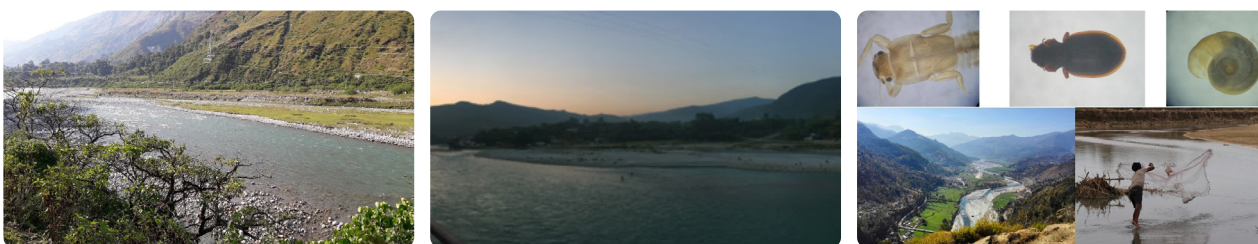


ENVIRONMENTAL FLOW ESTIMATION TOOLS

A set of software tools will enable quick coarse-scale desktop estimates of the environmental flow requirements of rivers by water planners and managers using time series data of monthly river flows.

2022
1st Edition

The Environmental Flow Estimation Tools are a set of user-friendly (online and offline) software tools enabling desktop estimation of quick, coarse-scale environmental flow requirements of rivers. The input data required are time series data of monthly “natural” river flows, either measured or estimated. The tools are meant to be used by water planners and managers in making initial planning-level estimates of environmental flows, which may then be followed by more comprehensive assessments using further data related to aquatic ecology, moving beyond river flow data. Five tools are currently available, two covering major rivers and the other three specifically for estimating environmental flow requirements in the Ganges Basin, Sri Lanka and Nepal. The tools are also useful for building capacity on environmental flow estimation, including for students and practitioners seeking to gain an initial understanding of the concept of environmental flows.



INNOVATION TYPOLOGY



THIS INNOVATION IS CHARACTERIZED AS

Technological Innovation

Innovations of technical/material nature, including varieties/breeds; crop and livestock management practices; machines; processing technologies; big data and information systems.



THE NATURE OF THIS INNOVATION IS

Incremental Innovation

Innovations that already exist and undergo constant, steady progress and improvement.



THIS INNOVATION IS EXPECTED TO CONTRIBUTE TO THE FOLLOWING IMPACTS



CGIAR IMPACT AREAS AND COLLECTIVE GLOBAL TARGETS



Environmental health & biodiversity

5

Targets: 5.1

Learn more: <https://www.cgiar.org/how-we-work/strategy>

SDGS AND SDG TARGETS



Ensure availability and sustainable management of water and sanitation for all

6

Targets: 6.4 | 6.5 | 6.6

Learn more: <https://sdgs.un.org/goals>



CGIAR INITIATIVES, PARTNERS AND GEOSCOPE

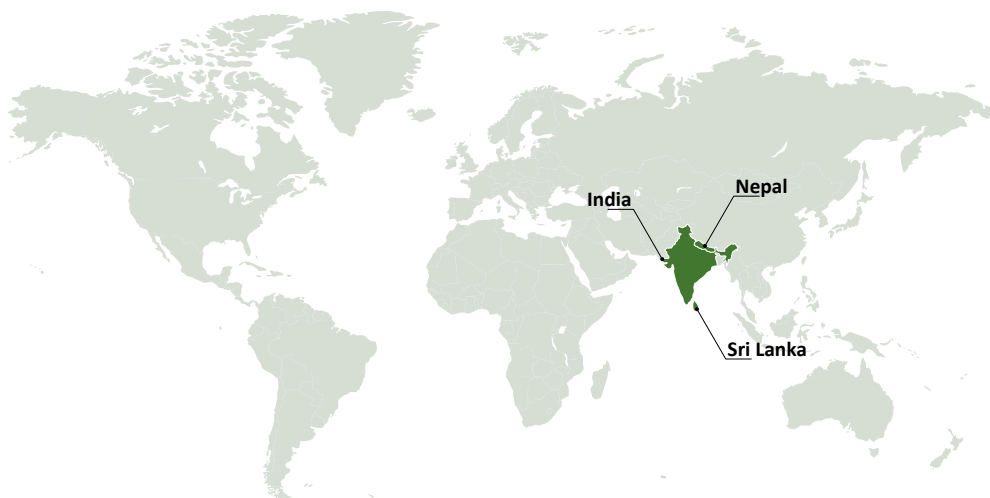
CGIAR LEAD & CONTRIBUTING INITIATIVE

NEXUS Gains: Realizing Multiple Benefits Across Water, Energy, Food and Ecosystems (Forests & Biodiversity)

THIS INNOVATION IS DEVELOPED, TESTED AND/OR SCALED FOR/IN THE FOLLOWING COUNTRIES

TYPE OF PARTNERS / PARTNERSHIPS

- National Government
- Academic, Training and Research





CURRENT INNOVATION READINESS

9

PROVEN INNOVATION

The innovation is validated for its ability to achieve a specific impact under uncontrolled conditions

8

UNCONTROLLED TESTING

The innovation is being tested for its ability to achieve a specific impact under uncontrolled conditions

7

PROTOTYPE

The innovation is validated for its ability to achieve a specific impact under semi-controlled conditions

6

SEMI-CONTROLLED TESTING

The innovation is being tested for its ability to achieve a specific impact under semi-controlled conditions

5

MODEL/EARLY PROTOTYPE

The innovation is validated for its ability to achieve a specific impact under fully-controlled conditions

4

CONTROLLED TESTING

The innovation is being tested for its ability to achieve a specific impact under fully-controlled conditions

3

PROOF OF CONCEPT

The innovation's key concepts have been validated for their ability to achieve a specific impact

2

FORMULATION

The innovation's key concepts are being formulated or designed

1

BASIC RESEARCH

The innovation's basic principles are being researched for their ability to achieve a specific impact

0

IDEA

The innovation is at idea stage



ACKNOWLEDGEMENTS

We would like to thank all Funders who support this innovation through their contributions to the **CGIAR Trust Fund** (<https://www.cgiar.org/funders/>). Additional bilateral investment for this innovation has been provided by IWMI, the CGIAR Research Program on Water, Land and Ecosystems and USAID.



MORE INFORMATION

WEBSITES AND DOCUMENTATION

- <https://www.iwmi.cgiar.org/resources/data-and-tools/models-and-software/environmental-flow-calculators/>
- <https://www.sciencedirect.com/science/article/abs/pii/S1364815208000649>
- <http://eflows.iwmi.org/>

CONTACT PERSON

For more information on this innovation please contact **Nishadi Eriyagama** (n.eriayama@cgiar.org)

PLEASE REFER TO THIS INNOVATION PROFILE AS

Eriyagama N., Dickens C., McCartney M., Wickramaratne C., Hafeez M., 2022. Environmental Flow Estimation Tools. Innovation Packages and Scaling Readiness (IPSR) Innovation Profile. CGIAR, November 2022.
<https://hdl.handle.net/10568/125372>

INNOVATION READINESS JUSTIFICATION

Since the development and dissemination of the tools, they have been independently used by other parties to estimate environmental flows, as evidenced by publications. For example, the online Global Environmental Flow Information System has been adopted to estimate environmental flows at country level in order to measure SDG indicator 6.4.2 on water stress. Inclusion of more ecologically grounded data into the tools may enable them to be adopted more widely.

EVIDENCE SUPPORTING THE INNOVATION READINESS LEVEL

eflows.iwmi.org