

A FRAMEWORK FOR CLIMATE-RESILIENT SUSTAINABLE GROUNDWATER MANAGEMENT



Groundwater is facing unprecedented pressure from over-extraction, pollution, and climate change. Effective groundwater management requires approaches tailored to the specific contexts of individual communities.

Drawing on years of experience across multiple geographies, EDF has developed a flexible management framework for communities to adapt in their effort to achieve sustainable groundwater use.

The framework uses four categories outlined briefly below. Visit bit.ly/EDFframe for the full framework including: foundational features required for initial progress, more advanced elements for improved impact and precision, varied examples, and relevant resources.



Download the full framework

1. INFORMATION AND UNDERSTANDING

Transparent and accessible information on aquifers and their condition, including data on groundwater level, production, and quality.

- A. Scientifically determined understanding of aquifers as dynamic systems.**
- B. Active, distributed groundwater monitoring for quantity and quality.**
- C. Production data to understand where, when, and how much groundwater is being pumped.**
- D. Models to integrate, synthesize, and interpret aquifer monitoring and climate change data and evaluate management alternatives.**

2. CLIMATE-RESILIENT MANAGEMENT FRAMEWORK

Clarity around access, water quality, monitoring, enforcement, tools, and incentives.

- A. Clear goals, targets, and guardrails.**
- B. Selection of aquifers or aquifer sub-regions for monitoring and/or additional management.**
- C. Locally-tailored management plans.**
- D. Regular reporting of progress and guidance on metrics.**
- E. Clear and transparent mechanisms for issuing and tracking groundwater allocations.**

3. RESPONSIBLE MANAGEMENT AUTHORITY

Empowered, accountable authority with responsibility to manage within guardrails and achieve targets.

- A. Government-empowered agency to develop groundwater plans in consultation with communities and to enforce those plans.**
- B. Sufficient financial and human resources to develop and enforce plans**

4. COMMUNITY ENGAGEMENT AND DECISION-MAKING

Transparent, community-involved decision-making processes to ensure water security.

- A. Representation of all interests in planning and decision-making.**
- B. Partnerships between responsible agencies and interested parties.**
- C. Accountability for achieving goals and managing community concerns.**