Water permits and concessions for irrigation in Argentina. Status quaestionis and trends in comparative perspective.

Permisos y concesiones de agua para riego en Argentina. Estado de la cuestión y tendencias en perspectiva comparada.

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Originales: Recepción: 09/04/2020 - Aceptación: 25/09/2020

ABSTRACT

This article examines permits and concessions granting water rights for irrigation in the different provincial legal frameworks of Argentina. This study is structured after four variables concerning the conditions for access and subsistence of water rights for irrigation granted by permits and concessions; 1) ownership of the land to-be-irrigated; 2) duration of legal right; 3) right forfeiture for lack of use; and 4) appurtenance. By means of a critical comparative analysis of the regulation some trends and findings arise.

Keywords

permits • concession • water rights • water laws • ownership • duration • forfeiture • appurtenance

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RESUMEN

El artículo revisa las figuras de permiso y concesión de uso de agua pública para riego en las diversas legislaciones provinciales de aguas de Argentina. El análisis se hace a partir de la identificación de cuatro variables o dimensiones que conforman las condiciones para el acceso y subsistencia de los derechos de agua otorgados a partir de permisos y concesiones, claves para la gestión y expansión del riego. El análisis comparativo de las legislaciones hídricas provinciales se estudia a partir de cuatro variables: 1) titularidad del predio a irrigar; 2) el plazo; 3) la falta de uso como causal de extinción por caducidad; y 4) la inherencia del derecho al predio, con base en lo cual se identifican tendencias junto con algunas reflexiones críticas sobre su funcionamiento.

Palabras clave

permiso • concesión • uso especial del agua • leyes de aguas • propiedad • plazo • caducidad • inherencia

Introduction

Water rights constitute the legal conditions to access the water resource, this being essential for irrigation, whatever the type or nature of the latter.

According to the federal government system in Argentina, all provinces, as holders of their water resources, legislate on their use and harnessing in different ways (25). Each province has explicit "water codes" contemplating irrigation as the special use of public water, granting permits and concessions.

Both permits and concessions to access private use of public water present similarities and features that could be taken as common to every province's public law, but, in turn, each code has distinctive features that provide water rights with better or worse conditions in terms of legal protection, more rigidity or flexibility, and tighter relation to either public or private interests (13).

Water rights present a polyhedral shape bearing a series of characteristics which are difficult to be quantified given that these features are part of a system and operate in contexts with different geographical conditions, legal paradigms, customs, law enforcement devices, implementation, and even institutional culture (8). Therefore, we envision that, regardless of the existing common features, this century Water Law will bear a complex and strongly territorial structure based upon local diversities (7), all of which arouses more interest in the comparative analysis of the different provincial legal systems.

The legal status of water rights may not have been quite determining in the context of relative abundance of the resource and emerging economic development of the mid-20th century, let alone in the 19th century, when most of today's acts and water codes were passed. However, in a context of increasing relative scarcity of water resources, of intensive development of agriculture, and uncertainty regarding the availability of and the impact on irrigation systems due to climate change (3, 5, 19), water rights -as the indispensable legal factor for irrigation- take on greater significance and develop amidst growing tensions (22).

The current economic and climate dynamics do not correspond with the excessively rigid legal configurations of last century's civil approaches (11), nor the 19th century water legal framework; instead, water rights codes must reflect, adequately and in a balanced way, the management and use of water, achieving a right balance, dynamic over time, between public and private interests (27).

Water codes regulate concessions and permits either separately or together. Most times they have similar legal frameworks as regards the four variables under analysis, but in certain occasions they may differ in the requirements for access and the conditions for exercising those rights.

This last point explains why the selection of the four variables has been done by focusing on the main topic analyzed in each case, regardless of the fact that in some provinces there may be slight nuances in other figures.

The analysis is carried out based on four variables linked to the requirements for access and subsistence of the water rights granted by permits and concessions. These are: 1) ownership of the land to be irrigated; 2) the duration of the right; 3) forfeiture for lack of use; and 4) appurtenance.

MATERIALS AND METHODS

This article presents the conclusions of a qualitative comparative analysis of the legal framework comprising permits and concessions for irrigation amongst Argentinian provincial legislations currently in force (2020). For this purpose we built four variables which were assigned a value: very positive, positive, negative, or very negative, according to whether they promoted or not a better management and supported the expansion of irrigation in the current context. We did not take into account the institutional aspects bearing influence on legal efficiency and effectiveness.

The universe compared has included the following codes: Buenos Aires (12257 Act), Catamarca (2577 Act), Chaco (555-R Act), Chubut (XVII-53 Act), Córdoba (5589 Act), Corrientes (191 Act), Entre Ríos (9172 Act), Formosa (1246 Act), Jujuy (161 Act), La Pampa (2581 Act), La Rioja (4295 Act), Mendoza (Water Code of 1884 / 4035 underground water Act), Misiones (XVI-15 Act), Neuquén (899 Act), Río Negro (2952 Act), Salta (7017 Act), San Juan (190-L Act), San Luis (VI-0159-2004 Act), Santa Cruz (1451 Act), Santa Fe (13740 Act), Santiago del Estero (4869 Act), Tierra del Fuego (1126 Act). These have been considered, when necessary, along with the corresponding constitutional and regulatory principles.

Following a non-experimental observational methodological design, the analysis was divided into two distinct phases: the first one focuses on each provincial water code. Here we integrated the general legal framework of permits and concessions with the specific regulation of the irrigation use, these being normally separated in the water codes and here connected by the methodological choice implemented. The second one entails the comparative analysis of the aforementioned variables between all the provinces and the respective tables provided. Based on this we identified tendencies and could carry out a critical reflection upon their functioning. It should be pointed out that the disaggregated analysis of the variables does not prevent the mutual and reciprocal existing implications, both in the regulatory and practical fields.

RESULTS

Brief reference on permits and concessions for the use of irrigation water

Any person seeking to access the use of water for irrigation must comply with the conditions imposed by the regulations in force in each province for such use, being a common pre-requirement in all of them to have a legal title granted by the competent authority. Permit and concession are administrative titles implemented by all of the Argentinian provinces that regulate irrigation with private waters.

Permit is an administrative act of authorization granted by the public administration, whereby the latter allows the use of public water in favor of the title holder. It is revocable without compensation, given that it is founded on the public administration's mere tolerance to the use of water by the licensee without creating any right per se. It must be expressly granted by the provincial State (4).

Concession instead creates a genuine subjective right, stable for its holder, who must be compensated in case of revocation. Whether it be considered a contract or an administrative act, it creates an administrative right in rem over the private use of public water, entirely regulated by administrative law and protected under the same constitutional guarantees of private property (12, 25).

In general terms and regardless of some nuances that can be found (15), both administrative titles are distinguished by the precariousness -found in permits- which is subject to possible revocability without compensation. Therefore, concession provides holders with more secure rights although its scope may vary from one province to another (13). In a general sense, both devices allow water for irrigation, except for the provinces that have limited such use only to concession (Chubut's XVII-53 act and Jujuy's 161 act).

Ownership of the land to be irrigated

This variable refers to the requirement of an applicant for a right to use surface water, in terms of their relationship to the property where this right will be applied. Both concession and irrigation permit create rights in rem, which makes legislation often to require the formal ownership of the land to be irrigated. However, in general it also allows tenants, possessors or allottees to access the use of water, under certain and limited circumstances. In the case of Buenos Aires, for instance, despite a lack of express regulation about this, the link between ownership and concession appears implicitly due to the in rem nature of property.

Most provinces allow applicants other than the owners when there is some justified interest (tenants, possessors, allottees). Nevertheless, there are still some provinces requiring the ownership to grant the use of water as table 1 shows.

Table 1. Requirement/lack of requirement of land ownership to access the water right according to the legislations of each province.

Tabla 1. Exigibilidad/omisión del requisito de titularidad dominial para acceder al derecho de agua según las leyes de cada provincia.

Variable	Person other than the land owner (tenant, possessor, allottee)		Land o	owner	
	Concession	Permit	Concession	Permit	
Buenos Aires			X	X	
Catamarca		X	X		
Chaco		X	X		
Chubut	X		X		
Córdoba		X	X		
Corrientes	X	X	X	X	
Entre Ríos	X	X	X	X	
Formosa	X	X	X	X	
Jujuy			X		
La Pampa	X	X	X	X	
La Rioja		X	X		
Mendoza		X	X	X	
Misiones	X	X	X	X	
Neuquén			X		
Río Negro	X	X	X	X	
Salta		X	X		
San Juan			X		
San Luis		X	X		
Santa Cruz	X	X	X	X	
Santa Fe	X	X	X	X	
Santiago del Estero		X	X		
Tierra del Fuego	X	X	X	X	
Tucumán	X	X	X	X	

In view of the current economic dynamics, the relaxation of these ownership requirements could benefit irrigation expansion in any of its forms, adjusting water rights to the current economic reality; in fact, the public interest behind the private use of public waters for irrigation is met, regardless of the property rights involving the land in question. In certain cases the ownership requirements are limited to concession, which could be seen as a right balance between the two extremes that facilitates the development of irrigation with precarious water rights where there is also precarious land tenure.

Such flexibility can be considered positive given that it promotes the development and expansion of different irrigation systems. This is in the public interest as it justifies the private use of a public domain good. In turn, rigidity in the need for land ownership can

imply a negative value, making it difficult for agricultural ventures to operate. Nevertheless, the absence of that rigidity can also entail a negative turn, even if smaller if compared to the aforementioned public interest, as it can be detrimental to some owners' individual interests who might find themselves obliged to litigate over their land.

Duration of right

Among the variables studied, duration -that is, the period during which the right is guaranteed- is a determining factor for investments as well as for the public administration powers, both in terms of hydrological planning and the opportunity of adjusting conditions in future water rights novations.

The observation of table 2 shows that near a third of the provinces provides for perpetuity, while the rest prescribe durations mostly below 50 years. Without entering into the existing debate within the doctrine (17) on the likely unconstitutional nature of perpetuity due to its alienating effect on public domain, it is important to highlight as a positive factor the existence of reasonable duration terms, in line with the amortization of the irrigation project investment. In turn, excessive durations could be considered negative and perpetuity very negative, unless there is a very reasonable argument justifying such extension of time.

Table 2. Duration of water rights according to provincial legislations.Tabla 2. Duración de los derechos de agua según las leyes de cada provincia.

Duration	Up to 20 years	21 to 50 years	+ de 50 years	Perpetuity
Buenos Aires		X		
Catamarca				X
Chaco				
Chubut				X
Córdoba	X			
Corrientes				X
Entre Ríos	X			
Formosa		X		
Jujuy			X	
La Pampa	X			
La Rioja	X			
Mendoza				X
Neuquén	-	-	-	-
Río Negro				X
Salta				X
San Juan				X
San Luis		X		
Santa Cruz			X	
Santa Fe	X			
Misiones		X		
Santiago del Estero	X			
Tierra del Fuego		X		
Tucumán	-	-	-	-

For example, in oasis economies of arid regions, where water rights perpetuity and appurtenance are typical regulations (10) constituting mechanisms of land policy that have structured the entire territory (24). Introducing a right with such long time-frame over public domain, however, would only be reasonable as long as the rigidity of its content has an inversely proportional density. That is, the right being very flexible and according to the public interest justifying it. This entails the need to have public intervention powers strong

enough over the use of water, following efficiency standards, continuity, restrictions, and the possibility of reviewing the scope of the concession according to an adaptive water planning.

It should be borne in mind however that some provincial legislations do not have any provision about water rights duration -Chaco- or mention temporariness without indicating concrete terms -Neuquén-, or those terms appear as indefinite -Tucumán-.

Adding or reducing a duration to rights currently not having any can raise important legal issues if the minimum constitutionality standards are not met so as to protect the vested rights over public waters issued by the public administration (14).

Right forfeiture for lack of use

The survival of a water right is linked to its effective or beneficial use, since even if their use is provided for the direct benefit of individuals, the economic development produced by the adequate and efficient use of it is considered of public interest (21). In the requisite of effective use, under penalty of forfeiture if unmet, there is an evident purpose of promoting investment and production at the expense of economic and real-estate speculation, thus privileging the public interest that justified granting rights on public waters.

Except the case of San Luis, all the provinces provide for forfeiture in the case of lack of use as table 3 shows. Most of them do so for terms of 3 years or less and only some accept longer terms, never beyond 6 years -except for Tucumán-. Some provinces demand the lack of justified cause, which is important in case the provided terms are brief and when the vicissitudes of economy and production are taken into account. Still, even for these cases it is convenient to have objective justification causes so as to avoid arbitrariness and reasonably allow for adjusting application according to the particularities of each region.

Table 3. Forfeiture term for lack of use in provincial legislations. **Tabla 3.** Plazo de caducidad por no uso según legislación provincial.

Forfeiture for lack of use	From 1to 3 years	From 4 to 6 years	From 7 to 9 years	10 years or more
Buenos Aires	X			
Catamarca	X			
Chaco		X		
Chubut	X			
Córdoba	X			
Corrientes	X (continuous)	X (discontinuous)		
Entre Ríos	X			
Formosa		X		
Jujuy	X			
La Pampa	X (continuous)	X (discontinuous)		
La Rioja	X			
Mendoza	X (underground water)	X (surface water)		
Neuquén		X		
Río Negro	X			
Salta	X			
San Juan	X			
San Luis				
Santa Cruz		X		
Santa Fe	X (continuous)	X (discontinuous)		
Misiones	X			
Santiago del Estero	X			
Tierra del Fuego	X			
Tucumán		X (non use + non payment)		X

Bearing in mind that the private use of the public domain means a benefit for the community, and that this purpose prevails over individual interest, general interest is key to establishing the conditions of that use (9,16). We therefore consider very positive the terms below 3 years, positive those between 4 and 6 years, negative because of their unreasonable duration those between 7 and 9 and very negative those above 10 years. The main reasons for this are that short terms not only promote production and irrigation expansion but also prevent from keeping assigned water flows idle while other people are asking for them, enabling the public power to reallocate them.

Appurtenance

This principle has the dual purpose of guaranteeing legal certainty, keeping the economic unit land-water as well as the public and private investments over it, thus guaranteeing the immovability of the water right granted to this land.

This principle with the consequent immovability of the water right has the purpose of keeping the land-water productive economic unit untouched as well as the utility of the public and private infrastructure built around it (1). In essence, it prevents the water right from existing independently from the land, including its sale or lien separately, guaranteeing the purpose it was granted for and avoiding speculation as well as guaranteeing the sustainability of the water supply network.

In implementing this, many provinces -Jujuy, Catamarca, La Rioja, Salta, San Juan, Mendoza, and Santiago del Estero- have valued this regulation so dearly to the extent of giving it constitutional rank as a structuring principle in water legislation. In their legal development, some provinces have established it with absolute rigidity whereas some other allow to modulate it through possible transfers of water rights independently from the land ownership, be it for certain regulated cases and/or in general when the competent authority expressly allows for it (23). It is worth noting that this regulation appears more frequently in province with scarce water resource and so it bears a higher value (26).

Table 4 (page 211) shows that except for the case of Entre Ríos, all the provinces provide for regulations on appurtenance of water right for irrigation to the property for which this right was granted. Half of the provinces makes so in a rigid way whereas the other half allows transfers or exceptions by means of different causes and forms of authorization.

Appurtenance is useful to consolidate the territorial development of the irrigated areas and their appropriate scale by preserving the agricultural production units that justify and support the water distribution network. However we have observed that a rigorous application can have a negative impact on the efficiency of use (2), preventing users from reallocating to maximize benefits (6) as well as excluding farmers from the possibility of taking advantage of any surplus generated after the infrastructure works (20), and reducing gaps in the adaptation capabilities to climate change (18).

In a centralized scheme of granting rights such as the adopted by all the Argentinian provinces, the appurtenance of water to the land follows a clear logic which might be difficult to make compatible with the past decades trend of incorporating water rights markets and banks as found in other regions (Mexico, Spain, Chile, Australia, United States), where rights can shift from use and place based upon a decentralized scheme of transfers where the intensity of state intervention varies among the different compared experiences. However, such compatibility can be reached through state control and authorization of the transfer, making sure that the new use is neither contradictory nor inappropriate with the public interest behind the granting of the original water right (23). In the analysis and development of water rights legal framework it is important to find the balance between the purpose intended by the appurtenance and the possibility of make adjustments after being granted when it is a justified measure.

Table 4. Appurtenance of water rights to the land according to provincial legislations. **Tabla 4.** La inherencia del derecho de agua al predio según las leyes de cada provincia.

Appurtenance	Flexible	Rigid	Not foreseen
Buenos Aires		X	
Catamarca		X	
Chaco		X	
Chubut		X	
Córdoba	X		
Corrientes		X	
Entre Ríos			X
Formosa	X		
Jujuy	X		
La Pampa	X		
La Rioja		X	
Mendoza		X	
Neuquén	X		
Río Negro		X	
Salta		X	
San Juan		X	
San Luis	X		
Santa Cruz		X	
Santa Fe		X	
Misiones	X		
Santiago del Estero	X		
Tierra del Fuego	X		
Tucumán	X		

Conclusions

The qualitative analysis of the four variables suggested for studying the conditions for access and subsistence of the rights granted by permits and concessions of water for irrigation in each of the current provincial legislations allows us to draw certain conclusions as well as identify some trends.

As for ownership of the land to be irrigated, most of the provinces provide for granting the water right to person other than the landowner, showing a trend towards flexibility in this variable. However, some correspondence between the land ownership and the certainty/precariousness of the right to use water could be beneficial so as to get a balance between achieving the public interest goal of developing irrigation areas and the individual interest of formal owners; following this line of reasoning, it would be very positive to replicate the precarious permit technique for those who are not the owners of the land in question. Table 5 (page 212) shows the assessment of the different alternatives regarding this variable.

As for the duration of the water rights, there is a tendency to limit it to determined periods, ever shorter, as shown in most Argentinian provinces; still, near a third continues to allow perpetuity. Table 6 (page 212) shows that establishing reasonable terms so as to cover the amortization of the ventures is valued as very positive or positive, while excessive terms -long or short- are considered negative, perpetuity being taken as very negative (except for situations as oasis economies, determined by water distribution structures where perpetuity can be justified at large and result in a positive outcome as long as it is accompanied by strong regulations intervening protectively on the hydrological planning).

Table 5. Assessment of the alternatives regarding the land ownership for accessing the water right. Person other than the landowner (tenant, possessor, allottee).

Tabla 5. Valoración de alternativas relativas a la titularidad dominial para acceder al derecho.

Person other than the landowner (tenant, possessor, allottee)		Landowner	
Concession	Permit	Concession	Permit
		Nega	ative
Positive			
	Very positive		

Table 6. Values for the alternatives regarding duration of water rights.

Tabla 6. Valoración de alternativas relativas a la duración de los d	derechos de agua.
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Reasonable term	Excessive long/short term	Perpetuity, not including exceptions	
Very positive/Positive	Negative	Very negative	

All of the provinces -except for one- provide for forfeiture in case of lack of use, most of them through relatively short terms of unjustified lack of use, something that seems likely to be strongly consolidated in the coming scenario of growing scarcity and reallocating demands.

As showed in table 7, we consider establishing rights forfeiture in terms below 3 years very positive, between 4 and 6 positive, negative between 7 and 9 and very negative above 10 years. The reasons for this are explained in the fact that a short term entails a strong promotion of production and the expansion of irrigation, something that prevent from keeping idle flows of water and speculation. On top of this it would allow the public power to reallocate and take advantage of them more efficiently.

Table 7. Values for alternatives regarding the forfeiture for lack of use.

Tabla 7. Valoración de alternativas relativas a la extinción por no uso de los derechos de agua.

From 1 to 3 years	From 4 a 6 years	From 7 a 9 years	10 years or more
Very positive	Positive	Negative	Very negative

Appurtenance of the right to the land is provided for in all the provincial legislations; sometimes more rigidly, in other more flexible. However, rigidity can be perceived as an obstacle for hydric and economic efficiency, and even for environmental needs in times of climate change, all of which explain and foresees the trend towards flexibility so as to allow transfers in certain cases or under the state control according to the public interest involved.

Table 8 shows that even when this principle of appurtenance is considered a positive element in irrigation systems, it is definitely more positive when developed together with mechanisms that allow to adjust the rigidity, enabling a certain flexibility so as to allow authorities to assess rights reallocation in a due manner according to their effects. In turn, the total absence of link between the land and the water right is considered negative or very negative as it does not promote efficiency of use nor the maintenance of the production unit -sometimes- developed after significant investment done over the property and time involved. Finally, it does neither consolidate the territorial areas under irrigation nor the maintenance of its public infrastructure.

Table 8. Values for the alternatives regarding appurtenance of water rights to the land. **Tabla 8.** Valoración de alternativas relativas a la inherencia del derecho de agua al predio.

Flexible	Rigid	Not foreseen
Very positive	Positive	Negative/Very negative

REFERENCES

- 1. Andino, M. 2011. El régimen jurídico del agua en la agricultura en Argentina. En: Embid Irujo, A. (dir). Agua y Agricultura. Navarra. España. Aranzadi. 125-160.
- 2. Batista Medina, J. 1996. Respondiendo a la escasez del agua de riego: cambio institucional y mercado de agua. Estudio de un caso en las Islas Canarias. Revista Española de Economía Agraria. Ministerio de Agricultura, Alimentación y Medio Ambiente. España. 175: 167-198.
- 3. Boninsegna, J. 2015. Impactos esperados y vulnerabilidad al cambio climático de los principales ríos de Mendoza y San Juan". En: Impactos y vulnerabilidad al cambio climático de los principales ríos de Mendoza y San Juan a partir de la evolución de los glaciares cordilleranos. La economía del cambio climático en la Argentina. Santiago. Chile. CEPAL. 11-28.
- 4. Correa, J. 2007. Permiso de uso de aguas públicas para riego. Revista de Derecho Público, Contratos Administrativos. Rubizal Culzoni. Santa Fe. Argentina. (1): 277-327.
- 5. Deis, L.; de Rosas, M.; Malovini, E.; Cavagnaro, M.; Cavagnaro, J. 2015. Impacto del cambio climático en Mendoza. Variación climática en los últimos 50 años. Mirada desde la fisiología de la vid. Revista de la Facultad de Ciencias Agrarias, Universidad Nacional de Cuyo. Mendoza. Argentina. 47 (1): 67-92.
- Duarte, L. (coord.). 2010. Hacia una estrategia para el manejo integrado del agua de riego en Argentina. Ministerio de Agricultura, Ganadería y Pesca de la Nación. Buenos Aires. Argentina. 148 p.
- 7. Embid Irujo, A. 2018. El Derecho de Aguas del siglo XXI. En: García Pachón, M. (ed). Tratado de Derecho de aguas. Bogotá. Colombia. Universidad Externado de Colombia. 2: 19-51.
- 8. Hodgson, S. 2006. Modern Water Rights: Theory and Practice. Rome. Italy. FAO. 116 p.
- 9. Lafuente Benaches, M. 1988. La concesión de dominio público (Estudio especial de la declaración de caducidad). Madrid. España. Montecorvo. 223 p.
- 10. López, J. 1984. La concesión de uso de aguas públicas para riego. Ambiente y Recursos Naturales. La Ley. Buenos Aires. Argentina. 1(4): 29-36.
- 11. Marienhoff, M. 1939. Régimen y legislación de las aguas públicas y privadas. Buenos Aires. Argentina. V. Abeledo. 817 p.
- 12. Marienhoff, M. 1960. Tratado de dominio público. Buenos Aires. Argentina. TEA. 599 p.
- 13. Martín, L. 2010. Derecho de aguas. Estudio sobre el uso y dominio de las aguas públicas. Buenos Aires. Argentina. Abeledo Perrot. 319 p.
- 14. Martín, L. 2011. Modificación de la concesión de aguas públicas. Problemática jurídica en torno a su indemnización en el derecho argentino. Actas de Derecho de Aguas. Pontificia Universidad Católica de Chile. Santiago. Chile. 1:115-142.
- 15. Martín, L. 2012. Concesión y permiso para el uso de aguas públicas: principios, naturaleza jurídica y revocabilidad. Jurisprudencia Argentina. Abeledo Perrot. Buenos Aires. Argentina. 2: 1104-1125.
- 16. Martín, L. 2013a. Aguas disputadas. Transformaciones del interés público (y privado) en el uso del agua pública. Passagens. Revista Internacional de História Política e Cultura Jurídica. Universidade Federal Fluminense. Rio de Janeiro. Brasil. 5: 3-28.
- 17. Martin, L. 2013b. Instituciones y principios matrices del derecho de aguas: contradicciones entre teoría y práctica. Actas de Derecho de Aguas. Pontificia Universidad Católica de Chile. Santiago. Chile. 3: 105-121.
- 18. Mussetta, P.; Barrientos, M. 2015. Vulnerabilidad de productores rurales de Mendoza ante el Cambio Ambiental Global: clima, agua, economía y sociedad. Revista de la Facultad de Ciencias Agrarias, Universidad Nacional de Cuyo. Mendoza. Argentina. 47(2): 145-170.
- 19. Panel Intergubernamental sobre Cambio Climático. 2008. Cambio Climático 2007: Informe desíntesis. Contribución de los Grupos de trabajo I, II y III al Cuarto Informe de evaluación del Grupo Intergubernamental de Expertos sobre el Cambio Climático [Equipo de redacción principal: Pachauri, R. K. y Reisinger, A. (directores de la publicación)]. Ginebra. Suiza. IPCC. 104 p.
- 20. Pinto, M. 2012. Estrategias de adaptación al cambio climático desde la Política y Legislación de Aguas en Argentina. Actas de Derecho de Aguas. Pontificia Universidad Católica de Chile. Santiago. Chile. 2: 143-186.
- 21. Pinto, M. 2013. El interés público como fundamento de la concesión de aguas y la caducidad por no uso. La Ley Gran Cuyo. La Ley. Buenos Aires. Argentina. 2013:698-619.
- 22. Pinto, M. 2018. Los conflictos sobre usos del agua y su regulación en Mendoza, Argentina. Análisis de su resolución jurisprudencial. Revista de Derecho Administrativo Económico. Pontificia Universidad Católica de Chile. Santiago. Chile. 27: 131-156.
- 23. Pinto, M.; Martín, L. 2015. Los mecanismos legales de acceso al agua en las provincias áridas del oeste argentino: principios y características comunes. Revista de la Facultad de Ciencias Agrarias, Universidad Nacional de Cuyo. Mendoza. Argentina. 47(1): 145-157.
- 24. Pinto, M.; Buccheri, M.; Andino, M. 2017. La asignación de derechos de agua y los mecanismos de recuperación de plusvalía territorial. En: Pinto, M.; Estrella, J.; Gennari, A. (comp.); Agua y Sociedad. Buenos Aires. Argentina. Lajouane. 179-216.
- 25. Pinto, M. (dir); Andino, M.; Rogero, G. 2019. Ley de Aguas de 1884 Comentada y Concordada. Mendoza. Argentina. Irrigación Edita. 1: 266 p.

- 26. Rugoso, M. 2017. El principio de inherencia; Análisis; Regulación legal; Particularidades del caso de la Provincia de Mendoza. Revista RyD República y Derecho. Facultad de Derecho, Universidad Nacional de Cuyo. Mendoza. Argentina. 2: 1-34. http://revistaryd.derecho.uncu.edu.ar/index.php/revista/issue/view/3/showToc [Consulta: 20 de octubre de 2019].
- 27. Solanes, M.; Jouravlev, A. 2005. Integrando economía, legislación y administración en la gestión del agua y sus servicios en América Latina y el Caribe. Santiago de Chile. CEPAL. 101: 79 p.