontiers or boundaries or the designation of its name, frontiers or boundaries.

[14] Available at: http://iwrmdataportal.unepdhi.org

Table 1 Overview of survey question subjects for the four IWRM dimensions, per level.

	1. Enabling environment	2. Institutions and participation	3. Management instruments	4. Financing
National level	• Policy • Law • Plans	• Authorities • Cross-sectoral coordination • Capacity • Public participation • Business participation • Gender objectives	• Availability monitoring • Water-use management • Pollution control • Ecosystem management • Disaster management	• Budget for investment • Budget for recurring costs
Subnational	Policy	Gender objectives	Data and information sharing	• Subnational or basin budget for investment • Revenues raised
Basin/aquifer/ local	Basin/aquifer management plans	• Basin/aquifer organizations • Local public participation	• Basin management instruments • Aquifer management instruments	
Trans-boundary	Management arrangements	• Organizational arrangements • Gender objectives	Data and information sharing	Financing for cooperation
Federal countries only	Provincial water law	Provincial authorities	-	-

2.3 Addressing objectivity, transparency and comparability of survey responses

The objectivity, transparency and comparability of the survey responses are addressed in three ways:

1. Countries have been encouraged to organize multi-stakeholder processes to reach a consensus on responses to each question (see section 2.4). These processes establish cross-sectoral and multi-level dialogues and ensure that most key stakeholders in the country agree on the responses, resulting in a more realistic assessment of implementation. While there is no way to systematically and accurately cross-check country reports, these multi-stakeholder processes are the best way to achieve more robust results. Countries reported that it was easier to reach a consensus on the scores when they could be based on evidence.

2. For each question, specific guidance is provided for the degree of implementation for the following six thresholds: 0, 20, 40, 60, 80 and 100 (see annex 1.2).

3. For each question, countries were encouraged to justify their score with information on, for example, specific challenges facing the implementation, and through a description of the various measures taken to further IWRM. These notes provide a valuable source of information on IWRM implementation at the national level and are used throughout this report to illustrate the steps that countries are taking and the different forms of implementation. These justification fields facilitate consensus, allow for the assessment of progress over time, enhance transparency and provide insight into national contexts. However, it should be noted that not all countries provided a reasoning to their scores, an issue that may be addressed in future reporting.

In addition, efforts have been made to ensure a high level of data quality, which include holding online training seminars for national focal points and implementing quality control processes for submitted questionnaires.

Despite the measures outlined above, it is acknowledged that country responses retain an element of subjectivity, particularly where multi-stakeholder processes were less extensive. Ultimately, while results are indicative and country-driven, the self-assessed country reporting is designed to be useful to the countries themselves in furthering IWRM implementation. Therefore, the most important issue pertains to what countries do with the information and how IWRM implementation can progress over time, rather than the comparison of scores

between countries. At the national level, the surveys can be used as a relatively simple diagnostic tool to identify areas of relatively low or high IWRM implementation. At the regional level, the 51 data points (country scores) present a useful pattern on the status of IWRM implementation in Africa, though consideration must be given to the potential subjectivity of the individual data points.

2.4 National data-collection processes

The data-collection process aimed to build on existing monitoring efforts in countries and encourage country-led national data-collection processes. Each United Nations Member State was invited to appoint a national focal point for indicator 6.5.1, responsible for coordinating data collection and submission to UN Environment, serving as the United Nations custodian agency for indicator 6.5.1. About 80 per cent of the focal points are affiliated with national ministries responsible for water management (e.g. ministries of water, the environment or similar), 8 per cent are from a water agency or other specialized agency, 4 per cent are from National Statistics Offices, and the remaining 8 per cent have mixed affiliations.

Focal points were advised to design a process that included multiple stakeholder groups to the extent possible, ensuring that the survey responses represent a consensus among stakeholders. In most cases the survey response information has been collected from government officials and various sectoral stakeholders through direct communication or workshops.

In 17 African countries, stakeholder workshops were held in collaboration with the Global Water Partnership (GWP), together with the national focal points and GWP Country Water Partnerships (Figure 1). Approximately 450 stakeholders participated in these workshops, which provided not only a platform for stakeholder discussions and consensus building, but also information on the barriers to implementation and examples of actions taken to further IWRM in countries (Box 2).

BOX 2

Country-level multi-stakeholder workshops as an agent of change

Overall, 17 African countries held multi-stakeholder workshops, facilitated by Country Water Partnerships, to complete the questionnaire. In all cases, the workshops included a range of relevant government ministries and agencies, with some also including other stakeholders such as nongovernmental organizations (NGOs) and businesses. The workshop approach had several benefits, as follows:

- Feedback was provided on the questionnaire, which was viewed as a useful tool for countries to objectively assess their IWRM progress for managing and sustainably using water resources (e.g. Mozambique). However, Sudanese participants found the questionnaire too complicated. Tanzanian participants expressed the need for a more coordinated approach to monitoring and reporting of all SDG 6 targets and indicators.
- In most cases participants discussed, negotiated and finalized scores for the questions.
- In some cases the process stimulated individuals and groups to work together to overcome identified problems, advance progress through their own institutions, or lobby for change. Stakeholders in the Gambia agreed that the exercise had raised their awareness of IWRM and its implementation and participants made commitments to promote IWRM in their various institutions. Zambian participants emphasized that the main takeaway of the process was the recognition that furthering IWRM implementation will positively affect economic, environmental and human development. Malawi, Mauritania and others provided specific recommendations to advance IWRM.

The results demonstrate how the integrated approach works, indicating that a negotiated outcome is more likely to reflect the reality of country situations, garner wider acceptance and provide focus for the most important next steps.

Approximately 95 per cent of African countries (51 out of 54) reported on the degree of implementation of IWRM

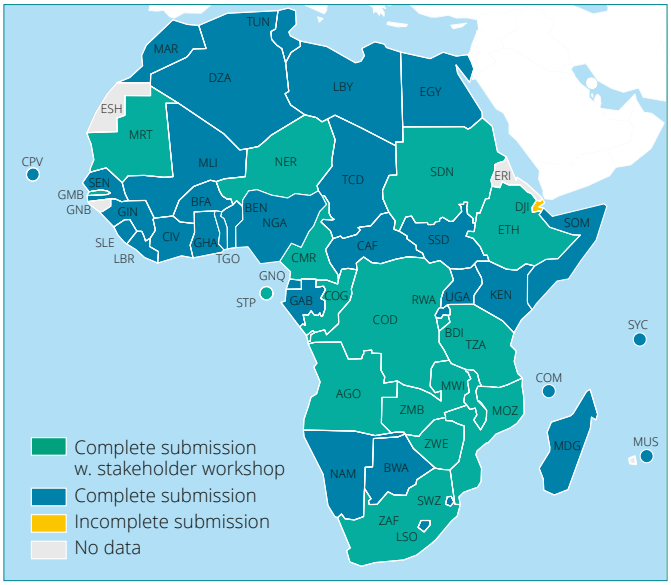


Figure 1 Country submissions on SDG indicator 6.5.1.

Note: Djibouti submitted an incomplete questionnaire and no response was received from Eritrea or Guinea-Bissau.

2.5 Subregional analyses

Results in this report are presented at three main levels:

1. Continental: either the average values from all African countries or the breakdown of countries in each implementation category.

2. Subregional: based on the five AMCOW subregions of Northern, Southern, Eastern, Western and Central Africa (Figure 2).

3. Country: shown in the maps used throughout the report and country examples provided in boxes.

The purpose of the subregional analyses is twofold: to facilitate learning, collaboration and coordination among countries in each region; and to allow prioritization of activities between regions.

The Regional Economic Communities (RECs), in collaboration with AMCOW and the African Union (AU), can play a significant role in helping countries to advance their implementation of all IWRM elements. Subregional collaboration activities include organizing peer-to-peer capacity-building, and identifying and prioritizing financing. There are eight RECs in Africa, six of which are relevant for implementing IWRM.

There is a reasonable, though not exact, match between the five AMCOW subregions and six RECs (Figure 2), with eight countries currently members of two RECs (Table 2).

Analysing the results of the five African subregions facilitates coordination and allows for prioritization. RECs may wish to aggregate data to include only their own countries to support planning among their Member States.

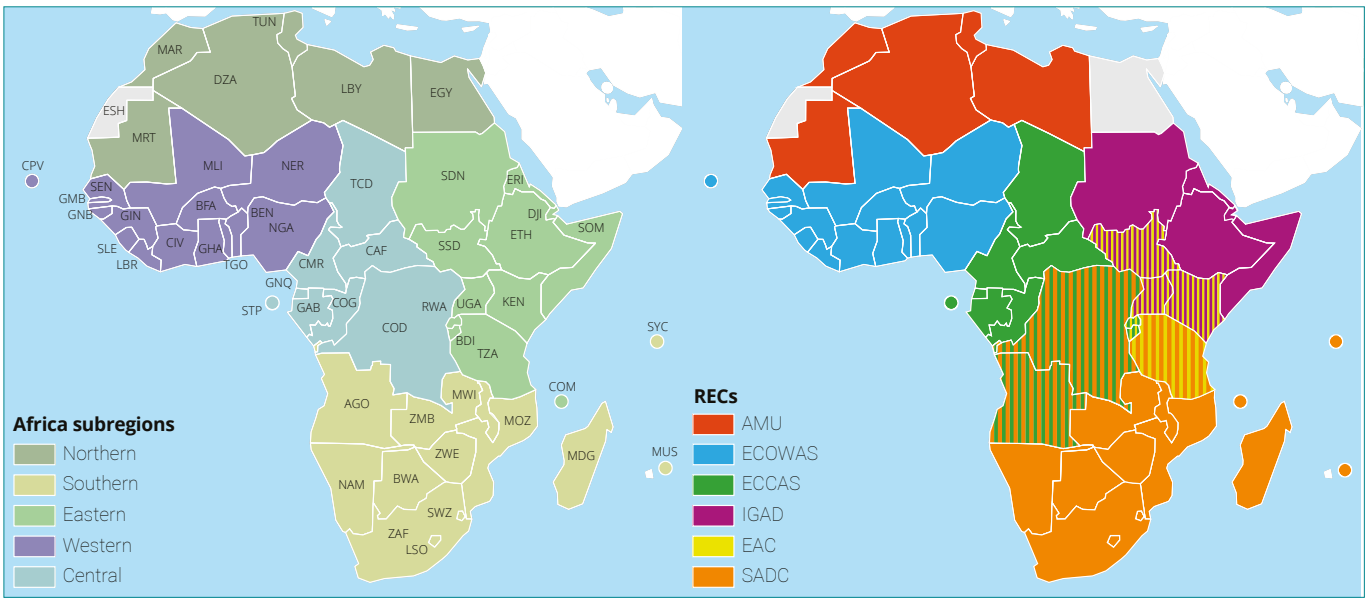


Figure 2 AMCOW subregions (left) and six RECs (right).

Note: Subregional names have been shortened for brevity in all figures and some island states are shown as circles for clarity.

Table 2 REC member countries.

Regional Economic Commission (REC)		Countries*
AMU	Arab Maghreb Union	Algeria, Libya, Mauritania, Morocco, Tunisia (5)
IGAD	Intergovernmental Authority on Development	Djibouti, Ethiopia, Eritrea, **Kenya**, Somalia, **South Sudan**, Sudan, **Uganda** (8)
EAC	East African Community	**Burundi, Kenya, Rwanda, South Sudan, Tanzania, Uganda** (6)
SADC	Southern African Development Community	**Angola**, Botswana, Comoros, **Democratic Republic of the Congo**, Eswatini,** Lesotho, Madagascar, Malawi, Mauritius, Mozambique, Namibia, Seychelles, South Africa, **Tanzania**, Zambia, Zimbabwe (16)
ECCAS	Economic Community of Central African States	**Angola**, **Burundi**, Cameroon, Central African Republic, Chad, Congo, **Democratic Republic of the Congo**, Equatorial Guinea, Gabon, **Rwanda**, Sao Tome and Principe (11)
ECOWAS	Economic Community of West African States	Benin, Burkina Faso, Cabo Verde, Côte d'Ivoire, the Gambia, Ghana, Guinea, Guinea-Bissau, Liberia, Mali, Niger, Nigeria, Senegal, Sierra Leone, Togo (15)

* Countries in bold are members of more than one REC.

** Formerly Swaziland.

Source: pixabay.com

3

OVERALL STATUS OF IWRM IMPLEMENTATION

Source: pixabay.com

The general interpretations of the implementation categories for the overall indicator 6.5.1 score are based on the threshold descriptions from the individual questions (Table 3). Individual question thresholds are provided in annex 1.2, and some questions are discussed further in chapter 4.

In line with target 6.5 on implementing IWRM at all levels, including through transboundary cooperation, by 2030, a global, aspirational target for indicator 6.5.1 has been set, which is to reach a very high degree of implementation, or an average score of between 91 and 100. Recognizing that African countries have generally lower levels of IWRM development, it is recommended that countries and/or subregions set targets, guided by the global level of ambition but considering their national and subregional circumstances (see section 7.4).

Table 3 Overall IWRM implementation categories, score thresholds, and interpretation.

	Score range	General interpretation for overall IWRM score
Very high	91 - 100	Vast majority of IWRM elements are fully implemented, with objectives consistently achieved and plans and programmes periodically assessed and revised.
High	71 - 90	IWRM objectives of plans and programmes are generally met and geographic coverage and stakeholder engagement is generally good.
Medium-high	51 - 70	Capacity to implement IWRM elements is generally adequate and elements are generally being implemented under long-term programmes.
Medium-low	31 - 50	IWRM elements are generally institutionalized and implementation is under way.
Low	11 - 30	Implementation of IWRM elements has generally begun, but with limited uptake across the country, and potentially low engagement of stakeholder groups.
Very low	0 - 10	Development of IWRM elements has generally not begun or has stalled.

3.1 Country status

KEY FINDINGS AND **RECOMMENDATIONS**

1. Most countries (82 per cent) have institutionalized most IWRM elements, and implementation is under way (medium-low implementation and above). **These countries should build on this foundation to implement the IWRM elements and accelerate progress.**
2. Most countries (71 per cent), for most IWRM elements, report that capacity for effective implementation is largely inadequate, with most activities undertaken on an ad hoc basis using unsustainable financing (medium-low and below). **Capacity, financing and effectiveness need to be significantly increased to ensure implementation leads to positive outcomes on the ground.**
3. Country implementation of IWRM in Africa ranges from very low (10) to medium-high (65), with a continental average score of 41. This is slightly lower than the global average of 49. **Learning opportunities between countries should be harnessed, though action should fit the national context.**

More than half of African countries (53 per cent) have medium-low implementation. While some institutional arrangements may be in place in these countries, implementation of such arrangements may be limited, with generally low capacity, geographic coverage and stakeholder participation.

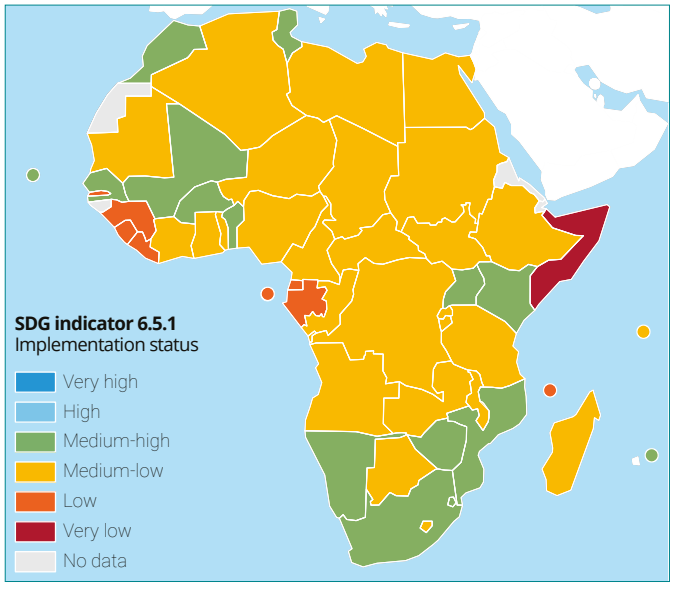
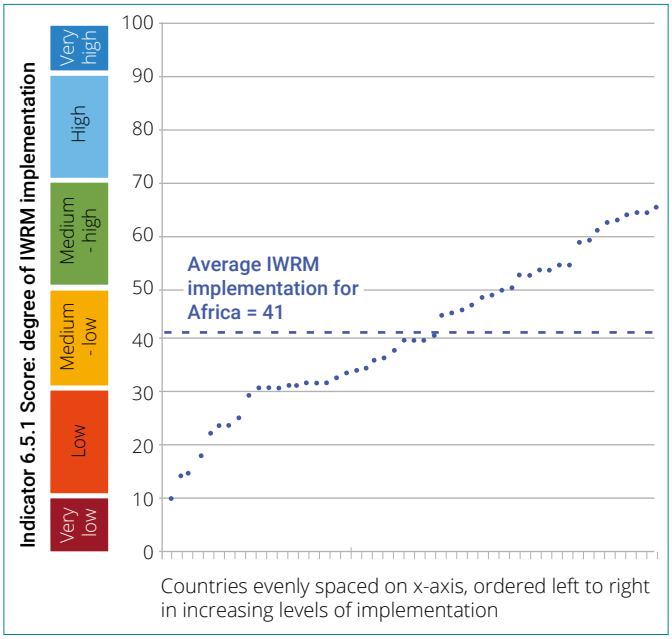


Figure 3 Country implementation of IWRM in Africa.

Forty-two countries (82 per cent) have institutionalized most elements of IWRM (medium-low and medium-high implementation). The focus must now be on implementation at all levels.

Countries per category			Score range	Baseline	Towards 2030
%		No. of countries			
0	Very high	0	91-100	No countries have fully established IWRM processes or review and revise programmes.	-
0	High	0	71-90	No countries are generally achieving policy objectives for IWRM. Geographic coverage and stakeholder involvement are generally good.	
29	Medium-high	15	51-70	Twenty-nine per cent of countries are implementing most IWRM elements in long-term programmes.	Potentially able to reach the global target, but efforts need to be focused and sustained towards 2030.
53	Medium-low	27	31-50	Fifty-three per cent have institutionalized most IWRM elements and implementation is under way, but uptake of arrangements is not widespread.	**Seventy-one per cent of countries unlikely to meet the global target unless progress is significantly accelerated.** **Countries should aim to set national or subregional targets based on the country context.**
16	Low	8	11-30	Sixteen per cent have started developing IWRM elements. Limited uptake across the countries and potentially low stakeholder participation.	
2	Very low	1	0-10		

Figure 4 Distribution of 6.5.1 scores per IWRM implementation category in Africa, based on 51 reporting countries.



In Africa, IWRM implementation ranges from very low (10) to medium-high (65). The average degree of implementation for Africa is medium-low, with a score of 41.

Figure 5 Indicator 6.5.1 baseline for Africa: Country IWRM implementation scores (0-100).

3.2 Progress towards targets

KEY FINDINGS AND **RECOMMENDATIONS**

1. Country experience, evidence and progress noted from similar surveys conducted in 2008 and 2012 suggests that almost three quarters (71 per cent) of countries will not meet the African and global targets unless progress is significantly accelerated (medium-low implementation and below). **Progress should be significantly accelerated in these countries and national interim targets should be set to facilitate implementation.**

To achieve target 6.5 by 2030, a global, aspirational target for indicator 6.5.1 has been set, which is to reach a very high degree of IWRM implementation or a global average score of between 91 and 100. This target has a longer time frame compared with some targets for IWRM elements covered in the Africa Water Vision for 2025, which initially had a target date of 2015. Similarly, the Sharm El-Sheikh Declaration was focused on achieving the MDGs by 2015, though target dates were not specified for several commitments. The current SDG target is in line with many political commitments made by African Heads of State and Water Ministers, such as those agreed at the Pan-African Implementation and Partnership Conference on Water (PANAFCON) 2003, and in the Ngor Declaration on Sanitation and Hygiene 2015, as well as those included in the AMCOW Strategy 2018–2030 and the joint African Union Commission (AUC) and AMCOW African Water Resources Management Priority Action Programme 2016–2025.

As this is predominantly a baseline assessment, it is challenging to estimate progress towards global and African targets. An empirical analysis can only be carried out following the results of subsequent reporting on indicator 6.5.1, using a methodology that is directly comparable to the one used in this baseline. In the absence of empirical data, experience from countries over the past few decades indicates that progress has generally been slow and that most African countries are unlikely to meet the targets unless current rates of implementation are accelerated, particularly among the 71 per cent of countries in the medium-low, low and very low implementation categories (Figure 4, section 3.1).

It should be noted, however, that most countries have institutionalized and started implementing many IWRM elements, which along with the support of global efforts made within the SDG framework, has provided a solid foundation from which to accelerate progress. It is therefore recommended that countries set targets in line with national priorities and capacities to encourage action on the ground and further progress (see section 7.5).

Though global status reports on IWRM implementation were published in 2008 and 2012, these assessments did not create any IWRM implementation scores, making a direct comparison with the SDG baseline difficult to determine. Furthermore, although many questions included in the 2008, 2012 and 2017/18 surveys are similar to those in the SDG baseline and could be compared, the approach to collecting national data and the number of possible responses to each question are different, hence making direct comparisons challenging. This highlights the need to maintain a consistent reporting and assessment methodology throughout the SDG period.

3.3 Subregional implementation of IWRM

KEY FINDINGS AND **RECOMMENDATIONS**

1. Central Africa is the only subregion with a low level of IWRM implementation (28). All other subregions have a medium-low level of IWRM implementation (scores between 37 and 50).
2. Apart from Central Africa, each subregion has countries with medium-high implementation.
3. On average, Northern and Southern Africa have the highest implementation levels (scores of 50 and 49), followed by Eastern and Western Africa whose scores are roughly 10 points lower (scores of 37 and 42).
4. **IWRM implementation in Central Africa should be a priority. AMCOW, with support from the AU, should make efforts to facilitate implementation at the national level, and through support to ECCAS.**

Northern and Southern Africa have similar levels of implementation, with average scores of 50 and 49 respectively. Countries in these subregions have medium-low or medium-high implementation. These subregions have slightly higher average implementation than Eastern (37) and Western (42) Africa, which have some countries with low implementation levels. Central Africa has the lowest average implementation (28), and is the only subregion without a country reaching the medium-high category.

In efforts to accelerate IWRM implementation in Africa, special attention should be given to Central Africa. Even though this region is generally water-abundant, it faces serious water development and management challenges, especially in accessing drinking water and sanitation services: half the region's 150 million inhabitants do not have access to basic drinking water services, compared with 42 per cent for sub-Saharan Africa (11 per cent for the global population), and

72 per cent do not have access to basic sanitation services (same percentage for sub-Saharan Africa, compared with 32 per cent for the world).[15] Central Africa also has great potential for hydropower development, which is included in some African targets.[16] Institutional and legal frameworks, as well as professional capacity, should be significantly improved if hydropower is to be developed, with due consideration given to social and environmental impacts.

Subregional differences in implementing various IWRM elements are discussed in chapter 4. The historic and potential role that RECs may have in facilitating IWRM implementation is discussed in chapter 7.

Northern and Southern Africa have the highest average implementation, followed by Eastern and Western Africa, and then Central Africa.

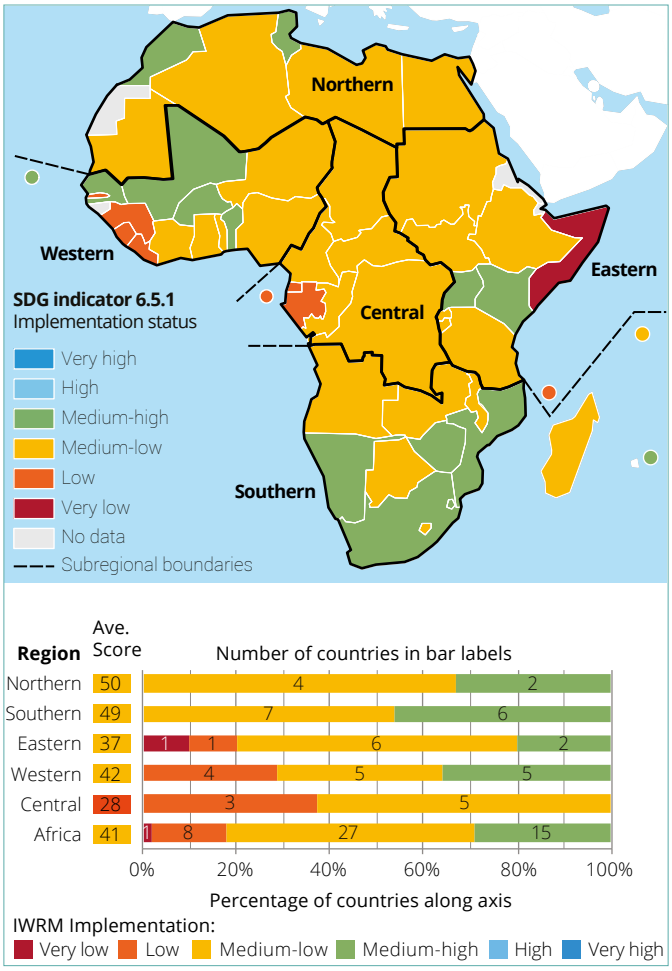


Figure 6 Subregional averages and country breakdown of IWRM implementation.

[15] Central Africa comprises 10 countries (see Figure 2). Percentages on access to basic drinking water and sanitation services are taken from WHO and UNICEF (2017). *Progress on Drinking Water, Sanitation and Hygiene: 2017 Update and SDG Baselines.* Geneva, Switzerland. Available at: https://www.unicef.org/publications/files/Progress_on_Drinking_Water_Sanitation_and_Hygiene_2017.pdf

[16] For example, in the 2008 Sirte Declaration of the Ministerial Conference on Water for Agriculture and Energy in Africa: The Challenges of Climate Change.

4

IMPLEMENTING ELEMENTS OF IWRM

Source: pixabay.com

This chapter analyses the level of implementation across the four IWRM dimensions: enabling environment (IWRM-based policies, laws and plans); institutions and participation; management instruments; and financing. It also includes analysis of the 33 individual questions from the questionnaire on IWRM elements.

Across the four IWRM dimensions, Africa's average scores are consistently in the medium-low implementation category, which ranges from 31 to 50 (Figure 7).

The lowest scores are recorded for the dimensions that refer to the operationalization and implementation of IWRM on the ground: financing (33) and management instruments (40). The level of financial resources used for water infrastructure and water management indicates the extent of political will and also the means available for IWRM implementation. The level of progress on the development and implementation of management instruments indicates the extent to which IWRM has progressed from the enabling environment and institutional framework (policies, plans and strategies, and mechanisms for public participation, etc.) to implementation on the ground, including at decentralized administrative and water management units.

Financing for water resources management has the lowest average score (33) of the four IWRM dimensions.

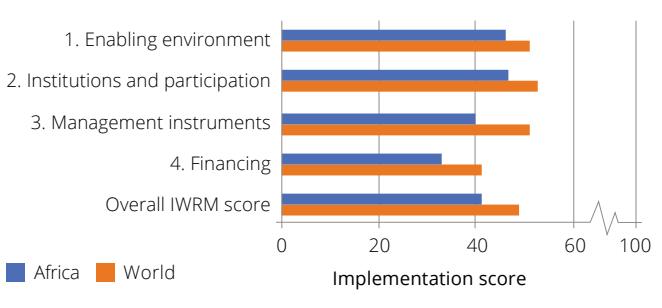


Figure 7 Average implementation of the four dimensions of IWRM in Africa and the world.

However, it should be noted that these scores are African averages. At the country level, average scores for these dimensions range from 0 to 77, demonstrating the need for each country to carefully assess their own strengths and weaknesses for progressing with IWRM implementation. Sections 4.1–4.4 discuss this issue and scores are summarized in annex 3.

While transboundary aspects are included in each of the four dimensions, these are discussed individually in chapter 5.

4.1 Developing and implementing laws, policies and plans (survey section 1)

KEY FINDINGS AND **RECOMMENDATIONS**

1. The establishment of enabling environments at the national level (48) scores significantly higher than at "other levels" (43) (subnational, basin/aquifer, transboundary policies, laws and plans). **IWRM implementation should trickle down from the national to subnational levels, from capital cities to decentralized administrative and natural resource governance units (territories and watersheds).**
2. When comparing the seven enabling environment IWRM elements, progress is lowest at the aquifer and subnational levels (average score 34) – this is also the case at the global level. **Governments, river basin organizations and RECs should increase efforts to improve the enabling policy and legal environment for integrated management of aquifers, including aquifers that are shared with other countries.**
3. Central Africa has the lowest average score (31) for the seven enabling environment elements, which is 15 and 20 points lower than the continental and global averages (46 and 51 respectively) (Table 4). In addition, Central Africa is the only subregion without a country in the medium-high implementation category (Figure 8). **To accelerate IWRM implementation in Africa, special attention should be given to Central Africa.**

The enabling environment dimension covers the creation of laws, policies and plans to support the implementation of IWRM. The extent of implementation of the policy, legal and planning elements of this IWRM dimension is measured at the national level and at other levels (subnational and transboundary).

Progress in establishing an enabling environment for IWRM through policies and laws in Africa (46) scores close to the global average (51) (Table 4).

At the subregional level, Northern and Southern Africa have similar average implementation for most enabling environment elements and score higher than the other regions (Table 4). Eastern and Western Africa have lower levels of implementation, though Western Africa has the highest average level for implementing national IWRM plans. This can partly be explained by the fact that ECOWAS has

been encouraging Member States to develop and implement IWRM plans for the last two decades.

In this time, each Western African country has either formulated a national IWRM plan or developed a road map for formulating a national plan.[17] However, this has not translated into plans at the basin or aquifer levels, where Western Africa reports the joint lowest score with Central Africa. Overall, Central Africa reports significantly lower implementation of most enabling environment elements.

Central African countries report the lowest implementation scores for every element of the enabling environment for IWRM.

1. Enabling environment	Northern	Southern	Eastern	Western	Central	AFRICA	WORLD
1.1 National level							
a) Policies	63	55	54	51	33	51	55
b) Laws	62	65	46	45	34	51	56
c) Plans	50	50	36	51	23	43	49
1.1 Average	58	57	45	49	30	48	53
1.2 Other levels							
a) Subnational policies	52	47	44	33	26	40	45
b) Basin/aquifer plans	43	45	31	26	26	34	42
c) Transboundary arrangements	60	65	54	60	50	58	56
d) Provincial laws (federal countries)	-	-	26	30	-	27	59
1.2 Average	52	52	41	40	31	43	47
Dimension 1 average	55	55	43	45	31	46	51
Key	Highest	Lowest					

Table 4 Progress in establishing an enabling environment for IWRM in African subregions.

Source: pixabay.com

[17] UEMOA (2018). *Etats des lieux de la Gestion Intégrée des Ressources en Eau (GIRE) dans l'espace UEMOA & Plan d'Action.* Union économique et monétaire ouest-africaine (UEMOA). Ouagadougou, Burkina Faso. [In English: WAEMU (forthcoming). *Stock-Taking of Integrated Water Resources Management (IWRM) implementation in WAEMU subregion & Action Plan.* West African Economic and Monetary Union (WAEMU).]

There is significant variation between national and subregional scores for implementing the enabling environment elements, as seen in Figure 8, which could provide opportunities for sharing ideas and experiences.

Analysing the distribution of countries per IWRM implementation category for each enabling environment element reveals that 63 per cent of African countries are in the low categories (medium-low, low and very low) (Figure 9). However, 29 per cent of countries are in the medium-high category, with 8 per cent of countries in the high category.

An analysis of countries' performances in implementing the seven enabling environment elements shows both positive and negative results. In terms of the positives, more than 50 per cent of countries have attained or surpassed the medium-high level (score of 51 and above) in three of the seven elements: formulation and implementation of national water policies reflecting IWRM principles (Q1.1a); formulation of national water laws (Q1.1b); and establishment of transboundary arrangements for shared river basins and aquifers (Q1.2c).

A number of African countries have reached a high or very high level of implementation in six of the seven IWRM elements, with the exception being the implementation of provincial laws in federal countries.[18]

Moreover, there are some African countries with a very high implementation level for the formulation of national laws (Q1.1b), development and implementation of national IWRM plans (Q1.1c) (Box 3), and establishment of operational transboundary arrangements (Q1.2c) (see section 5.1 for transboundary arrangements).

Examples of high implementation of laws, policies and plans are found in all subregions except for Central Africa.

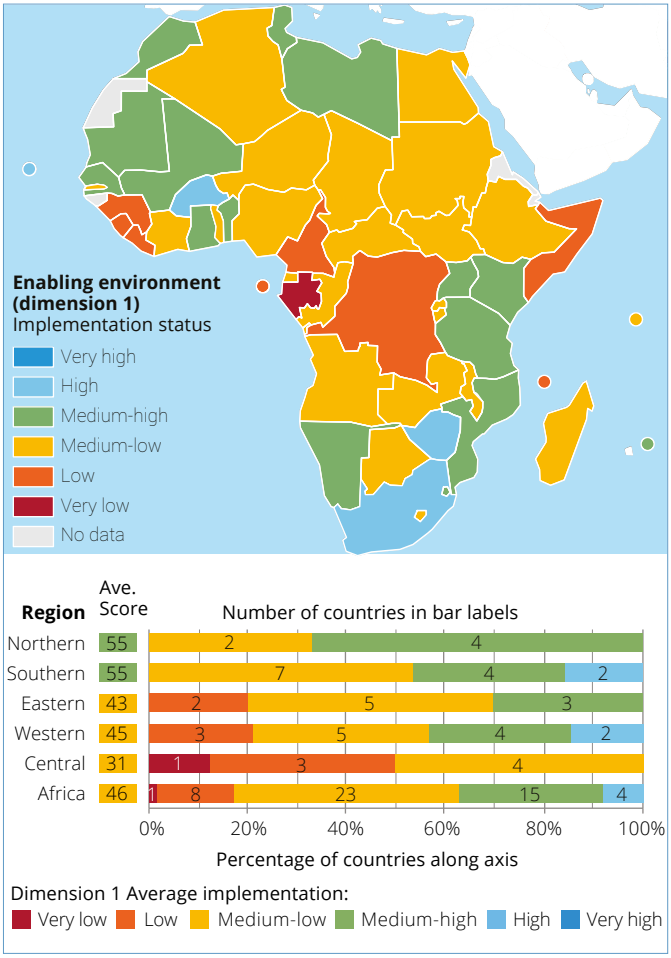


Figure 8 Average implementation of enabling environment elements – policies, laws and plans at different levels by country and subregion.

Approximately 70–80 per cent of African countries have national policies, laws and plans which are approved and based on IWRM principles (medium-low implementation and above). This drops to 45 per cent for African countries with approved plans for most of their basins and aquifers.

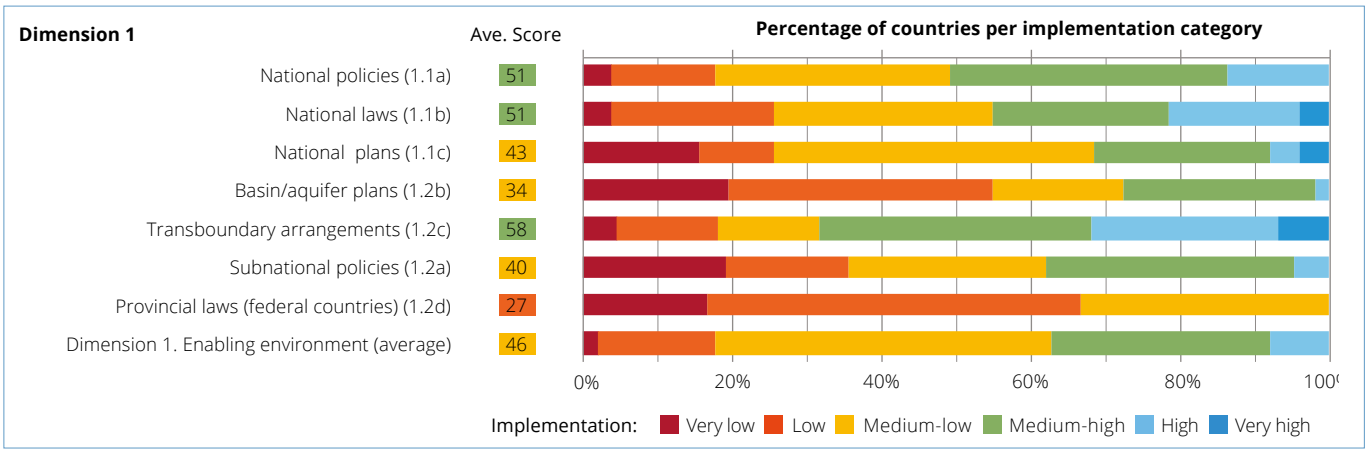


Figure 9 Implementation status of policies, laws and plans based on IWRM approaches.

[18] African federal countries include: Comoros, Ethiopia, Nigeria, Somalia, South Sudan and Sudan.

BOX 3

Examples of an effective enabling environment for IWRM

Countries in the high implementation category, such as **Burkina Faso** (Western Africa) and **Zimbabwe** (Southern Africa), have recently approved a water policy and/or national water laws and have formulated and implemented national IWRM plans. These high performing countries have enacted by-laws to operationalize the framework laws. IWRM strategies and plans are also implemented at the subnational and major national and shared watersheds levels.

After developing its Water Law (1998), Burkina Faso formulated a landmark Water framework law *(Loi d'orientation relative à la gestion de l'eau)* in 2001. Burkina Faso is the first Western African country to engage in the formulation of a national IWRM plan, a process which began in 2003. The country is currently in its third phase (2016–2020) of implementing the national IWRM plan. For each of the country's five main watersheds, a basin agency has been established, which is responsible for implementing the basin water management master plan. Burkina Faso is member of the Niger Basin Authority and the Volta Basin Authority.

Zimbabwe adopted a Water Act in 1998 and a National Water Policy in 2013. Catchment management plans have been developed for sub-basins of the Limpopo, Zambezi and Pungwe rivers. The country is also involved in river arrangements for the Limpopo and Zambezi transboundary river basins.

Approximately 55 per cent of African countries either have no basin or aquifer management plans, or are currently developing these (very low and low implementation).

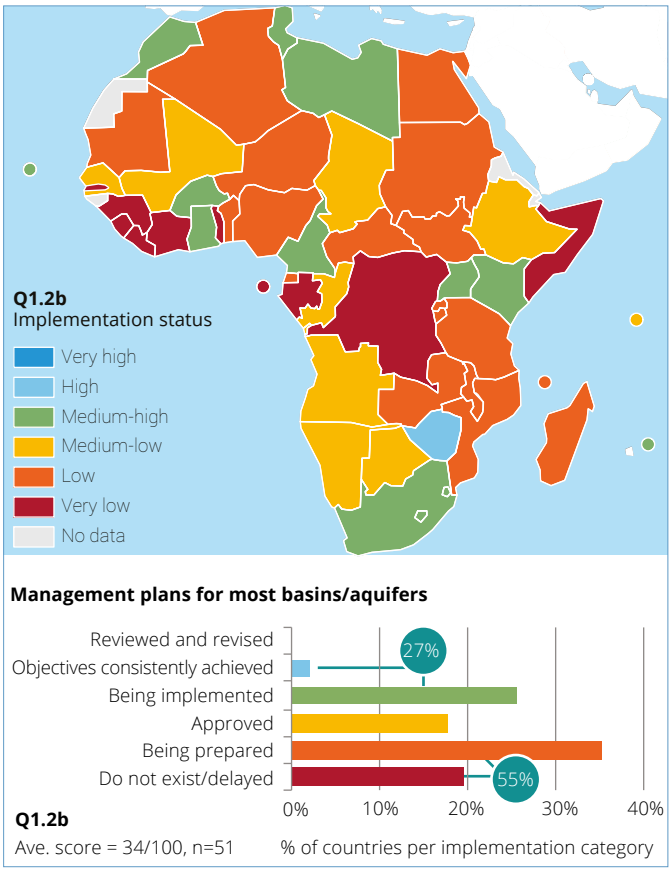


Figure 10 Country status in developing and implementing basin/aquifer management plans.

As regards the negative findings, many African countries appear to be facing serious challenges in implementing some of the enabling environment elements. Approximately 55 per cent of African countries are in the low and very low implementation categories for the development of basin and aquifer management plans (Figure 10). Furthermore, one third of countries are facing challenges in developing and implementing water policies at the subnational level.

4.2 Establishing institutions and engaging stakeholders (survey section 2)

The institutions and participation dimension of IWRM implementation in particular refers to the range and roles of political, social, economic and administrative institutions and stakeholder groups that help to support IWRM implementation. This dimension comprises the subnational level (administrative units, river basin catchment and aquifers; state/provincial level for federal countries) and the supranational level (especially transboundary river basins).

As shown in Table 5, Africa's overall performance in establishing institutions and inclusive decision-making processes for IWRM implementation is at the medium-low level, which is slightly below the global level (medium-high). Nevertheless, this level of implementation means that, on average, authorities and institutions have been established with clear mandates to lead in water governance decision-making processes, and that inclusive participation and information-sharing is taking place, including with private sector entities.

Within Africa, the highest score is achieved by Southern Africa (medium-high level), while other regions (Northern Africa and Western Africa followed by Central Africa) are at the medium-low level. The score at the national level is higher than at other levels, which is a general pattern noted for other IWRM dimensions.

Central Africa has the lowest average score for establishing institutions and inclusive participatory mechanisms for IWRM implementation, but also for all other elements of this IWRM dimension (with the exception of gender-related elements): authorities leading IWRM implementation; coordination among authorities and sectors; public participation; private sector participation; capacity development at the national level; and the establishment of functioning basin/aquifer management organizations.

Southern Africa has, on average, the highest scores for public participation and achieving gender objectives.

2. Institutions and participation	Northern	Southern	Eastern	Western	Central	AFRICA	WORLD
2.1 National level							
a) National institutions	60	50	45	56	40	50	58
b) Cross-sectoral coordination	57	62	52	55	44	55	63
c) Public participation	58	72	55	58	40	58	62
d) Business participation	58	53	46	52	35	49	55
e) Gender objectives	35	51	41	43	38	43	46
f) Capacity development	55	52	41	37	28	42	50
2.1 Average	54	57	47	50	37	50	56
2.2 Other levels							
a) Basin/aquifer organizations	57	48	34	41	1	37	46
b) Public participation	48	62	39	54	28	48	56
c) Subnational gender objectives	30	56	33	39	37	40	41
d) Transboundary gender objectives	22	45	31	36	34	35	32
e) Transboundary organizations	64	70	53	54	53	58	57
f) Provincial organizations (federal countries)	-	40	24	30	-	27	55
2.2 Average	46	56	37	45	29	44	49
Dimension 2 average	50	56	42	48	34	47	53
Key	Highest	Lowest					

Table 5 Progress in establishing institutions and participatory processes for IWRM implementation in African subregions.

Central Africa's low performance in the institutions and participatory processes IWRM dimension is likely due to its relatively low score for the enabling environment, since developing and implementing policies, laws, plans and strategies allows for the creation of responsible institutions and authorities, and establishment of platforms for stakeholder participation.

Northern Africa has the lowest score in addressing gender objectives, one of the pillars of IWRM. Gender-specific objectives include gender equality considerations by decision-making authorities and the extent to which gender is considered in policies and plans. Northern Africa's average low score means that gender is at best partially addressed in institutions, consultations and decision-making processes. The gender performance for the entire continent is at the medium-low level, which suggests that gender may be included in water management plans, for example, but is typically under-funded with a low level of implementation. African countries should increase their efforts to address gender inequalities and biases in water management aspects to achieve the commitment to gender mainstreaming and the

KEY FINDINGS AND **RECOMMENDATIONS**

1. Although 86 per cent of African countries achieve at least a medium-low level of implementation for the institutions and participation IWRM dimension, important variations are noted between countries and even regions. Central Africa is the lowest scoring African subregion (score of 34 compared with 47 for Africa) for establishing authorities, institutions and inclusive decision-making platforms and procedures for effective IWRM implementation. **Central Africa needs practical support (awareness-raising and capacity development in particular) to accelerate water policy and water law reform processes and IWRM planning, and should foster inclusive multi-stakeholder participation and the establishment and/or consolidation of relevant water management institutions.**
2. Gender elements of IWRM implementation are among the few areas where Africa equals (gender at the national level), and even surpasses (gender at the transboundary level), the global average. **However, to live up to the strong commitment to gender equality and gender mainstreaming agreed at the African Union Summit in 2002, African countries, especially in Northern Africa, should pay greater attention to gender aspects as part of their IWRM efforts.**
3. Many African countries are either struggling to establish or run effective institutions at the river basin or aquifer level. **To improve IWRM implementation, African countries should increase efforts to establish and support river basin and groundwater institutions.**

principle of gender equality made by the AU Heads of States and Governments in the Solemn Declaration on Gender Equality in Africa in 2004.

Similar to the enabling environment dimension, there is variation in the national and subregional scores on institutions and stakeholder participation (Figure 11).

Western Africa has the widest spread of average country scores on institutions and participation.

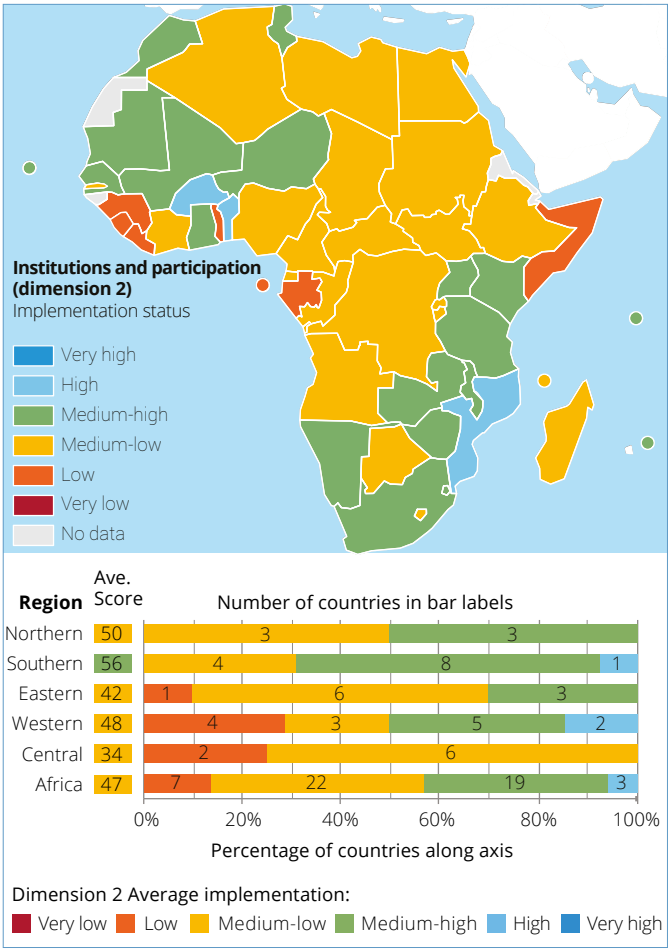


Figure 11 Average implementation of the institutional frameworks and stakeholder participation by country and subregion.

Africa has made significant progress in several of the institutions and participation elements, in particular: establishment of national authorities and institutions with clear leadership roles in the IWRM process (Q2.1a); cross-sectoral coordination in water management (Q2.1b); establishment of an inclusive participatory platform and decision-making process (Q2.1c) (Box 4); and establishment of transboundary institutions (Q2.2e) (Figure 12). For each of these elements, 70–80 per cent of African countries are at the medium-low implementation level, and more than 50 per cent of countries are at the medium-high level for the last three elements. More than 40 per cent of countries achieve high and very high implementation levels for the establishment of operational transboundary institutions, meaning that transboundary water management frameworks largely or fully fulfil their mandates (section 5.1.2).

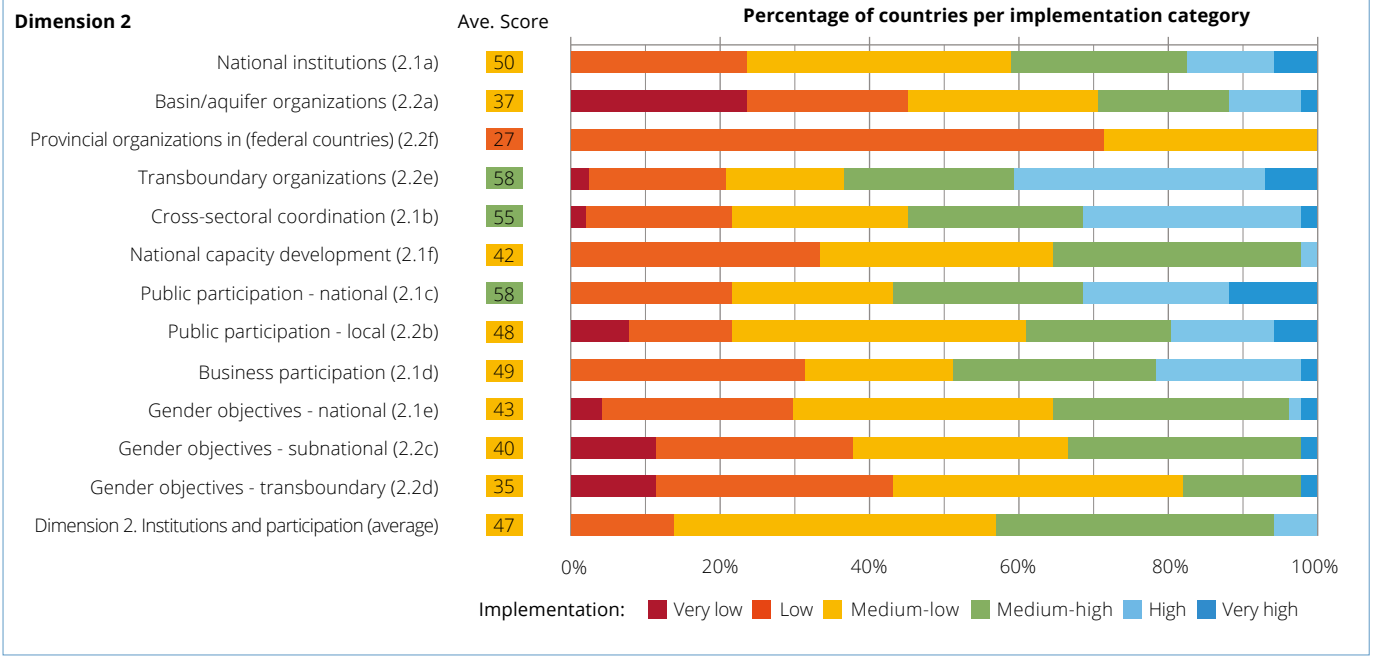


Figure 12 Implementation of institutional arrangements and stakeholder participation by question.

Country performances are particularly low in three areas: gender, basin/aquifer institutions, and capacity development. For more than 30 per cent of countries, gender is only briefly addressed (not at all for 10 per cent of countries) in national and subnational water management policies, laws and plans. However, there are some high performing countries (Box 5).

Almost half of all countries (45 per cent) find themselves in the low and very low categories for the establishment of functioning organizations responsible for managing watersheds and aquifers (Figure 13). This means that these countries either have not established such organizations or, where existing, lack the capacity to effectively lead and coordinate water management decision and planning processes at the basin and aquifer level. However, there are some countries who have reported good and promising practices of basin-level organizations leading IWRM implementation (Box 6).

BOX 4

Promoting public participation in water management

In **Botswana** (Southern Africa), which scores 70 in public participation at the national level (Q2.1c), the formulation of new water policies and laws involves wide consultations with relevant stakeholders. The Department of Water Affairs is carrying out feasibility studies as part of plans to create catchment management committees comprising representatives of main stakeholder groups in the coming years. In addition, stakeholder participation in water management decisions and processes has been enhanced through public involvement in water-related forums such as the Water Symposium and World Water Day.

BOX 5

National legal frameworks helping to address gender disparities in water management from the national to local levels

Commitments on gender at the international level (such as the AU 2002 Solemn Declaration on Gender Equality) and national level (in constitutions or other framework laws) offer a normative framework and enabling factors for addressing gender disparities in water management. In **Kenya** (Eastern Africa), which scores 60 on implementing gender-specific water management objectives at the national level (Q2.1a), the country's 2010 Constitution sets a two-thirds rule for affirmative action – meaning that a single gender cannot represent more than two thirds of the Members of Parliament and other elected public bodies. In compliance with the constitutional provision, the 2016 Water Act mandates that women should represent at least one third of members of Water Resources Users Associations (WRUAs) and Catchment Area Advisory Committees (CAACs).

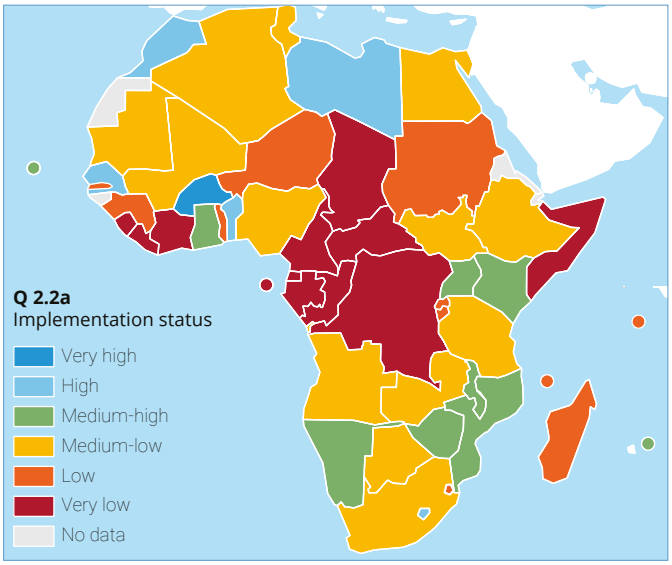


Figure 13 Country implementation of basin or aquifer institutions.

Regarding capacity development programmes, 64 per cent of countries report inadequate coverage across stakeholder groups and the country (medium-low, low and very low levels) (Figure 12).

BOX 6

Implementing IWRM at the river basin level

Both Burkina Faso (Western Africa) and Morocco (Northern Africa) have shown promising practices of basin level organizations leading IWRM implementation (Q2.2a), scoring 100 and 90 respectively.

Burkina Faso has divided the country into five main catchment areas and established a Water Agency for each catchment, comprising a Directorate General, basin committee (representing all key stakeholder groups) and local water committees at the sub-catchment level. Under the leadership of the Directorate General, a Water Development and Management Master Plan is implemented by each Water Agency.

In **Morocco**, Watershed Agencies have been established, which are responsible for developing and implementing IWRM plans at the basin level. The 2016 Water Law (No. 36-15) has strengthened the institutional framework for IWRM implementation through creating a Watershed Council at the basin level.

4.3 Applying management instruments (survey section 3)

The management instruments dimension relates to progress made in the development and utilization of decision-making support tools that guide informed water management choices, including water management programmes, monitoring, information-sharing and capacity-building. Progress is measured for nine elements: national monitoring of water availability; approaches, techniques and tools for sustainable and efficient water-use management; regulations, guidelines and tools for water pollution control; tools and mechanisms for monitoring and managing water-related ecosystems; instruments for managing water-related disasters; basin management instruments; aquifer management instruments; data- and information-sharing within countries; and transboundary data- and information-sharing between countries.

As shown in Table 6, Africa lags far behind the global average in developing and implementing water management instruments, with a score of 40 compared with the global average of 51. This gap (11 points) is larger than the gap for overall IWRM implementation (41 for Africa compared with 49 globally). In addition, for all nine elements of this dimension, Africa scores less than 50, meaning these are implemented at low to medium-low levels. This is worrying, since it is through the application of management instruments that a true picture can be gauged on the extent of operationalization and implementation of IWRM within countries. Africa therefore needs to focus IWRM strategies and plans on developing and implementing water management instruments, tools, approaches and information management systems.

An analysis of the subregions reveals that Northern and Southern Africa report the highest average implementation of management instruments (scores of 51 and 50). Eastern and Western Africa are behind on all elements by between 4 and 23 points (average scores of 35 and 39) and Central Africa lags significantly, with an average score of 23 (Table 6). The variation between countries and subregions in implementing management instruments is presented in Figure 14.

KEY FINDINGS AND **RECOMMENDATIONS**

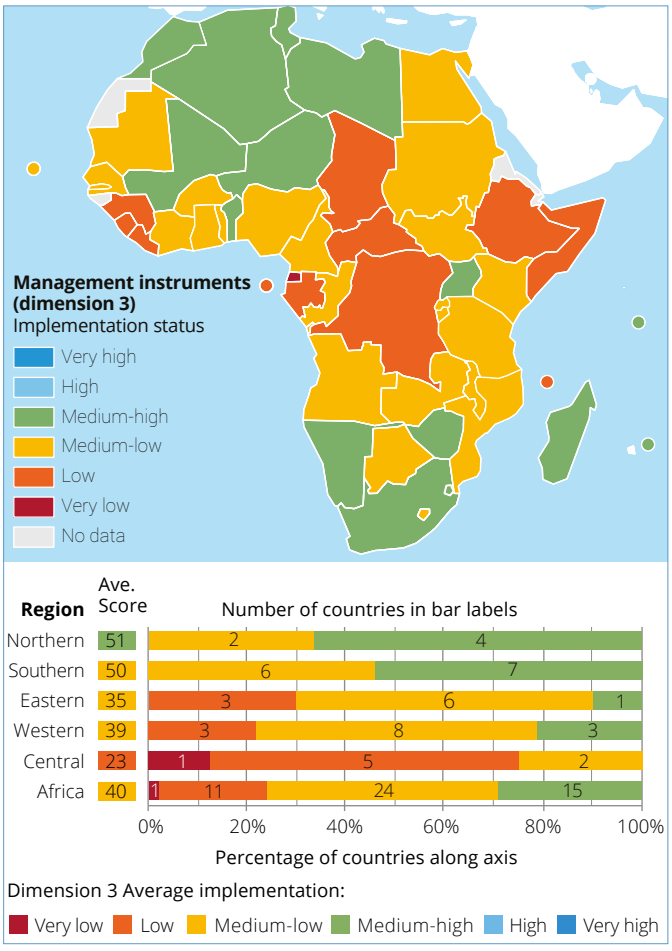
1. Africa lags far behind the global average in developing and implementing IWRM instruments (scoring 40 compared with the global average of 51), with the continent's average scores below 50 for all nine of the management instruments elements, i.e. in the medium-low to very low level categories. **Africa should shift its focus significantly towards the practical implementation of IWRM as a problem-solving, water-management approach. This requires increased efforts to develop and implement operational water management instruments for monitoring water quantity, quality and use, improving water-use efficiency, understanding and using ecosystem services, and addressing the risks of water-related disasters.**
2. Central Africa is far behind other subregions in operationalizing and implementing management instruments for water resources management, with an average score of 23 compared with 40 for Africa and 51 at the global level. **In Central Africa, substantive country-level efforts should be made to accelerate and strengthen IWRM operationalization. These efforts should be complemented by greater coordinating roles from transboundary basin organizations (for example, the International Congo-Ubangi-Sangha Basin Commission (CICOS)) and at the level of ECCAS.**
3. The development and implementation of aquifer-related management instruments scores the lowest (30) of all nine elements in this dimension. **Efforts to improve the understanding of groundwater resources should be increased, as well as investments in establishing effective systems for monitoring groundwater availability, recharge mechanisms, use and quality.**
4. The development and implementation of ecosystem management instruments scores the second lowest of the elements in this dimension. More attention should be given to the three key features of ecosystems: the services they provide if maintained in a healthy condition; the damage they cause if they degrade; and their water requirements. **African countries should include the protection of water-related ecosystems in water management strategies and plans, optimizing the services they provide and the benefits they generate for all, especially for vulnerable groups and communities whose livelihoods and production systems highly depend on natural ecosystems.**
5. Despite Africa's vulnerability to water-related disasters such as floods and droughts, half of African countries have no instruments in place for minimizing disaster risks and tend to resort to ad hoc responses when disasters occur, with limited effectiveness. **To improve the continent's resilience to water-related disasters, investment in disaster risk management needs to be prioritized, especially in water management plans but also in climate change adaptation strategies.**
6. Africa's performance on water-related data- and information-sharing within countries at all levels is low, although many countries and river basin and aquifer organizations are developing or have already established observatories and information management systems. One of the weaknesses of such initiatives is their heavy reliance on donor funding. **In establishing water-related information systems, countries and river basin and aquifer organizations should pay greater attention to the long-term viability of these initiatives, especially to ensuring the availability of sustainable funding.**

Source: pixabay.com

On average, Central Africa lags significantly behind the other subregions in implementing management instruments.

3. Management instruments	Northern	Southern	Eastern	Western	Central	AFRICA	WORLD
3.1 National level							
a) Water availability monitoring	57	55	40	49	28	46	58
b) Sustainable water-use management	52	53	40	38	26	42	52
c) Pollution control	52	55	34	37	21	40	52
d) Ecosystem management	52	42	29	36	23	36	46
e) Disaster risk reduction	43	52	29	38	21	38	53
3.1 Average	51	51	34	40	24	40	53
3.2 Other levels							
a) Basin management	55	50	33	36	20	38	49
b) Aquifer management	48	36	25	31	11	30	42
c) In-country data-sharing	47	49	43	41	26	42	52
d) Transboundary data-sharing	56	56	42	47	29	46	48
3.2 Average	52	48	35	38	21	39	48
Dimension 3 average	51	50	35	39	23	40	51
Key	Highest				Lowest		

Table 6 Progress in developing and implementing integrated water management instruments in Africa's subregions



Of the four IWRM dimensions, Central Africa is furthest behind on implementing instruments for water resources management.

Figure 14 Average implementation of management instruments by country and subregion.

The development and implementation of aquifer-related management instruments scores the lowest (30) of all nine elements, which is consistent with the observations made for the enabling environment and institutions and participation dimensions (Figure 15). It is also the lowest scoring element in this dimension for the world.

Between 58 and 86 per cent of countries report medium-low levels of implementation or lower across all elements of water resources management instruments.

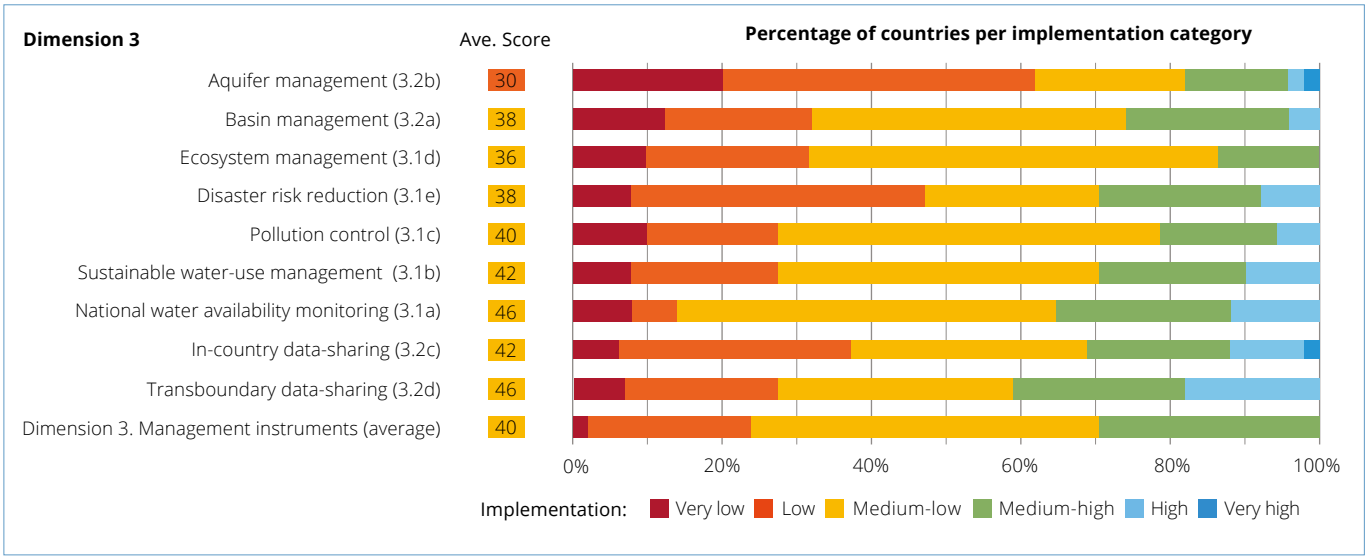


Figure 15 Implementation status of water resources management instruments.

Groundwater development should be noted for its importance in addressing present and future water challenges, especially in contexts of high pressure on surface waters (Box 7). However, development in this area is often constrained by the limited knowledge of the resource (Figure 16).

Approximately 82 per cent of African countries are not implementing aquifer management instruments as part of long-term programmes, and geographic and stakeholder coverage is inadequate (medium-low to very low implementation).

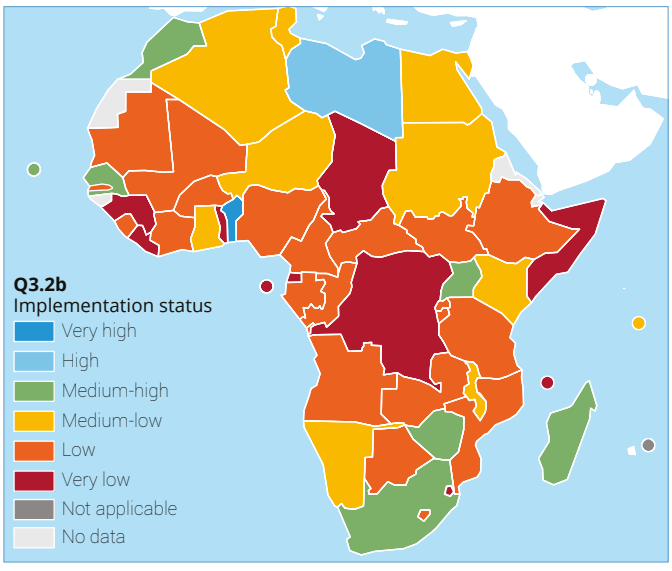


Figure 16 Implementation of aquifer management instruments.

African countries have faced challenges in monitoring groundwater. In the few cases where networks of observation wells and piezometers are in place, the equipment is neither maintained nor replaced and deteriorates over time. Where the equipment is functional, data are not collected regularly and analysed. As a result, groundwater-related information is often either lacking or outdated (Box 8).

Although the natural environment is at the core of sustainable water management, in practice, the way ecosystems are treated is one of the greatest weaknesses of IWRM implementation. The role of water-related ecosystems – as natural infrastructures contributing to the provision of water, its purification and recycling – are largely ignored and neglected. There is still limited understanding of ecosystem

BOX 7

Importance of developing and monitoring groundwater resources

In Egypt (Northern Africa), aquifers are the only source of freshwater for the country's population living in the desert, far from the Nile River. The country is therefore aiming to develop a strategy for groundwater development, encouraging the agricultural development of desert areas. It is expected that these newly developed irrigation areas will attract part of the highly concentrated population in the Nile Valley and Delta. With future demands for groundwater set to increase substantially, these areas will need continuous monitoring and evaluation to avoid unstainable levels of abstraction and misuse of water resources.

BOX 8

Challenges in groundwater-related data collection and monitoring

In **Ghana** (medium-low score of 40 for aquifer management instruments), aquifer-level management has been limited mostly to the northern regions. Although the country developed a Groundwater Management Strategy in 2011, it remains largely unimplemented.

In **Mali** (low score of 20), an inventory and mapping of the country's aquifers was carried out in the early 1990s, but these data have not been updated since. A national monitoring system for groundwater resources is under development, with plans to establish a network of 260 piezometric observation stations, but the long-term maintenance of such investments remains an unresolved issue.

services, benefits to water management and the water requirements of ecosystems. It is therefore not surprising that the average score for ecosystem management is 36, which is the second lowest score of the nine management instrument elements. Despite this, there are some positive examples (Box 9).

Approximately 86 per cent of African countries report inadequate coverage of water-related ecosystem management instruments across ecosystem types and the country (medium-low to very low implementation).

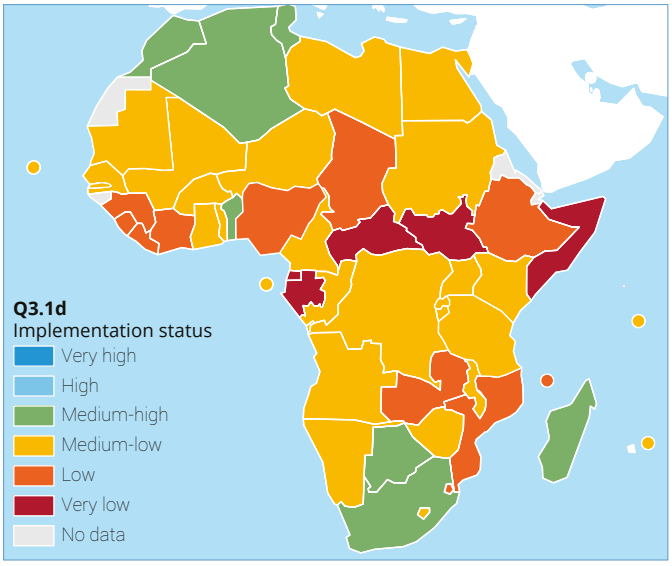


Figure 17 Implementation status of ecosystem management instruments.

The development and implementation of water-related disaster risk management instruments has a low average score (38 compared with the global average of 49), with almost 50 per cent of African countries within the low to very low implementation categories (Figure 18 and Box 10).

In almost half of African countries, the use of disaster risk reduction management instruments is limited and only used for short-term or ad hoc projects. Some African countries have no instruments at all (low and very low implementation).

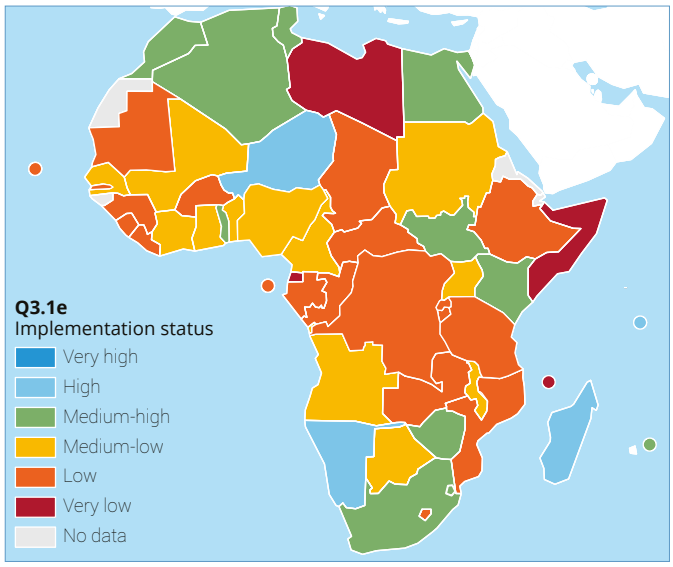


Figure 18 Implementation status of disaster risk reduction management instruments.

BOX 9

Management of water-related ecosystems at the national level varies

In **Algeria** (Northern Africa, medium-high score of 60), much progress has been made on aquatic ecosystems since the country ratified the Ramsar Convention in 1982. Many of the country's 50 Ramsar sites now have management plans which are being implemented.

South Sudan (Eastern Africa, very low score of 0) hosts the Sudd floodplain, which is the largest freshwater wetland of the Nile River Basin. Classified as a Ramsar site since 2007, the Sudd does not have a management plan. The Sudd floodplain is at risk of rapid deterioration, as are South Sudan's other wetlands and watersheds.

In **Togo** (Western Africa, medium-low score of 40), water-related ecosystems are addressed in the National Biodiversity Strategy and Action Plan 2015–2020 and in the National Reforestation Program 2016–2030. However, progress in implementing these programmes has been slow.

BOX 10

Challenges in effectively implementing water-related disaster risk management instruments

In **Burundi** (Eastern Africa, low score of 20), national platforms for natural disaster prevention have been created, but preventive response measures need updating. An interministerial committee for disaster management has also been established, but has limited resources to function effectively.

In **Ghana** (Western Africa, medium-low score of 40), a Flood Early Warning System has been developed for the White Volta Basin and another is under development for the Oti River Basin. Risk maps for vulnerable districts are in place to assist development plans and target investments in disaster risk reduction. The challenge is to ensure the effective implementation of existing instruments.

In **Malawi** (Southern Africa, medium-low score of 40), a National Disaster Risk Management Policy was adopted in 2015. The country also has a Department of Disaster Management Affairs (DoDMA), established under the Office of the Vice President, which is responsible for leading and coordinating disaster risk management efforts. The limited funding and the weak monitoring networks for droughts and floods are among the key constraints to reducing Malawi's vulnerability to disasters.

BOX 11

Risks of heavy reliance on donor funding for national or basin-level water-related information systems

With the objective of fostering open access to and sharing of high quality data on water availability, water quality and water use, Togo (score of 40) established an integrated water-related information system (*System Intégrée d'Information sur l'Eau* – SIIEAU), with the support of the African Water Facility (AWF, hosted by the African Development Bank), between 2009 and 2013. The AWF is providing funding for similar types of projects in countries such as Ethiopia and Tunisia, and to river basin organizations such as VBA and CICOS. For SIIEAU, an online database was created (www.siieau.tg), but its data are incomplete and have not been updated since 2014 when AWF funding ended. This shows the limitations of heavy reliance on donor support in developing national institutional frameworks and decision-making support systems for water governance.

Africa's performance on data- and information-sharing within countries is low (score of 42, 10 points below the average global score). However, several African countries have established water-related information management systems and platforms for information-sharing. Many river basin organizations[19] have established or are in the process of establishing observatories for water resources and the environment. Several African countries have also established national web-based information management systems on water resources. However, many tend to be overly reliant on donor funding and are unsustainable when this funding stops (Box 11). Another problem is the weak level of coordination and harmonization between country, basin and subregional monitoring initiatives.

4.4 Financing water resources management and development (survey section 4)

The financing dimension of IWRM implementation relates to the adequacy of financial resources available for water resource development and management. This dimension measures the extent to which public financial resources are mobilized to contribute to: building water resources structures such as dams and canals; supporting the development and operationalization of IWRM elements (section 4.3), including nature-based water management solutions, pollution control, etc.; and building and maintaining an enabling policy and institutional environment for IWRM (sections 4.1 and 4.2.), including the development of water-related policies, laws and by-laws, strategies and plans. The latter refer to the "soft" aspects of water development and management.

[19] Organizations include the Senegal River Basin Development Organization (OMVS), the Gambia River Basin Development Organization (OMVG), Niger River Authority (ABN) and Volta Basin Authority (VBA), among others.

KEY FINDINGS AND **RECOMMENDATIONS**

1. Of the four IWRM implementation dimensions, Africa scores the lowest on financing (33), which is also significantly lower than the global average (41). **African governments should display stronger political will and commitment to substantially reducing the investment gap in water infrastructure and financing water governance costs.**
2. Another key area of concern is Africa's low score on revenues raised from dedicated levies on water users at the basin, aquifer or subnational levels (average score of 31 compared with a global score of 40). Four out of five African countries find themselves in the medium-low to very low implementation categories. **Efforts should be made to document, widely share and replicate innovative and promising examples of water governance financing mechanisms based on water use and water pollution fees.**
3. Central Africa is far behind other subregions on financing for water, in terms of its overall score and individual scores for each of the five financing elements. **Central African governments and RECs, especially ECCAS, as well as technical and financial partners should work together to accelerate IWRM financing and implementation for the region, at the national and subnational levels and at the level of transboundary basin organizations, in particular CICOS.** This reinforces recommendations made in previous sections on Central Africa.

On average, Northern Africa is significantly more advanced than the other subregions in implementing financing for water resources management, scoring higher than the global average for some questions.

4. Financing	Northern	Southern	Eastern	Western	Central	AFRICA	WORLD
4.1 National level							
a) Budget for investment	45	29	25	29	21	29	42
b) Budget for recurrent costs	40	38	28	33	23	32	42
4.1 Average	43	33	27	31	22	31	42
4.2 Other levels							
a) Subnational budget for investment	37	22	20	23	11	22	35
b) Revenue raising	38	28	30	34	25	31	40
c) Transboundary financing	52	49	47	51	40	48	40
4.2 Average	42	36	32	36	24	34	39
Dimension 4 average	43	35	30	34	24	33	41
Key	Highest	Lowest					

Table 7 Subregional implementation status of financing for water resources management.

Table 7 presents the average scores for Africa and its subregions, with the variation in national and subnational scores for implementing financing shown in Figure 19.

Mobilizing financing for water resources management is a significant challenge for Africa. The score for the finance dimension of IWRM implementation is the lowest for both Africa (33) and the world (41), compared with other IWRM dimensions.

In four out of five of the financing elements, Africa scores far below the global averages, highlighting the extent of the continent's challenge to financing IWRM. Africa's performance is far below the global score (by 13 points) for national and subnational budget contributions to water infrastructure investments. However, these figures mask the fact that there are some African countries whose governments have significantly invested in water infrastructures in recent years (Box 12).

Despite average low and medium-low levels of implementation of financing in each subregion, Northern, Southern and Western Africa all have countries with medium-high implementation.

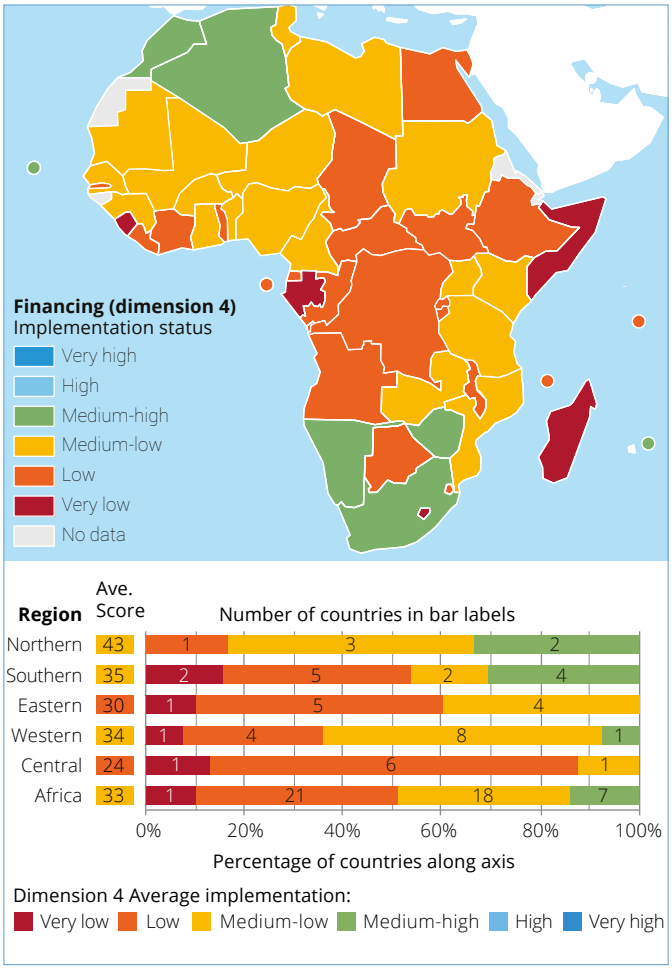


Figure 19 Average implementation of financial instruments for water resources management by country and subregion.

BOX 12

Algeria – impressive surge in government spending on water infrastructure in recent years

Algeria's average score of 60 for financing (medium-high) does not fully reflect the remarkable efforts made by the government in the last two decades to expand and improve the country's water and sanitation infrastructure. Since 2000, the Algerian government has invested an estimated $53 billion in water and sanitation infrastructure, specifically targeting storage and water control structures, drinking water supply infrastructure and sanitation. For storage, the government has built 76 dams for a total storage capacity of more than 8 billion m^3, which is considerable progress towards the country's target of 9.94 billion m^3 by 2030. The development of the drinking water supply and distribution network increased from 55,000 km in 2001 to 127,000 km in 2013 and the sanitation network increased from 21,000 km in 1990 to 61,800 km in 2013. In 2016, Algeria had 177 wastewater treatment plants, with almost 85 per cent of these completed in the last 10 years.

Surprisingly, financing for transboundary cooperation is the only finance element for which Africa has a higher average score than the global average (48 compared with 40), which is most likely due to Africa's overall progress in establishing some of the world's strongest transboundary river basin organizations (section 5.1).

Africa's score for financing water infrastructure from subnational and basin budgets is the weakest of all five

More than 80 per cent of countries report insufficient funding reaching planned programmes and projects and for recurrent costs of IWRM implementation elements (medium-low to very low implementation).

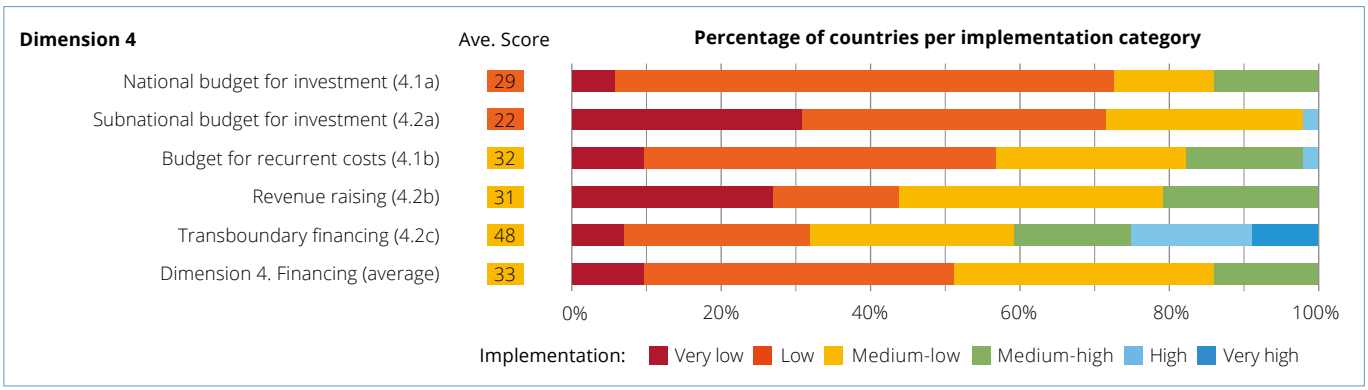


Figure 20 Implementation status of financing for water resources management.

financing elements, which is also the situation at the global level (low score of 22 and medium-low score of 35 respectively). This is to be expected, given that Africa's score for establishing functioning IWRM institutions at the subnational and basin level is very low (section 4.2).

Approximately 98 per cent of African countries report insufficient funding from the subnational or basin/aquifer levels reaching all planned programmes or projects (medium-low to very low implementation).

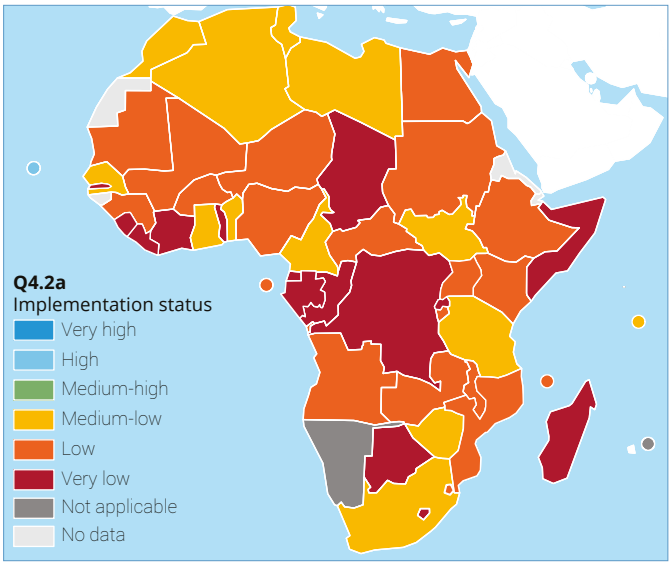


Figure 21 Implementation status of subnational or basin/aquifer-level budgets for investment.

Recovering costs is key to sustaining water management and IWRM implementation achievements. Africa's score, however, is of a medium-low level (31) for revenue raised from levies on water users at the basin, aquifer or subnational levels. User pays and polluter pays principles for water are among the instruments used in some African countries to contribute to water governance costs (soft costs), such as establishing water management institutions and financing their recurrent costs. Although most African countries face difficulties in recovering costs for water use and water pollution (80 per cent of countries are in the medium-low to very low categories), some countries are making great progress (Box 13).

Some 79 per cent of countries raise limited revenue from users at the basin, aquifer or subnational level for IWRM activities (medium-low to very low implementation).

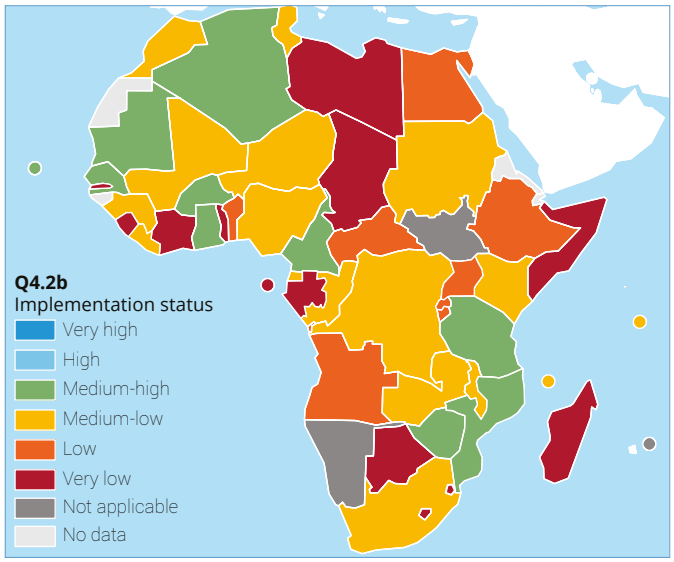


Figure 22 Implementation status of revenue raising.

Within Africa, the performance in financing IWRM implementation differs significantly between subregions. Northern Africa scores much higher than other subregions (score of 43 compared with 30 to 35 for Eastern Africa, Western Africa and Southern Africa). Central Africa's average score is much lower (24), which is also the case for all other financing elements, though this is not surprising, given the subregion's low performance in the three other dimensions of IWRM implementation.

BOX 13

Support from a Water-related Contributions Fund (CFE) in Burkina Faso

Burkina Faso (Western Africa) scores high (60) for the element on revenues raised from water users. In 2009, the country established a Water-related Contributions Fund (*Contribution Financière en matière d'Eau* – CFE), which became operational in 2016, and contributes to the budgets of the country's five river basin agencies. The CFE receives funding through: water withdrawal fees (generated from agricultural, pastoral, fish farming, mining and industrial activities); fees for altering the water (river) regime (generated from activities, such as the creation and exploitation of reservoirs, water diversion channels, etc.); and fees for polluting or affecting the quality of the water (e.g. discharges of polluted drainage water or solid waste, which degrade surface waters and aquifers). In 2017, the CFE contributed 44 per cent of the budget of the Nakanbe Basin Agency (one of the country's five basin agencies).

TRANSBOUNDARY IMPLEMENTATION OF IWRM

5

Source: pixabay.com

KEY FINDINGS AND **RECOMMENDATIONS**

1. Transboundary cooperation in Africa (average score of 49) scores similarly to both transboundary cooperation at the global level (47), and implementation of IWRM elements at the national level (41). This positive progress may be partly due to African political commitments, support from RECs and prioritization through AMCOW, which has resulted in many well-established transboundary basin and aquifer organizations. **Transboundary cooperation should remain a focus to maintain the positive progress across the continent.**
2. Approximately 80 per cent of African countries report that arrangements have been adopted and organizational frameworks established for their most important transboundary basins and aquifers (medium-low to very high implementation). **Efforts are needed to ensure that arrangements become operational, including regular meetings, data- and information-sharing, and sustainable financing.**
3. Hosting some of the world strongest transboundary river basin organizations has helped Africa score far higher than the global average on financing for transboundary cooperation (48 compared with 40). **Governments should continue to support such organizations to maintain effective transboundary cooperation.**
4. Estimates are likely to be optimistic since countries were asked to report only on the status of transboundary water management for what they consider to be their most significant transboundary basins and aquifers. **To obtain accurate estimates, information should be cross-referenced against SDG indicator 6.5.2 information and reporting approaches between the two indicators should be harmonized.**
5. There are significant differences in the level of transboundary cooperation reported by countries sharing the same transboundary river basins and aquifers. This may reflect differences in perspectives and priorities between countries. **Increased dialogue and harmonization between countries on reporting should be encouraged and should be used as a platform for enhanced understanding and cooperation.**
6. Southern Africa reports the highest level of transboundary cooperation, which is greatly facilitated by the SADC Revised Protocol on Shared Watercourses. Central Africa reports the lowest average level of transboundary cooperation. **RECs should develop subregional protocols to create a shared vision and common framework for action, as this can greatly improve transboundary cooperation.**

Transboundary management of water resources is particularly important in Africa. All 48 mainland African countries have shared waters in at least one of Africa's 64 transboundary river and lake basins[20] and 72 transboundary aquifers.[21] Transboundary cooperation, particularly for developing transboundary infrastructure, supports a number of targets related to water supply for agriculture, electricity generation and urban areas. Through the 2008 Ministerial Declaration on Accelerating Water Security in Africa, countries committed to deepening regional partnerships over water-use infrastructure, cooperating over shared water resources and identifying opportunities to invest in regionally important infrastructure. In the forthcoming AMCOW Strategy 2018–2030, Strategic Priority 3 is to "promote good water governance and transboundary water cooperation").

In the indicator 6.5.1 survey, there are five questions relating to transboundary cooperation:

- Arrangements (1.2c): such as treaties, conventions, agreements or memorandums of understanding
- Gender (2.2d): inclusion of gender objectives in transboundary cooperation and achievement of these objectives
- Organizational frameworks (2.2e): such as joint bodies, joint mechanisms or commissions
- Data- and information-sharing (3.2d): institutional and technical mechanisms established
- Financing (4.2c): national contributions to support transboundary cooperation arrangements.

Monitoring these elements supports SDG indicator 6.5.2, which measures the proportion of transboundary basin area in each country with operational arrangements for water cooperation. For SDG indicator 6.5.2, four criteria are used to determine whether arrangements are considered operational: a joint body or mechanism must exist; meetings between countries must be held at least once a year; joint management plans or objectives must have been set; and exchanges of data and information must take place at least once a year.

SDG indicators 6.5.1 and 6.5.2 are included in the Africa Water Sector and Sanitation Monitoring and Reporting system (WASSMO) (see chapter 6), which also has a target to develop infrastructure of regional importance to the benefit of all riparian states. The progress of this target is measured by a specific indicator monitoring regional developments of such infrastructure.

[20] UNEP-DHI and UNEP (2016). *Transboundary River Basins: Status and Trends.* Nairobi, Kenya.

[21] Nijsten, G.-J., Christelis, G., Villholth, K., Braune, E., and Gaye C. B. (2018). *Transboundary aquifers of Africa: Review of the current state of knowledge and progress towards sustainable development and management.* Journal of Hydrology: Regional Studies.

5.1 Country findings from 6.5.1

5.1.1 Summary

Approximately 80 per cent of African countries report that arrangements have been adopted and organizational frameworks are in place for their most important transboundary basins and aquifers (medium-low and above). However, almost 60 per cent of African countries report that funding is less than 50 per cent of agreed contributions, and that data- and information-sharing is limited (medium-low and below).

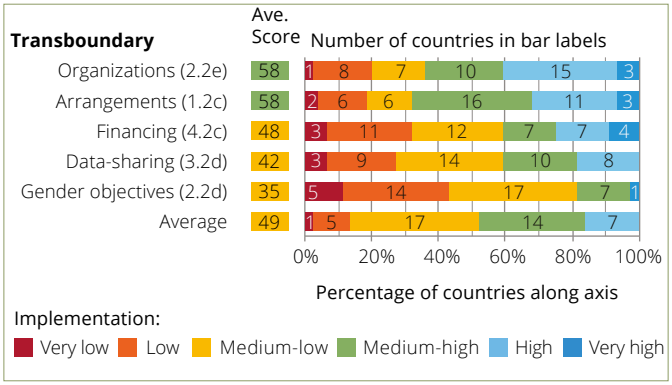


Figure 23 Transboundary-level implementation of IWRM elements.

When interpreting the findings for transboundary cooperation in Africa, bear in mind that results may be over-optimistic, given that:

a. Countries were asked to report on "only the most important transboundary basins or aquifers that are regarded as significant, in terms of economic, social or environmental value to the country (or neighbouring countries)". As countries were asked to make this judgment, they may not have reported on all basins/aquifers.

b. Only the majority (e.g. four out of seven) of these "most important" basins/aquifers had to meet the criteria described in each threshold to achieve the score for that threshold.

Rate of progress

When comparing transboundary questions from the 6.5.1 questionnaire in 2017/18 with similar questions from the 2011 questionnaire, the average status of implementation between the two periods seems comparable.[22] While it is difficult to measure progress empirically between 2011 and 2017 (see section 3.2), this approximate comparison suggests that there has not been substantial progress on transboundary cooperation in Africa as a whole in the last six years. With 12 years to go before the SDG target date of 2030, this is another indication that implementation rates need to be accelerated (see chapter 7).

Table 8 General interpretation of transboundary implementation categories for five questions.[23]

	Very low	Low	Medium-low	Medium-high	High	Very high
Arrangements/ organizational frameworks/ data- and information-sharing	None.	Being developed.	**Adopted.**	**Partly** implemented, mandates partly fulfilled.	**Mostly** implemented, mandates mostly fulfilled.	**Fully** implemented, mandates fully fulfilled.
Financing arrangements	None.	Adopted.	Funding <50 per cent of agreed contributions.	Funding 50–75 per cent of agreed contributions.	Funding >75 per cent of agreed contributions.	Agreed contributions fully met.
Gender	Not considered.	Partially considered.	Considered but imple-mentation limited.	Objectives partially achieved.	Objectives mostly achieved.	Objectives fully achieved.

[22] Similar questions from the 2011 survey include: 1.1.3b Transboundary … agreements for specific river basins; 2.1.1e [Institutional] mechanisms for transboundary … management; 3.1.2l Cooperative programmes managing transboundary water resources; 3.1.4d Mechanisms for exchanging information between countries.

[23] For full description of thresholds, see Annex 1.2.

5.1.2 Arrangements and organizational frameworks

In some respects, progress is quite positive. Transboundary arrangements (such as treaties, conventions or other agreements) (Q1.2c) and transboundary organizational frameworks (such as joint bodies, joint mechanisms or commissions) (Q2.2e) have the joint highest average scores (58) of any question in the questionnaire (Figure 23).[24] This medium-high level of implementation indicates that, on average, the arrangements' provisions are partly implemented and that the organizational frameworks' mandate is partly fulfilled. Furthermore, these average scores for Africa are slightly higher than the global averages of 56 and 57 for arrangements and organizations respectively. Encouragingly, approximately 80 per cent of African countries report that arrangements have been adopted and organizational frameworks are in place for their most important transboundary basins and aquifers (medium-low and above).[25] In about 20 per cent of African countries, transboundary arrangements and organizational frameworks are being developed (Figure 24).

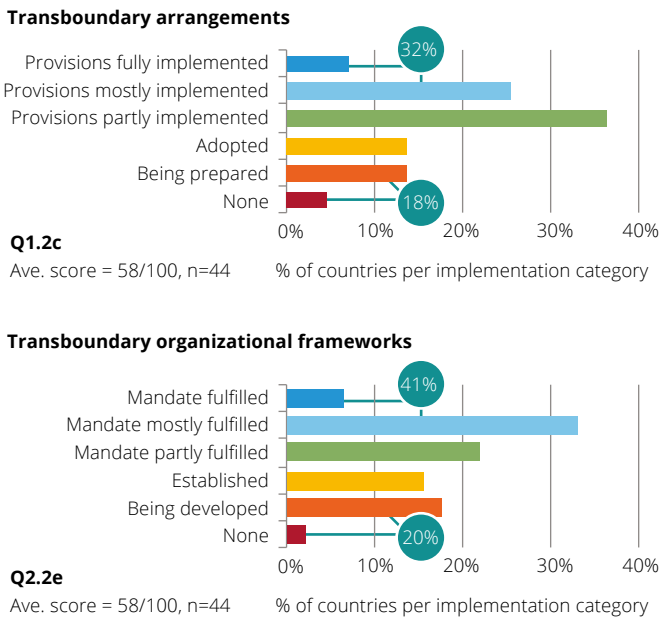


Figure 24 Implementation of transboundary arrangements (Q1.2c – top) and organizational frameworks (Q2.2e – bottom).

Progress made by Africa is in line with the fact that many of the transboundary river basin organizations in the continent are often cited as models of inter-State cooperation around shared watercourses (Box 14).

BOX 14

Positive examples of transboundary arrangements and organizational frameworks in Africa

These include OMVS (Senegal River), OMVG (Gambia River), ABN (Niger River), LCBC (Lake Chad Basin), CICOS (Congo River), OKACOM (Okavango River), LIMCOM (Limpopo River), ORASECOM (Orange-Senqu River), VBA (Volta River) and ZAMCOM (Zambezi River). The Senegal, the Gambia, and the Niger river basins ranked highest in the list of 231 transboundary watercourses assessed in 2017 by Strategic Foresight Group (a Mumbai-based international think tank) based on the level of transboundary cooperation or "Water Cooperation Coefficient". This indicator combines criteria such as the existence of river basin agreements, of a river basin authority, current and planned investment in water infrastructure, economic cooperation, etc. (Strategic Foresight Group (2017). *Water Cooperation Quotient 2017*. Mumbai, India).

5.1.3 Financing

In Africa, transboundary financing (Q4.2c) has an average score of 48: 10 points below arrangements and organizational frameworks, though 8 points above the global average. This medium-low level of implementation indicates that the annual funding from countries to support transboundary arrangements is less than 50 per cent of the agreed amounts, with 59 per cent of countries having reached medium-low implementation or lower (Figure 25). In this question, countries were asked to omit donor support, as it was considered variable and unsustainable.[26] Four countries reported meeting 100 per cent of expected contributions for transboundary cooperation arrangements (Benin, Mauritania, Namibia and Uganda).

When transboundary basin organizations function effectively (e.g. regular meetings of Ministers or Heads of States), initiate programmes for improving data collection and sharing and mobilize funding for large infrastructure projects (dams, electric power lines, dredging river channels for navigation, etc.), Member States are more willing to honour their membership dues (Box 15).

[24] Not too much emphasis should be placed on comparison between questions, as the thresholds for reaching certain levels of implementation may arguably be more easily achievable in some questions than others (see threshold descriptions for each question in Annex 1.2).

[25] In addition, at the global level 10 African countries are party to the Watercourses Convention, and Chad has become the first African country to accede to the Water Convention.

[26] However, countries may still have included donor funding in financial contributions. Further clarification around this issue may be warranted in future reporting.

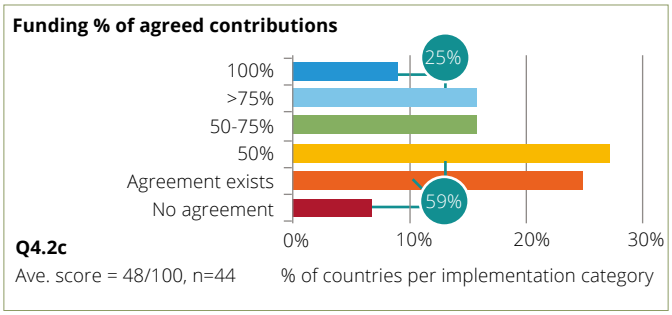


Figure 25 Country breakdown of financing for transboundary cooperation from Member States.

5.1.4 Data-sharing

Transboundary **data-sharing** (Q3.2d) has an average score of **46**, making it the only transboundary-level question to have an average lower than the global average (two points lower). This medium-low level of implementation indicates that although data- and information-sharing arrangements exist in more than 70 per cent of countries (medium-low and above), almost 60 per cent of countries report limited, or no, data-sharing (medium-low and below) (Figure 26). Fourteen countries (32 per cent), from every subregion, report limited data- and information-sharing, despite arrangements being in place (medium-low). It therefore appears that data- and information-sharing is still a major barrier to effective transboundary collaboration in Africa. Most countries report that transboundary basin and aquifer organizations provide the framework for data- and information-sharing, including through web-based systems.

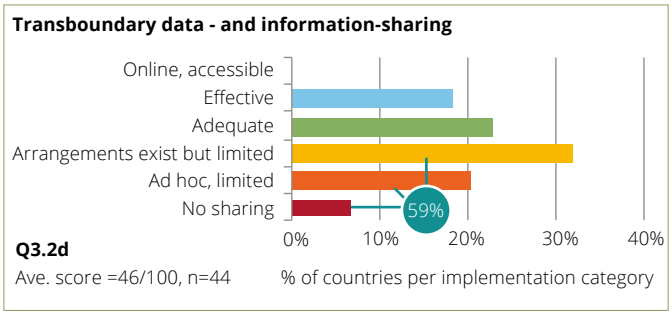


Figure 26 Country breakdown of transboundary data- and information-sharing.

5.1.5 Gender

At 35, transboundary gender considerations (Q2.2d) has the lowest average score, although this is slightly higher than the global average of 32. This medium-low level of implementation indicates that, on average, gender is addressed in transboundary plans but with limited budget and implementation. Gender-specific objectives at the transboundary level could include, for example: 1) Presence of a specific gender strategy in transboundary agreements, in other transboundary arrangements, in their implementation plans or in transboundary water impact assessments; 2) Gender parity of male and female participants in meetings of transboundary decision-making authorities. While many countries report having considered gender in transboundary arrangements, only eight (18 per cent) report having at least partly achieved gender objectives at the transboundary level.

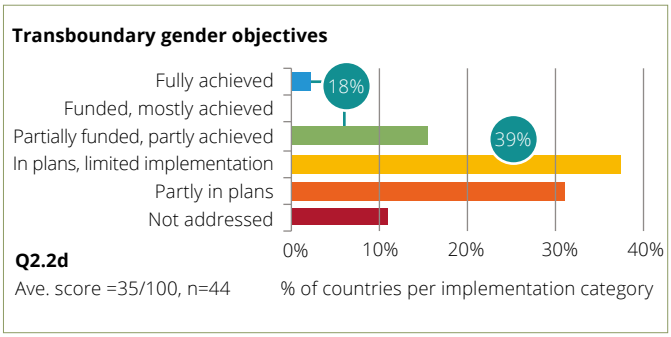


Figure 27 Country breakdown of consideration and achievement of transboundary gender objectives.

The fact that transboundary gender considerations were not included in reporting in 2012 but have been included in this SDG baseline shows an increasing awareness of the value of including and monitoring gender considerations at all levels. Encouragingly, 57 per cent of countries report including gender considerations in most transboundary policies and plans (medium-low and above), while Box 16 discusses the role of subregional protocols. The focus should now be on advancing implementation, and increasing budget where needed, to achieve gender objectives.

BOX 15

Payment of member dues to transboundary river basin organizations – case of Mali

Mali (medium-high score of 60 on financing for transboundary cooperation) is a member of three transboundary river basin organizations: ABN (Niger River), OMVS (Senegal River) and VBA (Volta River), which ask for an annual membership due from each member state. These contributions cover the basin organizations' regular running costs, and also partly support project financing. For OMVS, the membership contribution levels are part of an agreed formula of costs and benefits allocation among member states. Although member states are often late in paying their annual contributions, the overall collection of membership dues typically reaches or exceeds 75 per cent. Overall, Mali contributes more than XOF 700 million (a little more than EUR 1 million) annually in membership dues to the above-mentioned transboundary organizations.

BOX 16

Subregional protocols facilitate gender considerations at the transboundary level

The SADC Protocol on Gender and Development was launched in 2008. While not specific to water resources management, SADC Member States have committed to mainstreaming gender into the SADC Programme of Action and Community Building initiatives as a prerequisite for sustainable development. The Protocol recognizes that stronger regional integration and community building can only be achieved by eliminating gender inequalities and the marginalization of women throughout the SADC region. It has influenced transboundary arrangements and institutions in the SADC region (Botswana, Democratic Republic of the Congo, Eswatini (Swaziland), Lesotho, Malawi, Zambia). Having developed its Gender Policy in 2004, ECOWAS included a gender principle in its Water Resources Policy adopted in 2008 (Benin, Burkina Faso). Many transboundary basin organizations also have gender policies (such as the Gambia River Basin Development Organization (OMVG), Nile Basin Initiative (NBI) and Zambezi Watercourse Commission (ZAMCOM)).

5.2 Divergence within transboundary basins and aquifers

The above analysis discusses the situation as reported by countries. However, as shown below, considerable differences in implementation may exist between countries sharing transboundary basins and/or aquifers, which may hamper transboundary cooperation.[27]

Progress on transboundary water cooperation in Africa, as depicted in the analysis of 6.5.1, aligns well with the results for SDG indicator 6.5.2,[28] which measures the proportion of a transboundary basin area (river, lakes or aquifers) covered by an operational arrangement.[29] For instance, SDG indicator 6.5.2 supports the finding that most major river and lake basins in Africa are covered by operational arrangements, with 18 of the 28 countries that reported on transboundary river and lake basins indicating that at least 75 per cent of their transboundary river and lake basin area was covered by operational arrangements. However, only five countries reported that their transboundary aquifers were covered by operational arrangements, and several countries failed to report on transboundary aquifers due to a lack of available data.

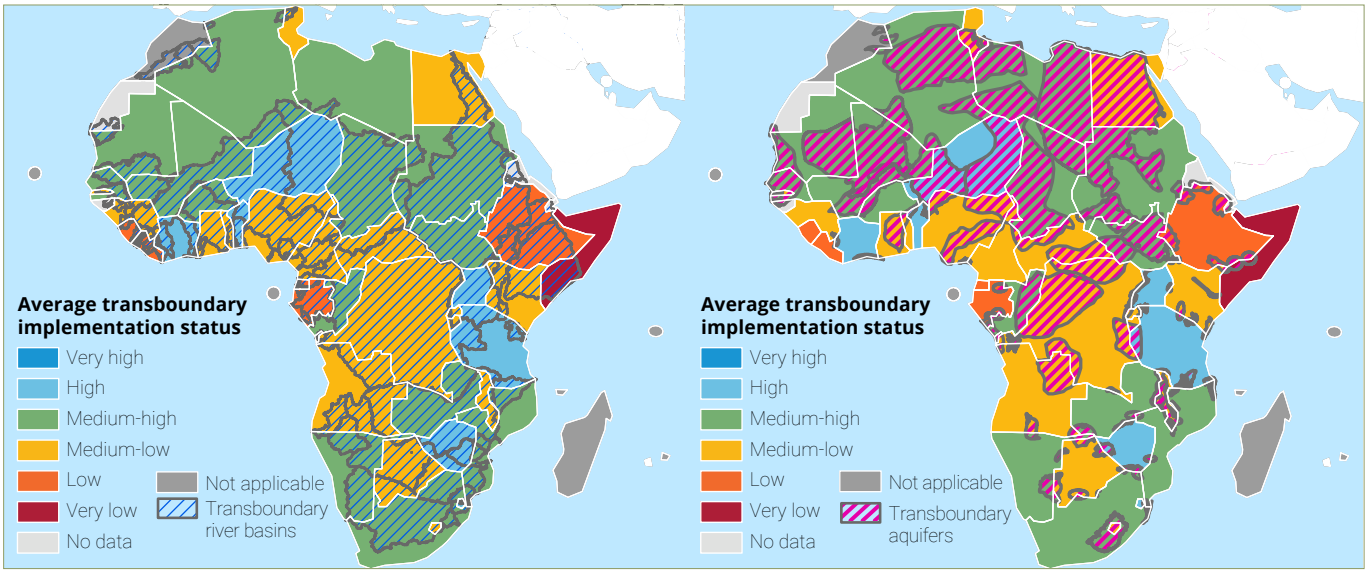


Figure 28 Country scores for average transboundary-level implementation, overlaid with transboundary basins (left) and aquifers (right).

[27] In the data-collection process, no attempt was made to harmonize reporting between countries sharing transboundary waters. This may be an area to strengthen in future reporting on 6.5.1, possibly in coordination with 6.5.2 reporting.

[28] Economic Commission for Europe (ECE) and the United Nations Educational, Scientific and Cultural Organization (UNESCO) (2018). *Progress on Transboundary Water Cooperation – Global baseline for SDG indicator 6.5.2.*

[29] According to SDG indicator 6.5.2, for an arrangement to be considered operational, all four of the following criteria must be met: i) there is a joint body or mechanism in place; ii) there are at least annual meetings between riparian countries; iii) a joint or coordinated water management plan has been established or joint objectives have been set; and iv) at least annual exchanges of data and information take place.

5.3 Subregional analysis of transboundary cooperation

As many transboundary basins and aquifers in Africa are entirely located within the subregions, a subregional analysis is warranted, in part to try to identify the impact of subregional frameworks on transboundary cooperation.

Table 9 below shows that, on average, Southern African countries report the highest levels of implementation across all transboundary elements of IWRM, apart from financing. Northern Africa is also relatively advanced, apart from on transboundary gender considerations, for which it has the lowest average score. Central Africa reports the lowest scores, both on average and for all elements of transboundary IWRM implementation, apart from on gender.

On average, Southern Africa reports the highest levels of transboundary cooperation.

Transboundary elements	Northern	Southern	Eastern	Western	Central	AFRICA	WORLD
Arrangements	60	65	54	60	50	58	56
Organizations	64	70	53	54	53	58	57
Data-sharing	56	56	42	47	29	46	48
Financing	52	49	47	51	40	48	40
Gender	22	45	31	36	34	35	32
Average	51	57	46	50	41	49	48
Key	Highest		Lowest				

Table 9 Subregional average scores for implementation of transboundary cooperation elements.

Figure 29 shows the variation within each subregion, which might indicate a need for RECs and other organizations in these regions to ensure that their lowest-performing countries are brought up to comparable levels with neighbouring countries. These include, in particular, Liberia and Sierra Leone in Western Africa (both members of ECOWAS), and Ethiopia and Somalia in Eastern Africa. In Central Africa, Equatorial Guinea and Gabon – both members of ECCAS – report the lowest levels of transboundary implementation of IWRM elements.

The disparities in the status of transboundary cooperation indicated in Figure 29 are closely related to the great variation in subregional political commitments (Table 10).

Eastern, Southern and Western Africa all include countries reporting high levels of transboundary cooperation.

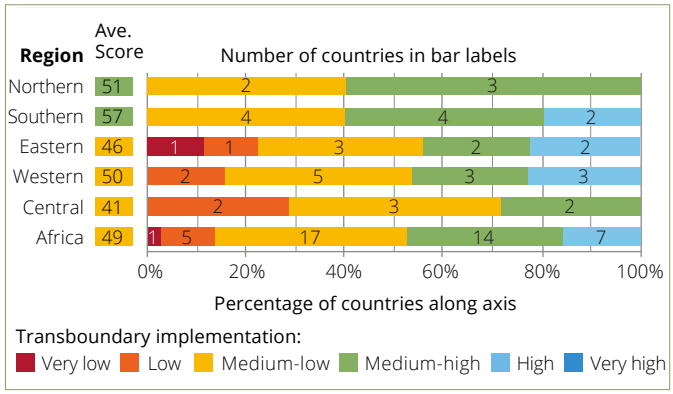


Figure 29 Subregional average transboundary implementation of IWRM elements.


Source: pixabay.com

Table 10 Subregional political commitments and frameworks for transboundary cooperation.

Subregion	Political commitments and frameworks for transboundary cooperation
Northern	**The Intergovernmental Authority on Development (IGAD)** has an ongoing Water Resources Management Programme to harmonize policies, strategies and action plans between member countries to develop and create awareness of transboundary water management strategies and concepts. It has recently stepped up gender mainstreaming in transboundary water management. **The Sahara and Sahel Observatory (OSS)** is active in Saharan countries, with its primary objective being to harness information to combat desertification. OSS studies the water resources of the major Saharan aquifers and facilitates technical and scientific cooperation between countries.
Southern	**SADC** passed a "Protocol on Shared Watercourses" in 1995, which was revised in 2000. This has proved instrumental to transboundary water cooperation in the region.
Eastern	**EAC** does not yet have a specific policy on transboundary water management, although it is preparing a common water vision and a comprehensive water management strategy.
Western	**ECOWAS** developed and adopted a Strategic Plan over the 2007–2015 period. The plan states that ECOWAS will provide support to transboundary basins and IWRM processes in the region and advance regional integration in the water sector. In addition, ECOWAS is in the process of finalizing a Directive on the management of shared watercourses in West Africa
Central	**ECCAS** developed a Regional Water Policy in 2009, and in December 2017 approved the Convention for the Prevention of Conflicts Related to the Management of Shared Water Resources in Central Africa. The Convention is rooted in the Convention on the Protection and Use of Transboundary Watercourses and International Lakes (Water Convention) and the Convention on the Law of the Non-navigational Uses of International Watercourses (Watercourses Convention).

Although Egypt is not a member of the above RECs, it plays an active role in transboundary cooperation, in particular through the Nile Basin Initiative and the Joint Authority for the Nubian Sandstone Aquifer System.

In the African monitoring and reporting system, indicator 1.5 – "Regional development of infrastructure to the benefit of all riparian states" – is reported on in a descriptive manner at the subregional level. However, in the 2018 data-collection period, most countries provided insufficient data to meaningfully report on this indicator. More comprehensive data collection on the number and cost of transboundary infrastructure projects would facilitate transboundary cooperation within subregions.

6 HARMONIZING AFRICAN AND GLOBAL LEVEL REPORTING ON IWRM

Source: pixabay.com

The 'Abuja Ministerial Declaration on Water – A Key to Sustainable Development in Africa' (Abuja, 30 April 2002) establishing AMCOW (African Ministers' Council on Water) gave it, inter alia, the following functions:[30]

(b) monitor progress in the implementation of major regional and global water resources and water supply and sanitation initiatives;

(c) review progress in the implementation of the commitments set forth in key international arrangements for the provision of financial resources and technology transfer in support of water sector reforms in Africa. Our review will take into account progress made globally, in the achievement of the water-related goals in both the Millennium and the Malmö Ministerial Declarations;

(g) consider, where appropriate, information regarding progress made or needed in the implementation of intergovernmental agreements on surface- and groundwater resources.

The issues of monitoring and reporting were taken up at the AU Summit level prior to the landmark Sharm El-Sheikh Commitments in July 2008. The AU Heads of State and Government specifically called on AMCOW to report annually to the Summit on the state of the continent's water resources.

In response, AMCOW developed the Africa Water Sector and Sanitation Monitoring and Reporting system (WASSMO). The online system was launched in 2016, replacing an interim paper-based system.

The monitoring framework was refined during 2015/16 to take into account targets and indicators under the SDGs. This chapter considers challenges and opportunities for harmonizing monitoring and reporting related to SDG target 6.5 between the African and global levels.

In the 2012 IWRM status report, one of the key recommendations was to establish a permanent reporting mechanism on the status of water resources management. With the establishment of WASSMO, this recommendation has been comprehensively addressed. However, challenges remain, as discussed in sections 6.1 and 6.2.

Source: pixabay.com

[30] Only functions relating to monitoring and reporting are referred to here.

6.1 Status comparison

There are considerable differences between the results collected through the global SDG data-collection process and through the AMCOW system, which calls for greater harmonization.

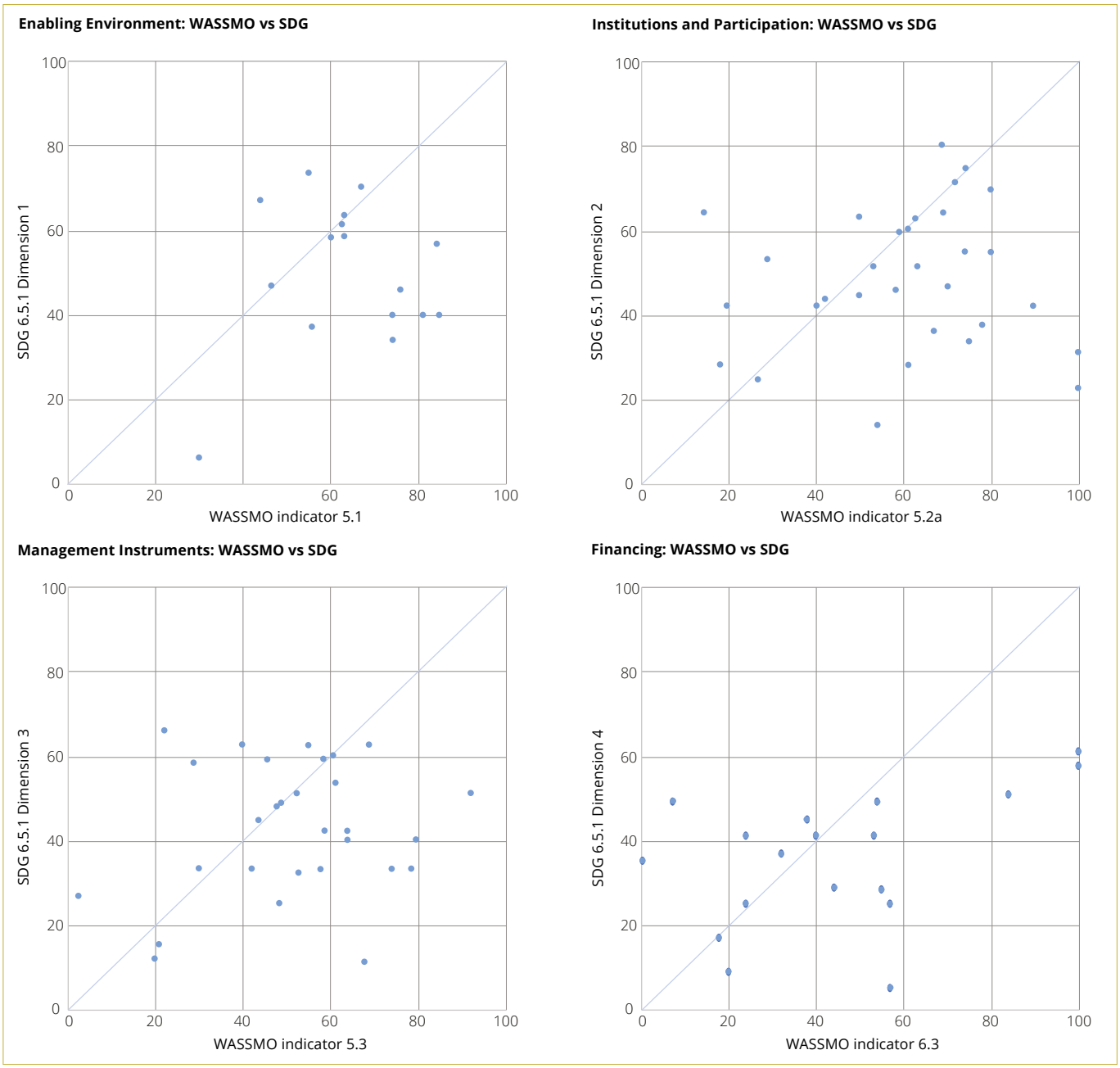


Figure 30 Differences between SDG and WASSMO results for the four main dimensions of IWRM.

Currently, WASSMO includes the four main IWRM dimensions as four separate indicators, without providing an overall IWRM score. This was a conscious decision in the system design, to disaggregate the data to a level that was deemed to be most useful to track progress not only on the SDGs, but also on African political commitments, and to facilitate action on the ground. Nonetheless, consideration over whether to include the overall IWRM score (as per SDG indicator 6.5.1) is warranted.

While some countries have reported significantly differently between the two systems, approximately one third of countries have reported more or less identically (e.g. within +/- 5), indicating that processes have been harmonized in these countries. These cases warrant further investigation to learn lessons that may be transferred to other countries.

In general, there appears to be a tendency to report higher scores through the WASSMO system than through the SDG system (countries below the diagonal line). This may, in part, be due to generally higher stakeholder engagement in SDG data collection. Regarding the overall level of IWRM implementation, seven countries reported within +/- 5, though there are some notable differences (Figure 31).

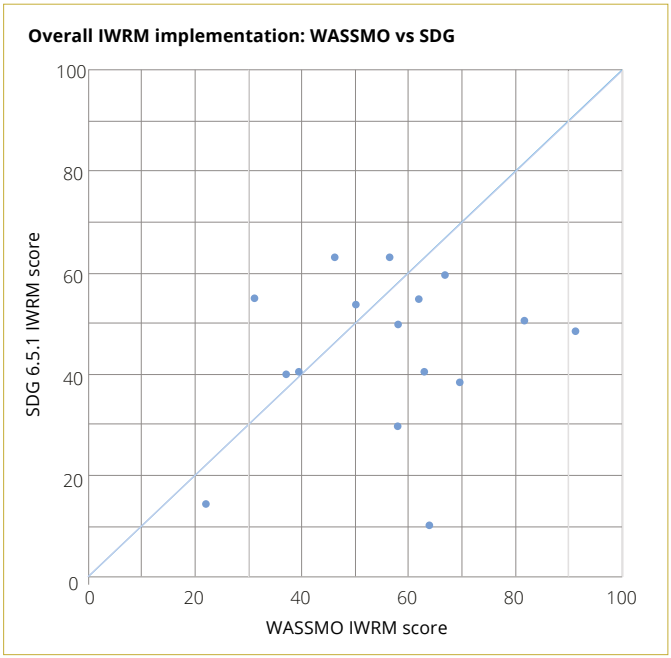


Figure 31 Differences in reporting on IWRM implementation through the WASSMO system and the SDG 6.5.1 process.

As well as differences in reported scores, there is also a notable difference in data coverage. In total, 51 countries have reported on each IWRM dimension through the SDG process. Meanwhile, in the WASSMO system, the number of countries for each IWRM dimension is as follows (WASSMO indicator numbers in brackets):

- Enabling environment (I-5.1): 31
- Institutions and participation (I-5.2a): 32
- Management instruments (I-5.3): 31
- Financing (I-6.3): 21

6.2 Harmonizing data-collection processes

One of the intentions of the African reporting system is to streamline monitoring and reporting processes to reduce the burden on countries that have to report to both the global and continental levels. Ongoing collaboration between AMCOW, UN-Water and United Nations custodian agencies has been attempting to streamline the reporting processes. However, to date, the processes have been quite separate and considerable work remains.

Currently, coordinating between the **three main levels** of monitoring and reporting on water-related goals and targets remains a challenge:

- **Regional level:** AMCOW is responsible for monitoring and reporting on progress towards both African political commitments and the SDGs.
- **Global level:** various United Nations organizations have been designated as "custodian agencies" for SDG targets, responsible for indictor design, data collection (usually directly from countries) and data aggregation, analysis and reporting. UN-Water has a coordinating role among United Nations organizations.
- **National level:** either National Statistics Offices (NSOs) or other agencies have been given responsibility for reporting on the SDGs, or have been established to do so.

At each level, arrangements are in place to collect the data, usually at the national level, and typically involving national focal points (FPs). These focal points are normally responsible for coordinating country teams comprising a range of government officials, experts and/or other stakeholders.

For most indicators, the arrangements and staff vary between these three levels, and coordination between them is generally limited.

Consequently, it is recommended that formal mechanisms be established to facilitate communication between focal points so that:

a. The burden of data collection is reduced (i.e. data can be shared, and the same data-collection process can be used for multiple purposes), and
b. Results are more likely to be harmonized, especially in those cases where indicator methodologies at the two levels are identical (as is the case for the four 6.5.1-related indicators in WASSMO).

The most effective means of harmonization would be to have common focal points wherever possible (e.g. common at the national level, which could then use the same data-collection and reporting process for multiple purposes, including at the regional and global levels). Where this is not possible or practical, coordination and communication between the different arrangements should increase.

AMCOW, United Nations custodian agencies and UN-Water have discussed harmonization opportunities at meetings related to the African water and sanitation monitoring process in Nairobi,[31] Accra[32] and Kigali.[33] Further collaboration is required, both to share details of focal points and to establish mechanisms for communication and collaboration.

In addition to the aforementioned three main levels, some subregions are also establishing – or planning to develop – monitoring and reporting mechanisms. For example, ECOWAS is in the process of establishing a monitoring and reporting system for water-related indicators.[34] Furthermore, data collection by (transboundary) surface- and groundwater organizations is often significant and growing. Therefore, if coordination increases between different levels of data collection, or arrangements are harmonized and consolidated, the same data can be used for multiple purposes.

[31] Monitoring and Evaluation Task Force and Validation Meeting, October 2015.

[32] Member States and Stakeholders Training Workshop, May 2017.

[33] Validation workshop for the 2017 Water and Sanitation Data, May 2018.

[34] In addition to the mainly national and some transboundary indicators in the AMCOW and SDG frameworks, ECOWAS is adding several basin-level indicators, thus providing further useful information for the subregional development of water resources and transboundary cooperation.

7

TOWARDS FULL IMPLEMENTATION OF INTEGRATED WATER RESOURCES MANAGEMENT

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This chapter provides recommendations for accelerating progress towards full implementation of integrated water resources management through the following sections:

- 7.1 General challenges and constraints to IWRM implementation in Africa
- 7.2 Constraints identified by countries
- 7.3 General enablers of IWRM implementation in Africa
- 7.4 Summary of proposed action areas
- 7.5 Practical guidance to accelerate progress

7.1 General challenges and constraints to IWRM implementation in Africa

Climate change and variability. The Intergovernmental Panel on Climate Change's (IPCC) Fifth Assessment Report underlines the continent's unpreparedness and extreme vulnerability to climate change, especially in a context where the changing and unpredictable climate is expected to amplify the existing stress on water availability (especially rainwater and surface waters) and agricultural systems in Africa.[35] This could have significant consequences for Africa's economy, which is highly dependent on climate-sensitive sectors (agriculture, forestry, fisheries) in a context of high poverty incidence.

Lack of water control infrastructure.

- Africa's low level of water control is not only one of the main causes of the continent's vulnerability to climate change and variability, but also a key challenge in efforts to improve water governance and to implement IWRM principles and approaches. Its control over its water resources is among the lowest in the world, storing an estimated 740 m^3 per capita in man-made reservoirs, which is below the global average and indicative of the continent's limited investment in water development infrastructure (dams, reservoirs, irrigation canals, inter-basin transfer structures, etc.). Africa's reservoir volumes represent only 11 per cent of the continent's annual renewable water – which is in fact close to the global average.[36]
- Without advocating for dams over alternative water development options, experience shows that the possibility of enforcing water management and allocation decisions depends to a large extent on the level of water control. For example, a structure such as the Senegal River Basin Development Organization's (OMVS) Permanent Commission for Water (CPE) – an advisory body tasked to meet twice a year to arbitrate water allocation by sector – cannot deliver its mission in river basin contexts where there is limited control of the river flow. Similarly, the Gambia River Basin Development Organization's (OMVG) CPE-type structure can only effectively perform when the level of water control in the Gambia River improves.

Rampant poverty. The subregions that have higher average IWRM implementation (Northern Africa and Southern Africa) also have the highest average Human Development Index (HDI) scores. This is consistent with Shah (2016), who sees a strong positive relationship between water security – the desired outcome of successful IWRM – and the stage of a nation's economic development.[37] For Shah, "the argument is not that GDP grows as water security grows but rather the opposite – water security grows as GDP grows" (2016), the implication being that the most relevant and reasonably attainable water development and governance goals differ depending on each country's stage of development. For poor countries in Africa, IWRM efforts should prioritize water development, particularly investment in water control infrastructure, which should be implemented according to IWRM principles.

Political instability, resulting in frequent and major government reshuffles and a high turnover in key leadership positions in the Ministry responsible for water. Unaware of the country's water management challenges and often of government commitments at the regional, transboundary and international levels and of emerging international norms and values, new leaders often find themselves at the helm of key water management bodies. Political instability can also result in low allocation of public resources to the water sector (apart from drinking water and sanitation), while other national priorities such as national security and peacekeeping take precedence. It might also lead to key water policy reform and planning processes or water development projects being stalled, such as when financial and technical partners withdraw their support to the beneficiary country, and therefore to funding the water sector.

High coverage of transboundary basins. Africa's 64 transboundary basins cover 62 per cent of the continent's land area. Except for islands, each African country shares at least one transboundary river,[38] while countries such as Niger, Benin and Burkina Faso are almost entirely covered by transboundary river and lake basins. This is both a challenge

[35] ODI and CDKN (2014). *The IPCC Fifth Assessment Report. What Is In It for Africa?* Overseas Development Institute (ODI) and Climate and Development Knowledge Network (CDKN). London, UK.

[36] White, W. R. (2010). *World Water: Resources, Usage and the Role of Man-Made Reservoirs – A Review of Current Knowledge.* Foundation for Water Research. Marlow, UK.

[37] Shah, T. (2016). *Increasing water security: the key to implementing the Sustainable Development Goals.* Global Water Partnership/Technical Committee (TEC) Background Papers. No.22. Stockholm, Sweden.

[38] Lautze, J., Giordano. M. (2005). *Transboundary Water Law in Africa: Development, Nature, and Geography* in Natural Resources Journal. Vol. 45, No. 4.

and an opportunity. For instance, it is an enabling factor in water management when transboundary rivers have an operational mechanism for cooperation and adopt advanced policies and plans on water management (e.g. water charters, basin development master plans, basin observatories) or mobilize substantial levels of investment in large water infrastructure projects. In such cases, river basin authorities can raise the level of water development and governance among their member countries, while transboundary river basin organizations can be effective engines of progress in IWRM implementation in Africa. On the other hand, shared river basins with no or dysfunctional basin organizations can paralyse efforts to improve water governance in riparian countries.

7.2 Constraints identified by countries

As part of the country reporting upon which this status report is based, many countries elaborated on what they perceive to be specific obstacles and hindering factors that justify their often-low-level scores for various dimensions and elements of IWRM implementation. Although these are by no means common constraints, most countries will identify with them, as they face or have already addressed similar issues. The list below is therefore intended to be indicative, rather than exhaustive.[39]

While the issues listed below are phrased as "constraints", they are typically also priority action areas for countries to further their IWRM implementation. These issues therefore form the basis for the summary of recommended action areas described in section 7.4.

Constraints to the effective formulation and implementation of water management policies, laws and plans

- At policy formulation stage: Stakeholder participation in formulating policies, laws and plans is suboptimal in some cases [Tanzania]. The process can also suffer from limited involvement and coordination with all relevant sectors [Sudan].

- At policy implementation stage: A common problem repeatedly mentioned is the weak implementation of policies, laws and plans once developed [Angola, Ethiopia, Malawi, Togo, Zimbabwe]. The many obstacles to policy implementation include:
    - The fact that adopted policies and laws are often not operationalized, which requires the development of by-laws, implementing texts, strategies, tools, etc. Twenty years after Côte d'Ivoire adopted the Water Code in 1998, only 5 of the planned 27 implementation decrees have been adopted.
    - Limited understanding of the approved policies and laws among the actors concerned and the general public [Burundi, Comoros, Tanzania].
    - Lack of political will translating into the government being slow to formally validate and/or adopt drafted policies, laws and plans [case of Cameroon's PANGIRE; Chad's IWRM Plan; Côte d'Ivoire's Water Policy].
    - Political instability leading to donor withdrawing support to water policy formulation and/or the implementation of the IWRM plan [Burundi, Côte d'Ivoire].
    - The fact that implementation of IWRM policies and plans is often not considered as a shared, cross-sectoral responsibility of all relevant authorities [Sudan].
    - Low levels of funding for water governance and IWRM interventions [Côte d'Ivoire, Malawi, Tanzania, Togo].
    - Lack of monitoring and/or periodic or regular reviews of progress made in IWRM implementation [Tanzania].

- Constraints at the basin/aquifer level (national level): In some cases, the basin agency has not been established or is dysfunctional and lacks management plans [Angola, Burundi, Central Africa Republic ,Togo].

- Constraints at the transboundary river basin level: Some of the progressive water agreements and charters developed at this level have not entered into force, as their formal ratification by Member States has been a long and complex process. For example, the Lake Chad Basin Authority's Charter developed in 2012 is still not in effect, the 2008 Water Charter of the Niger Basin Authority (NBA) is still at the ratification stage, and the 2010 Nile River Basin Cooperation Framework Agreement has not entered into force.

Constraints to establishing institutions and engaging stakeholders in effective IWRM implementation

- Lack of high-level government authority (Ministry or Directorate General) dedicated to water management. Experience shows that effective, cross-sectoral IWRM implementation requires a responsible body with convening power at the cross-sectoral level, the capacity to trigger and drive policy formulation and the development of laws and plans, and the ability to lobby for water management funding. Such a body needs to be a high-profile government entity dedicated to water management – it can take the form of a Ministry in charge of water, a Directorate General or a water management agency at the presidential or Prime Ministry level. Côte d'Ivoire's most significant progress in implementing IWRM was during the 1997–2000

[39] In brackets are the countries that indicated explicitly or implicitly the constraint considered in the free text responses in the 6.5.1 questionnaire or through workshop reports.

period, when a High Commissioner for Hydraulics was established in the Prime Minister's office.[40]

- The constraints to inclusive public participation in water management processes include the fact that some key stakeholder groups (such as water user associations) need support in areas such as information access and capacity development to be able to engage in water-related processes with more powerful actors [Madagascar]. In some cases, the Government is reluctant to engage with some non-state actors, questioning their legitimacy [Angola, Equatorial Guinea].

- The private sector is seldom engaged in water management processes [Angola, Tanzania], largely because the governance environment in the water sector does not provide incentives for private sector involvement [Botswana, Chad, Zimbabwe].

- The glaring gender imbalances in IWRM are difficult to correct, as gender equity and equality are not explicitly addressed in many national legal frameworks [Botswana]. Where laws or national plans do include gender-related provisions, their implementation is under-funded, whether at the national level [Ghana, Sierra Leone, South Sudan] or at the transboundary basin level [Chad, Ghana, Guinea].

Constraints to applying management instruments for IWRM implementation

- Constraints to implementing ecosystem management include the lack of consistent and strategic approaches to addressing ecosystems in IWRM policies and plans. Instead, ecosystem-related water management typically takes the form of short-term, ad hoc projects [Chad]. Overall, ecosystem-related interventions face difficulty mobilizing funding.

- Water management instruments are lacking, particularly for disaster management [Burundi] and for monitoring surface- and groundwater. Where instruments for water management exist, they are often ageing, broken and not functional, and have limited coverage [Chad, Côte d'Ivoire, Ethiopia, Sierra Leone, Zambia, Zimbabwe]. The maintenance of this equipment is also an unresolved issue [Niger, Togo].

- Mobilizing financial resources to implement instruments at the local level (such as local plans at the level of decentralized territories, basin development plans, etc.) is even more challenging than for national IWRM plans.

Constraints to financing water resources management and development

- There is often insufficient funding for water management and development from the government budget. For example, where government funding secured for the implementation of IWRM plans is highest, it tends to range from a maximum of 5–10 per cent.[41]

- A lost opportunity for government funding for water is the failure, in many country cases, to include funding provisions for water (especially water infrastructure and water governance) in national development plans [Botswana].

- Where government financial resources allocations for water are secured – example of national investments budgets – the funding levels tend to be not only low (as indicated earlier), but also irregular [Burkina Faso, Eswatini, Ghana, Guinea, Kenya, Liberia, Malawi, Mali, Namibia, Sierra Leone, Togo, Uganda, Zambia, Zimbabwe].

- When government budget allocation is formally adopted, a challenge remains to ensure government disbursement of the allocated funds [Tanzania].

- In this context, implementation of water management in Africa is heavily reliant on external funding (from financial and technical partners).

- Funding from development partners for water management is far below the needs [South Sudan], and seldom covers large water infrastructure development. That said, where donor money is successfully mobilized, beneficiary governments often show difficulty of absorbing the resources made available, leading to implementation delays, and even to suspension or cancellation of projects [Niger with the African Water Facility's support to the IWRM plan; Mali with current donor support to the IWRM programme].

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[40] UEMOA (2018). *Etats des lieux de la Gestion Intégrée des Ressources en Eau (GIRE) dans l'espace UEMOA & Plan d'Action.* Union économique et monétaire ouest-africaine (UEMOA). Ouagadougou, Burkina Faso. [In English: WAEMU (forthcoming). *Stock-Taking of Integrated Water Resources Management (IWRM) implementation in WAEMU subregion & Action Plan.* West African Economic and Monetary Union (WAEMU).]

[41] UEMOA (2018). *Etats des lieux de la Gestion Intégrée des Ressources en Eau (GIRE) dans l'espace UEMOA & Plan d'Action.* Union économique et monétaire ouest-africaine (UEMOA). Ouagadougou, Burkina Faso. [In English: WAEMU (forthcoming). *Stock-Taking of Integrated Water Resources Management (IWRM) implementation in WAEMU subregion & Action Plan.* West African Economic and Monetary Union (WAEMU).]

7.3 General enablers of IWRM implementation in Africa

Factors supporting effective IWRM implementation in Africa include the many inter-State commitments, strategies and plans taken at the continental and subregional levels to complement country-level efforts to promote water management and development efforts. The most relevant are as follows:

Regional commitments, agreements and strategies

Africa Water Vision for 2025. Under the auspices of the African Union, the African Development Bank and the United Nations Economic Commission for Africa (UNECA), the Africa water constituency agreed to the Africa Water Vision for 2025, which aspires to "*An Africa where there is an equitable and sustainable use and management of water resources for poverty alleviation, socioeconomic development, regional cooperation, and the environment*". Although progress towards this Vision has been made in the last two decades, a lot more needs to be done in the next five years.

Sharm El-Sheikh Declaration. The 2008 Assembly of the African Union in Sharm El-Sheikh (Egypt), adopted the "Sharm El-Sheikh Commitments for accelerating the achievement of water and sanitation goals in Africa". The Declaration called on African Union Member States to "develop and/or update national water management policies, regulatory frameworks, and programmes". It also recalled the need for States and development partners to build human and institutional capacity at all levels, and to "significantly increase domestic financial resources allocated for implementing national and regional water and sanitation development activities".

The African Union 2016–2025 Water Resources Management Priority Action Programme.[42] The programme contributes to accelerating IWRM implementation by building on the recommendations of the 2012 Status Report on the Application of Integrated Approaches to Water Resources Management in Africa. Its aims include increasing water storage and improving hydrometric and piezometrical data collection and monitoring.

AMCOW 2018–2030 Water Strategy. The strategy prioritizes actions aimed at promoting and supporting the development of: (a) national and basin-wide decision support systems; (b) water resources management plans at the national and regional levels; (c) infrastructure for increased water storage, improved water quality, reduced water disasters, and sustainable water supply for multiple uses.

AMCOW's 2011 gender strategy.[43] The strategy called for African countries to formulate and effectively implement gender-sensitive policies, supported by adequate funding for gender mainstreaming of water-related policies and processes.

Institutions, non-state actors and financing

The African Water Facility (AWF). An AMCOW initiative, the AWF was established in 2004 and is hosted and managed by the African Development Bank. The AWF supports African countries in their efforts to mobilize the investment needed to develop and manage water resources in Africa. It contributes both towards meeting the goals of the Africa Water Vision for 2025 and the water-related goals of the 2030 Sustainable Development Agenda, especially SDG 6. The AWF contributes to funding project design and to co-financing, managing and supervising project implementation. Between 2006 and 2016, it mobilized $1 billion (direct funding and leveraged financing) for investment in the broader water sector in Africa.[44] This includes funding for AMCOW's water monitoring system (WASSMO). Furthermore, the AWF's 2017–2025 Strategy seeks to mobilize €15 billion (direct funding and leveraged financing) for investment in water and sanitation projects, including water management and governance interventions.[45] As financing is one of the key constraints to IWRM implementation, the AWF has a central role to play in helping Africa advance towards the 2030 Sustainable Development Agenda. Since the AWF has achieved impressive results over the last decade, it deserves the continued support of African countries and development partners to deliver its ambitious strategy for the next decade.

African Transboundary River Basin Organizations. These are key assets for improved water governance in the continent, as most of Africa's surface freshwaters are in shared watercourses. Many of Africa's river basin organizations are at the forefront of promoting innovative approaches to integrated water management and are often cited as model mechanisms for transboundary cooperation. As discussed earlier, they can foster stronger water governance in the continent. As a platform for capacity development through experience-sharing and joint learning, the African Network of Basin Organizations (ANBO) has been implementing the project for Strengthening Institutions for Transboundary Water Management in Africa (SITWA) since 2012. It hopes to strengthen ANBO's capacity for supporting river basins in policy and institutional development, knowledge and information management and capacity development.

Regional Economic Communities (RECs). These inter-State entities promote subregional economic and development integration. Some RECs are more active than others in supporting the development efforts of member countries in various areas, including in the water sector:

[42] AUC-AMCOW (2016). *African Water Resources Management Priority Action Programme 2016–2025* (WRM – PAP).

[43] AMCOW (2011). *AMCOW Policy and Strategy for Mainstreaming Gender in the Water Sector in Africa.*

[44] AWF (2016). *AWF Strategy 2017-2025.* African Development Bank/African Water Facility. Abidjan.

[45] AWF (2016). *AWF Strategy 2017-2025.* African Development Bank/African Water Facility. Abidjan.

- The Southern African Development Community (SADC) and the Economic Community of West African States (ECOWAS) are the most advanced RECs in promoting improved water management. In 1998, SADC adopted a trailblazing Water Protocol aimed at fostering coordination and cooperation around the region's shared watercourses. Initiated in 1999, SADC's Regional Strategic Action Plan on Integrated Water Resources Development and Management is in its fourth phase, covering the 2016–2020 period. With three components (governance, infrastructure and management), this Action Plan focuses in particular on capacity development and climate change adaptation.

- In 2000, ECOWAS countries adopted the West African Vision for Water, Life and the Environment for 2025, with a Regional Action Plan for IWRM subsequently developed to support this vision. This was followed in 2008 by the West Africa Water Resources Policy, complemented by an Action Plan to operationalize it. This policy supports efforts in water policy formulation and implementation at the country level, as well harmonization and coordination between national and regional water-related policies. The policy also encourages the establishment of water management frameworks and institutions at the national and transboundary river basin levels. A regional IWRM Coordination and Monitoring Platform and a Water Resources Coordination Centre (WRCC, based in Ouagadougou) were established in 2001. Within the ECOWAS region, the West Africa Economic and Monetary Union (WAEMU) – a subregional economic community mostly composed of francophone countries – is formulating an IWRM Action Plan to support the implementation of the ECOWAS Water Resources Policy and the efforts of WAEMU countries towards the water-related SDGs.

- The Intergovernmental Authority on Development (IGAD), which brings together eight Eastern and Northern African countries,[46] formulated a Regional Water Resources Policy that was endorsed at the ministerial level in 2015 and has started developing a Regional Water Protocol. Nevertheless, IGAD as well as the East Africa Community (EAC) need to contribute more substantially to water management efforts in Eastern Africa – a subregion that, along with Western Africa, is trailing behind Northern and Southern Africa in the degree of IWRM implementation.

- Encouragingly, after having adopted a Regional Water Policy in 2009, the Economic Community of Central Africa States (ECCAS) formulated a Regional IWRM Action Plan (2015), and in December 2017 approved a Convention for the Prevention of Conflicts Related to the Management of Shared Water Resources. It is hoped that these regional commitments, if implemented effectively, will help Central Africa close the IWRM implementation gaps to other subregions.

7.4 Summary of proposed action areas

The time is ripe for African countries to shift from the formulation of national-level policies, laws and strategies on IWRM to its practical implementation on the ground. Integrated approaches should be used as an effective solution to water management challenges at the provincial, municipal, village, river basin and aquifer levels. In recent years, IWRM has all too often either not progressed beyond discussions or resulted in the formulation of policies, laws or national plans that have not been implemented. Admittedly, these efforts have helped raise awareness of water-related challenges and popularize IWRM as an alternative to a sectoral and short-sighted paradigm to water development and management. However, since energies have been invested in formulating policies, laws and plans that ended up abandoned, enthusiasm around IWRM has substantially declined in Africa among governments, water users and technical and financial partners. To restore the credibility of the IWRM discourse and re-mobilize stakeholders, IWRM must be used to solve on-the-ground problems. In the context of this report, this is particularly reflected in the need to accelerate progress in terms of management instruments and financing for water resources management.

The proposed action areas in this section are based on the findings discussed in chapters 3–5, and build on the country examples listed in section 7.2.

Firstly, it is worth noting that the 2012 Status Report on the Application of Integrated Approaches to Water Resources Management in Africa recommended a set of action areas. While there has been some progress in some of these areas, they are still valid recommendations in 2018 (Box 17).

The following recommended action areas, based on the findings of the 2017/2018 data, are deemed to be key enablers for accelerating progress on IWRM implementation in Africa. Potential actions are listed under each action area, though other actions should of course be considered when developing plans and programmes further. The recommendations are generally relevant to all levels – from basin/aquifer level, to national, subregional and regional levels – though they have different implications at each level. At these levels, the recommendations may be considered in plans and programmes of various target organizations, including basin/aquifer organizations (including transboundary), governments, RECs, AMCOW, AU, Africa Water Facility, African Network of Basin Organizations (ANBO) and technical and financial partners (TFPs). Nonetheless, the following recommendations are primarily targeted at the supranational levels. As mentioned in section 7.5, action at the national level depends on national contexts and planning should be the result of national processes, building on reporting activities for national and SDG indicators (especially SDG 6.5.1 and 6.5.2) where appropriate.

[46] The IGAD member countries are: Djibouti, Eritrea, Ethiopia, Kenya, Somalia, South Sudan, Sudan and Uganda.

BOX 17

Action areas recommended in the 2012 Status Report on the Application of IWRM in Africa

Enabling environment for IWRM:

- Target and provide priority support to countries that are falling behind with IWRM implementation, including by creating enabling environments, especially in countries recovering from conflicts, political crises and disasters.
- Enhance political will for water reforms by conceiving and implementing specific programmes on information and awareness-raising and targeting advocacy towards policymakers.

Establishing governance and institutional frameworks:

- Promote the establishment of effective governance and institutional frameworks (based on IWRM) at the transboundary, national and local levels (basin commissions, agencies, local water committees).
- Enhance capacity-building at all levels to obtain the necessary human resources for IWRM implementation.

Applying management instruments:

- Improve the monitoring of water quantity, quality and use.
- Develop appropriate water allocation models.
- Promote forecasting and early warning systems through peer learning from existing good experiences.

Infrastructure development and financing:

- Promote preparation of basin plans for IWRM, including comprehensive investment programmes.
- Strengthen and sustain the African Water Facility.

Financing IWRM:

- Build the knowledge base on best practices regarding the implementation of the user pays and polluter pays principles.
- Increase government financing of water resources management, to help increase national contributions for water resources development.
- Support countries in creating an environment suitable for private sector financing.

PROPOSED ACTION AREAS:

I Increase financing for water resources management, including water control infrastructure.

1. Initiate and develop consultative processes and awareness-raising efforts at the AU and/or REC levels for a resolution on increased financing for water resources management from government budgets.[47] Actions include:

- Prepare advocacy materials based on the findings and recommendations of this report.
- Engage policy dialogue within relevant AMCOW organs and at relevant continental events.

2. Document, share and replicate good practice experiences of operationalizing the user pays and polluter pays principles for financing water management activities.

- Document and capitalize on good/promising practice examples of applying the user pays and polluter pays principles for financing water management in selected countries and basins.
- Support peer learning activities to implement the user pays and polluter pays principles.
- Support countries and basin organizations in implementing the user pays and polluter pays principles and in establishing national and basin-level funds for financing water management.

3. Increase RECs' contribution to financing water development and management in their respective member countries and river basins.

- Develop and/or implement subregional strategies and plans for supporting IWRM implementation at the country and basin levels.
- Create or activate existing subregional platforms to exchange experiences about IWRM implementation at the country and basin levels.
- Re-mobilize the international community to support the development, updating and implementation of national IWRM plans.

[47] In line with the 2017 Durban Political Declaration signed on the occasion of World Water Day on 22 March 2017.

Strengthen regional capacity to support IWRM implementation.

4. Strengthen the capacity of RECs to support IWRM implementation in their respective regions and foster linkages across SDGs.

- Peer learning among RECs, including through exchange visits to RECs that are more advanced in designing and implementing regional IWRM strategies and plans.
- Help promote and mobilize funding for relevant RECs' regional strategies and programmes: e.g. ECCAS Regional IWRM Action Plan (2015); SADC's 2016–2020 Regional Strategic Action Plan on Integrated Water Resources Development and Management (Phase IV); the ECOWAS West Africa Water Resources Policy; WAEMU's IWRM Action Plan, etc.

5. Launch a ten-year capacity-building programme in support of IWRM implementation at all levels.

- Assess IWRM-related capacity gaps and available IWRM capacity development and training institutions.
- Design a modular IWRM training programme and related training material, with a particular emphasis on implementing IWRM at the subnational level that also takes into account the differences between IWRM implementation stages.
- Support peer learning, including through exchange visits.
- Mobilize funding and the effective implementation of the IWRM capacity development plan

6. Harmonize water-related information management systems at the global (SDG-related), regional (AMCOW), subregional (RECs), basin (RBOs) and national levels.

- Organize consultation meetings at appropriate levels to ensure agreement on common core indicators.
- Strengthen water-related information systems at all levels (national, basin, regional).
- Coordinate data-collection and reporting efforts.

Further develop transboundary cooperation.

7. Promote the establishment and operationalization of arrangements for transboundary cooperation where they are lacking. Target: medium and small shared river basins and aquifers (in general, as most major transboundary river basins have some arrangements in place).

- Promote approaches to establish viable cooperation arrangements, for example by grouping two or more basins or aquifers together (e.g. OMVG model which is comprised of three contiguous river basins).
- Support transboundary consultations and the formulation and formal establishment of basin or aquifer arrangements (conventions, institutions, etc.).
- Capitalize on the entry into force of the Watercourses Convention and the broadening of the Water Convention to support the negotiation and strengthening of transboundary cooperation arrangements.

8. Support existing transboundary organizations to deepen inter-State cooperation and promote IWRM at multiple levels.

- Support transboundary river basin and aquifer organization initiatives to formulate and/or implement agreements and conventions to better reflect integrated water management principles in basin and aquifer governance frameworks (e.g. water charters, shared vision).
- Support the development and implementation of basin water management strategies and plans (e.g. basin water management master plans).
- Support the establishment and effective functioning of inclusive mechanisms for stakeholder engagement (e.g. basin committees; coalition organizations of civil society and/or water user associations).
- Support efforts to establish effective water information systems (e.g. monitoring systems, observatories).

Provide targeted support.

9. Strengthen the governance of aquifers at the national and transboundary levels.

- Ensure more systematic consideration of aquifers in national IWRM plans and in river basin strategies and plans.
- Improve knowledge of aquifers through studies and monitoring activities.
- Support the establishment of aquifer-level management institutions (commissions, agencies, committees).

10. Support IWRM implementation at the subnational level (basin/watershed level; decentralized territories).
Countries with medium-low and medium-high levels of IWRM implementation should be targeted in particular. This support could involve the following steps:

- Establish water management institutions (basin committees and agencies; local water management committees around sub-basins, lakes, ponds, boreholes and wells).
- Support the formulation and implementation of water management strategies or plans (e.g. basin water management master plans or strategies; communal water development and management plans).

- Operationalize water management instruments at the subnational levels (user pays and polluter pays principles; design and application of environmental flows; gender mainstreaming in water management institutions and plans).

11. Provide concerted and targeted support to selected countries to accelerate IWRM implementation. Target countries: post-conflict countries and/or the 36 countries with medium-low to low levels of IWRM implementation. This support could involve the following steps:

- Raise awareness, especially among policy-makers and senior government officials.
- Establish multi-stakeholder platforms.
- Develop capacity at the national and subnational levels.
- Strengthen water-related information systems.
- Develop or update national IWRM plans.
- Mobilize financing for IWRM implementation.

7.5 Practical guidance to accelerating progress

This section presents some practical guidance on starting points for planning and facilitating IWRM implementation at the national level, and how subregional, regional and global structures might assist. It includes guidance on:

- Analysing the national situation
- Setting national targets
- Developing workplans and budgeting
- Mobilizing financing
- Monitoring and evaluating progress
- Supporting roles of RECs and transboundary organizations.

Recognizing that each country will be at a different stage of planning for water resources management, these recommendations may either feed in to existing processes, or be used to kick-start processes in countries that are at earlier planning stages.

In reporting on indicator 6.5.1, national focal points were encouraged to coordinate a process whereby stakeholders from a range of sectors could discuss and agree on final scores for each question, and provide their reasoning for these scores. This not only contributed to more robust scores, but also increased each stakeholder group's understanding of the key challenges, priorities and perspectives of other stakeholder groups. In essence, this is one of the central pillars of implementing integrated water resources management. While the extent of this multi-stakeholder consultation varied between countries, it is believed that most countries held workshops, and all at least sought the inputs of some stakeholder groups. In 17 countries, multi-stakeholder workshops were facilitated by GWP Country Water Partnerships and their proceedings documented. The completed 6.5.1 questionnaires, and the processes used to complete them, can be useful starting points for many of the issues discussed in this section.

Implementing IWRM is an incremental process with incremental gains – it is not an "all or nothing" scenario. Therefore, any steps that a country can make towards

Source: pixabay.com

increasing the level of implementation across any of the dimensions of IWRM – measured by increasing scores for any of the 6.5.1 questions – should lead to benefits for society, the economy and the environment.

7.5.1 Analysing the national situation

The national results from the 6.5.1 indicator questionnaire can be used as a basis for a diagnostic analysis in each country. The results, and the reasoning provided for the score for each question, can help identify priorities and key action areas for each country. Countries that have documented their workshop processes can also draw on their discussions.[48] Countries that did not hold multi-stakeholder workshops as part of reporting on indicator 6.5.1 could consider doing so as part of their planning processes. Moreover, countries with gaps in the reasoning fields for each question may consider filling these out retrospectively to facilitate national discussions and understanding.

However, while the 6.5.1 questionnaire can provide a quick diagnostic tool to identify major gaps and priority areas, more in-depth analysis is needed to fully support planning for implementing water resources management. Some African countries may have already undertaken detailed studies on the current situation and have formulated implementation plans to work towards 2030. AMCOW, regional bodies and global institutions (e.g. UN Environment as custodian agency for indicator 6.5.1, and the Global Water Partnership (GWP), which has facilitated many national implementation plans and is running an SDG 6 Support Programme) have a role in identifying such processes and disseminating any resulting ideas and information that could be of use to other countries.

7.5.2 Setting national targets

While achieving "very high" overall implementation of IWRM is the ultimate goal, it is unlikely that most African countries will achieve an overall score of 91 in the next 12 years, unless current rates of implementation are significantly accelerated. To accelerate progress, countries should focus their efforts by setting national targets in line with national priorities and contexts.

The 2030 Agenda resolution encourages each Government to set "its own national targets guided by the global level of ambition but taking into account national circumstances."[49]

Though the resolution encourages this approach, countries seeking to address the challenging task of setting national targets across the SDGs will find no fixed instructions.

Some countries may have already set internal targets or be in the process of doing so. For others, the 6.5.1 questionnaire and the multi-stakeholder processes for reporting on indicator 6.5.1 can be useful tools to not only set targets, but also to develop workplans to instigate action on the ground. Countries could use multi-stakeholder processes to fill out the 6.5.1 survey with ambitious yet realistic target scores for individual questions, and these targets could be aggregated to provide an overall country target score. This approach could be used to set targets for 2030, as well as to set interim targets and targets beyond 2030 if desired, to ultimately reach very high IWRM implementation.

Some initiatives and examples may provide a starting point in national target-setting:

- The United Nations Development Group provides guidance and a toolkit on tailoring SDGs to national, subnational and local contexts.[50]
- Some countries are currently undertaking processes to set national targets for drinking water, sanitation and hygiene. A briefing note providing lessons learned and recommendations is in development.[51]
- The Economic Commission for Europe's Protocol on Water and Health provides guidelines on national target-setting and evaluating progress.[52]
- The Framework for Freshwater Ecosystem Management provides a holistic framework, which includes advice on setting objectives and targets, with a focus on ecosystem health for sustainable development.[53]

7.5.3 Developing workplans and budgeting

It is recommended that countries develop workplans and budgets to advance and accelerate IWRM implementation. Where such plans already exist, they may be reviewed and, where necessary, adjusted to take into account the country's IWRM implementation status and the progress that needs to be made towards the IWRM target of SDG 6.

As described previously, multi-stakeholder processes are also key to developing effective workplans. IWRM implementation efforts have not tapped into the potential contribution

[48] The reports for country workshops facilitated by GWP are available online at www.gwp.org

[49] United Nations (2015). *Transforming our world: the 2030 agenda for sustainable development*. Resolution adopted by the United Nations General Assembly on 25 September 2015. A/RES/70/1, 15-16301 (E). Paragraphs 54–59.

[50] United Nations Development Group. *Tailoring SDG to National, Sub-national and Local Contexts.* https://undg.org/2030-agenda/mainstreaming-2030-agenda/tailoring-sdg-to-national-context/#Purpose%20,%20found%20via%20HOME%20%C2%BB%202030%20AGENDA%20%C2%BB%20MAINSTREAMING%202030%20AGENDA. Accessed 24 August 2018.

[51] For example, Rural Water Supply Network, WHO/UNICEF Joint Monitoring Programme webinar, *The SDGs at the national level: how countries nationalise targets and indicators.* https://vimeo.com/272921443. Accessed 26 July 2018.

[52] United Nations Economic Commission for Europe and the World Health Organization Regional Office for Europe (2010). *Guidelines on the setting of targets, evaluation of progress and reporting. Protocol on Water and Health to the Convention on the Protection and Use of Transboundary Watercourses and International Lakes.*

[53] UN Environment (2017). *A framework for freshwater ecosystem management. Volume 1: Overview and guide for country implementation. Volume 2: Technical guide for classification and target-setting.* Nairobi, Kenya.

of non-state actors, with such efforts generally seen as the exclusive responsibility of government authorities (especially central governments) and to some extent river basin organizations. In fact, water resources management is and should remain a shared responsibility of all concerned actors. National and international NGOs and decentralized government authorities are actively engaged in water management and use activities at the provincial level, as well as at the level of water bodies (lakes, reservoirs, wells, boreholes), irrigation schemes, etc. These activities are, however, typically not accounted for when assessing progress in water management, or the level of funding mobilized for IWRM. Looking to the future, non-state actors (water user associations, NGOs, the private sector, etc.) could contribute a lot more if they were fully involved in IWRM planning and implementation processes. They could, for example, help in designing quality strategies, plans, policies and laws, or developing and implementing capacity-building initiatives, as well as in mobilizing funding, pilot-testing solutions and contributing to overall efforts to monitor progress in implementation and to document and share lessons learned.

7.5.4 Mobilizing financing

As discussed in sections 4.4 and 7.1, the lack of financing is a significant barrier to implementing water resources management, but it is neither unique to it, nor a new situation. While there have been a few African political agreements and commitments on increasing financing for water resources management, most have focused on water supply and sanitation. There is broad recognition that an integrated approach must be taken if the SDGs are to be achieved.[54,55] This principle also applies to financing and, given the integrated nature of water, is particularly relevant for water resources management. Thus, the principle of involving non-state actors in water resources management and identifying where these actors have demands and impacts on water resources also provides an opportunity for financing water resources management through multiple avenues. These include through agricultural development and the development of safe, sustainable and resilient urban areas. Blended financing is also likely to include Official Development Assistance (ODA) (monitored through SDG indicator 6.a.1). The advantages of intersectoral collaboration are the ability to coordinate and prioritize financing, and the opportunity to attract a range of investors, such as regional, national and local banks, and private sector and philanthropic finance. A lack of innovation and institutional will to diversify and mobilize finance represents a serious impediment to implementing effective water resources management.[56]

7.5.5 Monitoring and evaluating progress

While there are regional and global initiatives to broadly monitor progress in implementation, it is likely that tailored monitoring and evaluation are needed at the country and basin/aquifer levels to identify priority areas and design appropriate activities and programmes to effectively and efficiently advance and accelerate implementation

7.5.6 Supporting roles of RECs and transboundary organizations

Regional Economic Community (RECs) and transboundary basin and aquifer organizations can play a key role in advancing IWRM implementation in their respective subregions and basins. First, they already serve to some extent as political spaces for negotiating high level intergovernmental commitments on water-related issues. Where progressive commitments already exist (as is the case of the many REC-level declarations mentioned earlier or when, at the level of transboundary basin/aquifer organizations, water charters are adopted), the necessary steps can be taken to ensure that these commitments are operationalized and actually implemented. RECs and transboundary basin/aquifer organizations can also strengthen their roles as platforms for experience-sharing, allowing countries that are lagging behind to learn from countries that are more advanced in implementing IWRM.

More specifically, RECs and transboundary organizations can develop regional IWRM strategies and plans to support and complement national IWRM plans and efforts. For instance, the West African Economic and Monetary Union (WAEMU) has recently assessed the status of IWRM implementation in its eight member countries, and developed a subregional IWRM Action Plan.[57] With a budget of about 30 million euros, the proposed 2019–2030 Plan is designed to support national efforts towards the IWRM target of the 2030 Sustainable Development Agenda.

It is hoped that the recommendations and suggestions provided in this chapter will inspire action at all levels towards practically implementing all aspects of water resources management. This will, in turn, help to realize benefits for the social, economic and environmental dimensions of sustainable development for the whole of Africa.

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[54] United Nations (2015). *Transforming our world: the 2030 agenda for sustainable development.* Resolution adopted by the United Nations General Assembly on 25 September 2015. A/RES/70/1, 15-16301 (E). Paragraphs 54–59.

[55] United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP) (2017). *Integrated Approaches for Sustainable Development Goals Planning: The Case of Goal 6 on Water and Sanitation.*

[56] Newborne, P. and Dalton, J. (2016). *Water management and stewardship: taking stock of corporate water behaviour.* Overseas Development Institute.

[57] UEMOA (2018). *Etats des lieux de la Gestion Intégrée des Ressources en Eau (GIRE) dans l'espace UEMOA & Plan d'Action.* Union économique et monétaire ouest-africaine (UEMOA). Ouagadougou, Burkina Faso. [In English: WAEMU (forthcoming). *Stock-Taking of Integrated Water Resources Management (IWRM) implementation in WAEMU subregion & Action Plan.* West African Economic and Monetary Union (WAEMU).]

ANNEXES

A

Annex 1 6.5.1 Questionnaire

Annex 1.1 6.5.1 Questionnaire overview

Section 1: Enabling Environment. Assessment of Degree of implementation (0 – 100)	
1.1	**What is the status of policies, laws and plans to support IWRM at the national level?**
a	National water resources **policy,** or similar
b	National **water resources law(s)**
c	National **integrated water resources management** (IWRM) **plans**, or similar
1.2	**What is the status of policies, laws and plans to support IWRM at other levels?**
a	**Subnational** water resources **policies** or similar
b	**Basin/aquifer management plans** or similar, based on IWRM
c	**Arrangements for transboundary water management in most important basins / aquifers**
d	FEDERAL COUNTRIES ONLY: **Provincial/state water resources laws**
Section 2: Institutions and Participation. Assessment of Degree of implementation (0 – 100)	
2.1	**What is the status of institutions for IWRM implementation at the national level?**
a	National **government authorities' capacity** for leading implementation of national IWRM plans or similar
b	**Coordination between government authorities from different sectors** on water resources
c	**Public participation** in water resources policy, planning and management at national level
d	**Business participation** in water resources development, management and use at national level
e	**Gender-specific objectives** for water resources management at national level
f	**Developing IWRM capacity** at the national level
2.2	**What is the status of institutions for IWRM implementation at other levels?**
a	**Basin/aquifer level organizations for leading implementation** of IWRM plans or similar
b	**Public participation** in water resources, policy, planning and management at the **local level**
c	**Gender**-specific objectives at **subnational levels**
d	**Gender**-specific objectives and plans **at transboundary** level
e	**Organizational framework for transboundary water management** for most important basins / aquifers
f	FEDERAL COUNTRIES ONLY: **Provincial / State authorities** responsible for water resources management
Section 3: Management Instruments. Assessment of Degree of implementation (0 – 100)	
3.1	**What is the status of management instruments to support IWRM implementation at the national level?**
a	**National monitoring of water availability** (includes surface and/or groundwater, as relevant to the country)
b	**Sustainable and efficient water-use management** from the national level
c	**Pollution control** from the national level
d	**Management of water-related ecosystems** from the national level
e	**Management instruments to reduce impacts of water-related disasters** from the national level
3.2	**What is the status of management instruments to support IWRM implementation at other levels?**
a	**Basin management instruments**
b	**Aquifer management instruments**
c	**Data and information sharing within countries** at all levels
d	**Transboundary data and information sharing between countries**
Section 4: Financing. Assessment of Degree of implementation (0 – 100)	
4.1	**What is the status of financing for water resources development and management at the national level?**
a	**National budget** for **investment** including water resources **infrastructure**
b	**National budget** for the **recurrent costs of** the **IWRM** elements
4.2	**What is the status of financing for water resources development and management at other levels?**
a	**Subnational or basin budgets** for investment including water resources **infrastructure**
b	**Revenues** raised from dedicated levies on water users at basin, aquifer or subnational levels
c	**Financing for transboundary cooperation**

Annex 1.2 6.5.1 Questionnaire with threshold descriptions

The shortened version of the questionnaire below contains the full wording of the questions and the threshold descriptions, which are useful for interpreting progress on each of the questions. However, this version does not contain the glossaries and explanatory notes included in the full questionnaire, which can be downloaded from http://iwrmdataportal.unepdhi.org.

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	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**.
b. National **water resources law(s)**	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.**
c. National **integrated water resources management** (IWRM) **plans**, or similar	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.**
1.2 What is the status of policies, laws and plans to support IWRM at other levels?						
a. Subnational water resources **policies** or similar	**Development not started or delayed in most subnational jurisdictions**.	Exist in **most jurisdictions**, but **not necessarily based on IWRM**.	**Based on IWRM, approved by the majority of** authorities and starting to be used to guide work.	**Being used** by **the majority of relevant** authorities to guide work.	Policy objectives **consistently achieved by a majority of authorities**.	Objectives **consistently achieved by all** authorities, and **periodically reviewed and revised**.
b. Basin/aquifer management plans or similar, based on IWRM	**Development not started or delayed in most** basins/ aquifers of national importance.	**Being prepared for most** basins/ aquifers of national importance.	**Approved in the majority** of basins/ aquifers and starting to be used by authorities.	Being **implemented in the majority of** basins/aquifers.	Plan **objectives consistently achieved in majority** of basins/ aquifers.	**Objectives consistently achieved in all basins**/aquifers, and **periodically reviewed and revised**.

1. ENABLING ENVIRONMENT	Degree of implementation (0 – 100)					
	Very low (0)	Low (20)	Medium-low (40)	Medium-high (60)	High (80)	Very high (100)
c. Arrangements for transboundary water management in most important basins / aquifers	Development not started or not progressing.	**Being prepared or negotiated.**	**Arrangements are adopted**.	Arrangements' provisions are **partly implemented.**	**Most** of the arrangements' **provisions are implemented.**	The arrangements' provisions are **fully implemented.**
d. FEDERAL COUNTRIES ONLY: **Provincial/state water resources laws**.	**Development not started or delayed in most** states.	Exist in most jurisdictions, but not necessarily based on IWRM**.**	**Based on IWRM, approved in most states and starting to be applied by authorities** in the **minority** of states.	**Some laws** being applied in the **majority** of states.	**All laws** being applied in the **majority** of states.	**All laws** being applied in **all** states, and **all people and organizations** are **held accountable**.

2. INSTITUTIONS AND PARTICIPATION	Degree of implementation (0 – 100)					
	Very low (0)	Low (20)	Medium-low (40)	Medium-high (60)	High (80)	Very high (100)
2.1 What is the status of institutions for IWRM implementation at the national level?						
a. National **government authorities' capacity** for leading implementation of national IWRM plans or similar	**No dedicated government authorities** for water resources management.	Authorities exist, with **clear mandate to lead water resources management**.	Authorities have clear mandate to lead IWRM implementation, and the **capacity to effectively lead IWRM plan formulation**.	Authorities have the **capacity to effectively lead IWRM plan implementation**.	Authorities have the capacity to effectively lead **periodic monitoring and evaluation of the IWRM plan**.	Authorities have the capacity to effectively lead **periodic IWRM plan revision**.
b. **Coordination between** national **government authorities representing different sectors** on water resources, policy, planning and management	**No communication** between different government sectors on policy, planning and management.	**Communication: Information** on water resources, policy, planning and management **is made available between different sectors.**	**Consultation: Information, experiences and opinions are shared between different sectors.**	**Participation: Opportunities** for different sectors **to take part in** policy, planning and management **processes.**	**Representation: Formal consultation** between different government sectors **with the objective of agreeing on collective decisions on important issues and activities.**	**Co-decisions and co-production: Shared power between different sectors** on joint policy, planning and management activities.

2. INSTITUTIONS AND PARTICIPATION	Degree of implementation (0 – 100)					
	Very low (0)	Low (20)	Medium-low (40)	Medium-high (60)	High (80)	Very high (100)
c. **Public participation** in water resources, policy, planning and management at national level.	**No communication** between government and stakeholders on policy, planning and management.	**Communication: Information** on water resources, policy, planning and management **is made available to stakeholders.**	**Consultation:** Government authorities **occasionally request** information, experiences and opinions of stakeholders**.**	**Consultation:** Government authorities **regularly request** information, experiences and opinions of stakeholders.	**Participation:** Regular opportunities for stakeholders **to take part in relevant** policy, planning and management **processes.**	**Representation: Formal representation of** stakeholders in government processes **contributing to decision making on important issues and activities, as appropriate.**
d. **Business participation** in water resources development, management and use at national level.	**No communication** between government and business about water resources development, management and use.	**Limited communication** between government and business about water resources development, management and use.	**Regular consultation** between government and business about water resources development, management and use.	**Limited opportunities for** private sector involvement established for water resources development, management and use activities.	**Regular opportunities for private sector involvement** established for water resources development, management and use activities.	**Effective private sector involvement established** for water resources development, management and use activities.
e. **Gender-specific objectives** for water resources management at national level.	**Gender not explicitly addressed** throughout national laws, policy or plans.	**Gender partially addressed** throughout national laws, policies or plans.	**Gender addressed** in national plans but with **limited budget** and **implementation**.	Gender addressed in national plans, **partially funded** and **objectives partly achieved**.	Activities **adequately funded,** and **objectives mostly achieved**.	Objectives **fully achieved** and **adequately address gender issues**.
f. **Developing IWRM capacity** at the national level	**No capacity development specific to water resources management**.	**Occasional** capacity development, generally limited to **short-term / ad hoc activities**.	**Some long-term** capacity development initiatives are being implemented, but geographic and stakeholder **coverage is limited**.	**Long-term** capacity development initiatives are being implemented, and geographic and stakeholder **coverage is adequate**.	**Long-term** capacity development initiatives are being implemented, with **effective outcomes**, and geographic and stakeholder **coverage is very good**.	**Long-term** capacity development initiatives are being implemented with **highly effective outcomes**, and geographic and stakeholder **coverage is excellent.**
2.2 What is the status of institutions for IWRM implementation at other levels?						
a. **Basin/aquifer level organizations for leading implementation** of IWRM plans or similar.	**No dedicated basin authorities for water resources management.**	Authorities exist, with **clear mandate to lead water resources management**.	Authorities have clear mandate to lead IWRM implementation, and the **capacity to effectively lead** IWRM plan **formulation**.	Authorities have the **capacity to effectively lead** IWRM plan **implementation**.	Authorities have the **capacity to effectively lead periodic monitoring and evaluation** of the IWRM plan.	Authorities have the **capacity to effectively lead periodic IWRM plan revision**.

2. INSTITUTIONS AND PARTICIPATION	Degree of implementation (0 – 100)					
	Very low (0)	Low (20)	Medium-low (40)	Medium-high (60)	High (80)	Very high (100)
b. **Public participation** in water resources, policy, planning and management at the **local level**	**No communication** between local government and stakeholders on policy, planning and management.	**Communication: Local level information** on water resources, policy, planning and management **is made available to stakeholders.**	**Consultation:** Government authorities **occasionally request** local level information, experiences and opinions of stakeholders**.**	**Consultation:** Government authorities **regularly request** local level information, experiences and opinions of stakeholders.	**Participation:** Regular opportunities for stakeholders **to take part in relevant local level** policy, planning and management **processes.**	**Representation:** Formal representation of stakeholders on local authority processes contributing to decision-making on important local issues and activities, as appropriate.
c. **Gender**-specific objectives at **subnational levels**	**Gender not explicitly addressed** throughout subnational laws, policy or plans.	**Gender partially addressed** in subnational laws, policies or plans.	**Gender addressed** in subnational plans but with **limited budget** and **implementation**.	Gender addressed in subnational plans, **partially funded** and **objectives partly achieved**.	Activities **adequately funded,** and **objectives mostly achieved**.	Objectives **fully achieved** and **adequately address subnational gender issues**.
d. **Gender**-specific objectives and plans **at transboundary** level	**Gender not explicitly addressed** in transboundary policies or plans.	**Gender partially addressed** in transboundary policies or plans.	**Gender addressed** in transboundary plans but with **limited budget** and **implementation**.	Gender addressed in transboundary plans, **partially funded** and **objectives partly achieved**.	Activities **adequately funded,** and **objectives mostly achieved**.	Objectives **fully achieved** and **adequately address transboundary gender issues**.
e. **Organizational framework for transboundary water management** for most important basins / aquifers	No organizational framework(s).	Organizational framework(s) **being developed**.	Organizational framework(s) **established**.	Organizational framework(s)' **mandate is partly fulfilled**.	Organizational framework(s)' **mandate is fulfilled for the most part.**	Organizational framework(s)' **mandate is fully fulfilled.**
f. FEDERAL COUNTRIES ONLY: **Provincial / State authorities** responsible for water resources management	**No dedicated provincial/state authorities for water resources management.**	Authorities exist, with **clear mandate to lead water resources management**.	Authorities have clear mandate to lead IWRM implementation, and the **capacity** to effectively lead IWRM **plan formulation**.	Authorities have the **capacity** to effectively lead IWRM **plan implementation**.	Authorities have the capacity to effectively lead **periodic monitoring and evaluation** of the IWRM plan.	Authorities have the capacity to effectively lead **periodic** IWRM plan **revision**.

3. MANAGEMENT INSTRUMENTS		Degree of implementation (0 – 100)					
		Very low (0)	Low (20)	Medium-low (40)	Medium-high (60)	High (80)	Very high (100)
3.1 What is the status of management instruments to support IWRM implementation at the national level?							
a	**National monitoring of water availability** (includes surface and/ or groundwater, as relevant to the country).	No national monitoring systems in place.	Monitoring systems established for a limited number of **short-term / ad hoc projects** or similar.	**Long-term** national monitoring is carried out but with **limited coverage and limited use** by stakeholders.	**Long-term** national monitoring is carried out with **adequate coverage but limited use** by stakeholders.	**Long-term** national monitoring is carried out with **very good coverage and adequate use** by stakeholders.	**Long-term** national monitoring is carried out with **excellent coverage and excellent use** by stakeholders.
b	**Sustainable and efficient water-use management** from the national level, (includes surface and/ or groundwater, as relevant to the country).	No management instruments being implemented.	Use of management instruments is **limited** and only through **short-term / ad hoc projects** or similar.	**Some** management instruments implemented on a more **long-term** basis, but with **limited coverage** across different water users and the country.	Management instruments are implemented on a long-term basis, with **adequate coverage** across different water users and the country.	Management instruments are implemented on a long-term basis, with **very good coverage** across different water users and the country, and are **effective**.	Management instruments are implemented on a long-term basis, with **excellent coverage** across different water users and the country, and are **highly effective**.
c	**Pollution control** from the national level	No management instruments being implemented.	Use of management instruments is **limited** and only through **short-term / ad hoc projects** or similar.	**Some** management instruments implemented on a more **long-term** basis, but with **limited coverage** across sectors and the country.	Management instruments are implemented on a long-term basis, with **adequate coverage** across sectors and the country.	Management instruments are implemented on a long-term basis, with **very good coverage** across sectors and the country, and are **effective**.	Management instruments are implemented on a long-term basis, with **excellent coverage** across sectors and the country, and are **highly effective**.
d	**Management of water-related ecosystems** from the national level	No management instruments being implemented.	Use of management instruments is **limited** and only through **short-term / ad hoc projects** or similar.	**Some** management instruments implemented on a more **long-term** basis, but with **limited coverage** across different ecosystem types and the country.	Management instruments are implemented on a long-term basis, with **adequate coverage** across different ecosystem types and the country. Environmental Water Requirements (EWR) analysed in some cases.	Management instruments are implemented on a long-term basis, with **very good coverage** across different ecosystem types and the country, and are **effective**. EWR analysed for most of country.	Management instruments are implemented on a long-term basis, with **excellent coverage** across different ecosystem types and the country, and are **highly effective**. EWR analysed for whole country.

3. MANAGEMENT INSTRUMENTS		Degree of implementation (0 – 100)					
		Very low (0)	Low (20)	Medium-low (40)	Medium-high (60)	High (80)	Very high (100)
e	**Management instruments to reduce impacts of water-related disasters** from the national level	No management instruments being implemented.	Use of management instruments is **limited** and only through **short-term / ad hoc projects** or similar.	**Some** management instruments implemented on a more **long-term** basis, but with **limited coverage** of at-risk areas.	Management instruments are implemented on a long-term basis, with **adequate coverage** of at-risk areas.	Management instruments are implemented on a long-term basis, with **very good coverage** of at-risk areas, and are **effective**.	Management instruments are implemented on a long-term basis, with **excellent coverage** of at-risk areas, and are **highly effective**.
3.2 What is the status of management instruments to support IWRM implementation at other levels?							
a	**Basin management instruments**.	No basin level management instruments being implemented.	Use of basin level management instruments is **limited** and only through **short-term / ad hoc projects**.	**Some** basin level management instruments implemented on a more **long-term** basis, but with **limited geographic and stakeholder coverage**.	Basin level management instruments implemented on a more **long-term** basis, with **adequate geographic and stakeholder coverage**.	Basin level management instruments implemented on a more **long-term** basis, with **effective outcomes** and **very good geographic and stakeholder coverage**.	Basin level management instruments implemented on a more **long-term** basis, with **highly effective outcomes** and **excellent geographic and stakeholder coverage**.
b	**Aquifer management instruments**.	No aquifer level management instruments being implemented.	Use of aquifer level management instruments is **limited** and only through **short-term / ad hoc projects**.	**Some** aquifer level management instruments implemented on a more **long-term** basis, but with **limited geographic and stakeholder coverage**.	Aquifer level management instruments implemented on a more **long-term** basis, with **adequate geographic and stakeholder coverage**.	Aquifer level management instruments implemented on a more **long-term** basis, with **effective outcomes** and **very good geographic and stakeholder coverage**.	Aquifer level management instruments implemented on a more **long-term** basis, with **highly effective outcomes** and **excellent geographic and stakeholder coverage**.
c	**Data and information sharing** within **countries** at all levels	No data and information sharing.	**Limited** data and information sharing **on an ad hoc basis.**	Data and information sharing **arrangements exist** on a more **long-term basis between major data providers and users.**	Data and information sharing **arrangements implemented** on a more **long-term basis,** with **adequate coverage** across sectors and the country.	Data and information sharing **arrangements implemented** on a more **long-term basis,** with **very good coverage** across sectors and the country.	**All relevant data and information are online and freely accessible to all**.

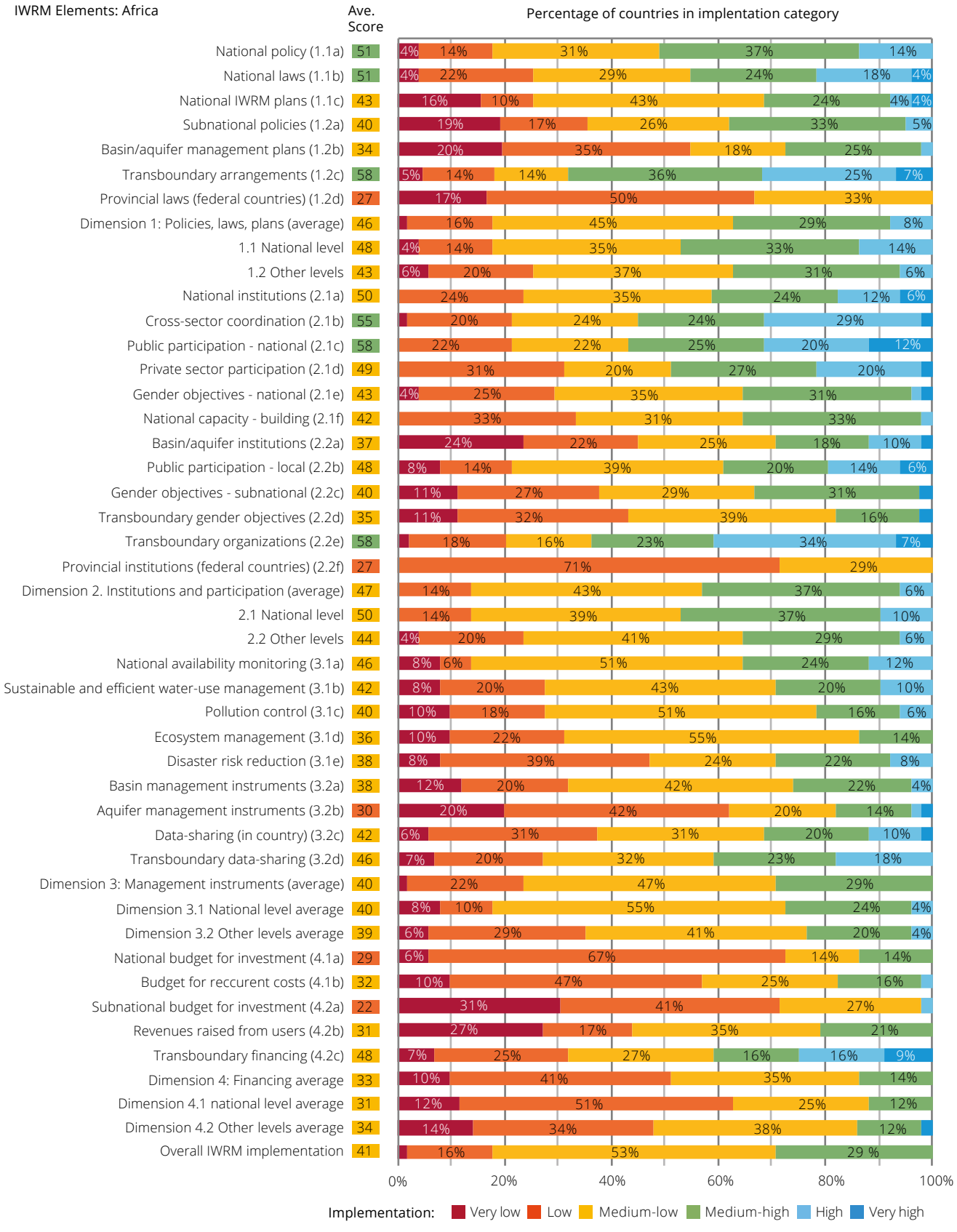
3. MANAGEMENT INSTRUMENTS		Degree of implementation (0 – 100)					
		Very low (0)	Low (20)	Medium-low (40)	Medium-high (60)	High (80)	Very high (100)
d	**Transboundary data and information sharing** between **countries**	No data and information sharing.	**Limited** data and information sharing **on an ad hoc or informal basis.**	Data and information sharing **arrangements exist, but sharing is limited.**	Data and information sharing **arrangements implemented adequately.**	Data and information sharing **arrangements implemented effectively.**	All relevant data and information are **online** and **accessible between countries**.

4. FINANCING		Degree of implementation (0 – 100)					
		Very low (0)	Low (20)	Medium-low (40)	Medium-high (60)	High (80)	Very high (100)
4.1 What is the status of financing for water resources development and management at the national level?							
a	**National budget** for **investment** including water resources **infrastructure**.	**No budget** allocated in national investment plans.	**Budget allocated** but only partly covers planned investments.	**Sufficient budget allocated** for planned investments but insufficient funds disbursed or made **available.**	**Sufficient budget allocated and funds disbursed** for all planned programmes or projects.	**Funding available and all planned projects under implementation**.	Planned programmes **completed,** post-evaluation carried out and new funding cycle for programmes underway.
b	**National budget** for the **recurrent costs of** the **IWRM** elements	**No budget** allocations made for recurrent costs of the IWRM elements.	**Allocations** made for **only a few** of the elements and implementation at an early stage.	Allocations made for **at least half** of the elements but insufficient for others.	Allocations for **most of the elements** and some implementation under way.	Allocations include **all elements** and implementation regularly carried out.	Planned budget allocations for all elements of the IWRM approach **fully utilized**.
4.2 What is the status of financing for water resources development and management at other levels?							
a	**Subnational or basin budgets** for investment including water resources **infrastructure**.	**No** budget allocated In subnational or basin investment plans.	**Budget allocated** but only partly covers planned investments.	**Sufficient budget allocated** for planned investments but insufficient funds disbursed or made **available**.	Sufficient budget allocated and funds disbursed for all planned programmes or projects.	Funding available and all **planned projects under implementation.**	**Budget fully utilized**, programmes completed as planned and post evaluation carried out.

4. FINANCING		Degree of implementation (0 – 100)					
		Very low (0)	Low (20)	Medium-low (40)	Medium-high (60)	High (80)	Very high (100)
b	**Revenues** raised from dedicated levies on water users at basin, aquifer or subnational levels.	**No revenues** raised at the **subnational** level.	**Processes in place** to raise local revenue but **not yet implemented**.	Limited revenues raised from **charges, but are not** used for IWRM activities.	Limited revenues raised from **charges** cover some IWRM activities.	Revenues raised from **charges** cover most IWRM activities.	Local authorities raise funds **from multiple sources and fully cover costs** of IWRM activities.
c	**Financing for transboundary cooperation**	No specific funding allocated from the MS budgets nor from other regular sources.	MS agreement on country share of contributions in place and in-kind support for the cooperation organization / arrangement.	Funding less than 50% of that expected as contributions and by regulation.	Funding less than 75% of that expected as contributions and by regulation.	Funding more than 75% of that expected as contributions and by regulation.	Full funding of that expected as contributions and by regulation.

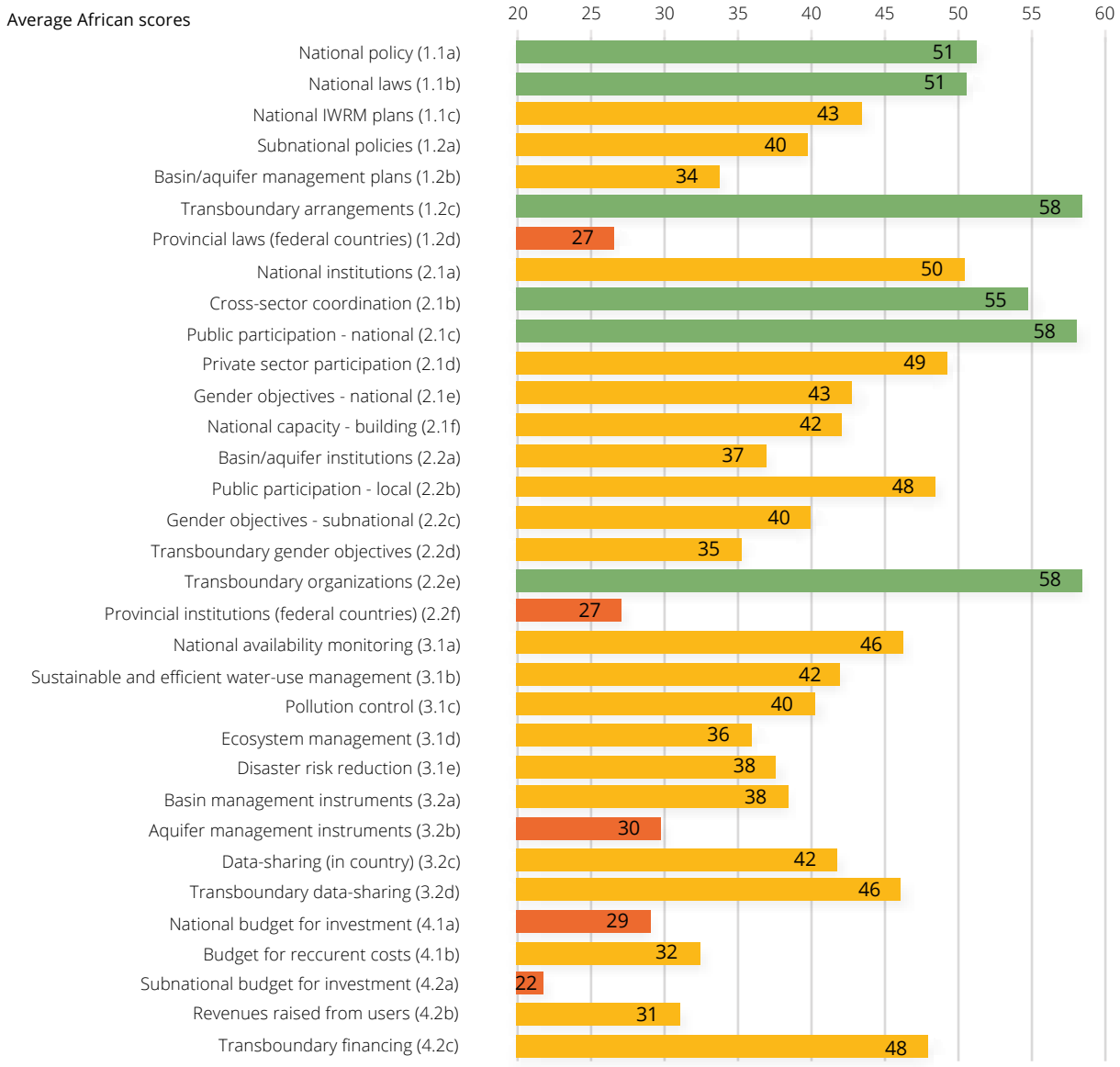
Annex 2 African status of IWRM implementation by question

Annex 2.1 Distribution of country implementation of IWRM elements for Africa



For clarity, "2%" labels have been removed from the above figure.

Annex 2.2 Average African implementation of IWRM elements



Annex 3 National 6.5.1 data: IWRM implementation

IWRM implementation categories and score thresholds

Very low	Low	Medium-low	Medium-high	High	Very high
0 - 10	11 - 30	31 - 50	51 - 70	71 - 90	91 - 100

Scores based on 33 questions across four sections (see Annex 1). For full results for each question for each country, see http://iwrmdataportal.unepdhi.org

Country	Final IWRM Score	Section 1	Section 2	Section 3	Section 4
		Average	Average	Average	Average
		Enabling environment	Institutions and participation	Management instruments	Financing
Algeria	**48**	40	42	51	60
Angola	**45**	38	38	28	37
Benin	**63**	70	71	62	48
Botswana	**41**	48	47	49	20
Burkina Faso	**63**	73	80	49	48
Burundi	**32**	40	31	33	24
Cameroon	**34**	30	33	37	36
Cabo Verde	**64**	76	70	41	70
Central African Republic	**31**	50	42	12	20
Chad	**32**	35	36	30	26
Comoros	**26**	27	35	14	28
Congo	**32**	35	32	33	28
Côte d'Ivoire	**32**	35	37	32	24
Democratic Republic of the Congo	**31**	27	44	29	26
Egypt	**40**	47	42	49	24
Equatorial Guinea	**24**	40	33	0	24
Eswatini (formerly Swaziland)	**53**	65	69	52	24
Ethiopia	**31**	40	38	28	20
Gabon	**14**	6	28	16	8
Gambia	**30**	34	36	33	16
Ghana	**49**	56	55	40	44
Guinea	**24**	13	25	27	32

Country	Final IWRM Score	Section 1	Section 2	Section 3	Section 4
		Average	Average	Average	Average
		Enabling environment	Institutions and participation	Management instruments	Financing
Kenya	**53**	63	59	48	40
Lesotho	**33**	47	44	33	8
Liberia	**15**	17	18	13	12
Libya	**47**	57	45	53	32
Madagascar	**36**	40	33	63	10
Malawi	**40**	40	51	42	28
Mali	**53**	58	60	59	36
Mauritania	**45**	53	51	33	44
Mauritius	**64**	65	63	60	70
Morocco	**64**	68	69	64	55
Mozambique	**55**	62	75	42	40
Namibia	**59**	58	63	59	57
Niger	**50**	40	64	51	44
Nigeria	**35**	34	38	34	34
Rwanda	**35**	47	31	33	28
Sao Tome and Principe	**23**	24	22	25	20
Senegal	**53**	60	66	49	38
Seychelles	**45**	43	55	58	25
Sierra Leone	**19**	20	25	20	10
Somalia	**10**	13	13	11	4
South Africa	**65**	77	64	66	56
South Sudan	**38**	46	47	33	28
Sudan	**40**	37	44	44	34
Togo	**32**	40	28	36	24
Tunisia	**55**	67	53	58	40
Uganda	**59**	63	69	62	40
United Republic of Tanzania	**50**	57	55	40	50
Zambia	**46**	48	65	36	36
Zimbabwe	**61**	72	65	54	52

This report provides the African baseline for Sustainable Development Goal (SDG) indicator 6.5.1: Degree of integrated water resources management implementation. It represents the work of 51 African countries.

Implementing integrated water resources management (IWRM) is a central building block for achieving the SDGs in Africa and related African political commitments. Successful water resources management requires the interaction of governments, organizations and the private sector at all levels and across all sectors. Although 82 per cent of African countries have institutionalized most elements of IWRM, most are not likely to reach the 2030 target. Accelerating the practical implementation of IWRM on the ground, with cross-sectoral coordination to secure financing and sustainable and equitable outcomes, must now be the focus.

Through analysing the elements of IWRM, this report identifies areas of progress and those which need urgent attention. It explains how countries and transboundary river basin and aquifer organizations, with the support of African Regional Economic Commissions (RECs), the African Ministers' Council on Water (AMCOW) and the international community, can build on multi-stakeholder reporting processes to prioritize actions to work towards the 2030 target.