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Research Agenda Networks in the Literature from 2020 to 2023 Related to Water Resources Management

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Abstract

A public agenda includes axes and topics of discussion that in the literature from 2020 to 2023 is reflected in a category for the analysis of their relationships as nodes and borders of expectations, interests and needs between the parties in conflict and willing to co-responsibility. The objective of this work was to establish the research agenda in the state of the art published during the COVID-19 pandemic. A documentary, cross-sectional and exploratory study was carried out with sources indexed to institutional repositories. A network of categories that explain the impact of the pandemic on the research agenda was found, since asymmetries between the nodes and edges are appreciated, which in turn reflect the differences between the parties involved. In relation to the state of the question, lines of study related to the legitimacy of supply policies and intermittent collection are recommended.

Keywords: agenda, co-responsibility, COVID-19, water resources, networks

1. Introduction

Complexity is that approach that from multiple natural or social sciences aims to account for the recursion, emergence or fractality of a phenomenon. In the case of converging science around a common problem: The economy of an increasingly complex world in the relations between its economic and political actors, as well as between public and private sectors. What is new is that the relationship between humanity and nature is increasingly distant. It is about sustainable development that obliges stakeholders to conserve the environment for future generations. In other words, science as an observatory and record of the unsustainable economic reality is a self-verifying testimony of the complexity of the relationship between humanity and nature.

From the social sciences, the proposals for scrutinizing the unsustainable reality between the availability of resources and human needs have been explained as a fractal. The complexity of a fractal phenomenon is that it repeats itself in its structure of relations between center and periphery. In this way, globalization is an economic condition of the fractality of increasingly limited resources.

Globalization allowed resources to be available

in the economic centrality where the institutions and organizations that decide on the transfer of resources gather. From the periphery, resources were transferred, after transformation into products in the industrial semi -periphery, towards the centrality of the cities. The United States and Europe, from a geopolitical fractal logic, are financial and economic nodes that attract natural resources for the satisfaction of their current generations of citizens without considering their future descendants. This fractal globalization of the availability of resources generated an anthropocentric consumer consciousness.

Anthropocentrism is distinguished by its high degree of consumerism without considering future generations. It is assumed as an exclusive right of current humanity with respect to the resources it can consume. Against this dominant ideology stands ecocentrism that puts the availability of resources before any need of any generation. This is a complex nature conservation approach. The foundation of econcentrism is in the recursion that assumes the relationship between resources and needs as non-linear.

Ecocentric ideology governance is inscribed as an alternative to the right of private and public resources. In order to conserve resources, ecocentric governance suggests assuming that the environment is common to any human generation. Therefore, the fractality of the central node cities with respect to the suburbs or periphery, is established from a logic of public resources in which the periphery pays tribute to the centrality. Or, from the private resources of the centrality that give value to the common resources of the periphery.

Ecocentric governance, the centrality and the periphery share the availability of resources. An increase in resources in the periphery impacts centrality and vice versa. Thus, the scarcity of resources affects both entities. In an energy or water crisis, the periphery does not solve the work necessary to pay taxes to the centrality. Even a bonanza in the centrality inhibits the development of the periphery accustomed to scarcity and without a strategy for abundance.

Unlike anthropocentric governance that distributes resources according to asymmetric relationships between centrality and periphery, ecocentric governance assumes a co-management model in which centrality and periphery are interdependent. An example is the coupling of central and peripheral institutions in the face of a resource crisis.

Ecocentric governance is distinguished from other forms of state, government regimes or political systems in terms of its logic of construction and deconstruction of the asymmetries between the rulers and the ruled. The purpose of ecocentric governance is to achieve intercultural co-government. That is, each minority will be represented to have a voice and a vote in the decisions that concern resources. Ecocentric governance achieves its goal of co-government based on the recognition of differences, negotiations, agreements and co-responsibilities between stakeholders, political and social actors, as well as public and private sectors.

The conflict between the public administration and the users of public resources and services represents the beginning of the deconstruction of anthropocentric governance. The asymmetries between the policies of forgiveness, subsidies and unit cost inflation are the beginning of a dialectic between the parties involved.

State management instruments such as the forgiveness of payments, the reduction of debts or the increase in costs are disseminated as conflicts increase. Demonstrations emerge, blockades of avenues, rallies in esplanades, confrontations between the authority and dissatisfied users. The first phase of governance emerges, but it is confused as a class struggle that should be directed towards the dictatorship of the proletariat through the stewardship of the State.

The theoretical and conceptual frameworks that explain the differences and similarities between the rulers and the ruled are: 1) Giddens's theory of social structuring (1984), 2) Bourdieau 's theory of habitus (2003) and 3) the theory of social representations de Moscovici (1981).

Governance, as a co-government system, emerges with a conflict between the rulers and the ruled. The differences between public administration and users of energy and water services are controversial. The theory of social structuring warns that the asymmetries between the parties are due to the dialectic between agents and institutions. The hegemony of the rulers over the ruled is exercised through institutions. In this sense, the constitution of the citizen crosses norms and moral civic values that

border him to agency, or else, to conformity and obedience. In the dialectic between the State and society, the users of energy and water services are constituted from the policies of forgiveness, subsidy and price escalation, which are executed based on the conflicts between the parties.

The scope of the social structure of water services opens the discussion to the inheritance of the sense of public administration that the literature has explained from the habitus. Assumed as dispositions against or in favor of a water management system, the water habitus supposes an evaluation, negotiation and permanent co-responsibility. The habitus theory assumes that natural resources and water services are instruments that contributed to the asymmetries between rulers and ruled, but they are also means and modes of discernment and establishment of a common agenda among political and social actors.

Social structuring emerges from the duality of a political system, public administration and a water resource tariff system. This duality is made up of rulers and ruled in the political sphere and by managers and users at an administrative level. The habitus underlies this duality of the structure, but not as an asymmetry but as a reflection of the differences between those who manage or administer versus those who demand and contribute to the administrative system. In other words, the agents (public servants, intermediaries and users) influence the structure of the public administration through the public agenda, although the relevance of the issues and lines of discussion does not lie in the laws or in the protests. The importance of a tariff system lies in its representation of fairness. If an authority or user is willing to negotiate a waiver, subsidy or rate increase, it is because they inherited a provision that allows them to anticipate higher risk scenarios such as blockades, boycotts, kidnappings or confrontations between demanders of supply and law enforcement.

However, governance, anthropocentric centered on the parties involved or ecocentric centered on the availability of resources, cannot be carried out in an instance of social structuring, duality of structures and systems, nor in an inheritance of dispositions against or in favor of waivers, subsidies or rate increases. Anthropocentric or ecocentric governance unfolds as the parties involved, rulers and ruled, develop and consolidate learning about their expectations,

knowledge, needs, values or competencies.

The participation of the agents or the institutional regulations of the structures of the administration of water resources and services do not translate into an observable governance in conflicts, negotiations, agreements and joint responsibilities. A sequence of learning is necessary in which social actors self-manage their resources and influence the public agenda, reducing rates, promoting subsidies or forgiveness in public administration. This process is due to the duality of social structuring and participatory habitus, but this would mean that there is unilateral and unidirectional governance in localities with different or similar problems.

Governance is not symmetrical, although its purpose is to reduce differences between the parties. The goal of governance is achieved in a process of learning the limits of state management and civil self-management. Unlike the classroom where unilateral teaching prevails, governance assumes bilateralism. The rulers promote water supply policies with a collection system in accordance with public finances, but the civil sectors can mobilize, block avenues, confront the police or organize rallies. Even civil proposals can be in accordance with their income, needs and expectations, although the authorities can carry out their policies based on legitimizing their disadvantage or hegemony in the next elections.

Governance studies explain the scenarios of management, self-management and co-management of water resources and services no longer from the duality of social structuring or the reduction of dispositional asymmetries between the parties. Governance studies rather reflect conflicts, negotiations, agreements and co-responsibilities.

Governance is observed on a spectrum that goes from conflict to co-responsibility. The Sustainable Development Goals (SDG) in its water dimensions suggest access and equitable distribution of water in migrant communities due to droughts, floods, hurricanes, fires or frosts. In this way, migratory flows in relation to migrant communities have been observed for their intercultural differences in storage, consumption and reuse.

However, intercultural studies that report differences between migratory flows and native communities with respect to a fair payment

adjusted to the availability of resources, seem to justify policies of intermittent supply and increased rates. In addition, intercultural studies report ideological conflicts in native communities and greater tolerance in migratory flows with respect to intermittent supply, retributive consumption and reuse of fluvial waters.

The governance analyzed in the literature from 2020 to 2023 is anthropocentric, unilateral and Top Down (top down), although ecocentric governance studies show bilateral co-responsibility from a bottom up (bottom up) approach where it is established the agenda in socio-digital networks. In this way, the theoretical, conceptual and empirical frameworks reflect a trajectory of relationships between variables that predict co-responsibility.

From the theory of structuring, habitus and social representation, it is possible to notice a spectrum that goes from the asymmetric duality of rulers and ruled, observable in the rates dictated by the public administration, to peripheral learning. This route of expectations, decisions and specific actions oriented towards co-management of water resources has been observed in studies related to the establishment of the agenda from a bottom up perspective. The migratory flows that self-manage their water resources redefine the supply policies in localities with high scarcity, unhealthiness and high prices, but this relationship is not observable in native communities that maintain a tariff system based on the availability of resources. In this way, a path that goes from intercultural differences to the adoption of a technological agenda for water reuse explains the agenda and local governance. Precisely, the agenda, be it technological, media or investigative, must reflect the routes of management, self-management and co-management of water between rulers and ruled.

Therefore, the objective of this paper is to describe the differences between political systems, government regimes and anthropocentric and ecocentric forms of State with respect to the public administration of the problems of scarcity, unhealthiness and scarcity of energy and water services in the centrality. urban and the rural periphery.

Are there significant differences between anthropocentric governance and ecocentric governance with respect to the public administration of energy and water resources and services both in the urban centrality and in the rural periphery according to the literature from 2019 to 2022 and with respect to the evaluations of expert judges in the matter?

The premises that allow approaching the question suggest that: 1) The availability of energy and water resources depends on anthropocentric or ecocentric management. Consequently, 2) the public administration of energy and water services distances itself from the needs of users. 3) The policies of cancellation, subsidy and increase in rates exacerbate the differences between the public administration and the demands of the users. 4) The needs of the users depend on their location in the urban center and in the rural periphery. 5) Centrally located users develop anthropocentric expectations such as comfort and recreation in energy and water consumption. 6) The users of the periphery demand the regularization of energy and water services because they allocate up to 20% of their income. 7) The users of the centrality and the periphery coincide in a post-materialist policy that allows them to inhibit consumerism, scarcity, unhealthiness and famine.

2. Method

A documentary, cross-sectional and exploratory study was carried out with a selection of findings published in the literature from 2020 to 2023, considering an advanced search using keywords: "agenda", "management", "self-management", "co-management", "governance", "shortage", "shortage", "unhealthiness" and "famine".

The Agenda Setting Inventory (IEA) was used, which includes questions about the relationship between the categories and the findings in the literature from 2020 to 2023 on governance, agenda and issues of water resources management.

Judges who were experts on the topics were contacted through the institutional email, after selecting them from their index h of citations in Google Scholar. Respondents were informed about the objective and those responsible for the project, as well as the written guarantee of confidentiality and anonymity, following the Helsinki protocol and the format of the American Psychological Association (APA) in its field of studies with humans. In three phases,

the experts evaluated the selected abstracts. In the first phase, they rated the relevance of the summary assigning a –1 for a negative relationship, 0 for no relationship, and 1 for a positive relationship. In the second phase, the initial rating was subtracted from the average of the initial ratings. In the third, a reconsideration or ratification of the initial rating was registered.

The centrality, grouping and structure coefficients were estimated in order to test the hypothesis of significant differences between the investigative agenda and the evaluations of expert judges. Values close to zero were considered as evidence of a scattered or volatile agenda. Values close to unity as evidence of a research agenda.

3. Results

Table 1 shows the structure of relationships between the nodes and edges of the water agenda in the literature from 2020 to 2022. Negative relationships can be seen that would explain the impact of the pandemic on the administration of water resources. Positive relationships explain the response of the parties involved to the pandemic. That is, the water agenda in the reviewed literature was evaluated as ambivalent by the expert judges. In the case of unsanitary conditions and high prices, as they are negatively linked to the negotiation between the parties, they explain the local response to the health crisis. The negotiation node, in turn, is positively related

Table 1. Centrality of the water agenda in the literature from 2020 to 2023

Variable	Betweenness	Closeness	Strength	Expected influence
Garcia et al.,	-0.840	-0.932	-1.158	0.367
Carreon et al.,	0.487	0.670	0.994	-0.554
Hernandez et al.,	1.482	0.719	0.464	0.816
Bustos et al.,	-0.011	-0.942	-1.023	0.427
Espinoza et al.,	-0.343	0.601	0.909	-1.246
Rincon et al.,	0.321	0.536	0.683	0.511
Quiroz et al.,	1.814	-0.147	-0.275	1.759
Sanchez et al.,	2.809	1.068	1.198	0.200
Valdes et al.,	-0.011	0.346	0.325	-1.028
Anguiano et al.,	-1.172	-0.309	-0.242	1.392
Barrera et al.,	-0.011	0.794	0.788	-0.174
Aldana et al.,	-0.840	-0.599	-0.646	-0.136
Aguilar et al.,	0.321	-0.350	-0.803	-1.411
Sandoval et al.,	1.150	0.015	-0.084	-1.433
Bermudez et al.,	-0.509	0.363	0.231	0.233
Juarez et al.,	0.321	0.696	0.908	0.635
Molina et al.,	-0.675	0.532	0.620	1.303
Gonzalez et al.,	0.652	0.457	0.473	0.497
Coronado et al.,	-1.338	0.498	0.738	-1.898
Gutierrez et al.,	-0.011	0.102	0.391	0.923
Elizarraraz et al.,	-1.172	-1.014	-1.305	1.188
Mecalco et al.,	-0.840	0.769	0.757	-1.039
Mendez et al.,	0.321	0.672	0.482	-1.712
Arrollo et al.,	0.155	-0.556	-0.513	-0.281
Olguin et al.,	-0.840	0.321	0.202	-1.095

Bucio et al.,	1.150	0.934	1.061	1.320
Quintero et al.,	0.321	0.323	-0.059	0.392
Bautista et al.,	-0.011	0.443	0.273	0.010
Lopez et al.,	-1.338	-3.172	-2.837	0.350
Mejia et al.,	-1.338	-2.839	-2.550	-0.315

Source: Prepared with study data.

Table 2 shows the proximity values of nodes and edges. Proximities between the edges are observed, but distances between the nodes. In other words, the water agenda in the selected literature seems to reflect an asymmetry between agreements, conflicts, scarcity, unhealthiness, co-management, self-management and management.

Table 2. Clustering of the water agenda in literature from 2020 to 2023

Variable	Barrat[a]	Onnela	WS[a]	Zhang
Aguilar et al.,	0.000	-1.037	0.000	-0.358
Aldana et al.,	0.000	-0.563	0.000	0.625
Anguiano et al.,	0.000	-0.107	0.000	-0.539
Arrollo et al.,	0.000	-0.794	0.000	-0.453
Barrera et al.,	0.000	0.937	0.000	0.404
Bautista et al.,	0.000	0.247	0.000	0.252
Bermudez et al.,	0.000	0.196	0.000	0.296
Bucio et al.,	0.000	1.242	0.000	-0.709
Bustos et al.,	0.000	-1.016	0.000	-1.889
Carreon et al.,	0.000	0.912	0.000	0.754
Coronado et al.,	0.000	0.586	0.000	1.688
Elizarraraz et al.,	0.000	-1.143	0.000	-0.978
Espinoza et al.,	0.000	0.597	0.000	1.655
Garcia et al.,	0.000	-1.059	0.000	-1.918
Gonzalez et al.,	0.000	0.318	0.000	0.477
Gutierrez et al.,	0.000	0.398	0.000	1.195
Hernandez et al.,	0.000	0.558	0.000	-0.296
Juarez et al.,	0.000	0.879	0.000	1.461
Lopez et al.,	0.000	-2.788	0.000	-0.775
Mecalco et al.,	0.000	0.981	0.000	0.311
Mejia et al.,	0.000	-2.537	0.000	-1.764
Mendez et al.,	0.000	0.387	0.000	-0.081
Molina et al.,	0.000	0.891	0.000	0.553
Olguin et al.,	0.000	0.175	0.000	0.021
Quintero et al.,	0.000	-0.101	0.000	0.870
Quiroz et al.,	0.000	-0.134	0.000	-1.579
Rincon et al.,	0.000	0.803	0.000	0.061

Sanchez et al.,	0.000	0.958	0.000	1.181
Sandoval et al.,	0.000	-0.312	0.000	-0.073
Valdes et al.,	0.000	0.526	0.000	-0.395

Source: Prepared with study data.

Shows the grouping values where a symmetry between the nodes and edges can be seen. It then means that the water agenda is structured from the interests, expectations and needs of the parties involved. As the administration of water resources generates a management focused on forgiveness, subsidies and rate increases, users respond with a mobilization focused on confrontations, blockades or boycotts.

In summary, the present study observed a water agenda in the literature from 2020 to 2023. The structure of the analyzed categories suggests the prevalence of a centrality and grouping of nodes related to conflicts and co-responsibilities. Therefore, the differences between the investigative agenda and the evaluations of the expert judges reflect the impact of the pandemic on the water agenda and the parties involved.

4. Discussion

The contribution of this work to the state of the matter was the establishment of a network of relations between nodes related to a research agenda on the administration of water resources. The asymmetric structure of nodes in terms of proximity and grouping suggests the impact of the pandemic on the findings published from 2020 to 2023. Water policies are based on a collection system that this study found disperse and volatile when compared to water problems, such as conflicts, blockades and boycotts, as well as the expectations of co-responsibility between the parties involved. Political and social actors revolve around a policy of forgiveness, subsidies and rate increases based on local political elections.

Studies of water governance warn that co-responsibility is achieved whenever the parties in conflict establish a bottom-up agenda through socio-digital networks and face a common risk event such as climate change or a pandemic. In the present work, a dual structure is appreciated that could be interpreted as a social structure from the effects of the pandemic on the administration of water resources. Or a structure of provisions that have been inherited from generation to generation by the parties involved in terms of conflicts, negotiations, agreements and co-responsibilities in electoral contests.

However, the social representation of water resources and services, consisting of a historical centrality of conflicts between the governors and the governed, as well as a symbolic periphery of forgiveness, subsidies and tariff increases, seems to explain more the phenomenon of the water agenda as a lifelong learning phenomenon among stakeholders. The implications of the research advances exposed in local water policies suggest the legitimacy of co-management and the increase in rates as governance networks.

5. Conclusion

The objective of this work was to establish the network of agendas around water resources and services in the literature from 2020 to 2023. The contributions of the study explain the impact of the pandemic on the parties involved. The limits of the work can be seen in the asymmetry of the nodes analyzed, as well as the differences between the categories. The implications for local policies are debatable in terms of the unilateralism of public water administration and the mobilization of users affected by condonations, subsidies, and rate increases.

References

Bourdieu, P. (1966). Field of power, intellectual field. Maseille: Montresor https://lecturayescrituraunrn.files.wordpress.com/2013/08/bourdieu-pierre-algunas-propiedades-de-los-campos.pdf.

Bourdieu, P. (1979). The distinction. Criteria and social bases of taste. Buenos Aires: Taurus Alfaguara https://pics.unison.mx/maestria/wp-content/uploads/2020/05/La_Distincion-Bourdieu_Pierre.pdf.

Bourdieu, P. (1985). What does it mean to speak? Economics of linguistic exchanges. Madrid: Akal https://imaginariosyrepresentaciones.files.wordpress.com/2014/08/que-significa-hablar-bourdieu.pdf.

Bourdieu, P. (1993). Misery of the world Buenos Aires: Fund for Economic Culture http://www.multimedia.pueg.unam.mx/lecturas_formacion/metodologias_cualitativas/sesion_11/Bordieu_Pierre_Un_equilibrio_tan_fr%C3%A1gil.pdf.

Bourdieu, P. (1996). Television. Barcelona: Anagram https://lideresdeleftprd.files.wordpress.com/2015/11/sobre-la-television-pierre-bourdieu.pdf.

Bourdieu, P. (2000). Power, right and social classes. Bilbao: Descle de Bauwer https://erikafontanez.files.wordpress.com/2015/08/pierre-bourdieu-poder-Derecho-y-clases-sociales.pdf.

Bourdieu, P. (2002). Thought and action. Marseille: Agone https://zoonpolitikonmx.files.wordpress.com/2014/11/bordieu-pensamiento-y-accic3b3n.pdf.

Bourdieu, P. (2007). The practical sense. Buenos Aires: XXI Century https://www.icmujeres.gob.mx/wp-content/uploads/2020/05/Bordieu%20-%20El%20sentido%20pr%C3%A1ctico-3_compressed.pdf.

Bourdieu, P. (2011). The strategies of social reproduction. Buenos Aires: XXI Century http://www.redmovimientos.mx/2016/wp-content/uploads/2016/10/Las-Estrategias-de-La-Reproduccion-Social-Pierre-Bourdieu.pdf.

Giddens, A. (1967). The new rules of sociological method. Buenos Aires: Amorrortu https://sociologiaycultura.files.wordpress.com/2014/02/giddens-anthony-las-nuevas-reglas-del-metodo-sociologico.pdf.

Giddens, A. (1979). The class structure in advanced societies. Madrid: Alliance https://actividadesrepublicana.files.wordpress.com/2015/10/giddens-anthony-la-estructura-de-clases-en-las-sociedades-avanzadas.pdf.

Giddens, A. (1984). The society Constitution. Basis for structuring theory. Buenos Aires: Amorrortu https://agoracontemporanea.files.wordpress.com/2018/03/giddens-anthony-la-constitucic3b3n-de-la-sociedad.pdf.

Giddens, A. (1992). The transformation of intimacy. Madrid: Cátedra https://cmapspublic2.ihmc.us/rid=1T8T3S9SQ-DLN7NM-3VJC/Anthony-Giddens-La-Transformacion-de-la-Intimad-pags.pdf.