



Status of Integrated Water Resources Management in GCC Countries according to UN-SDGs

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Outline

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Introduction

- GCC countries have scarce water resources and increasing high demand
- Increasing of desalination production, which is CapEx/OpEx and energy intensive
- The reuse percentage of treated sewage effluent (TSE) is about 34% of the available
- Efficient implementation of Integrated water resources management (IWRM) can help in creating a sustainable future for water in the GCC region
- The objective of this paper is to present the UN WATER data about IWRM indicator for GCC and to learn lessons from the analysis of SDGs data for decision makers
- What is the **IWRM**?

- IWRM is a process that promotes the coordinated management of all available water resources and relevant resources in order to maximize the resultant economic and social welfare in an equitable manner without compromising the sustainability of vital ecosystems (IWRM Hub 2023)
- **Four key principles** of IWRM were adopted at the 1992 Dublin Conference on Water and endorsed at the Rio de Janeiro Summit on Sustainable Development

SDG Goal 6 and IWRM Components



- Four key components of IWRM used in UN WATER are:
 1. Enabling environment.
 2. Institutions and participation.
 3. Management instruments.
 4. Financing.

TARGET 6-1 SAFE AND AFFORDABLE DRINKING WATER	TARGET 6-2 END OPEN DEFECTION AND PROVIDE ACCESS TO SANITATION AND HYGIENE	TARGET 6-3 IMPROVE WATER QUALITY, WASTEWATER TREATMENT AND SAFE REUSE	TARGET 6-4 INCREASE WATER-USE EFFICIENCY AND ENSURE FRESHWATER SUPPLIES
TARGET 6-5 IMPLEMENT INTEGRATED WATER RESOURCES MANAGEMENT	TARGET 6-6 PROTECT AND RESTORE WATER-RELATED ECOSYSTEMS	TARGET 6-A EXPAND WATER AND SANITATION SUPPORT TO DEVELOPING COUNTRIES	TARGET 6-B SUPPORT LOCAL ENGAGEMENT IN WATER AND SANITATION MANAGEMENT

UN WATER Methodology for IWRM

(1) UN-WATER SDG 6 Data Portal

- UN-Water SDG 6 Data Portal places all the United Nations' water and sanitation information into one database, designed for decision-makers, advisors, technical professionals, researchers and students.
- United Nations Environment Programme (UNEP) is the custodian of indicator 6.5.1 (IWRM implementation).
- IWRM Data Portal is maintained by UNEP-DHI Centre on Water and Environment, in partnership with UNEP and Global Water Partnership (GWP).

SDG 6 INDICATORS

- 6.1.1 Drinking Water
- 6.2.1 Sanitation and Hygiene
- 6.3.1 Wastewater
- 6.3.2 Water Quality
- World Water Day
- 6.4.1 Water Use Efficiency
- World Toilet Day
- 6.4.2 Water Stress
- 6.5.1 Water Management
- 6.5.2 Transboundary Cooperation
- 6.6.1 Ecosystems
- 6.a.1 International Cooperation
- 6.b.1 Stakeholder Participation
- Institutional and Cross-Cutting
- Gender Contextualization



(2) Data Source

- Data on 6.5.1 are collected through a questionnaire (33 questions)
- This questionnaire cover the 4 key dimensions of IWRM
- Responses are consolidated through consultations between relevant stakeholders.
- Portal hosts more than 185 national reports on SDG indicator 6.5.1
- Data available for 2017 and 2020, no closer data available



SDG 6 Progress Reports

Monitoring progress towards SDG 6 helps policy- and decision makers identify challenges and opportunities, set priorities, communicate progress, and generate support and investment. SDG 6 Progress Reports are primarily based on national official data sources, compiled and validated by United Nations custodian agencies.

(3) The questionnaire:

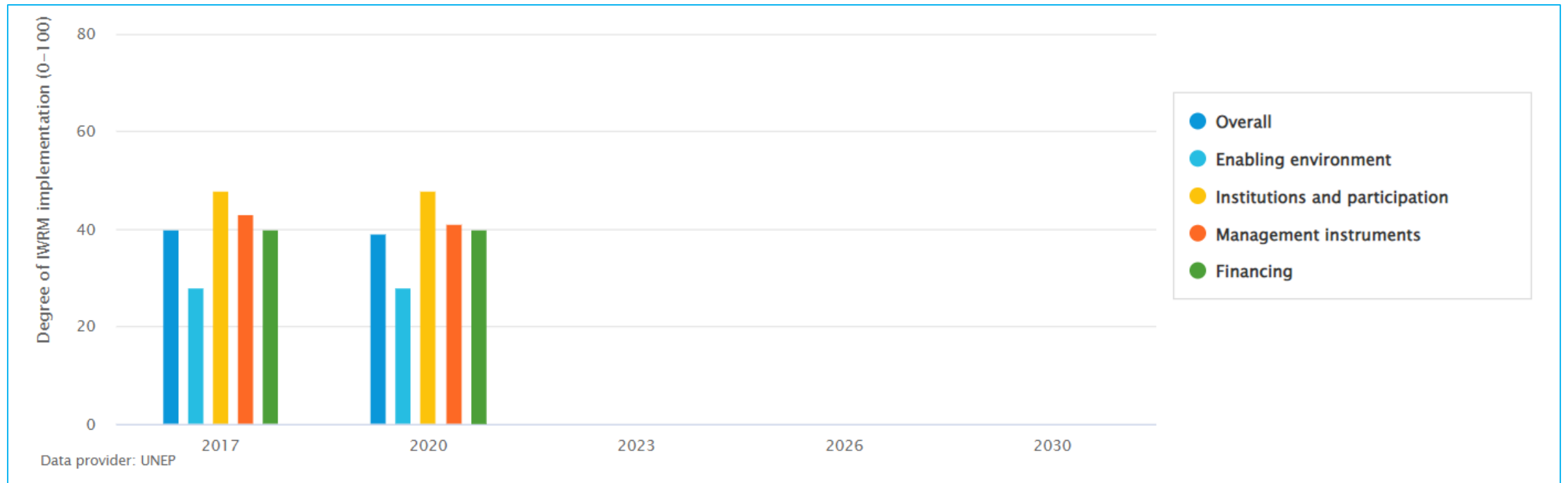
Table 1. Overview of survey question subjects for the four IWRM dimensions, per level

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

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

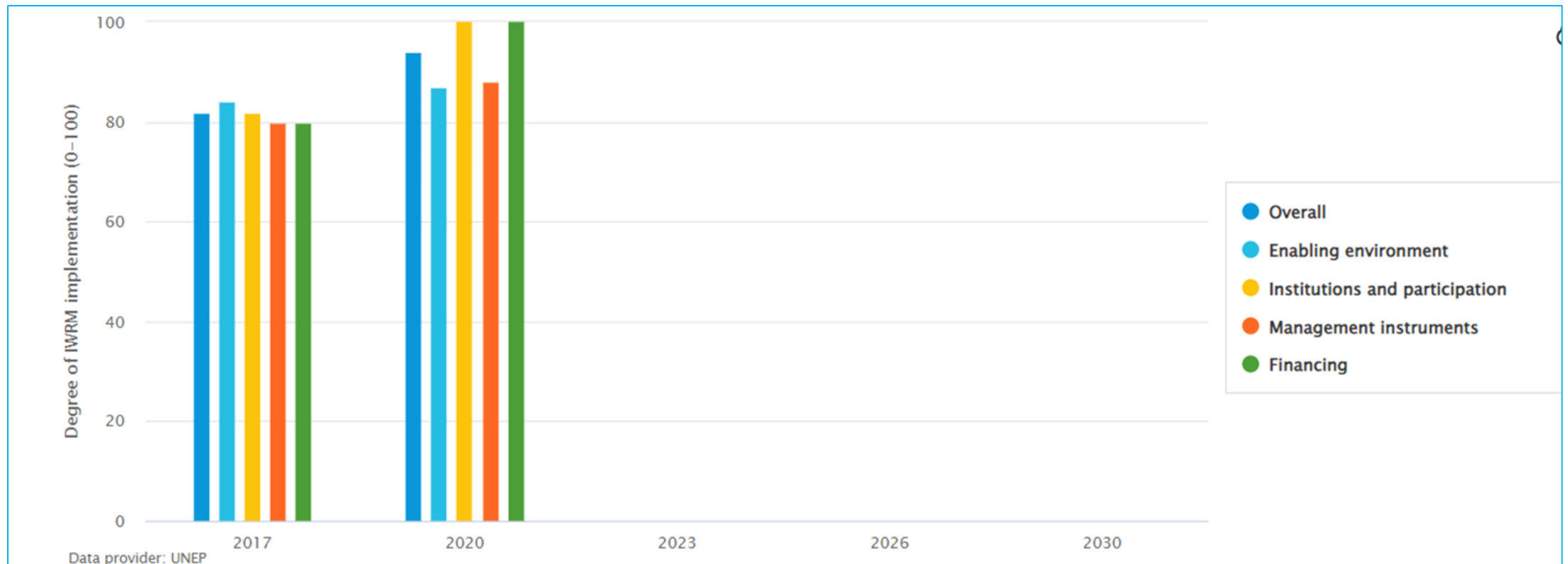
Results and Discussion of IWRM for GCC (Bahrain)

- Low score in all the four IWRM dimensions.
- Enabling environment is the lowest score.
- Overall score in 2020 is less than the score of 2017 by one percent.
- Bahrain is the lowest score among the GCC countries.
- This points to more effort needed to achieve the global target of SDG 6.5.1: IWRM.



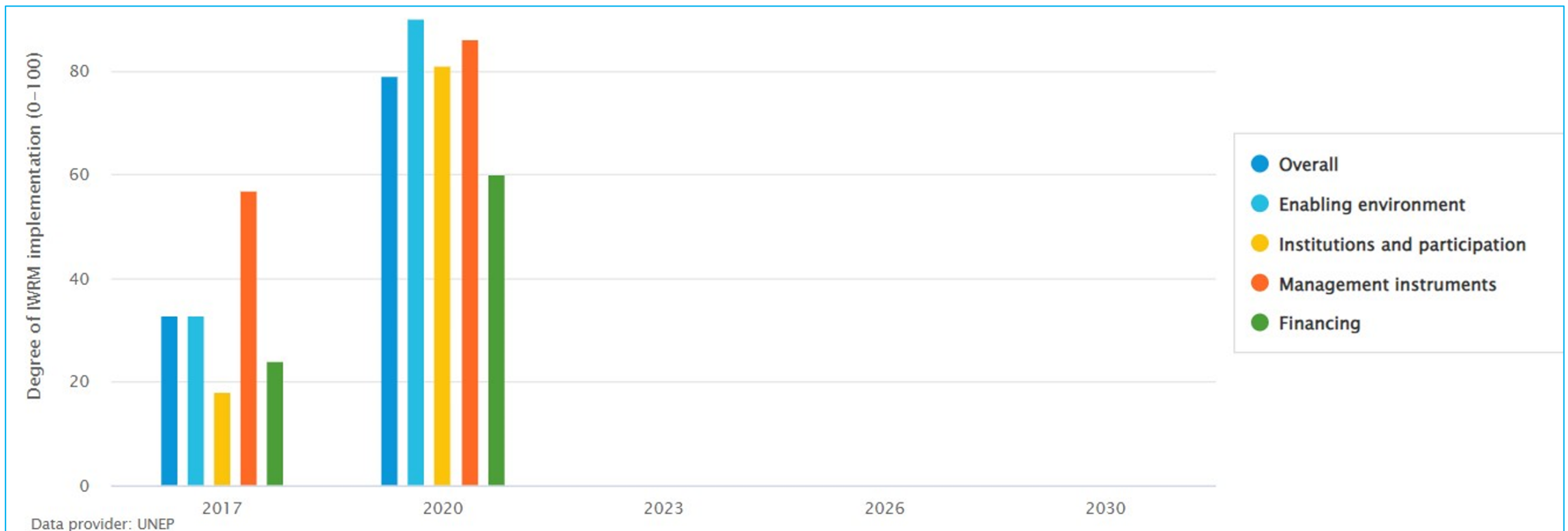
Results and Discussion of IWRM for GCC (Kuwait)

- Highest score among all GCC countries and is the only state in the very high category.
- In 2020, Kuwait has the full score in two dimensions (institutions participation and financing).
- Score increased from 82 in 2017 to 94% 2020.
- Small window to do more progress in these two dimensions and improve its very high score.



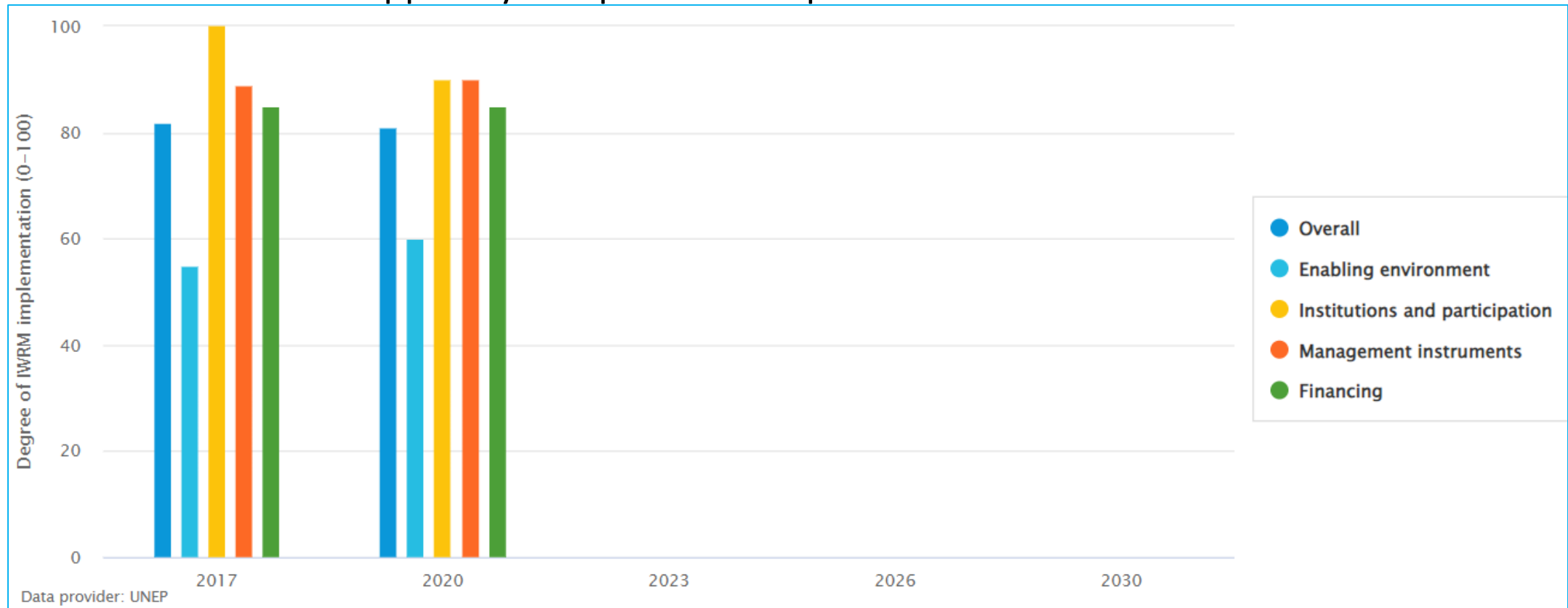
Results and Discussion of IWRM for GCC (Oman)

- Oman made a big jump in the overall score between 2017 and 2020
- Notable progress in the four dimensions of the IWRM.
- Highest improvement was in the institution/participation and enabling environment, 18/81 33/90%.
- This indicates a significant effort by Oman to be in the high category of IWRM in 2020.



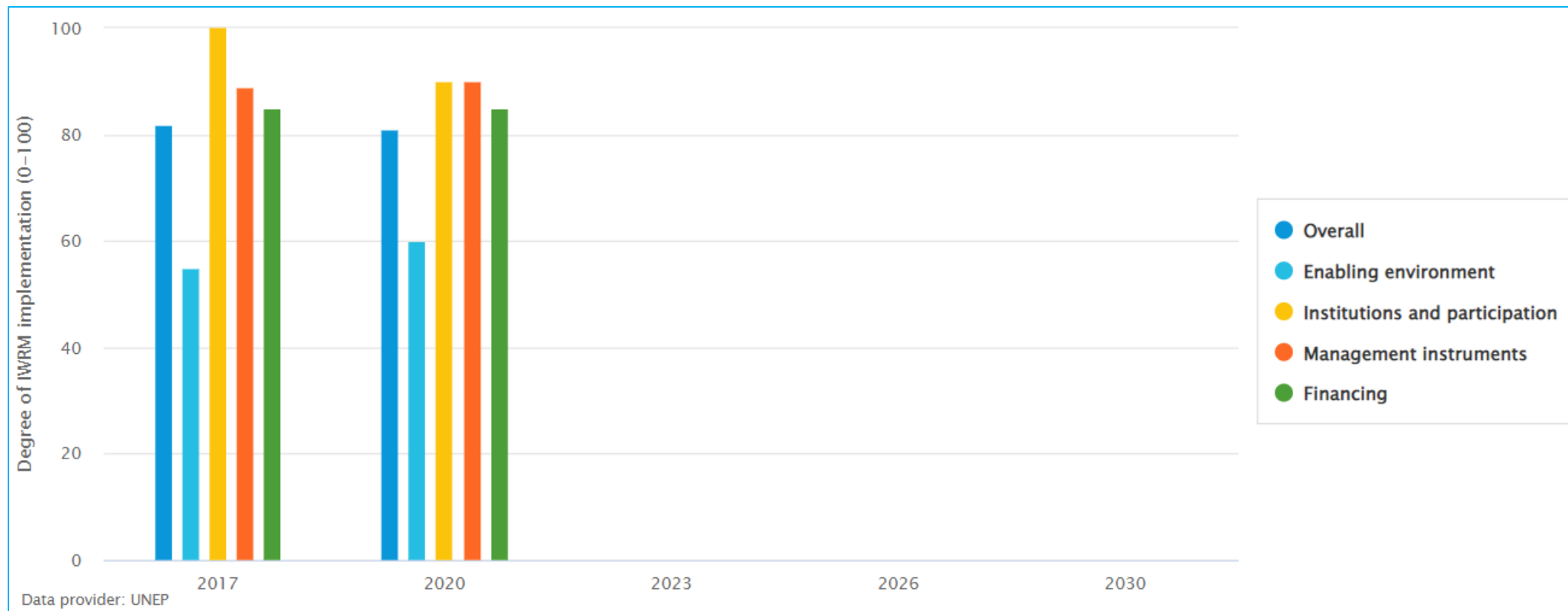
Results and Discussion of IWRM for GCC (Qatar)

- High Score of in four dimensions and in the overall.
- Score of enabling environment is the lowest at 60%.
- From 2017 to 2020, 10% decrease of the component of institutions/participation score.
- Overall score in 2020 dropped by one percent compared to 2017.



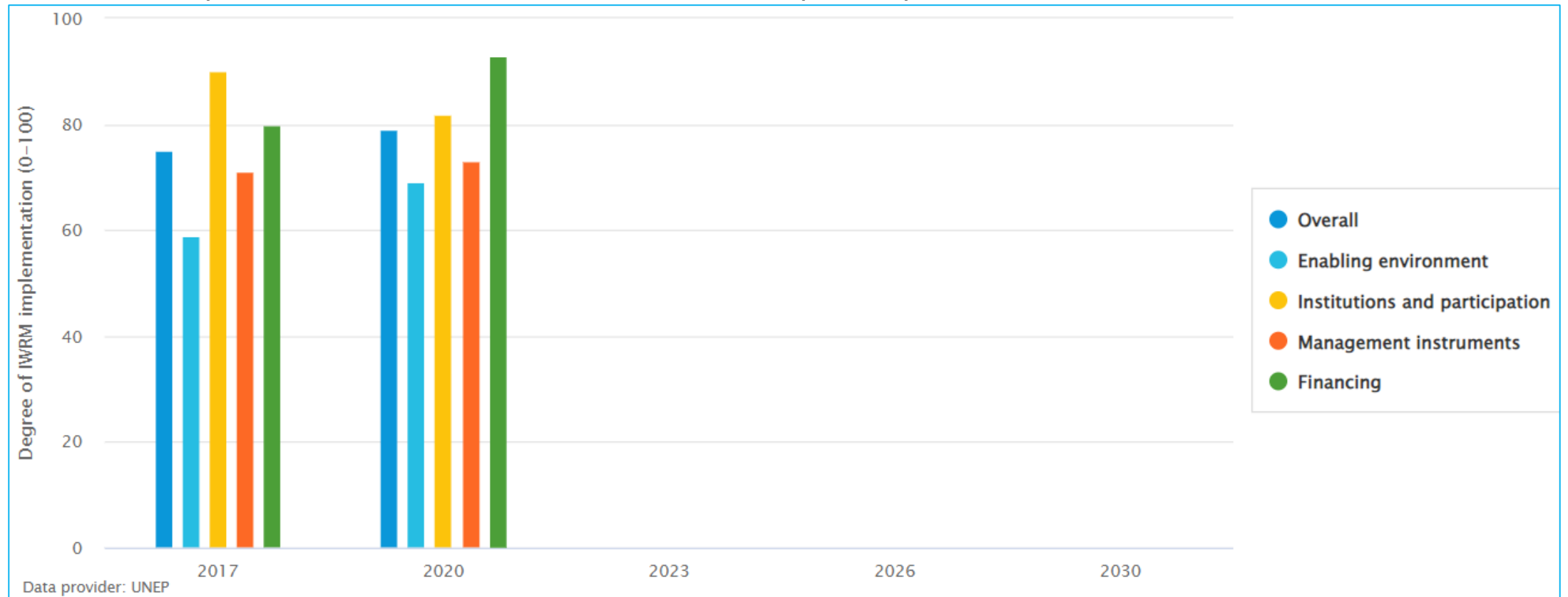
Results and Discussion of IWRM for GCC (Saudi Arabia)

- High score in management instruments and medium-high score in institutions/participation.
- Scores of the other two dimensions of IWRM are almost the same with lower values.
- No remarkable changes in the scores between 2017 and 2020.
- Saudi Arabia (highest population and area in GCC), which make IWRM is challenging but warranted.



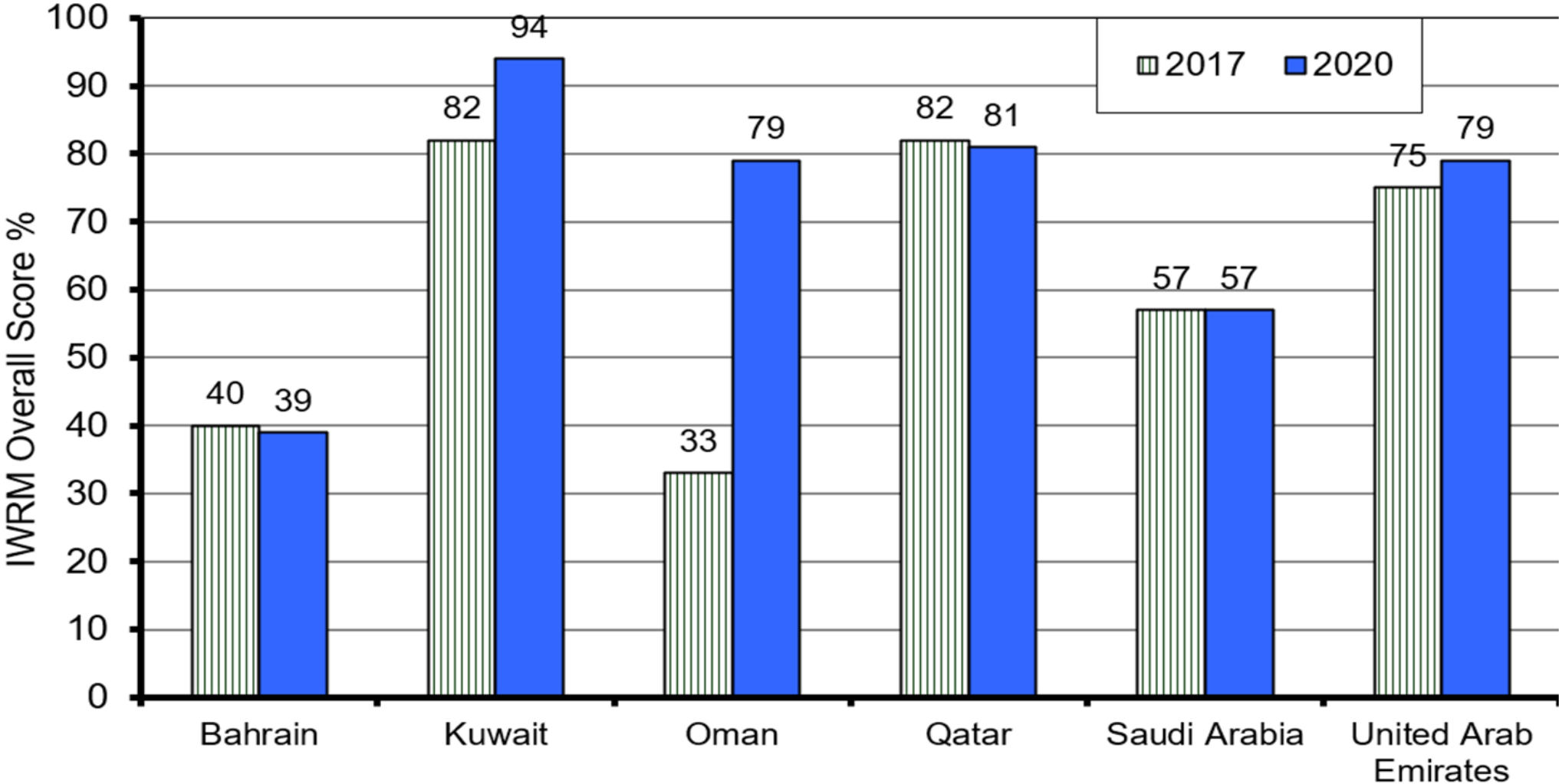
Results and Discussion of IWRM for GCC (UAE)

- Overall score is high with very high score in financing followed by high score in institutions/participation
- The lowest score in enabling environment
- From 2017 to 2020, UAE made good improve with and notable score in financing
- There is a drop in the score of the institutions and participation between 2017 and 2020



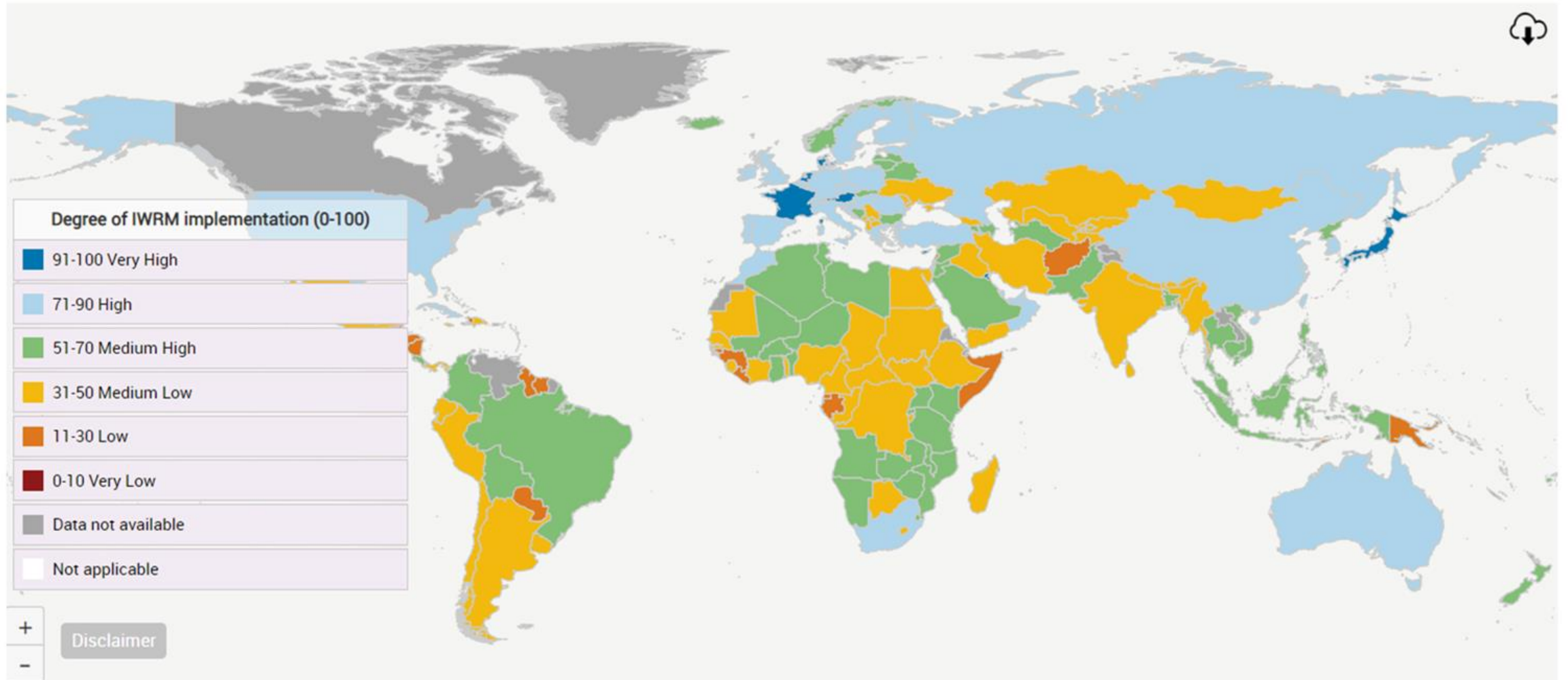
Results and Discussion of IWRM for GCC (all)

Overall score of all GCC countries between 2017 and 2020.



Global IWRM indicator

Global status of indicator 6.5.1 Degree of integrated water resources management implementation (0-100) (2020) 



Conclusion and Recommendations

- This paper provides the first review of the progress in implementing IWRM in GCC.
- It identifies priority areas that will help accelerate full implementation of IWRM.
- According to 2020 data, Kuwait achieved the highest score of 94% with very high category.
- Qatar, Oman and UAE achieved scores to be in the high category of IWRM, with scores of 81, 79 and 79%, respectively.
- Saudi Arabia has a score of 57% with medium-high category, no difference between 2017 and 2020.
- Bahrain has the lowest score of 39% which makes it in medium-low.
- The Score of 2023 will be very helpful to shape the trendline of each country.
- Trainings on questionnaire and data analysis are very useful in reflecting the reality.



Thank you

(My proposed idea for WSTA conference publication)