

# IWMI Global Environmental Flows Platform

Launching a unified home for global e-flow estimates (GEFIS) and local assessment evidence (GEFDAT)

## What are environmental flows (e-flows)?

Environmental flows (e-flows) describe the quantity, timing, and quality of freshwater flows and levels needed to sustain aquatic ecosystems and the human cultures, economies, sustainable livelihoods, and well-being they support.

## Two pillars, one platform

- **GEFIS (Global Environmental Flows Information System)**

A global, hydrology-led system that generates environmental flow requirement data for all countries, with estimates produced at ~ 0.1 degree grid cells that can be aggregated.


- **GEFDAT (Global Environmental Flows Database)**


A curated repository that compiles and standardizes local environmental flow assessments so on-the-ground evidence is comparable across geographies.




The screenshot shows the website's main interface. At the top left is the IWMI logo. On the right, there are buttons for 'Contact Us' and 'Log In / Sign Up'. The main heading reads 'IWMI Global Environmental Flows Platform'. Below this, two white boxes with blue icons describe the platform's components: 'Global Environmental Flows Information System (GEFIS)' with a map icon, and 'Global Environmental Flows Database (GEFDAT)' with a database icon. The bottom right corner features logos for CGIAR, Policy Innovations, and Multifunctional Landscapes.

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## IWMI Global Environmental Flows Platform

  
**Global Environmental Flows Information System (GEFIS)**  
Explore interactive maps, perform custom zonal statistics, and visualize environmental flows globally.

  
**Global Environmental Flows Database (GEFDAT)**  
Access and query the comprehensive database of environmental flow assessments and records.

## Why this matters

**SDG reporting and water stress:** E-flows data from GEFIS contribute to reporting on Sustainable Development Goal (SDG) Indicator 6.4.2, which tracks levels of water stress globally. The Food and Agriculture Organization (FAO) of the United Nations is the SDG custodian.

**Advancing climate adaptation goals:** SDG Indicator 6.4.2 is also used to monitor progress of countries toward climate adaptation targets under the United Nations Framework Convention on Climate Change and the Paris Agreement.

**Strengthening water security and ecosystem resilience:** E-flows provide an evidence-based approach for balancing human and ecosystem needs, helping integrate environmental water requirements into water resources planning and decision-making.

**Supporting global biodiversity and wetland commitments:** E-flows are increasingly recognized across international frameworks and guidances, including the Convention on Biological Diversity and the Ramsar Convention on Wetlands, as essential for protecting freshwater ecosystems and sustaining wetlands.

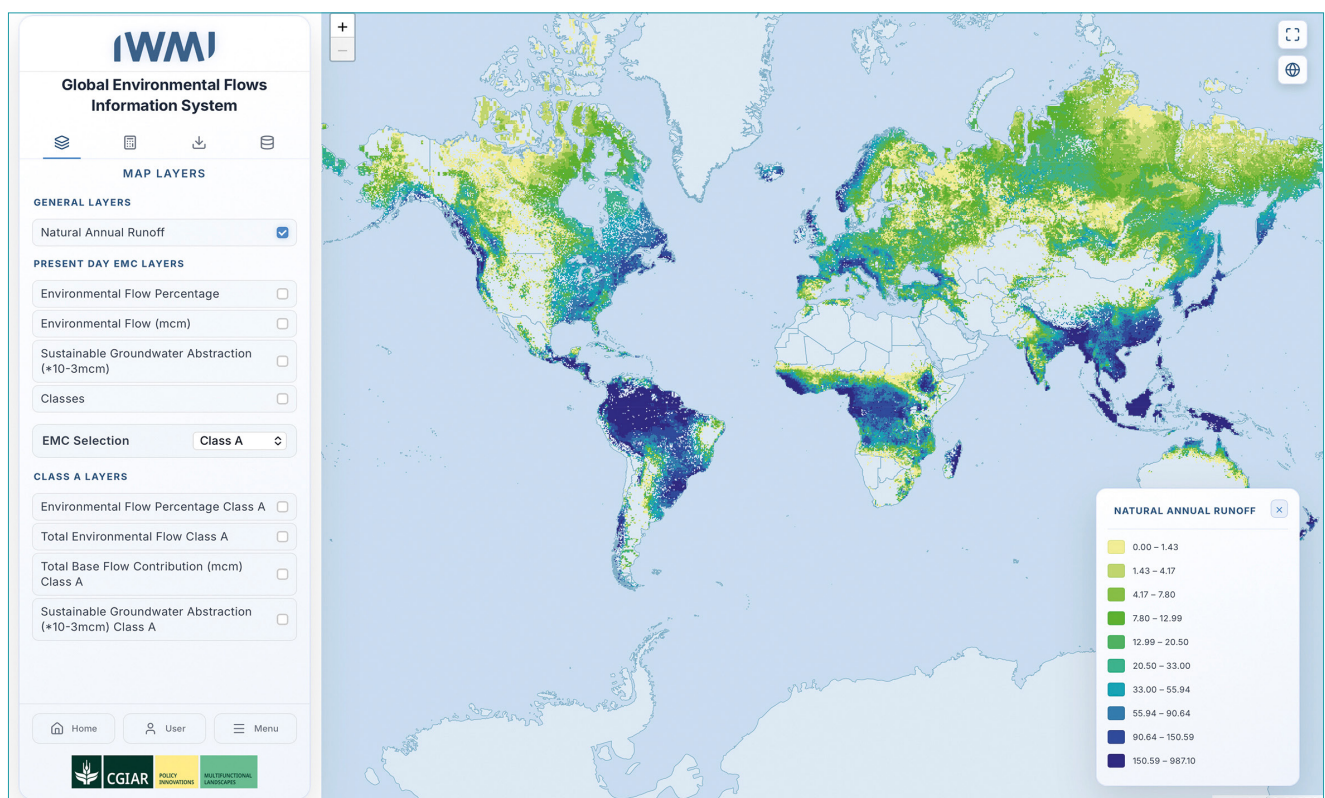
## What you can do with the platform

- Screen and benchmark environmental flow requirements using a globally consistent baseline.
- Compare global estimates with local assessments to understand alignment or differences.
- Share local evidence including methods, sites, recommendations, and supporting documentation to strengthen national reporting and planning.

Platform entry point:  
[eflows.iwmi.org](https://eflows.iwmi.org)



## GEFIS - Global Environmental Flows Information System



## What it is

An online tool that provides globally consistent estimates of environmental flow requirements, using hydrology-led approaches and global model inputs. GEFIS offers an accessible, transparent baseline for assessing environmental water needs across river basins and countries worldwide.

## What it does

- Generates environmental flow requirement data for all countries.
- Produces estimates at ~ 0.1 degree grid cell resolution, with options for basin, national, and regional aggregation.
- Provides a transparent, preliminary estimate that can be used for initial screening, comparison, and reporting.
- Enables consistent cross-country and basin-scale comparisons where local environmental flow assessments are unavailable or limited.
- GEFIS does not replace locally designed environmental flow assessments where ecological, water quality, or governance considerations need to be explicitly incorporated.

### Why FAO uses it for SDG 6.4.2

GEFIS provides environmental flow requirement data used in SDG Indicator 6.4.2 (water stress) reporting. As many countries do not yet have locally determined environmental flow estimates, GEFIS helps fill critical data gaps by providing globally consistent baseline estimates. FAO encourages countries to provide locally determined environmental flow estimates where these are available and differ from global estimates.

## How countries should interpret and supplement GEFIS

1. Use GEFIS as a transparent baseline for national screening and SDG-linked contexts.
2. Where local studies exist, compare them to GEFIS and document reasons for differences (method, scale, objectives).
3. Provide locally determined estimates and supporting documentation so national values can complement global estimates.

## GEFDAT – Global Environmental Flows Database



## What it is

An open, curated IWMI repository of local environmental flow assessments, compiled and standardized to make on-the-ground evidence comparable across geographies. GEFDAT captures site location/context (country, basin/sub-basin, reach, geocoordinates), method metadata, ecological condition framing (including Ecological Management Class fields), and e-flow recommendations (as volume and/or percentage of flow), along with supporting documentation where available.

## What it does

- Makes local assessments discoverable, comparable, and usable for analysis and policy discussions from reach to national scale.
- Aligns terminology with GEFIS (e.g., environmental management class and percentage-based flow indicators) to support consistent interpretation across datasets.
- Captures additional contextual fields where available, such as location accuracy, strength of evidence, methodological confidence, and relevant legal or regulatory references.
- Serves as a bridge between field-based hydrological-ecological studies and global-scale modelling and reporting tools.
- GEFDAT does not replace national or basin-level assessment processes. Rather, it curates and standardizes evidence contributed by agencies, basin organizations, researchers, and practitioners.

## How countries and interested individuals and groups can use and contribute to GEFDAT

1. Explore existing evidence: Use GEFDAT to locate existing local assessments and understand how methods and recommendations vary.
2. Strengthen national coverage: Contribute missing national studies by providing (at minimum) site metadata, a copy or citation of the assessment report, and summary statistics on recommended e-flows.
3. Improve comparability: Where possible, include methodological details and contextual notes so evidence can be interpreted consistently alongside GEFIS outputs and other datasets.

## A practical “global-to-local” workflow

Start with **GEFIS** to establish a consistent, globally comparable baseline of e-flow requirements. Then use **GEFDAT** to ground-truth these assessments with local assessments and document differences. Used together, they support more transparent national reporting, stronger scientific credibility, and better-informed decisions for freshwater ecosystem protection and long-term water security.

Contact [iwmi-eflows@cgiar.org](mailto:iwmi-eflows@cgiar.org)



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### Author

John Simaika, Senior Researcher - Aquatic Ecology, International Water Management Institute (IWMI), Colombo, Sri Lanka

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