





Human Rights to Water and Food with gender perspective: Urgent call for inclusion of autonomy of women irrigation users, México 2025-2030

Derecho Humano al Agua y Alimentación con perspectiva de género: Emergencia inclusión de autonomía de las mujeres usuarias de riego, México 2025-2030

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Abstract

This article addresses the human right to water and the inalienable need to add food, given the risks, litigation, and controversies surrounding the use of water for agricultural purposes. Governance as a foundation for understanding who will be entrusted with food production in Mexico over the next five years, using Module V Cortazar of Irrigation District 011 Río Lerma as a case study. The central question is: How many women irrigation users are there, and in what conditions and positions do they work? The challenges of equity, sustainability, and participation of women irrigation users are analyzed, considering the need for autonomy to exercise their leading role in water resource management and productive decision-making. The initial diagnosis concludes with the identification of operational needs such as: i] updating registries and ii] the emergence of inclusive public policies that guarantee the full exercise of the right to water.

Objective	Methodology	Conclusion
Analyzes the human right to water and the inalienable need to add food, in the face of risks, litigation, and disputes over the use of water for agricultural purposes.	The challenges of equity, sustainability, and participation of women irrigation users are analyzed, considering the need for autonomy to exercise their leading role in water resource management and productive decision-making	The initial diagnosis concludes with the identification of operational needs such as: i] updating registries and ii] the emergence of inclusive public policies that guarantee the full exercise of the right to water

Human rights of water with gender perspective, Women irrigation users, autonomy, General Law of Water

Resumen

El artículo analiza el derecho humano al agua y la necesidad inalienable de sumar la alimentación, ante riesgos, litigios y controversias por el uso del agua para uso agrícola. La Gobernanza como cimiento para comprender en manos de quienes se confiará la producción de alimentos en México en los próximos 5 años, como caso de estudio el Módulo V Cortazar del Distrito de Riego 011 Río Lerma. La pregunta: ¿Cuántas mujeres usuarias de riego existen y en que condición y posición trabajan? Se analizan los desafíos de equidad, sostenibilidad y participación de mujeres usuarias del riego, considerando la necesidad de autonomía para ejercer su papel en la gestión de recursos hídricos y en la toma de decisiones productivas. Se concluye como primer diagnóstico, la identificación de necesidades operativas como: i] actualización de padrones y ii] la emergencia de políticas públicas inclusivas que garanticen el ejercicio pleno del derecho al agua.

Objetivo	Metodología	Conclusion
Analiza el derecho humano al agua y la necesidad inalienable de sumar la alimentación, ante riesgos, litigios y controversias por el uso del agua para uso agrícola	Se analizan los desafíos de equidad, sostenibilidad y participación de mujeres usuarias del riego, considerando la necesidad de autonomía para ejercer su papel en la gestión de recursos hídricos y en la toma de decisiones productivas	Se concluye como primer diagnóstico, la identificación de necesidades operativas como: i] actualización de padrones y ii] la emergencia de políticas públicas inclusivas que garanticen el ejercicio pleno del derecho al agua

Derecho humano al agua con perspectiva de género, mujeres usuarias de riego, Ley general de agua

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Peer review under the responsibility of the Scientific Committee [<https://www.marvid.org/>]- in the contribution to the scientific, technological and innovation **Peer Review Process** through the training of Human Resources for the continuity in the Critical Analysis of International Research.



Introduction

The human right to water was officially recognised by the United Nations General Assembly through Resolution 64/292 in 2010. Water was recognised as a fundamental right essential to sustaining life and human dignity, which cannot be understood without food. In Mexico, this right was incorporated through a constitutional amendment in 2012 in Articles 5, 23 and 115, reaffirming its importance in sustainable development and social justice. However, its implementation faces significant challenges in the agricultural context, especially in irrigation units for rural development [URDERALES], where 94.7% use groundwater, and modules in irrigation districts use mixed water sources: 92% surface water and 8% groundwater, usually with emergency irrigation.

In both cases, women agricultural producers who use irrigation have historically been marginalised. Marginalised not only in terms of agricultural production, but also in terms of being recognised as holders and possessors of a right that has been denied them, both in terms of inheritance and recognition in their management and appropriation in the decision-making of the various bodies and levels of water representation.

The analysis starts from the essential elements of governance with a gender perspective analysis.

The hypothesis is: If the intragenerational male transfer of the first generation of irrigation users in Mexico is completed in 2030, then it is women irrigation users who will have to take control and operation of irrigation management to guarantee future food sovereignty.

To project this hypothesis to 2030, a mixed methodology was applied with a case study of Module V Cortazar of Irrigation District 011 Río Lerma. The materials and methods are limited to the analysis of basic descriptive statistics from a global level. Given the lack of information, it was decided to manage the process until the Irrigation User Register for the aforementioned module was obtained and analysed, which would allow for the projection of a real situation in the field that would enable the research question to be answered: How many female irrigation users are there in Mexico?

The results presented conclusively reveal the hypothesis as a real case representative of this problem. It is concluded that, given the lack of inclusion in governance for women's participation in decision-making, coupled with the ageing of users and the lack of up-to-date information on irrigation registers, we are facing an emerging complexity of factors that hinder the efficient and equitable management of water for women irrigation users in Mexico. In this context, evidence is presented for a proposal to adhere to the General National Water Law.

Theoretical framework

The analysis starts from the constituent elements of governance, understood as the way in which people and institutions are organised for decision-making [Gleik, 1998]. This considers the set of structures, processes and regulations that govern water management, seeking equitable and sustainable use over time. Another element present for the self-management of governance is common property [Ostrom, 1990, 2012] and the way in which agents organise themselves around a common resource such as water. In a geographical area defined not by administrative boundaries, but by a body of water such as a river, a dam or a main canal. It is in this arena of action that those who participate show their capabilities, interests, commitments and strength. In view of this, it is clear that the position and status of women that was initially proposed for analysis is surpassed, as explained in the results. On gender issues, I had the opportunity to ask the author Elinor Ostrom directly in 2012, when she made her last visit to Mexico, whether there could be a gap in the origin of decisions for equitable governance with gender equality, if she carried out a specific comparative analysis between women's decisions and men's decisions. Her response was simply emphatic, and with a smile she gave me the order: Go ahead!

Box 1

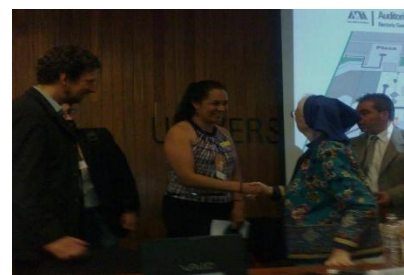


Figure 1

Exchanging views with Dr Elinor Ostrom. Source: Elinor Ostrom's last visit to Mexico, Autonomous Metropolitan University, Xochimilco campus, 2012

Since then, I have devoted myself to analysing the environments and decisions of women irrigation users in increasingly complex and even dangerous contexts.

Methodology

A mixed methodology was applied, using a hermeneutic approach to analyse brochures, images, and dissemination and consultation materials. Quantitative information from irrigation user registers was analysed using basic descriptive statistics to calculate means, modes, and medians.

In addition to the quantitative information, interviews and life stories were conducted with three women who have held representative positions. Work is still ongoing after the publication of this document.

In seeking the answer to the research question of how many women irrigation users there are in Mexico, we began at the national level with the institutions in charge: the National Water Commission [CONAGUA] and the National Association of Irrigation Users [ANUR], including the offices in charge of the directory of irrigation units in the Ministry of Agriculture and Rural Development [SADER], without obtaining any information from any of these bodies.

Given this result, it was decided to narrow down the analysis by searching for information in the field and to develop an applied research project with the management to access a register of irrigation users from one of the 11 irrigation modules that make up irrigation district 011 alto rio lerma: Module V Cortazar. From this register, a descriptive statistical analysis was carried out, yielding the following results.

Results

Following a hermeneutic research process, the starting point is the recognition of two indivisible elements necessary for the unavoidable maintenance of human life: water and food consumption.

From this, the following was found regarding the first element:

Human Right to Water

In 2010, with Resolution 64/292 of the UN General Assembly, drinking water and sanitation were recognised as essential human rights for the full enjoyment of life and all human rights [UN, 2010]. This right implies guaranteeing sufficient, safe, acceptable, affordable and accessible water for all.

Two years later, Mexico amended its Constitution to recognise the right to water in Articles 2, 25 and 115, which guide management towards equity and sustainability. The laws currently in force are two initiatives: i.] the National Water Law and ii.] the General Water Law, although constitutional controversies persist and there are more than 12 cases before the Supreme Court of Justice of the Nation concerning concessions, transfers, diversions and allocations of surface and groundwater.

Human Right to Food

Access to water is closely linked to the right to food: full, adequate and sufficient, recognised by UNICEF and the FAO, established in the International Covenant on Economic, Social and Cultural Rights.

Food production depends directly on the volume of water available. Therefore, proposals to condition, limit, deprive and restrict access, use, management, control, administration or inequalities in access affect security and jeopardise food sovereignty, especially for rural and indigenous communities that depend directly on the direct and indirect activities of each agricultural cycle per year.

Diagnosis of Irrigation District 011

In 2023, Mexico ranked 6th in the world in irrigated agriculture with 6.2 million hectares, distributed between surface water, groundwater or mixed use.

This area is organised into 84 Irrigation Districts with their modules, and countless irrigation units for rural development [URERALES], which means that in times of water stress that severely affects rainfed agriculture, it is this sector that must be in a position to save the food production that the country needs for national consumption.

One of these 84 irrigation districts is 011 Río Lerma, located in the central-western part of the country known as El Bajío. DR 011 has an irrigated area of 112,670 hectares. It is a key system for agricultural production not only for the state of Guanajuato, but also for the country, competing closely with irrigation districts in northern states such as Sinaloa, Chihuahua, and Sonora. All districts depend on an authorised available volume collected in large dams, which is distributed among the respective basin councils to distribute these volumes to the five consumptive uses, where, invariably in all cases, agricultural use accounts for an average of 74.5% of the total volume.

On the other hand, all the information on crop data, productivity per cubic metre applied, and areas sown versus harvested is available, but when inquiring about the persons responsible for these hydro-productive exercises, there is no information. Based on the register of irrigation users in Module V Cortazar, the analysis reported the following facts:

1. All irrigation user registers in Mexico are more than 30 years old. As a result, there are people registered who no longer exist. There is no clarity about the people currently responsible for irrigation, payments, water conveyance and use.
2. The average age of male farmers is 76.5 years old. The average age in Guanajuato is 73 years old for men and 78 years old for women. Added to this situation is the health condition of tired men, with the after-effects of COVID-19, stressed by debt and the inability to generate territorial roots in the young men of their families. In five years, by 2030, a considerable percentage will no longer be present to make operational decisions in the field regarding the management, distribution, and application of irrigation water.
3. In 1991, the World Bank carried out a programme to transfer irrigation management [TMR] to users, through technical, administrative and operational training for the first generation of irrigation users in Mexico, organised into civil associations.

However, women irrigation users were not considered eligible for training because they were not represented in any of the categories: Ejido Delegates, Small Property Owners and/or Community Members, coupled with their unequal roles and workloads, which have led to further gender gaps, where inclusion was absent then and remains absent today.

4. Currently, if the intra-generational transfer of irrigation users were to take place today, the burden of responsibility for converting water into food would fall on wives, daughters, sisters, and mothers, without them being equipped with the skills and knowledge for access, use, distribution, operation, control, measurement, transfer, diversion, saving, collection, payment, and efficient use of water for agriculture.

An analysis of the irrigation user registry for Module V Cortazar shows a strong gender bias: 69% are men and only 31% are women. This inequality is exacerbated by the lack of updated records and the limited training of female users.

Using a binary classification to count men and women in the irrigation user registry, the following figures were obtained.

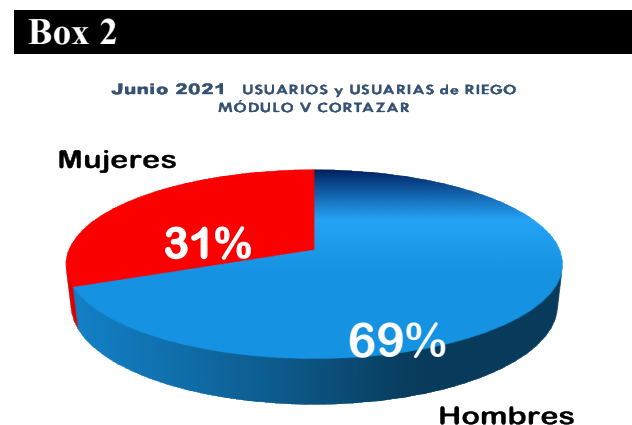


Figure 2

In the Cortazar Module, women face structural barriers such as:

- Limited or no active participation in assemblies; they can attend meetings only if they have been previously appointed in their ejidos or small properties as water delegates or substitutes. They can attend the meeting only if one of the two positions is vacant and she takes it.

- Lack of legal recognition of their ownership of land or water. It should be noted that land ownership and possession has never gone hand in hand with water. It is indicative but not limiting or conditional
- Institutional and symbolic violence in agricultural management spaces. In operational decision-making in the field, the work of active women who are **holders-have** the right to use water for irrigation is recognised, but when it comes to making decisions in assemblies, they do not demonstrate that they are **owners** of the right due to the lack of documents that accredit them and provide legal support to that effect.

This condition does not only apply to the use of water, but also to the lack of *ownership and possession* of agricultural machinery, infrastructure, movable and immovable property. Given the initial data, we proceeded to consider the statement of the first female director of an irrigation district in Sonora, who declared that half of irrigation users are women.

Using the existing data, I applied a five-year projection calculation from 2025 to 2030 to estimate what the data would look like in relation to the presence of female irrigation users in the figures from the Cortazar Irrigation Module.

This yielded the following information as a projection for 2030, considering that it is a 30-year-old registry and that many social conditions have changed. The context can be observed as follows:

Box 2

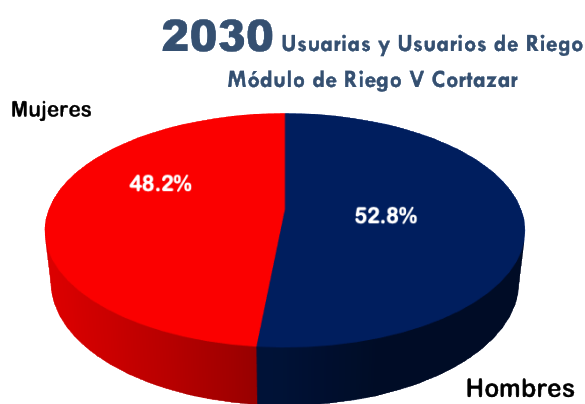


Figure 3

Emergency due to the inclusion of women irrigation users.

Given the hard data suggesting a trend towards the **hydro-feminisation** of the countryside in the coming decades, gender-focused public policies are required.

Progress towards equitable water management requires the integration of women as agents of change. Inclusion implies not only their recognition in the registers, but also their active participation in the planning, distribution and sustainable use of the resource.

Although this analysis is limited to one module in one irrigation district, it is useful for projecting the results to units and all modules in the 84 irrigation districts in Mexico.

Main findings

In this context, when interviewing the eight female irrigation users who are current representatives, such as ejido delegates, well diggers, canal diggers, small property representatives and former irrigation module managers, the responses themselves speak to the status and position of women at the forefront of access, distribution, use, management, control, operation, administration, conservation, transfer, risk management, conflict management, among other operational needs in the field. The themes that emerged from the interviews were:

Positions of authority abandoned due to changes in marital status or the onset of reproductive life:

"... as manager of the Module, I think I played a good role, I have the knowledge I learned in Irrigation in Chapingo..."

I was clear on the figures, strict on field measurements, and I was behind the canal workers... ..the problem is that I got married and soon after I got pregnant. He didn't like me continuing to work because it was too much pressure."

-MJG:2021-

Taking on responsibilities through empirical knowledge, feeling the need for endorsement in decisions and the risk of compromising individual safety:

"... When my old man died, I took over turning the well on and off, opening the floodgates, and assigning irrigation shifts. I learned how to do it. ... My problem is that I no longer have anyone to defend me, ... anyone to look out for me, or anyone to ask if it's okay to give water to those who owe me, who don't clean their channels either, because then I'm afraid they'll give me a hard time because I don't let them skip their turn... At night, I've seen them messing around with the girls... Because they don't pay! There's no way I'm going to pay those deadbeats!"

-CMS:2020-

Need for external male support, despite having her own track record, her own network is the most violent, leaving her vulnerable to uncertainty.

"... They appointed me as moderator of the meeting. At first, I didn't understand why me. Then I realised it was because I could tell the thugs to calm down because they don't clean the canals, they don't keep their shifts, they don't pay... and on top of that, they come and insult me or dictate their terms! It gives me courage because there are others who know that I don't stay quiet. The problem is when I go home and everyone gangs up on me, and no one stands up for me!"

Exposure to public displays of sexism, losing courage and undermining her own potential.

"... He dared to bring the canal manager and pressure me to give up my irrigation shift... They act like they're tough, but not with me anymore... I was so angry that I burst into tears. Why do we have to put up with them treating us like this? Don't we have the right to work on equal terms? So who do I ask? My brothers in the United States, my father is already deceased, he never came back... everything is in his name! Now what can I do if they all agree and ignore me?"
Need for commercial information support for better room for manoeuvre and individual negotiation.

'... no, when it comes to selling, they have to tell me how and to whom I sell, otherwise how can I do it on my own?!"

Dilemmas between fulfilling roles and workloads, aware of the need to participate in collective management.

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"... Going to meetings is a waste of time, and who's going to do my work here? ... I want to go, but who's going to pick up my kid? ... Then I have to look after my father-in-law, who is ill and needs help with everything... I pay for irrigation by selling some animals when I don't have any... If I miss it, my friend helps me out, even if it's just with emergency irrigation... even if it's just to keep me going!"

Collective uncertainty in the face of the closure of communication channels due to external pressure.

'... Well, they say the president gave the order, but what are we going to do with the channels that are very cemented, but that take the water elsewhere... Some say one thing, others say another. I want them to give me the water I need to harvest my crops, and if there are problems, they will call us to report them...'

Evolution that gives knowledge and power over others, based on the practice of learning and taking on a self-managed role for governance as a central node.

"When I first started participating, I used to sit at the back, trying not to be seen in case they asked me something I didn't know... ... Not today. I go to the front, and if I have questions, I ask them and I don't care. I am the delegate for the module, responsible for bringing information to my entire community.

I can't go back without concrete, well-explained data. ... They respect me because they know how hard I've worked, and I've shown everyone that I know, I can, and because I can, I go for it!"

The responses were illustrative and compelling, providing evidence of the lack of autonomy in complex processes that affect women's sense of self and their relationships with others. The lack of autonomy caused by ignorance and the support that men do have in their process of growth and development, while women are questioned about their identity, their position, condition, and capacity, and even so, women, despite their experience, maintain the need for consultation, support, protection, endorsement, companionship, and support from a man. An additional factor that has fractured incipient processes of empowerment in water management and control has been insecurity and drug trafficking.

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Conclusions and recommendations

In conclusion, there is an institutional need for an intersectoral update of all irrigation user registers in Mexico, both for surface water and groundwater, in order to know exactly who is responsible for what volumes of actual authorised water are available, from the parcel level to the basin council level, so that the real water situation in the country can be assessed.

It is important to urgently implement a training process that addresses individual technical, social and commercial needs in hydro-productive management in the field, which will contribute to the adoption of women's autonomy in their individual decision-making processes, from the individual and personal to the collective and public, without the need for external consultation.

Undoubtedly, the need was identified to anticipate a concrete proposal that would visualise each and every one of the situations that, in sum, constitute forms of **water patrimonial violence**, which must be considered for inclusion in the body of Article 49 without correlation of the General Law on National Waters in Mexico. The breakdown of this proposal was presented and delivered to the Deputies responsible for the Water Affairs Committee of the Chamber of Deputies in the open consultation forums on 18 November 2025.

Recommendations

Universities should work inter-institutionally on applied research into problems such as those raised here. This exercise should be linked to the one carried out in the Lerma-Chapala Basin in the 2000-2001 cycle in response to the need to transfer water to Lake Chapala. Where more women can participate and where their decisions are free from fear and guilt and they can enhance each and every one of their abilities to achieve collective action as a full example of social governance.

Colleagues must recognise the clear division that has always existed between the management, operation, work and production of land and water. Now more than ever, these two resources are following separate paths. It is worth conducting an exhaustive analysis of the creation of legal frameworks that are far removed from social practices in the field, where laws made in the cabinet are irrelevant and are not adopted due to the inconsistency of a daily reality of growing hydro-feminisation.

Finally, real processes to counteract **gender-based water patrimonial violence** by attending to, accounting for, accessing, caring for, distributing, transforming, saving, transferring, sharing, charging for and conserving water in all its contexts and locations before it is too late and we are facing the tragedy of the commons.

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