ISSLP
Interdisciplinary Studies in Society, Law and Politics

Original Research

A Sociological Perspective on an Engineering Issue: Social Consequences of Water Transfer Projects in the Province of Origin

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Received: 2024-08-05 **Revised:** 2024-09-23 **Accepted:** 2024-10-03 **Published:** 2025-01-01

The issue of "water" has become a critical social subject due to its scarcity, determinism, and uneven distribution in Iran. In recent decades, water engineering and water-based development initiatives, such as "inter-basin transfer" projects, have significantly expanded. These projects are defined and implemented based on water abundance in certain areas and scarcity in others, yet they often lack a multidimensional perspective. While extensively studied within natural and technical sciences, the side effects of these engineering projects have gradually emerged in other domains, particularly in social dimensions. This article aims to comprehensively study and identify the social effects and consequences of water transfer projects post-implementation in the source regions, utilizing "grounded theory" as the research methodology. The province selected for this study is considered the most affected by water transfer in terms of tension. An analysis of data from documents, interviews, cyberspace, articles, and surveys indicates that these regions are significantly impacted by the social consequences of the projects, particularly in terms of justice and social welfare. The findings reveal a broad impact on various aspects of life for people living in the implementation areas, including political, cultural, and economic dimensions. This impact is especially notable in the realms of citizenship, inequality, and social justice, demonstrating that water issues are inherently multifaceted and interdisciplinary.

Keywords: *Water Transfer, Social Consequences, Interdisciplinary Study, Engineering Sociology*

How to cite this article:

Jafari Azad, A., Mirzaei, K., & Seifollahi, S. (2025). A Sociological Perspective on an Engineering Issue: Social Consequences of Water Transfer Projects in the Province of Origin. *Interdisciplinary Studies in Society, Law, and Politics, 4*(1), 13-23. https://doi.org/10.61838/kman.isslp.4.1.2

1. Introduction

In a country like Iran, water is a competitive commodity, despite its national nature. Historically, there has been competition between upstream and downstream users of a water source. Recently, however, a new and powerful competitor has emerged, supported by the government, which transports water from springs over long distances. This development has occurred without in-depth social studies, viewed merely as structural and engineering plans. Consequently, when water, a common national resource, becomes a point of competition between local users and large metropolises, it leads to tensions and group disputes over ownership and use. This results in a range of secondary political, economic, and cultural consequences, impacting social stability and threatening national cohesion and unity.

The social perspective on water issues entered academic literature and government decision-making belatedly, only after significant damages from the lack of social

consideration in water projects over more than half a century became evident. The social and economic effects of these challenges and problems have been seen in national, local, and regional development dimensions, as well as in people's livelihoods. From the perspective of critical realism, water control is an "objective concept" that amalgamates several abstractions to capture the multidimensionality of this issue. In social studies of science and technology, such concepts are termed "boundary concepts," understood across domains or disciplines to facilitate interdisciplinary analysis (Mollinga, 2008).

In the 1960s, a wave of migration to cities began, and centralization policies and unbalanced development, particularly post-1979 revolution, significantly increased populations in several major cities. The primary demand of this population was drinking water supply, making it a public right that necessitated provision by any means from any geographical location. Thus, the concept of "water transfer" from water-rich areas to population centers began. The law supported these plans. For instance, Clause (k) of Article (104) of the Third Economic, Social, and Cultural Development Program of Iran mandated watershed operations, soil protection, and erosion control for inter-basin water transfer projects (Third Development Plan Law, 2003). Similarly, Clause (e) of Article (17) of the Fourth Economic Development Plan required sustainable development, respect for beneficiary rights, and various consumption needs justifications for water transfer projects (Abbasi et al., 2021).

Article 45 of the Constitution considers water a part of national wealth and capital. Thus, the Ministry of Energy's policy dictates that water resources do not solely belong to the local population of a region but that these people have priority in exploitation. Access to water for drinking and health is a right for all, and water transfer plans should be conducted after comprehensive economic, social, technical, and environmental studies (Masoumi & Lotfi, 2017).

This article focuses on the aftermath of water transfer projects. From the beginning of these projects' implementation, social evaluation studies were considered a necessity based on legal requirements. However, whether implementing agencies or any other monitoring apparatus conducted research to determine the social dimensions and consequences of these projects in the implementation areas remains ambiguous. An initial search in this field returned no results.

These discussions mark the beginning of a serious sociological discourse in engineering. The "water transfer" issue involves technical work and a novel approach to socio-economic development in Iran, aiming for fundamental changes in social structure, public attitudes, and national institutions, alongside accelerating economic growth, reducing inequality, and alleviating absolute poverty (Azkia & Ghaffari, 1998).

The starting point of this article is a few simple questions arising from the researcher's observations of water transfer projects in the country. Development projects like water transfer are intended to improve social welfare indicators and meet basic citizen needs, yet they often result in negative impacts, harm, and social tension in another region. This research investigates water transfer projects and their collective consequences from a sociological perspective using social research methods.

One critical issue in Iran's current economic development is the lack of a comprehensive theoretical framework and model to analyze, explain, and recognize societal realities and plan for human society's goals and needs. Development involves qualitative and structural transformation, yet current water transfer projects, if beneficial for destination communities, have often worsened conditions in source areas, indicating a lack of true development orientation (Seifollahi, 2007).

Effective water resources management aims to provide water and social well-being for society. Thus, understanding this human society and its sociological characteristics is crucial, followed by analyzing the relationship between water management institutions and societal development. We must question why water transfer projects have failed to achieve development goals. The answer lies in examining the structure and function of societal elements and understanding the formation of unbalanced and unfair social relations within and between human societies (Seifollahi, 2007).

The evidence indicates that water transfer plans follow an unbalanced and unstable development path. These plans have caused economic and social disharmony in source areas, initiating unfair social relations. The social system's various elements, including geographical-climatic, demographic, economic, cultural, and political components, shape social relations. Unbalanced

performance in these areas leads to unfair social relations, with greater imbalance causing more adverse consequences (Seifollahi, 2007).

This article emphasizes the consequences and subsequent effects (After Effects) of water transfer projects. Despite legal requirements for social evaluation studies during project implementation, ambiguity remains about whether research on social dimensions and consequences post-implementation has been conducted. Initial searches found no results.

The researcher aims to develop a theoretical model addressing the social effects and tensions caused by these projects, particularly in source areas. Each water transfer project and region is an independent research field from social, human, cultural, physical, and geographical perspectives. Thus, a single theory cannot be universally applied, necessitating research limitation to "space and time."

For this research, the most tense and newsworthy water transfer project from Zayanderoud and Kouhrang tributaries in Chaharmahal and Bakhtiari provinces to Isfahan and Yazd provinces in the Central Plateau catchment area was selected.

2. Literature Review

The topic of this article, "social consequences of water transfer projects," encompasses a wide range of concepts, making it an interdisciplinary study within sociology. The discussion begins with the sociology of development, extends to the sociology of the environment, and incorporates principles and arguments from social impact assessment (SIA) studies regarding water transfer projects. In this context, the issues of development, social security, political participation, and ethnic conflicts due to transfer plans are also examined, although each requires independent research for a comprehensive understanding.

The concept of inter-basin water transfer involves taking water from a watershed with surplus water, described as having high hydrological capacity, and transferring it to a water-deficient basin. These projects address the inconsistency in the distribution of the human population and the unbalanced concentration of water resources. Factors such as population growth, agricultural land development, industrial growth, and increased societal demand for quality water drive this approach. The goal of inter-basin management is to optimize water resource use between basins with minimal challenges, requiring cross-sectoral management that considers technical, economic, environmental, and socio-political factors (Halabian & Shabankari, 2010).

In Iran, the social effects of water transfer projects have gained attention from experts and officials since the mid-1980s, following social unrest caused by these projects. Several studies have been conducted on their social effects. In 1995, researchers from Tarbiat Modarres and Noor Mazandaran universities investigated global experiences with approximately 170 inter-basin water transfer projects. Their findings indicated that such projects peaked in the 19th century, with 43%, 19%, 13%, and 25% designed for urban drinking water supply, agricultural water supply, energy production, and multi-purpose objectives, respectively. In developed countries, over 80% of these projects pertain to drinking water supply.

Globally, more than 27% of harvested water volume is moved through inter-basin transfer projects. In Iran, 6.35 cubic kilometers of water are transferred annually, primarily for agricultural purposes, involving the construction of long tunnels. These projects often weaken socio-economic and environmental conditions in one of the basins over the long term. Consequently, inter-basin water transfer projects should only be implemented in emergencies, with comprehensive knowledge of regional potentials and a systematic management approach considering environmental, economic, social, and political factors (Halabian & Shabankari, 2010).

Shahbaz Shamseldini's research at the Agricultural and Natural Resources Research Center of Chaharmahal and Bakhtiari province, presented at the National Conference of Inter-Basin Water Transfer in Shahrekord, examines the economic and social effects of such projects. Shamseldini highlights the vital role of water in human life, the dependency of development on water, and the inappropriate distribution of water in terms of time and space. The increasing population growth exacerbates potential water crises in many parts of the world, including Iran. Shamseldini argues that inter-basin water transfer plans, alongside other water supply solutions and international standards like those of UNESCO, can help balance acute water crises.

According to Shamseldini, the implementation of these plans has tangible and intangible economic, social, and environmental effects, especially in the source basin. Key social effects include increased conflicts among water users, public poverty, migration, dissatisfaction with government decisions, perceived injustices, and despair in the source basin due to lost opportunities. However, these social indicators are generalized and not derived from systematic social research.

Dariush Bahmaie's 2019 study, "Investigation of Political-Social Reflections of Karun Water Transfer (Case Study of Ahvaz City)," conducted at the Geography Department of Tarbiat Modarres University, reveals significant social and political consequences of transferring water from the Karun basin. Bahmaie found that although water transfer is seen as a solution for residents of the Central Plateau, it creates complications in the source basin, particularly in Khuzestan. The study indicates a significant relationship between Karun water transfer and political-social actions, highlighting issues such as a sense of injustice, inequality, reduced political participation, increased ethnic and social tensions, and potential security threats.

Mahshid Talebi Soume Saraei's research, published as "Sociology of a Crisis: Social Pathology of the Water Crisis in the Zayandehroud Watershed" (Talebi Soumaesarai et al., 2018), examines the social issues in the Zayandehroud basin, the only permanent river in the central plateau with a dry climate. Historical management ensured minimal social issues regarding water sharing. However, since the mid-1980s, the river has become seasonal, prompting protests in benefiting provinces. Talebi's study aims to investigate the causes of the water crisis in Zayanderoud over the last two decades, using comparative content analysis of documents, laws, and interviews with 30 water experts from various departments and provinces (Isfahan, Chaharmahal, and Bakhtiari).

Talebi's findings reveal various gaps in water governance in the Zayanderoud basin, including implementation, targeting, policy, information, capacity, investment, and responsibility gaps.

3. Water Transfer and Development Theories

Development is a type of social transformation through which humans modify their environment to meet their needs and desires. Economic, social, and human development programs are instrumental for the advancement of human societies. When individuals' needs and desires are unmet within their social environment, various social problems emerge (Seifollahi & Hafez Amini, 2009).

The principles of sustainable development emphasize that the success of development projects requires the active participation of local communities, especially rural populations. This includes land transfer cooperation, local workforce involvement, trust in development initiatives, the formation of local organizations to manage new circumstances, and the region's preparation for economic and social structural changes. People will support development projects to the extent that the benefits are tangible and meaningful to them, with a clear vision of sustainability (Talebi Soumaesarai et al., 2018).

These concepts have gradually been incorporated into water resources development projects, including water transfer plans. The development of human societies and the increasing demand for water, particularly during periods of low rainfall, highlight the need for implementing water resource development plans to optimize the potential in the water sector. During the decision-making process for water transfer between basins, various stakeholders seek their own interests, ranging from political power to property rights and livelihood welfare. The government ultimately bears responsibility for these projects, with the economic risk often covered by public funds. Consequently, there are typically objections from affected communities. Social and cultural measures must be taken to mitigate these effects in the source region, ensuring that water allocation for transfer does not jeopardize local water needs (Karamouz et al., 2006).

The complexity of these plans, due to the increasing number of involved factors—social, economic, technical, environmental—presents significant challenges. Global experiences with inter-basin water transfer highlight the necessity of a holistic, sustainable development approach considering the entire lifespan's incomes and costs. Issues such as environmental damage, land subsidence, land salinity, changes in water consumption culture, water quality, social sensitivities, long-term future needs, the relative advantages of each basin, severe droughts, economic considerations, farmers'

rights, and comprehensive comparison of needs fulfillment methods form the basis for decision-making.

Neglecting sociological studies and the incomplete understanding of natural resource management's social dimensions limit sustainable development and natural ecosystem protection. Experts argue that sustainable natural resource management must include social and cultural aspects to be effective, emphasizing the importance of social management. Additionally, farmers' environmental attitudes vary based on their cultural, economic, and environmental contexts (Deng & Huang, 2009).

Another pathology in water transfer plans is the neglect of balanced regional development. Strategies creating growth poles and prioritizing resource allocation to specific areas have caused severe imbalances in the country's spatial structure. This imbalance is partially due to natural conditions and the uneven distribution of development potential, but overall, development distribution is unequal, leaving many regions isolated from national development. Efforts to reduce deprivation without considering spatial organization have failed to alleviate disparities (Arabshahi & Jabbari, 1994).

Water transfer projects exemplify this developmental imbalance. Government decisions, often made from political and bureaucratic positions without stakeholder consultation, demonstrate the bureaucratic control over water. This bureaucracy, influenced by political representatives, has prioritized water exploitation as a public good without consulting stakeholders. Sustainable development and long-term rationality are often overlooked. Game theory and rational choice theory illustrate how individual benefits drive actions that worsen the situation overall. Politicians gain votes by advocating for water resources, farmers profit from short-term well-digging, governments show progress, contractors showcase structural measures, academics secure research funding, and engineers find employment. However, weak and unheard voices suffer: ecological changes reduce biodiversity, farmers are devastated, aqueducts dry up, deserts expand, and salt winds and fine dust affect villages and cities. This process erodes initial gains, legitimacy, and the credibility of consulting and contracting firms (Fazeli, 2016).

4. Water and Political-Ethnic Conflicts

Water, as a limited and highly demanded resource, often becomes the source of social and political challenges. The increasing demand for water, coupled with inherent scarcity in Iran, has intensified competition and tensions over shared water resources. This issue impacts security on local, regional, and international scales. Shared water resources are frequently subjected to political and military threats, playing a crucial role in conflict outcomes. Factors such as water scarcity, the number of involved communities, their relative power, and access to alternative water sources drive competition for water. Development, defined as a multi-dimensional flow (political, social, cultural, and economic), aims to reduce poverty, unemployment, inequality, and promote industrialization. Effective development leads to a just social system and increased political participation. Researchers in the development field examine the relationship between development and ethnic identities, questioning how modernization influences ethnic identities and demands for political power. They also explore the impact of the transition period on ethnic relations and the conditions that exacerbate ethnic conflicts (Maghsoudi, 2001).

Social relationships within human society give rise to social groups, with ethnic groups playing a significant role in economic, social, and human decisions and planning. Development and economic-social planning serve as tools for social integration and maintaining territorial unity. The diversity of ethnic groups and the heterogeneity of population compositions influence the development process, necessitating different development plans tailored to each group's cultural, economic, and social contexts. Effective socio-economic development programs should consider the demographic-ethnic structure to foster social and cultural convergence among ethnic groups (Seifollahi & Hafez Amini, 2009).

In practice, socio-economic planning in Iran has not achieved social and cultural convergence among ethnic groups. The lack of human-centered sustainable development in these policies has led to social and cultural divergence. Consequently, ethnic-based protests and tensions arising from water transfer projects can be analyzed. These protests often take on an ethnic dimension, with symbols and cultural references used to unite and mobilize participants. Examples include ethnic epic poems, local costumes, and historical references to

bravery within a specific tribe, all contributing to the ethnic nature of protests related to water transfer projects.

5. Methods and Materials

For this article, the grounded theory method was chosen. This method is based on a flexible and complementary-restorative cyclical approach that collects and analyzes data in a systematic and repeatable manner. Therefore, data collection for this research was conducted gradually through theoretical studies and fieldwork. The grounded theory method is a systematic research approach in social sciences and other fields to discover and formulate theories or hypotheses from data obtained in the natural field. The objective of this method is to provide detailed, accurate, and systematic procedures to continuously collect and analyze data from the natural field during occurrences and theorize using the method of continuous comparison.

The unit of analysis in this method is "occurrence", thus the statistical population of this research was selected from communities and individuals experiencing water transfer incidents in their residence and geographical area. The sample was chosen from people and regions at the origin of the water transfer plan, namely Chaharmahal and Bakhtiari Province, and areas affected by the consequences of the transfer plan in the "post-implementation" phase.

In sample selection, we did not limit the samples to a specific region and city to maintain the power of generalization in the final theory for the province as the source of the water transfer plan. Therefore, the statistical population included people and residents affected by large water transfer projects in Chaharmahal and Bakhtiari Provinces, such as the water transfer project to Yazd, Beheshtabad project, the border of the three Kohrang tunnels, and the Qomroud project. These plans have led to social tension and conflict in this province compared to the provinces of the route and destination of the transfer, namely Isfahan and Yazd.

For field data collection, discovery, and extraction of concepts and initial theory based on theoretical saturation, a non-random targeted sampling method was used. Interviews were conducted in several stages with seven elite experts on water transfer, and fifteen citizens, farmers, and villagers from affected areas. Additionally, data and documents were extracted from approximately three years of participation in special Telegram groups focused on water transfer in Chaharmahal and Bakhtiari Province, such as the channels "Sadaye Paye Ab" and "Sayanat ez Chaharmahal and Bakhtiari water." These discussions and reactions in Telegram groups were utilized as sources. The documentary part of the research included content from media notes, interviews, and roundtables on the subject of water transfer. Documents from the Chaharmahal and Bakhtiari Regional Ministry of Energy and Water were also used for theoretical research.

For data analysis, qualitative analysis was used for interviews, documents, Telegram content, and field data: Open, axial, and selective coding were used to design concepts and their interrelationships through the construction of categories and concepts.

6. Findings and Results

In this section, the following research questions were addressed using interview results:

What are the factors, contexts, and platforms for the emergence and spread of social tensions and conflicts due to the implementation of water transfer projects?

What consequences have these projects had for the communities involved, particularly the source community or the original beneficiaries of the water source?

In the qualitative part of the research, data analysis began with extracting concepts and categories (open coding), eliminating irrelevant and repetitive concepts. From this coding, 138 concepts were extracted. The analysis then focused on linking codes (open coding) and identifying concepts (axial coding) to develop the theoretical model based on the extracted variables.

In the survey phase, the reasons for tension and divergence between residents of Chaharmahal and Bakhtiari Province and those in neighboring provinces (Isfahan and Yazd) were identified:

Table 1

Extracted Concepts and Their Frequencies

Extracted Concepts	Frequency
Unmet expectations of Chaharmahal and Bakhtiari residents in terms of access to facilities	8
Disregard for the rights and interests of Chaharmahal and Bakhtiari residents	11
Economic hardships and low income	8
Water transfer's impact on agriculture and industry	8
Rising unemployment	8
Injustice towards the less privileged areas within Chaharmahal and Bakhtiari	3
Ineffectiveness of provincial authorities in managing water transfer	4
Implementation of water transfer without considering the province's climatic conditions	6
Neglect of local farmers	5
Emergence of new challenges for the province's residents	2
High levels of poverty among the province's residents and farmers	4
Lack of effective management and planning	1
Discrimination between the residents of Chaharmahal and Bakhtiari and those in neighboring provinces	9
Excessive demands by neighboring provinces	2
Migration trends	1
Disregard for provincial boundaries and limitations	1

Based on the survey findings, several factors were identified as contributing to the tension between residents of Chaharmahal and Bakhtiari Province and those in neighboring provinces. These factors include unmet expectations regarding facilities, inadequate protection of local rights and interests, economic hardships, low income levels, water transfer for agricultural and industrial purposes, unemployment, injustice towards less privileged areas within Chaharmahal and Bakhtiari, inefficiencies in provincial authorities' handling of water transfer issues, disregard for the province's climatic conditions during water transfer, neglect of local farmers' concerns, the emergence of new challenges, elevated poverty levels among residents and farmers, deficiencies in management and planning, discrimination compared to neighboring provinces, excessive demands from neighboring provinces, migration trends, and failure to consider provincial boundaries. The primary contributors to tension were identified as the failure to safeguard local rights and interests and the discrimination experienced by Chaharmahal and Bakhtiari residents compared to those in neighboring provinces, particularly Yazd and Kerman. This highlights a sense of inequality among Chaharmahal and Bakhtiari residents.

7. Discussion and Conclusion

The main condition for sustainable development is to pay attention to the social and cultural aspects of development, consider the limitations and capacities of non-renewable resources to protect the rights of present and future generations, hear the weak voice of indigenous communities and project hosts, and consider systematic and organic relationships between categories. Humanity's environmental and natural coordinates of the development environment and the consideration of the views and interests of those who are in the field and environment of development projects are also crucial. Global experience indicates that ignoring these factors leads to negative and unintended consequences, such as a disconnect between the reality of development and its intended goals, exorbitant social, political, and economic costs, dissatisfaction due to unmet development goals both within the government and among the populace, and ultimately, destruction rather than development, affecting both present and future generations.

The history of global development since the 1960s shows that when the adverse consequences of the development process are revealed, measures must be taken to compensate for the damages and shortcomings. During this decade, sustainable development was proposed, followed by mandatory laws to study and consider environmental and social consequences of development, alongside the emergence of social movements aimed at protecting the environment and supporting the rights of human groups affected by development. It was within this context that project designers and implementers began to study and evaluate the consequences, predict negative effects, and from that time, social evaluation studies emerged. However, a review of development

plans in Iran shows that these requirements, studies, and evaluations arrived very late—since the late 1970s—and often only in the form of regulations and formal laws. The social assessment of large development projects has often been carried out perfunctorily, without serious attention to the findings and recommendations, resulting in severe social and environmental damages at the sites of development.

A clear example of implementing large development projects without considering their consequences is inter-basin water transfer projects. These plans, based on Iran's arid geography, dispersed water resources, unbalanced population distribution, especially in the central plateau and water-scarce areas, and efforts to provide drinking water and industrial needs in large population centers at any cost, have been designed and implemented. However, the implementation records of these plans show no significant study of the effects and consequences "before implementation" at the origin and destination of water transfer plans. Moreover, despite the passage of several years since the implementation of major projects in this field, no study has been conducted on the "post-implementation" effects. Thus, these studies should serve as a guide for future development projects rather than as a reminder of past failures.

This research was conducted in Chaharmahal and Bakhtiari Province, the host of several water transfer projects to the Central Plateau. Investigations and searches of the organizations and companies implementing these projects reveal that none of the legal regulations related to social evaluation studies have been conducted for these plans. This province has become a "large water transfer operation workshop" for other provinces without benefiting the resident population and project hosts. The lack of social impact assessment studies has made water transfer a significant issue in this province, with external social realities and subjective problems for its citizens.

One consequence of water transfer projects is the change in the nature and lifestyle of people, especially in villages around the project sites. Before the implementation of these plans, traditional farming and animal husbandry were the primary occupations. However, the implementation of these plans, along with continuous droughts, has reduced water potential, limiting agriculture and animal husbandry. Many believe that tunnel construction has diverted and dried up springs and water paths, and transferring water from river headwaters has decreased local river flow.

When a spring dries up or water flow is cut off, the normal routine of agriculture and animal husbandry is disrupted. As cultivated land area decreases and livestock numbers per household reduce, household income is affected, causing a shift from traditional to new service jobs. The loss of land and livestock represents a significant economic injury to individuals, with no compensation or replacement.

Local people have lost traditional fields and skills due to changing living conditions, or these skills have weakened. The younger generation in villages either migrates to cities or works outside the village for part of the year, leading to fundamental changes in the population structure.

According to the latest statistical yearbook of Chaharmahal and Bakhtiari Province, based on the 1995 population and housing census, the number of immigrants in this province is approximately 47,000, with over 60% migrating within the province from villages to cities (Statistical Yearbook, 2017). The province is among those with medium immigration, with around 20,000 people migrating outside the province. Field studies show that the main reason for these migrations is changes in employment and livelihood patterns due to agricultural and animal husbandry stagnation and water transfer-related consequences. Migration colonies from water transfer project areas can be identified in Shahrekord and the outskirts of Isfahan, with immigrants settling in small cities like Khomeinishahr, Dorcheh, and Goldasht.

Another important consequence of water transfer plans, in the psychological and mental dimension, is the issue of citizenship, which can be discussed in terms of "citizen rights" and "citizenship feeling." Government planners argue that surplus water in Karun's tributaries, located within Chaharmahal and Bakhtiari Province, should be transferred to provide drinking water and industrial needs for citizens in Isfahan and Yazd. Citizenship rights in destination provinces mandate that the government meet current and new water demands by any means, while the source province's needs should also be met based on population, industry, and climate requirements.

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consideration of the limitations and capacities of non-renewable resources to protect the rights of present and future generations, recognition of the weak voices of indigenous communities and project hosts, and consideration of systematic and organic relationships between categories. Humanity's environmental and natural coordinates of the development environment must also be considered, along with the views and interests of those directly impacted by development projects. Global experience indicates that neglecting these factors inevitably leads to negative and unintended consequences, such as a disconnect between the reality of development and its intended goals, exorbitant social, political, and economic costs, dissatisfaction due to unmet development goals both within the government and among the populace, and ultimately, destruction rather than development, affecting both present and future generations.

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The limitations of this research can be categorized into two areas:

A. Methodological Limitations: The selection of the "grounded theory" method was advantageous, allowing the researcher to utilize a wide range of documentary, field, and statistical data. However, selecting accurate and reliable references and sources during the research was challenging. Information and field data in the water sector were contradictory and heterogeneous, both in official records and field data.

B. Field Limitations: The most significant issue in field research was the "securitization" of the water transfer issue at both national and local levels. In recent years, particularly during severe droughts in the 1990s, water transfer has sparked gatherings, roadblocks, civil protests, and protest groups, leading to the involvement of security and political institutions. During interviews or questionnaire completion, many respondents were initially reluctant to participate due to security sensitivities surrounding water transfer. However, explaining the research's academic nature eventually garnered respondent cooperation.

Numerous specialized conferences and seminars, along with many studies, have focused on water transfer in Iran. However, the social sector and sociological perspectives on these projects have been minimal. While many studies acknowledge the social consequences of these projects, they often remain general and lack detailed social impact analysis. Therefore, this research can be considered one of the first in the field of water sociology.

This study approached the issue of water transfer from a fundamental perspective, examining the social impact at a macro level. Future research can build on these findings to explore different social dimensions of water transfer origins in more depth. Topics such as citizenship, immigration, employment rates, lifestyle changes, discrimination, and social justice are detailed subjects requiring further analysis.

Authors' Contributions

Authors contributed equally to this article.

Declaration

In order to correct and improve the academic writing of our paper, we have used the language model ChatGPT.

Transparency Statement

Data are available for research purposes upon reasonable request to the corresponding author.

Acknowledgments

We would like to express our gratitude to all individuals helped us to do the project.

Declaration of Interest

The authors report no conflict of interest.

Funding

According to the authors, this article has no financial support.

Ethical Considerations

In this research, ethical standards including obtaining informed consent, ensuring privacy and confidentiality were observed.

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