

## Water reallocation

**Challenge:** Too little water

**Adaptation response:** Water allocation

### Description

Water reallocation is the transfer of use rights between users who have been allocated a certain amount of water (through formal water use rights or entitlements, or informal arrangements), after it has been determined the initial allocation is physically impossible, or socioeconomically unfavourable. Resource reallocation can help adapt to unforeseen circumstances (e.g. critical water shortages during the dry season), reduce stress on renewable water supplies and help optimize water use benefits to meet constantly changing societal demands.

Water reallocation can either be voluntary, i.e. where water users choose to sell water use rights to others, or non-voluntary, where a central authority makes it mandatory for users to redistribute their rights.

### Implementation

The role of institutional establishments and procedures varies depending on whether voluntary or non-voluntary reallocation is required. State or local water authorities control most aspects of non-voluntary reallocation in the interests of the public and environment, while an economic and legal framework is required to support and regulate water rights trading to support voluntary reallocation. Reallocation arrangements can take other forms as well. For example, in rural communities, a chosen committee can manage allocation and reallocation among users. Authorities can gain valuable interdisciplinary understanding of human-water systems to help guide reallocation decisions with optimal benefits for the environment and society through analysis of hydrological, social, and economic data. Reallocation measures can be implemented in concert with public campaigns promoting conservation and efficiency for all, or specifically targeted, water users.

### Environmental Benefits

- Reduces pressure on renewable water supplies, mitigating risks of resource degradation, over-abstraction and pollution.
- Ensures that minimum required environmental flows and associated ecosystem services are sustained during the dry season.

### Socioeconomic Benefits

- Increases community resilience and adaptive capacity during times of water stress.
- Ensures that scarce resources are allocated to provide the greatest benefit to society at a given time.
- Adds value to water and may provide an incentive to improve efficiency and conservation among users.

### Opportunities and Barriers

#### Opportunities:

- Agile adaptation strategy to share resources without additional investment in alternative water sources or infrastructure development

- Market-based re-allocation can benefit the overall economy and save costs while also providing environmental and social benefits

## Barriers:

- Lack of institutional capacity (for non-voluntary reallocation) or poorly defined use rights may prevent effective reallocation
- Market or economic benefit-based reallocation can reduce availability for some less profitable, yet socially important, uses, and especially affect the poor
- Information (e.g. flow timing, volume and actual use) needed for voluntary reallocations may not be transparent or existent

## **Implementation considerations\***

Technological maturity:	4-5
Initial investment:	1-2
Operational costs:	1-2
Implementation timeframe:	2-4

\* This adaptation technology brief includes a general assessment of four dimensions relating to implementation of the technology. It represents an indicative assessment scale of 1-5 as follows:

*Technological maturity:* 1 - in early stages of research and development, to 5 – fully mature and widely used

*Initial investment:* 1 – very low cost, to 5 – very high cost investment needed to implement technology

*Operational costs:* 1 – very low/no cost, to 5 – very high costs of operation and maintenance

*Implementation timeframe:* 1 – very quick to implement and reach desired capacity, to 5 – significant time investments needed to establish and/or reach full capacity

This assessment is to be used as an indication only and is to be seen as relative to the other technologies included in this guide. More specific costs and timelines are to be identified as relevant for the specific technology and geography.

## Climate Change Adaptation Technologies for Water

A practitioner's guide to adaptation technologies for increased water sector resilience

WATER ADAPTATION TECHNOLOGY BRIEF

UN Environment-DHI Centre  
on Water and Environment



**CTCN**  
CLIMATE TECHNOLOGY  
CENTRE & NETWORK

**UNEP DTU**  
PARTNERSHIP

### Sources and further information

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