

INNOVATION PACKAGE AND SCALING READINESS REPORT



SOUSS-MASSA ONLINE WATER ACCOUNTING DASHBOARD

July 2024

SCALING READINESS METRICS

Scaling Readiness Score

8

Scalability Potential Score

63

Innovation

Souss Massa Online Water Accounting Dashboard: The innovative online **Water Accounting Dashboard for the Souss-Massa Basin** uses the outputs from the IWMI's Water Accounting+ framework to provide a comprehensive overview of the basin's water status, including: **(a)** per capita water availability each month, environmental water stress, the amount of water available for further use, and the basin closure **(b)** water balance considering inflows, usage, and outflows; **(c)** the impact of climate change on rainfall, evapotranspiration, outflow, and water availability; and **(d)** and an analysis of long-term hydrological changes.

Scaling Ambition

By 2025, IWMI and partners will work together to host the Souss Massa WA Dashboard with the ABHSM and increase user base by 500 technical staff, water resources professionals and private sector greenhouse operators in the Souss Massa Basin leading to improved water use efficiency and reduced dependency of non-renewable water resources up to 20%.

This innovation is expected to contribute to the following impacts

CGIAR Impact Areas and Collective Global Targets

1. Climate Adaptation and Mitigation
2. Nutrition, Health and Food Security
3. Reduce Poverty
4. Environmental Health and Biodiversity
5. Gender Equality, Youth and Social Inclusion

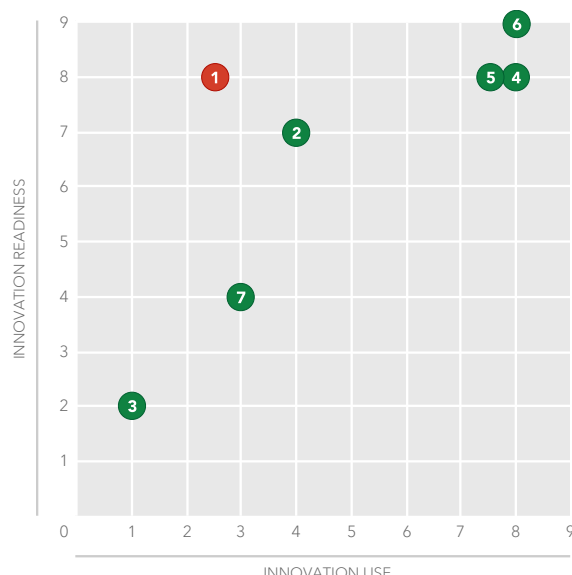
SDGs and SDG Targets

- SDG 1** | No Poverty
- SDG 2** | Zero Hunger
- SDG 6** | Clean Water and Sanitation
- SDG 10** | Reduce Inequalities
- SDG 12** | Responsible Consumption and Production
- SDG 13** | Climate Action

TOP SCALING BOTTLENECKS IDENTIFIED

1. Data quality and management
2. Experts and skills/capacity
3. Data integration and sharing

SCALING READINESS GRAPH



INNOVATION PACKAGE

1. **Souss Massa Online Water Accounting Dashboard**
2. Comprehensive Training Programs
3. Establish a Multi-Stakeholder Platform
4. User Manuals and documentation
5. Online tutorials
6. Pilot Projects
7. Implement Data Sharing Agreements



INNOVATION PACKAGE DETAILS

This report outlines the findings from the Innovation Package and Scaling Readiness workshop, which focused on creating an innovation package and identifying key barriers and enablers for advancing the Souss Massa Online Water Accounting Dashboard. The workshop highlighted several bottlenecks to scaling the innovation in Morocco, including (1) Data quality and management, (2) lack of national experts and skills/capacity in WA, and (3) Data integration and sharing from various sectors. Addressing these interconnected barriers is crucial for the successfully implementing Souss Massa Online Water Accounting Dashboard in Morocco. Despite these bottlenecks, the experts proposed some enablers to complement the core innovation: Improve awareness of beneficiaries/users, improves the confidence of beneficiaries/users in the core innovation, improve the compatibility of the core innovation with existing agricultural/market/political systems or business models, Improve the capacity and know-how of beneficiaries/users to use the core innovation appropriately, improves the legal conditions and governance necessary for scaling the core innovation (statutes, policies, regulations, and business models), and improves the coordination of stakeholders and the scaling of partnerships.

The table below provides an overview of the core innovation and key enablers needed to achieve scaling ambition.

Core Innovation / Enabler	Name	Description
1 Core	Souss-Massa Online Water Accounting Dashboard	The innovative online Water Accounting Dashboard for the Souss-Massa Basin uses the outputs from the IWMI's Water Accounting+ framework to provide a comprehensive overview of the basin's water status, including: (a) per capita water availability each month, environmental water stress, the amount of water available for further use, and the basin closure (b) water balance considering inflows, usage, and outflows; (c) the impact of climate change on rainfall, evapotranspiration, outflow, and water availability; and (d) and an analysis of long-term hydrological changes.
2 Enabler	Comprehensive Training Programs	Develop targeted training sessions that cover both basic and advanced features of water accounting framework and the dashboard. These can include workshops, webinars, and hands-on training to cater to different learning styles
3 Enabler	Establish a Multi-Stakeholder Platform	Create a formal platform that brings together government agencies, local communities, NGOs, and private sector representatives, in the form of community of practice. Regular meetings and workshops can facilitate communication, share best practices, and align goals related to water management.
4 Enabler	User Manuals and documentation	Create clear, accessible user manuals and documentation that outline water accounting framework and the dashboard's functionalities, troubleshooting tips, and best practices. This can serve as a valuable reference for beneficiaries.
5 Enabler	Online tutorials	Produce a series of online tutorials and instructional videos that guide users through the dashboard's features. Visual aids can enhance understanding and retention of information.
6 Enabler	Pilot Projects	Implement pilot projects where beneficiaries can practice using the dashboard in real-world scenarios. This hands-on experience can reinforce learning and demonstrate the practical benefits of the tool.
7 Enabler	Implement Data Sharing Agreements	Foster agreements that outline the terms of data sharing among stakeholders. This can include protocols for data access, usage, and security, promoting transparency and collaboration.



CONTRIBUTING CGIAR INITIATIVE AND PARTNERS

CGIAR LEAD INITIATIVE

Fragility to Resilience in Central and West Asia and North Africa

PARTNERS INVOLVED

Foreign & Commonwealth Office; Center for Mediterranean Integration
Souss-Massa Basin Agency (Agence de Bassin Hydraulique de Souss Massa, ABHSM)

CONTRIBUTING BILATERAL PROJECTS

TYPE OF PARTNERS

Donor
Government



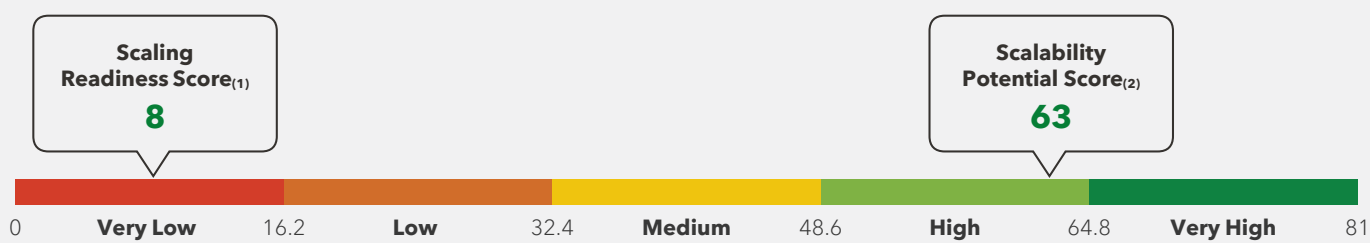
DETAILED SCALING READINESS GRAPH AND METRICS

Each of the elements of the Innovation Package have been assessed for their innovation readiness and innovation use. More information on Innovation Readiness and Innovation Use can be found at www.scalingreadiness.org.

Level	Innovation Readiness	Innovation Use
0	The innovation is at idea stage	The innovation is not used
1	The innovation's basic principles are being researched for their ability to achieve a specific impact	The innovation is used by the organization(s) leading the innovation development
2	The innovation's key concepts are being formulated or designed	The innovation is used by some partners involved in the initial innovation development
3	The innovation's key concepts have been validated for their ability to achieve a specific impact	The innovation is commonly used by partners involved in the initial innovation development
4	The innovation is being tested for its ability to achieve a specific impact under fully controlled conditions	The innovation is used by some organizations connected to partners involved in the initial innovation development
5	The innovation is validated for its ability to achieve a specific impact under fully controlled conditions	The innovation is commonly used by organizations connected to partners involved in the initial innovation development
6	The innovation is being tested for its ability to achieve a specific impact under semi-controlled conditions	The innovation is used by organizations not connected to partners involved in the initial innovation development
7	The innovation is validated for its ability to achieve a specific impact under semi-controlled conditions	The innovation is commonly used by organizations not connected to partners involved in the initial innovation development
8	The innovation is being tested for its ability to achieve a specific impact under uncontrolled conditions	The innovation is used by some end-users or beneficiaries who were not involved in the initial innovation development
9	The innovation is validated for its ability to achieve a specific impact under uncontrolled conditions	The innovation is commonly used by end-users or beneficiaries who were not involved in the initial innovation development

#	Innovation/Enabler Name	Innovation Readiness	Evidence #	Innovation Use	Evidence #
1	Souss Massa Online Water Accounting Dashboard	8	I	3	II
2	Comprehensive Training Programs	7	III	4	IV
3	Establish a Multi-Stakeholder Platform	2	-	1	-
4	User Manuals and documentation	8	V	8	VI
5	Online tutorials	8	VII	8	VIII
6	Pilot Projects	9	IX	8	X
7	Implement Data Sharing Agreements	4	-	3	-

SCALING READINESS METRICS



(1) Scaling Readiness score is based on the lowest scoring innovation

(2) Scalability potential score is based on the average readiness and use of all package elements



SCALING OPPORTUNITIES AND BOTTLENECKS

Direct seeding addresses critical soil and water management challenges in Morocco's semi-arid regions. This conservation agriculture technique, developed through collaborative research between INRA and ICARDA, bridges the gap between conventional farming and sustainable practices. Direct seeding enables more efficient resource use, improved crop yields, and enhanced resilience to climate variability by preserving soil structure, conserving moisture and reducing erosion. This approach has the potential to significantly contribute to sustainable farming practices and soil conservation efforts. However, its adoption is still limited.

The key bottlenecks identified by experts are:

The bottlenecks can be grouped into three main categories:

1. Data Quality and Management
2. Expertise and Skills
3. Data Integration and Sharing

These bottlenecks highlight the interconnected challenges related to data quality, the need for specialized skills, and effective data integration and sharing practices.

The **Data Quality and Management** significantly hinder the scaling of a Water Accounting Dashboard in the following ways: (1) **Detailed Data and Reliability**: Inaccurate or imprecise rainfall data can lead to misguided water management decisions. If the data lacks reliability, users may not trust the insights provided by the dashboard, limiting its adoption among stakeholders; (2) **Updating Data on Agriculture in Greenhouses**: Outdated information on greenhouse agriculture can skew water accounting metrics, making it difficult to assess current water needs accurately. This can result in inefficient water use and missed opportunities for optimization; (3) **Data Reliability**: If the overall reliability of the data is questioned, it can undermine confidence in the dashboard. Stakeholders may hesitate to use the tool for decision-making, fearing that the data may lead to incorrect conclusions or actions; (4) **Data Normalization**: Without standardized data formats, integrating diverse datasets from various actors can be challenging. This inconsistency can complicate analyses and comparisons, leading to fragmented insights that hinder effective water management strategies; (5) **Adding Uncertainty to the Dashboard**: Uncertainty in data representation can create confusion among users, making it harder to interpret the results. If users cannot easily understand the implications of uncertainties, they may be reluctant to rely on the dashboard for critical water management decisions.

The **limited number of Expertise and Skills** hinder the scaling of water accounting in Souss Massa in several critical ways: (1) **Limitations of Experts in Water Accounting**: A shortage of qualified experts in water accounting can lead to gaps in knowledge and ineffective implementation of water accounting systems. Without sufficient expertise, the development and maintenance of the dashboard may be compromised, resulting in suboptimal decision-making and planning; (2) **Basic Knowledge of Python and Tableau**: Proficiency in Python and Tableau is essential for data manipulation, analysis, and updating the dashboard. If local stakeholders lack basic programming skills, they may struggle to exploit the data effectively. This can prevent timely updates and limit the ability to adapt the dashboard to changing conditions, ultimately undermining its usefulness. Together, these limitations restrict the capacity to effectively analyze and interpret water data, making it challenging to implement data-driven strategies for sustainable water management. As a result, the scaling of water accounting practices in Souss Massa may face significant obstacles, leading to inefficiencies and reduced effectiveness in addressing water-related challenges.

The limited **Data Integration and Sharing** significantly hinder the scaling of the Souss Massa Water Accounting Dashboard in several ways: (1) **Institutionalizing Data Sharing**: Without formal structures or agreements for data sharing among stakeholders, collaboration can be inconsistent. This lack of institutionalization leads to silos where valuable data remains isolated, preventing comprehensive analyses and hindering effective water management strategies; (2) **Inclusion of Unconventional Water Sources**: If unconventional water sources (e.g., treated wastewater, rainwater harvesting) are not integrated into the data framework, the dashboard may present an incomplete picture of water availability. This oversight can result in misinformed decision-making and missed opportunities for optimizing water use; (3) **Crop type Mapping (Validation)**: Accurate land use (crop type) mapping is essential for understanding water needs in agriculture. Without validated maps, the dashboard's assessments may be flawed, leading to ineffective allocation of water resources and strategies that do not align with actual land use patterns; (4) **Typology of Data Needs**: A clear understanding of the different types of data required for effective water accounting is crucial. Without this typology, stakeholders may struggle to identify what data is necessary, leading to gaps in information and analyses that are not comprehensive enough to support informed decision-making; (5) **Integration of Snowmelt**: Snowmelt can significantly influence water availability in certain regions. If this factor is not adequately integrated into the water accounting framework, the modeling results will lack a critical component, potentially leading to inaccurate forecasts and poor water management practices. Overall, these bottlenecks prevent the effective integration of diverse data sources and the sharing of critical information, which are essential for creating a robust and scalable water accounting system in Souss Massa. Without addressing these challenges, the dashboard may fail to provide the insights needed for sustainable water management in the region.



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The information in this Innovation Package and Scaling Readiness Report was gathered during the workshop held in Rabat, Morocco, on 28 June 2024. The report was prepared by Maha Al-Zu'bi, Komlavi Akpoti, and Youssef Brouziyne, with guidance from CGIAR's Portfolio Performance Unit (PPU). The authors would like to express their gratitude to all workshop participants, the CGIAR Innovation Packages and Scaling Readiness (IPSR) team for their invaluable contributions, and to Naga Velpuri and Mansoor Leh for their thoughtful revisions and feedback.

For enquiries on the Water Accounting Dashboard, please contact: m.leh@cgiar.org

For general queries related to the Innovation Package and Scaling Readiness (IPSR) reports and processes, please contact performanceandresults@cgiar.org.



MORE INFORMATION

- Scaling readiness website: www.scalingreadiness.org
- Innovation Readiness levels: [IPSR Infographic Innovation Readiness](#)
- Innovation Use levels: [IPSR Infographic Innovation Use](#)
- Innovation uptake support materials:
 - https://public.tableau.com/app/profile/iwmi.wa/viz/IWMI_SoussMassa_Dashboard_16842204452620/Landing
 - <https://cgspace.cgiar.org/items/4f6a3b33-bff5-445d-8560-5dd47bd792e9>
 - <https://agu.confex.com/agu/hydrology24/meetingapp.cgi/Paper/1501942>
- Innovation Papers/journals articles
 - <https://cgspace.cgiar.org/items/4a747022-b02e-43d9-a0b3-ab256a56cf14>
 - <https://ui.adsabs.harvard.edu/abs/2023AGUFM.H41A..03V/abstract>
- Innovation Blogs, News, Webpages, others
 - <https://www.iwmi.cgiar.org/blogs/the-souss-massa-online-water-accounting-dashboard-for-informed-resource-management/>
 - <https://www.iwmi.cgiar.org/projects/water-accounting-in-practice/>



EVIDENCE ANNEX

The below evidence has been validated to support the innovation readiness and innovation use claims.

Evidence #	Evidence URL
I	https://public.tableau.com/app/profile/iwmi.wa/viz/IWMI_SoussMassa_Dashboard_16842204452620/Landing
II	https://www.iwmi.cgiar.org/news/iwmis-morocco-resilience-days-forum-charts-course-for-climate-adaptation/
III	https://cgspace.cgiar.org/items/4f6a3b33-bff5-445d-8560-5dd47bd792e9
IV	https://www.iwmi.cgiar.org/blogs/the-souss-massa-online-water-accounting-dashboard-for-informed-resource-management/
V	https://cgspace.cgiar.org/items/4a747022-b02e-43d9-a0b3-ab256a56cf14
VI	https://ui.adsabs.harvard.edu/abs/2023AGUFM.H41A..03V/abstract
VII	https://www.iwmi.cgiar.org/blogs/the-souss-massa-online-water-accounting-dashboard-for-informed-resource-management/
VIII	https://agu.confex.com/agu/hydrology24/meetingapp.cgi/Paper/1501942
IX	https://www.iwmi.cgiar.org/blogs/the-souss-massa-online-water-accounting-dashboard-for-informed-resource-management/
X	https://cgspace.cgiar.org/items/4f6a3b33-bff5-445d-8560-5dd47bd792e9



EXPERTS ANNEX

The following experts (13 Male and 5 Female) contributed to the Innovation Package and Scaling Readiness workshop and assessment.

Name	Organization
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BELRHAZI Sara	RESING
EL ALAMI Asmae	MEE DGH DRPE
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About CGIAR Initiative on Fragility to Resilience in Central and West Asia and North Africa

The CGIAR Initiative on Fragility to Resilience in Central and West Asia and North Africa (F2R-CWANA) is building resilient agrifood systems that can withstand the impact of climate change, generate economic opportunities, and deliver better incomes and livelihoods for rural communities in the region.

Learn more about the CGIAR Initiative Fragility to Resilience in Central and West Asia and North Africa here: <https://www.cgiar.org/initiative/fragility-to-resilience-in-cwana/>

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PLEASE REFER TO THE INNOVATION PACKAGE AND SCALING READINESS REPORT AS

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