

Executive Summary

The Impact of Climate Change Induced Water Scarcity

on the Economic Life of Inhabitants in
the Central and Western Hammar
Marshes of Iraq



Introduction

This report evaluates the impact of **climate change—particularly water scarcity—on the economic livelihoods** of residents in the **Central Marshes and Western Hammar Marsh** in southern Iraq. These wetlands are among the most significant ecological and cultural landscapes in the Middle East, forming part of the historic Mesopotamian marshes.

The inhabitants of these areas, often referred to as the **Marsh Arabs (Ahwar people)**, represent one of the oldest continuous human cultures in the region, with roots tracing back thousands of years to ancient Mesopotamian civilizations such as the Sumerians. Their traditional way of life is deeply connected to the wetland environment and has remained largely unchanged for centuries.

Marsh communities live in **reed houses (mudhif)** built from locally harvested plants and rely on narrow wooden boats for transportation between water channels. Their livelihoods are primarily based on:

- **Buffalo breeding**, which provides milk and dairy products
- **Fishing**, a key source of food and income
- **Reed cutting**, used for construction and handicrafts
- **Bird hunting**, traditionally used for food

This way of life is characterized by a **subsistence-based economy**, where families depend directly on natural resources rather than formal employment. The marshes not only provide income but also shape the **social structure, cultural identity, and daily practices** of the people.

However, in recent decades, climate change has significantly disrupted this delicate balance. Rising temperatures, reduced rainfall, and declining water inflows from the Tigris and Euphrates rivers have led to repeated droughts—particularly in **2008–2009, 2015, 2017–2018, and 2022–2023**. These environmental pressures have severely affected both the ecosystem and the traditional lifestyle of the Marsh Arab communities, putting their economic survival and cultural heritage at risk.

Methodology

The study is based on a **field survey and direct interviews** conducted in 2024 with 200 marsh residents.

Sample size:

- 100 participants from the Central Marshes
- 100 participants from Western Hammar Marsh

Data collection methods:

- Structured questionnaires
- Face-to-face interviews
- Field observations
- Supporting data from civil society organizations

Questionnaire structure:

- **Basic information:** age, education, occupation, income, household size
- **Impact-related questions:**
 1. Effects of water scarcity on livelihoods
 2. Loss of income and livestock
 3. Migration patterns
 4. Changes in fishing, reed cutting, and hunting
 5. Access to government or NGO support
 6. Suggested solutions

The methodology combines **quantitative data (percentages, trends)** with **qualitative insights (personal experiences and observations)**.

Key Findings

1- Universal impact of water scarcity

- **100% of respondents** reported being affected by water shortages.
- Water levels in the marshes have drastically declined, with flooded areas shrinking to **less than 5% of their natural extent** in some periods.

2- Collapse of traditional livelihoods

The marsh economy depends on:

- Buffalo breeding
- Fishing
- Reed cutting
- Bird hunting

All sectors experienced severe decline:

- **Buffalo population losses:**
 - 63% decrease (Central Marshes)
 - 52% decrease (Western Hammar)
- **Fishing activity:**
 - Dropped to 5% and 2% of previous levels
 - Now mainly for household consumption, not income
- **Reed cutting:**
 - Nearly halted due to lack of reeds
- **Bird hunting:**
 - Has almost disappeared

3- Economic hardship and unemployment

- **Unemployment rates extremely high:**
 - 86% (Central Marshes)
 - 84% (Western Hammar)
- Monthly income ranges between **\$20–\$133**, insufficient to cover basic needs or livestock costs.
- **100% of participants reported losing income sources** due to drought.

4- Migration and displacement

- **Extensive:**
 - 70% of Central Marsh residents migrated
 - 60% of Western Hammar residents migrated
- Migration is both **internal and external**, mainly in search of water and employment.

5- Environmental degradation

- **Drying wetlands led to:**
 - Loss of biodiversity (vegetation, birds, fish)
 - Increased water salinity
 - Death of livestock
- The marsh ecosystem is under **serious threat of collapse** if current trends continue.

Key Findings

6- Social consequences

- **Economic decline has caused:**
 - Family instability
 - Health problems
 - Reduced access to education
- **High illiteracy rates:**
 - 39% (Central Marshes)
 - 66% (Western Hammar)

7- Limited institutional support

- Government and NGO interventions were minimal and short-term, including: Food aid shares, and Limited animal feed support.
- There is a lack of effective water management policies and long-term planning.

8- Causes of the Crisis

The study identifies several key drivers:

- Climate change (higher temperatures, reduced rainfall).
- Declining river inflows from the Tigris and Euphrates.
- Upstream water use by neighboring countries.
- Weak national water management.

Main Recommendations

The report emphasizes that urgent action is needed to protect both the **marsh ecosystem** and the **livelihoods of local communities**.

The key recommendations are:

1- Ensure sustainable water supply

- Provide sufficient and continuous water inflow to the marshes
- Improve water management and distribution
- Develop emergency plans to deal with drought periods

2- Support affected communities economically

- Compensate residents for losses in livestock and income
- Provide financial assistance and subsidies (especially for buffalo breeders)
- Create alternative job opportunities to reduce unemployment

3- Protect and restore the environment

- Rehabilitate damaged marsh areas
- Preserve biodiversity (fish, birds, vegetation)
- Regulate harmful practices such as overfishing and illegal hunting

4- Strengthen institutional response

- Increase government involvement and long term planning
- Improve coordination with NGOs and international organizations
- Implement effective crisis management strategies

5- Raise awareness and community engagement

- Conduct environmental awareness programs
- Encourage local participation in protecting natural resources
- Support education and training initiatives

6- Improve resource management practices

- Regulate water use and reduce waste
- Promote sustainable use of reeds, fisheries, and grazing lands
- Prevent destructive practices (e.g., use of poisons in fishing)