

## We Are

An interdisciplinary team of researchers bridging hydrologic science, ecology, geoscience, economics and institutional analysis. We work with scholars, water managers, public and private decision-makers and nongovernmental organizations to identify viable solutions to water challenges throughout the world.

## We Reach

- Water managers
- Policymakers
- Governments
- Conservation groups
- Community groups
- Nongovernmental organizations
- Private companies
- Individuals

In many parts of the world, freshwater for people and the environment is a threatened resource. Rapid population growth, climate change and poor management, among other factors, have led to water crises that put people and their livelihoods in danger. Often interlinked, regional water supply shocks can affect people, economies and nature everywhere. Finding locally relevant solutions will depend on incentives, technology, conservation, markets and trade.

## Mission

The Global Freshwater Initiative (GFI) is developing strategies that promote the long-term viability of freshwater supplies for people and ecosystems threatened by climate change, shifts in land use, increasing population, decaying infrastructure and groundwater over-pumping. Our investigations of freshwater vulnerability are global in scope but regional in focus.

## Goals

We work with policymakers, stakeholders and collaborators throughout the world to:

- Understand the nature and causes of water crises and their impacts on people, economies and ecosystems
- Identify planning and policy prescriptions that ensure regional freshwater supplies for human and environmental needs are sustainable and resistant to disruptions
- Develop innovative, quantitative models that inform improved policies to address regional water supply problems by exploring water markets, infrastructure, technology, taxes, water rights and quotas
- Train the next generation of water resource experts



## Research Themes

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- **Identify present and future freshwater supply vulnerabilities**
- **Create predictive tools to evaluate promising water management policies**
- **Develop plans to manage or avert crises**

## Major Projects

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### ■ **Global Freshwater Vulnerability**

Many nations and regions already struggling with poverty and uncertain political futures must contend with a growing threat to stability – unreliable access to freshwater. In the past 50 years, the amount of water withdrawn for human use has tripled, triggering challenges for national security, agriculture, industry and ecosystems. To help find solutions, GFI researchers are identifying characteristics and patterns of vulnerability at national and urban scales, gathering regional and local data, exploring country-specific vulnerability issues and evaluating potential policy solutions. Unlike previous water vulnerability research, which has focused primarily on issues of scarcity and infrastructure, GFI looks at a range of contributing factors such as regulatory enforcement, corruption, transboundary competition and water transported “virtually” in agricultural products.

### ■ **Water Security**

The turbulent Middle East faces one of the greatest challenges to its stability – the inability to ensure the security of water for all human and environmental needs. Water insecurity is a growing threat throughout this and other regions throughout the world. Water security has an important role to play in the search for solutions to poverty and other conditions that breed extremism. Jordan, a stabilizing force in the region, is an ideal place to begin tackling the problem. GFI

coordinates the Jordan Water Project, an international, interdisciplinary research effort aimed at developing new approaches for analyzing strategies to enhance the sustainability of freshwater resources in arid regions. Using an innovative hydro-economic policy-evaluation model, the project is quantifying impacts of climate and population change scenarios as well as a range of possible policy and infrastructure interventions.

### ■ **Transboundary Conflicts**

Conflicts over water that crosses political boundaries will likely grow as competition for water resources intensifies. GFI has developed analytic methods to account for impacts on these waters, forecast consequences of their continued use, and suggest monitoring, regulatory, market and management solutions. Team researchers are analyzing transboundary water resources of the Mekong Delta and Middle East, among other regions.

### ■ **Water for Food**

For some nations, striving for sovereign food security can come at the cost of sacrificing long-term water security. Working in highly under-developed Cambodia, GFI is using satellite remote sensing, government survey data and groundwater simulations to identify and analyze the water needs of a land area that could support dry-season rice production without creating freshwater unsustainability. This methodology allows GFI to analyze other regions exhibiting competition between water and food security.

### **For more information:**

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