SDG 6: Clean Water and Sanitation

Water supply, treatment and reuse on campus, conservation works, cleanliness events and water research

INTRODUCTION

Water, sanitation and research at SRM University-AP

Sustainable Development Goal 6 calls on every society to **ensure availability and sustainable management of water and sanitation for all**. At SRM University-AP in Amaravati, Andhra Pradesh, that goal is pursued through the water the campus draws, treats, stores and reuses, through events that build a culture of cleanliness and water stewardship, and through the research the university publishes on water quality and treatment.

This section of the Sustainability Annual Report covers the campus water data for **FY 2024–25**, the SDG 6 events, the publications of **calendar years 2024 and 2025** and the campus water conservation works.

In brief, the campus has 5 water treatment plants (1,350 KLD), 4 sewage treatment plants (1,003 KLD), 5 RO plants (10,000 LPH), 3,793 taps with low-flow fixtures and 11 rainwater harvesting systems; three SDG 6 events recorded 315 participants; and the university has 115 SDG 6 publications for 2024–2025.



Reverse osmosis (RO) plant



Treated water storage tank



Ultrafiltration (UF) unit

HIGHLIGHTS

3,793 taps with low-flow fixtures (100%)

1,350 KLD capacity of 5 water treatment plants

11 rainwater harvesting systems

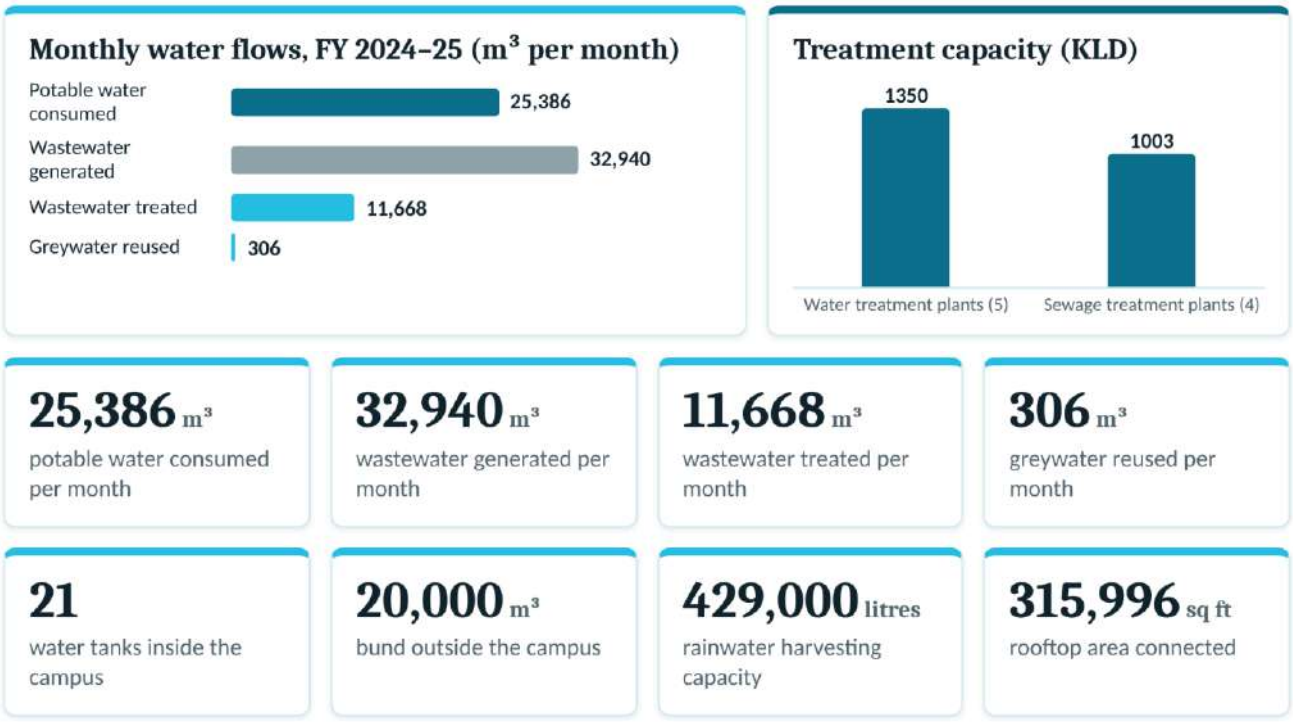
315 participants across three SDG 6 events

115 SDG 6 publications, 2024–2025

WATER AT SRM UNIVERSITY-AP

Supply, treatment and reuse

This section reports how much water the university uses, how much wastewater it generates, how much is treated and reused, and the capacity of its treatment and water-harvesting infrastructure. Consumption, wastewater and sludge values are per month for FY 2024–25; capacities and counts describe the installed infrastructure.



SUPPLY, STORAGE AND TREATMENT INFRASTRUCTURE

Potable water consumption in FY 2024–25 is **25,386 m³ per month**. The campus has **5 water treatment plants (WTPs)** with a combined capacity of **1,350 KLD (m³ per day)** and **5 RO plants** with a combined capacity of **10,000 LPH**. Water is held in **21 tanks inside the campus** and a bund outside the campus with a capacity of **20,000 m³**; **5 open borewells**, and the pumps installed across the campus total **4,955 HP**. Total water consumption is **343,571 litres**.

WASTEWATER TREATMENT AND REUSE

In FY 2024–25 the campus generates **32,940 m³ of wastewater per month**, of which **11,668 m³ is treated per month** before discharge, and **306 m³ of greywater is reused each month**. The share of wastewater treated and reused at approximately **42%**. The **4 sewage treatment plants (STPs)** have a combined capacity of **1,003 KLD**, equal to the total wastewater treatment capacity. Sludge generated is **15 kg per month**, and **140,026,000 litres** of wastewater has been reused.

RAINWATER HARVESTING AND EFFICIENT FIXTURES

11 rainwater harvesting systems are installed, with a capacity of **429,000 litres**. The rooftop area connected to them is **315,996 sq ft**, which equals the total rooftop area, so the whole roof is connected. All **3,793 taps** on the campus – 100% – are installed with low-flow fixtures.

CAMPUS WATER INFRASTRUCTURE IN PICTURES

Treatment, storage and drinking water

Treatment plants. Softener, carbon and sand filters and ultrafiltration units form part of the water treatment plants counted in the data above.


Softener, carbon and sand filters


Filter bank with piping


Ultrafiltration unit


Ultrafiltration unit and SOP board

Storage and supply. Treated water is held in storage tanks, and the final water tanks carry cleaning-schedule labels. The borewell marker shown records a depth of 605 feet.


Storage tank


Final water tanks


Borewell point 13


Inflow into a collection pit

Drinking water and awareness. Signage on campus carries the message “Save Water – Don’t waste it” next to the drinking water sign, with water dispensers for everyday use.



Save-water signage and dispenser


Drinking water dispenser

WATER CONSERVATION INITIATIVES

Conservation works across the campus

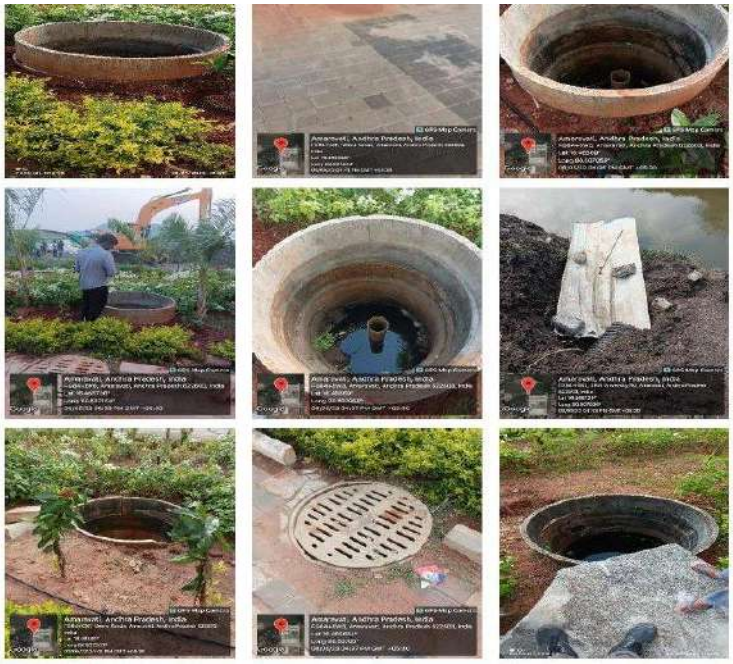
The campus water conservation works cover rainwater harvesting, borewell and open-well recharge, tanks and bunds, water treatment and distribution, wastewater recycling and water-saving fixtures. The photographs were taken between May 2023 and February 2024.

Rainwater harvesting

The campus has implemented a rainwater harvesting system comprising **10 rechargeable pits**, designed to collect and store rainwater. By harnessing rainfall, the pits help replenish groundwater levels and ease water scarcity, and their rechargeable nature allows continuous use throughout the campus. Overflowing rainwater overflows, it can mix with nearby bodies of water such as lakes, potentially raising water levels and giving rise to environmental concerns.

Storm-water drainage and rainwater pits. For the **storm-water drainage** works (item 6.1), the works include excavation for pipeline trenches and manholes of **2,177.300 cum** up to 1,500 mm depth and **304.681 cum** from 1,500 to 3,000 mm; **1,969.100 Rmt** of 300 mm RCC hume pipe; **78** RCC catch basins of 0.6 × 0.9 m and **57** of 1.20 × 1.20 m, with **15.400 Rmt** extra over for depths of 1.5 to 3.0 m; **60** manhole footrests; **22** FRP manhole gratings of grade D400 and **64** of grade 10 T; and **one** connection to the municipal storm-water drain.

For the **rainwater harvesting** pits (item 6.2), excavation is **157.290 cum** up to 1,500 mm depth, **157.290 cum** from 1,500 to 3,000 mm, **140.826 cum** from 3,000 to 4,500 mm and **23.888 cum** from 4,500 to 6,000 mm. The pits use **13** precast concrete circular well kerbs of ø1,500 mm, with extra-over lengths of **19.500 Rmt**, **15.900 Rmt** and **4.250 Rmt** for depths of 1.5–3.0 m, 3.0–4.5 m and 4.5–6.0 m, and **10** filter-media sets (gravel, sand, pebbles, brick and boulder layers with a ø160 mm cowl and perforated pipe). Quantities are in cubic metres (cum) and running metres (Rmt).



Rainwater recharge pits across the campus – Nine photographs show circular recharge-pit chambers set in landscaped beds and paved walkways, including one with a slotted cover at pavement level.

Borewell and open-well recharge

Photographs show borewell recharge points marked with numbered signs in landscaped areas of the campus. The marker on one borewell point records a depth of 605 feet; the campus has 5 open borewells.



Borewell 2



Recharge point in a garden



Borewell 1

Tanks, bunds and water bodies

The campus has a water body and covered storage tanks, maintained as part of its water system. These correspond to the 21 tanks inside the campus and the 20,000 m³ bund outside it.



Campus water body



Water body and covered structure



Wide view of the water body



Covered tank, outside







Inside a covered tank | Covered tank, interior | Covered tank beside the water body

Water treatment and distribution

Four water treatment plants, **WTP-01 to WTP-04**, are charted. Each is fed with **CRDA raw water (300 KLD)**, and the charts show it passing through flash mixing, flocculation, tube settling, sand, carbon and softener filtration and ultrafiltration before it reaches a final water tank and a hydro-pneumatic system. Tank sizes and RO capacities below are as labelled on the charts.

WTP-01 has a 70 KL raw water tank, 15 KL flash-mixing and 15 KL flocculation tanks, a 30 KL tube settler, 35 KL and 89 KL treated water tanks and ultrafiltration, and ends at a final water tank of 85 KL; it is shown with RO Plant-1 and RO Plant-2 (1,500 LPH each) and supplies the Main Kitchen, hostels, X-Lab and the Old Academic Block. **WTP-02** has a 349 KLD raw water tank, 0.5 KL flash mixing, 30 KL flocculation, a 35 KL tube settler and a 22 KL treated water tank, ends at a 349 KL final water tank, shows no RO plant (it pumps to WTP-4), and supplies Academic Block 2, the Ganga hostels and Academic Block 3.

WTP-03 has two 35 KL raw water tanks, 5 KL flash mixing, 15 KL flocculation, a 25 KL tube settler, ultrafiltration and two 35 KL UF storage tanks, with final tanks of 85 KLD; it is shown with RO Plant-1 (1,500 LPH) and RO Plant-2 (3,000 LPH) and serves the same buildings as WTP-01. **WTP-04** is fed from WTP-2 through the same treatment train, ends at its own final water tank, is shown with RO Plant-3 (4,000 LPH) and supplies the Vedavathi hostel. Across the campus there are 5 RO plants with 10,000 LPH in total.

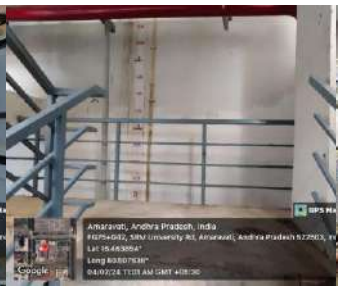

Tube settler tank


Flash mixer tank


Clarifier


Tank with control panel


Circular steel tank


Tank with level scale


Pressure filter vessels

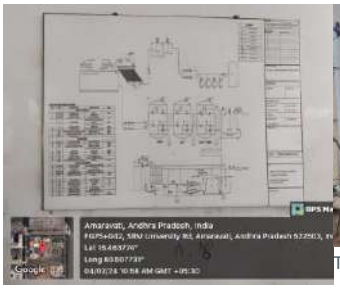

Filter vessels with manifold


Ultrafiltration unit


UF membrane columns


UF storage tank


Filters and UF unit



Process flow drawing



Treated tank pump set

Fountains and landscape water features

The campus also has landscape water features that are maintained as part of its water-body and distribution system.



Tiered fountain



Fountain with flower beds



Lotus channel

Wastewater recycling

SRM University-AP operates **three functioning sewage treatment plant (STP) units** dedicated to continuous wastewater recycling. Once treated, the recycled water is used for gardening, maintaining lawns and flushing toilets. A process flow drawing displayed at the plant reads “STP SBR technology 500 KLD”. The campus has four STPs with a combined capacity of 1,003 KLD. The photographs follow the water through the plant: inlet chamber, valve channel, treatment basin, sludge holding tank, sand filter vessels, filtration room and treated-water tanks.



Wastewater chamber



Channel with valves



Pipe pit



Treatment basin



Treatment basin, second view



Sludge holding tank



Sludge holding tank, second view



Sand filter vessels



Filtration room



Treated water tanks



Treated tank level scale



STP process flow drawing

Water-saving fixtures

Sensor-operated urinals and dual-flush toilets are installed on campus, consistent with all 3,793 taps carrying low-flow fixtures.



Sensor-operated urinals



Dual-flush system

EVENTS AND INITIATIVES

Three events on water and cleanliness

Three SDG 6 events were documented for FY 2024–25: an international conference on water sustainability, an online video competition on cleanliness and hygiene, and a volunteer campus clean drive. Together they recorded **315 participants** – 277 at the conference and 19 at each of the two cleanliness events – from external delegates and researchers to students and faculty.

3
SDG 6 events in FY 2024–25

315
participants across the three events

277
at the international conference

19 + 19
at the two cleanliness events

Water Elixir Meet (WE Meet) 2025

277 PARTICIPANTS · International conference

A three-day international conference that brought scientists, researchers, engineers and policymakers together to share research on water scarcity, pollution, climate-change impacts and policy, and on membrane technology, desalination and modern water-treatment technologies. Its stated objectives were to exchange knowledge and practices for water sustainability, foster collaboration between academia, industry and government, develop actionable strategies for sustainable water use at local, regional and global scales, and give young researchers a platform to present their work.

Keynote sessions were delivered by **three foreign delegates and six national experts**, alongside technical sessions, poster presentations and mentoring for early-career researchers. Outcomes include a compendium of research abstracts, a policy brief and new partnerships between academic institutions, industries and policy bodies on microplastic pollution, PFAS contamination, saltwater intrusion and circular water economies.

Participants numbered **277**: **126 external**, 27 faculty, 106 PhD scholars and others, 7 PG and 11 UG students. A WE Meet 2.0 with a larger international exhibition, thematic workshops on PFAS remediation, digital twins in water systems, microplastic monitoring and sustainable coastal management, a student-led innovation platform, and masterclasses and bootcamps.


Technical session


Auditorium session


Delegates in session


Conference stage


Presentation on screen

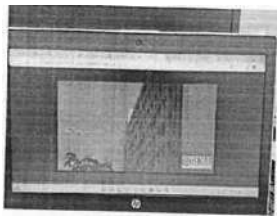

Speaker at the podium

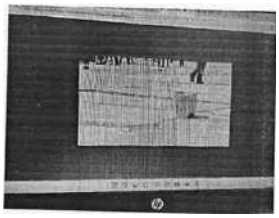
Swachh Bharat Abhiyan – Swachatha

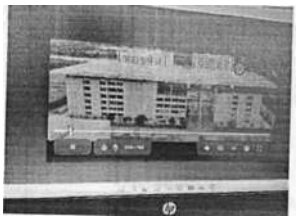
19 PARTICIPANTS · Awareness programme

An awareness programme in line with the objectives of the Swachh Bharat Abhiyan, held as an online video competition on cleanliness and hygiene. Students made short videos of up to two minutes, individually or in groups of up to five, on keeping university spaces clean. The Abhiyan's aims include ending open defecation, better solid-waste management, cleanliness and hygiene in public spaces, community participation, stronger sanitation infrastructure, awareness of handwashing, waste disposal and toilet use, and empowering local bodies.

A panel of judges reviewed the entries for creativity, relevance and impact, and first and second prizes were awarded. Student response was enthusiastic and reflected the core values of the Swachh Bharat Abhiyan.


Cleanliness video


Cleanliness video


Cleanliness video


Cleanliness video

Campus Clean Drive

19 PARTICIPANTS · Cleaning drive

A volunteer cleaning drive to spread awareness about cleanliness and public hygiene and to keep the campus premises clean. Participants – 18 UG students and 1 faculty member – swept paths and open spaces and collected waste. Outcomes: students gained awareness of public hygiene, and the surroundings were cleaner.


Sweeping garden paths


Collecting waste

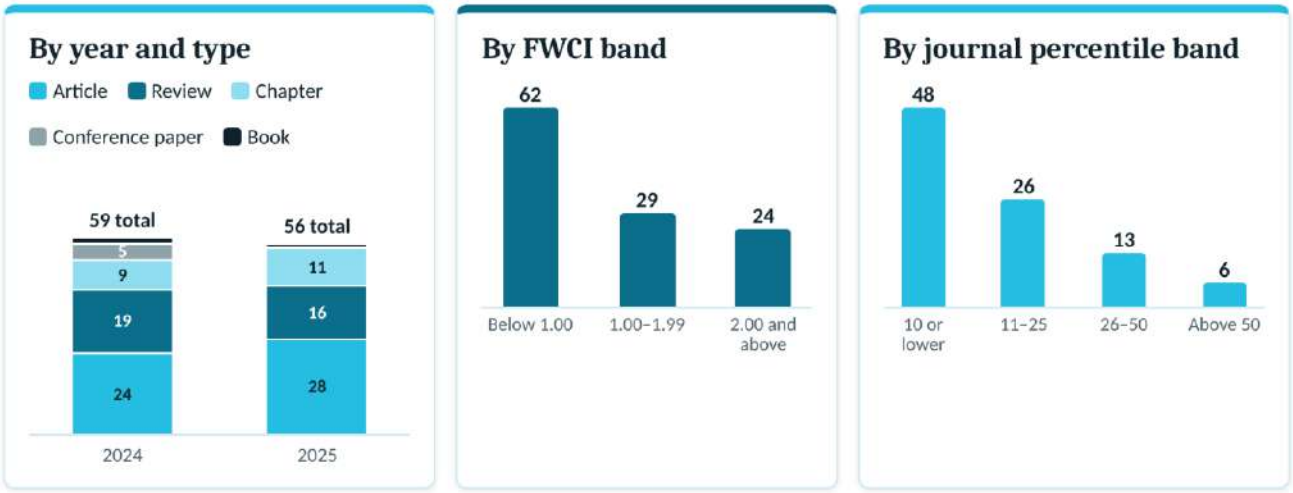

Cleaning open spaces


Volunteers at work

RESEARCH AND PUBLICATIONS

SDG 6 research output, 2024–2025

SRM University-AP has **115 publications** under SDG 6 for 2024–2025: **59 dated 2024 and 56 dated 2025**. By type they are **52 articles, 35 reviews, 20 book chapters, 5 conference papers and 3 books**. The topics span groundwater quality and salinity, fluoride and arsenic in drinking water, wastewater and greywater treatment, microplastics, membranes and photocatalysis, rainwater harvesting and menstrual hygiene.



CITATION IMPACT AND JOURNAL QUALITY

Field-Weighted Citation Impact (FWCI) of 1.00 equals the world average for similar publications; values above 1.00 mean the output has been cited more than average.

115 SDG 6 publications, 2024–2025

52 with FWCI above 1.00

24 with FWCI of 2.00 or more

9 with FWCI of 5.00 or more

20.91 highest FWCI (2025 chapter on biowaste-derived biochars)

Of the 93 outputs with a journal metric, **48** appear in journals at percentile 10 or lower and a further **26** at percentile 11 to 25, so 74 of the 93 sit within the first quarter on this measure. The remaining 22 outputs – 16 chapters, 3 conference papers and 3 books – have no journal metric. A smaller percentile number means a higher-ranked journal (for example a CiteScore of 38.2 carries percentile 1).

FEATURED SDG 6 PUBLICATIONS

Twelve of the most directly relevant publications are listed below with year, journal CiteScore, percentile and FWCI where available (– means none, as for most chapters). The other 103 SDG 6 outputs are counted in the 115.

#	Title and authors	Type · year	CiteScore	Percentile	FWCI
1	**Groundwater quality assessment using water quality index and principal component analysis in the Achnera block, Agra district, Uttar Pradesh, Northern India** Ali, S. et al.	Article · 2024	6.7	11	11.34
2	**Safeguarding drinking water: A brief insight on characteristics, treatments and risk assessment of contamination** Kundu, D. et al.	Review · 2024	5	30	1.43
3	**Groundwater Salinity Across India: Predicting Occurrences and Controls by Field-Observations and Machine Learning Modeling** Sarkar, S. et al.	Article · 2024	18.1	7	2.00
4	**Occurrence and Distribution of Fluoride in Groundwater and Drinking Water Vulnerability of a Tropical Dry Region of Andhra Pradesh, India** Yasaswini, G. et al.	Article · 2024	6	13	1.83

#	Title and authors	Type · year	CiteScore	Percentile	FWCI
5	**Recent advancement in microplastic removal process from wastewater - A critical review** Dayal, L. et al.	Article · 2024	10.6	13	7.38
6	**Enhancing access to rainwater harvesting in regions with saline groundwater** Puppala, H. et al.	Article · 2025	3.3	37	1.07
7	**Community level vulnerability of groundwater fluoride contamination and exposure by the application of multi-criteria model** Das, K. et al.	Article · 2025	12.8	10	1.08
8	**Integrated assessment of fluoride occurrence and groundwater usability: a critical concern for drinking water sustainability and irrigation in semi-arid region of West Bengal, India** Das, K. et al.	Article · 2025	3.3	37	0.64
9	**Water pollution (SDG 6.3)** Mukhopadhyay, A. et al.	Chapter · 2024	–	–	7.64
10	**Balancing Safety and Sustainability: Sustainable Approaches to Reducing Disinfection By-Products in Drinking Water** Koley, S. et al.	Chapter · 2025	2.2	63	1.34
11	**Healthy menstruation: Myth or reality? Insights into urban slums of Vishakhapatnam city, India** Pandey, G. et al.	Article · 2025	3.1	39	0.26
12	**Harnessing bio-nano hybrid column for sustainable treatment of Reverse Osmosis Concentrate: A decentralized water treatment approach** Priyadarshi, G.V. et al.	Article · 2025	9.6	7	0.38

CONCLUSION

Progress towards clean water and sanitation

Across water supply, treatment, reuse, awareness and research, SDG 6 at SRM University-AP is an infrastructure-led effort backed by campus events and a substantial body of water research.

Water infrastructure. Five water treatment plants (1,350 KLD), four sewage treatment plants (1,003 KLD) and five RO plants (10,000 LPH) are in place.

Efficiency and reuse. All 3,793 taps have low-flow fixtures, 11 rainwater harvesting systems serve the reported rooftop area, and about 42% of wastewater is treated and reused.

Conservation works. The campus has rainwater recharge pits, borewell recharge points, tanks and bunds, four charted treatment plants, wastewater recycling at working STPs and water-saving fixtures.

Awareness. Three events – a three-day international water conference and two cleanliness activities – recorded 315 participants.

Research (2024–2025). 115 SDG 6 publications, 52 of them with FWCI above the world average and 48 of 93 in journals at percentile 10 or lower.