

Socioenvironmental activism and emerging science communicators in Mexico

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Abstract

Activists, social organizations and members of citizen collectives in Mexico and Latin America have assumed not only the fight for water and territory, but also the difficult task of interacting with experts in different scientific fields, and the challenge of placing their causes in the public space. They take the role of cultural mediators between affected people, scientists and politicians within hybrid transdisciplinary working groups. Within the framework of these groups' actions, a new current of communication of science has emerged, one that shifts its interest from encouraging involvement with scientific knowledge for its own sake, to untangling, understanding and communicating socio-environmental issues for the explicit purpose of contributing to social transformation.

Keywords

Citizen science; Environmental communication; Participation and science governance

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Water issues and socioenvironmental conflicts in Latin America

In the Latin American context, environmental issues related to water and territory often spark socio-environmental conflicts that pit different social groups against each other over the invasion and pollution of bodies of water, deforestation and other forms of extractivism, land grabs, and the disturbance of ecosystemic balance. Each Latin American country has its distinct circumstances, determined by its particular biophysical conditions, and even more so by its social, economic and political context. Issues related to water and territory are complex problems and necessarily call for the convergence of multiple sciences, both natural and social, in the search for deep understanding and possible solutions at the global and local levels. At the intersection of water and territory, issues cut across a wide swath of categories and types of problems, constituting objects of interdisciplinary study, with an inherent complexity that poses challenges for scientists and science communicators alike. [Herrera-Lima, 2018]

Mexico, like other Latin American countries, presents a wide range of problems related to conflicts over water and territory: unequal access to high-quality water [Torregrosa, 2018], the pollution of bodies of water and soil, the environmental and social impact of megaprojects for extracting resources and generating energy [Pacheco Vega, 2014], flimsy or ill-fitting legal frameworks, deforestation and land grabs caused by urban sprawl, among others [Tetreault and Ochoa-García, 2012; Castro, 2007]. These problems and conflicts involve a variety of social actors, who take different stands, are affected in different ways and wield varying degrees of power. The issues, for their part, circulate through multiple channels in the public space: communication media, social networks, streets and public squares, to name a few.

Scientific knowledge and its communication take on a key role in the agency and mobilization of the social actors involved in these conflicts. Different kinds of specialized knowledge have to come together to shed light on the multiple aspects of these complex issues in order to generate possible interventions that could transform the underlying conditions. In this context, a key question arises: What role can the communication of science play in understanding, explaining, making visible and placing on the public agenda these ongoing conflicts without eclipsing the positions and voices, demands and proposals of the social actors affected by socio-environmental issues related to water and territory?

Emergent science communicators and hybrid transdisciplinary groups

In recent years the object of my research has been the communication of science as it relates to socio-environmental issues, particularly in the state of Jalisco, in Western Mexico, both in the state capital, the Guadalajara Metropolitan Area (GMA), and in towns located on the shores of Lake Chapala. The Guadalajara Metropolitan Area is one of the largest urban conglomerates in the country, and Lake Chapala is Mexico's largest natural body of fresh water. Chaotic urban sprawl, insufficient or non-existent regulation of industrial waste disposal, agricultural chemicals and sewage runoff in rivers and lakes, inefficient and unfair public administration, the invasion of forested areas for housing or industrial use with the consequences caused by deforestation, among many other factors, have given rise to multiple socio-environmental problems in the region. Civil society organizations devoted to defending water and territory and putting these conflicts and issues on the public agenda face numerous obstacles; one of them is the urgent need to untangle the multiple threads that run through complex socio-environmental conflicts.

From my research into actors and communicative practices in this context, I have identified the relevant and growing role played by members of civil society organizations (activists) as an emerging type of science communicators who address socio-environmental issues and conflicts. I have characterized them as non-professional communicators [Herrera-Lima, 2018] whose objects of communication are the issues in which they find themselves immersed, and who turn to scientific knowledge to understand and explain these issues. To this end, they reach out to scientists and academics who are willing to dialogue and collaborate in building understanding and telling the general public about these realities. This has led to the development of alternative forms, resources and strategies of communication aimed at understanding and explaining the conflict and placing it in the public space. Their communication is done face to face in public spaces such as parks, public thoroughfares, public squares, riverbanks or forests. They communicate by way of public forums, panel discussions, guided

tours along rivers and lakes, collaborative workshops in public spaces or parks, itinerant workshops and talks, and they produce short documentaries and graphic communication products. They also use social networks and have access to printed or digital publications produced by themselves or to university media devoted to public communication of science [Herrera-Lima, 2018].

I found that most of the communication actions about the Jalisco region's socio-environmental issues related to water and territory, are made by non-professional communicators: members of civil society organizations comprising residents of the affected regions and communities, volunteers, professionals and academics. These social actors give rise to new voices and communication practices, producing alternative narratives resulting in distinct versions of the region's socio-environmental issues, in which science and scientific knowledge are incorporated as key elements of the explanations and arguments. They interact with social and natural scientists — geologists, lawyers, psychologists, biologists, environmental engineers, urban planners — who in some cases are active members of the organization and, in some cases, they have also sought out the participation of professional communicators.

Throughout my research I have had contact with civil society organizations active in other Latin American contexts like Costa Rica and Argentina. These contacts have led me to conclude that this same model, with certain variations, is followed in socio-environmental conflicts in other regions of Mexico and in other Latin American countries. The model can be considered a mix of the participation model, in the way proposed by Trench: "Communication about science takes place between diverse groups on the basis that all can contribute, and that all have a stake in the outcome of the deliberations and discussions" [Trench, 2008] and citizen science [Lewenstein, 2016], with some specific features. In this model, affected people and activists seek the collaboration of scientists for the understanding of the socio environmental problems and, the opportunity of making claims on them. The aim is not only people engagement with science but also to engage and involve the scientists with the social problems.

At the hearing of the Latin American Water Tribunal held in 2018 in Guadalajara, Mexico, in which I participated together with activists, academics and scientists, cases were heard regarding water conflicts in the Mexican states of Sonora and Puebla, together with the case of the towns along the shores of Lake Chapala in Jalisco, as well as cases from Colombia, Guatemala, Brazil and Chile. In attendance at the hearings were groups of affected residents and members of civil society organizations, most of whom reported close ties to scientists and academics from different disciplines who contributed to the understanding and communication of their issues [Tribunal Latinoamericano del Agua, 2018; Herrera-Lima and Muñoz, 2019].

The formation of groups made up of activists, affected parties, scientists and academics looking to understand socio-environmental problems through collaborative interaction gives rise to what I have called "hybrid transdisciplinary groups" [Herrera-Lima, 2018] that form in response to the demands of affected residents, and that with the mediation of activists seek out the collaboration of experts in different fields of scientific knowledge. As the members of these groups interact in structured discussions, integration activities, workshops and the sharing

of knowledge and experiences, they gradually build up a complex configuration of the socio-environmental issues, with the input of both expert knowledge and direct experience and involvement in the problems. The process inevitably includes negotiations and conflicts within the groups, as different visions, perspectives, codes and assessments are put into play. In other words, different cultural frameworks come into confrontation — the culture of the affected residents, of the activists, of the scientists and academics — and these disparate groups look for ways to come together around the shared purpose of understanding the problem and proposing interventions.¹ Interculturality is considered here as proposed by Daniel Mato [Mato, 2009], not only referring to ethnicities, but to different frameworks of understanding and world visions.

In the face of conflicting perspectives and the difficulty of integrating them, some of these groups have turned to specialists in the communication of science and strategic communication, for encouraging productive communication practices within the groups and facilitating the harmonization of these different frameworks of understanding, concepts, visions and needs. In this way, professional communicators coordinate with non-professional communicators, taking on the role of cultural mediators [Martín-Barbero, 1990].² These groups also face the challenge of developing efficient, accessible and persuasive forms of communication with outside audiences, with scientifically grounded arguments that consider the complexity of socio-environmental processes and serve to counteract other narratives. Within the framework of these groups' actions, a new current of communication of science has emerged, one that shifts its interest from encouraging involvement with scientific knowledge for its own sake, to untangling, understanding and communicating socio-environmental issues for the explicit purpose of contributing to social transformation [Herrera-Lima, 2018].

Conclusions

The forms of communication that the non-professional communicators have developed, in collaboration with scientists and, in some cases, professional communicators, offer alternative and critical responses to the need to make public and visible their versions of the socio-environmental conflicts, versions grounded in both first-hand experience and scientific knowledge. There are emergent roles for both, professional and non-professional science communicators within the hybrid transdisciplinary groups: cultural mediators, knowledge integrators, strategic communicators, together with the traditional role of popularization of science [Herrera-Lima, 2020].

Activists, social organizations and citizen collectives members, in Mexico and Latin America have assumed not only the fight for water and territory, but also the difficult task of interacting with experts in different scientific fields, and the challenge of placing their causes in the public space. Their role in the political dimension of science communication about socio environmental issues has particular characteristics and an increasing relevance, as they integrate the political

¹The conception of culture considered in my work is based on the symbolic and sociohistorical proposals developed by authors like Gilberto Giménez [2007], and J. B. Thompson [2002].

²Martín-Barbero develops the idea of the role of the communicator as a cultural mediator, placing the interaction between different worlds of life (*mundos de vida*) as one of the most important constituent element of communication.

dimension of the problems with an active work based on transdisciplinary perspective, for understanding, explaining and communicating them.

Their communication work has to do with “a perspective of public communication of science that focuses on social issues, whose main actors, those directly affected or involved, require and demand specialized knowledge in order to understand problems and propose potential solutions. . . Attention is focused on the problematical or conflictive social processes in which the actors are immersed, where they identify elements and relations that can be explained and understood by integrating knowledge produced in different scientific disciplines, with their own knowledge, gained through experience” [Herrera-Lima, 2016, p. 113], leading them to seek productive dialogue with scientists and professional communicators.

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