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The Agrarian Reform Law enacted by the Chilean Congress in 1967, which was primarily designed to change the nature and structure of the country's agricultural sector, will have a profound effect on its water law. The article which follows provides first a basic description of previous Chilean water law and secondly focuses specifically on new modifications and changes occasioned by the Agrarian Reform Law.

MODIFICATIONS IN THE WATER LAW OF CHILE CONTAINED IN THE NEW AGRARIAN REFORM LAW

*Michael T. Lyon**

INTRODUCTION

ON July 28, 1967, the Chilean Congress enacted a wide-sweeping Agrarian Reform Law.¹ The Law, if administered and carried out as planned, will change the nature and structure of Chilean agriculture by breaking up large and generally inefficient landholdings, by providing technical assistance and capital for the agricultural sector, and by integrating the peasants into the nation's economic structure.

The Agrarian Reform Law also modified a great part of the water law of Chile. Many of the modifications were made to improve the efficiency of water use; others were made to remove elements in the water law system likely to impede the agrarian reform program.

This article discusses a number of original approaches to the administration and utilization of water which are con-

* LL.B. Stanford University, 1967. The author wishes to express his appreciation to the International Legal Center, whose fellowship allowed him to pursue these studies. He also wishes to thank Don Pedro Moral L., Director of the Legal Section of ICIRA in Santiago, Chile, for counsel and guidance during the preparation of the Article. The author, alone, however, bears the responsibility for the contents of the article.

1. *Ley de la Reforma Agraria*, No. 16.640, published in the DIARIO OFICIAL No. 26.804, July 28, 1967.

tained in the recent modifications of the water law system, and attempts a basic description of water law prior to the Agrarian Reform Law. To understand the new modifications, a minimal knowledge of the previous water law is necessary, and to this purpose the first part of this article is devoted. The second part is devoted to the new modifications.

The sources of information for this article are varied and numerous. My work in the legal department of the Agrarian Reform Training and Research Institute (ICIRA) provided me with much of my understanding of the Chilean legal system, and in particular, water law. Research of documents in the water department of the *Direccion de Riego* (the irrigation authority), and secondary sources in the area of water law provided me with additional information. I found interviews with Chilean lawyers vitally important in filling in the gaps in my understanding and answering the numerous questions which arose.

The structure of the second part of this article is patterned on Part 6, chapters one and two of the *Exposicion Metodica y Coordinada de La Ley de Reforma Agraria de Chile*.² A large part of the text of this section relies heavily on Part 6 of this publication and on provisions of the Agrarian Reform Law related to water.

In translating the legal terms I have attempted to use analogous terms of the Common Law; this should increase comprehension, although it runs the risk of giving the deceptive impression of greater similarity between the Common Law and the legal system of Chile than in fact exists. There are a number of gaps and ambiguities in the Agrarian Reform Law which have not as yet been cleared up. A description of the law in these areas may leave a reader with numerous questions and a feeling of incompleteness or vagueness. These gaps and ambiguities in the law are attributable to the inadequate drafting of certain articles and to the extensive and often justifiable reliance on administrative regulations to fill in the details of the legislation. The

2. This publication was prepared by the Agrarian Law Department of the Agrarian Reform Training and Research Institute project financed by the United Nations Development Program and managed by the Food and Agriculture Organization of the United Nations. It was copyrighted in 1968 and published by the EDITORIAL JURIDICA, Santiago 1968.

Agrarian Reform Law in many areas establishes only a set of norms; the public administrators are to draft the details.

Finally, citations to sources other than legislation have usually been omitted. These other sources were interviews, personal experiences, treatises and documents in the *Dirección de Riego*. Also I have frequently omitted full citations to old legislation no longer in effect. Footnotes have been used primarily for supplemental descriptive material.

PART I: WATER LAW PRIOR TO THE AGRARIAN REFORM

In 1951 a Water Code³ was enacted which modified the previous water law and collected and organized legislation relating to water. Prior to this Code all matters relating to water were appendages of the Civil Code of 1857.⁴ The Civil Code, as its author intended, provided only a basis for a water law system; the details were reserved for specific legislation. This legislation enacted over a period of more than a century touched only specific aspects of water law and was dispersed in a great number of laws, decrees and ordinances.

The legislation before the Water Code was of three types. Substantive provisions of the civil law⁵ determined the rights of private parties. These provisions were the foundation of water legislation and were contained principally in the Civil Code sections dealing with servitudes, and water of the public domain. Other provisions were found in the Mining Code, the Law of Canal Associations of 1908, and various specific laws.

In addition to substantive provisions, administrative provisions were enacted to define and regulate the powers of public administration over water matters. These provisions related in particular to the grant of *mercedes* of water,⁶ the construction of irrigation works and the policing of natural

3. *Código de Aguas, Ley No. 9.909* published in the DIARIO OFICIAL No. 21.960, May 28, 1951.

4. *Código Civil, Ley* signed by the President of the Republic on December 14, 1855 and came into effect on January 1, 1857.

5. Civil Law (*derecho civil*). This article refers only to the laws, doctrine and *jurisprudencia* (case law) based on the Civil Code. It is private law in that it contains the norms governing relationships between private parties.

6. A *merced* is a grant by the public authorities of rights over water.

channels. Finally, provisions of a procedural nature were promulgated to establish the manner of asserting and protecting water rights in court. The Code of Civil Procedure set up a special procedure for resolving water conflict.

The substantive provisions of the Civil Code established that the water which ran in natural watercourses, that is 95% of the surface water in Chile, was *bienes nacionales de uso publico*.⁷ However, in spite of the Civil Code, private parties exercised rights over this water which were the same rights an individual would exercise over his own property. Most discussions of water rights focused on this apparent conflict over the nature of water rights. How could private parties exercise ownership or at least the attributes of ownership over national property for public use? This question preoccupied scholars for many decades.⁸ Although the definition of water rights in the state-private context caused the most interest among legal thinkers, it went largely unresolved in practice for the reason that the State, in keeping with liberal economic philosophy, rarely intervened in water conflicts except as an arbitrator. Thus, the conflicts remained somewhat abstract, and the issue was never forced to a conclusion. Since the important conflicts were generally among private parties, the issue of the nature of private rights over water *vis a vis* the rights of the State was unlikely to arise. Subsequent discussions of the changes produced by the Water Code of 1951 on prior law will reveal the basic framework of these private rights.

As mentioned above, water which flowed in rivers and other natural channels, under the Civil Code, was *bienes nacionales de uso publico*; the Water Code did not alter this

7. *Bienes nacionales de uso publico* (national property for use of the public) refers to property over which *dominio publico*, public ownership, is asserted. The property belongs to all inhabitants of the country, and all members of the public may use it within administrative limitations established by the state. In contrast, private property, *bienes particulares*, is property which, conceptually, can be defined as that property which can be appropriated by individuals without causing prejudice to third parties. *Bienes fiscales* is property over which the Government, as distinguished from the state or nation, can exercise dominion. In a sense this property is to the government what *bienes particulares* is to the individual; the government can use, enjoy, and dispose of it in any way it sees fit.

8. See COMENTARIOS AL CODIGO DE AGUAS, pt. II (ed. Ana Hederra Donosa, Santiago de Chile, 1960). COWPER, DEL DOMINIO Y APROVECHAMIENTO DE LAS AGUAS 81 Toma I. The latter work is probably the most complete discussion of the Chilean water code. It also provides reasonably detailed background on the water law prior to the code.

situation which had been established centuries ago and which the Civil Code had codified. However, the Water Code did bring other water into the public domain as *bienes nacionales*. Previously, under Article 837 of the Civil Code, water which flowed in artificial channels constructed at the expense of an individual belonged to that individual. This article caused a considerable controversy. One possible interpretation of this provision is that in spite of the fact that the water which ran in natural channels was owned by the nation, i.e. in *dominio publico*,⁹ once it was introduced into artificial channels it passed into private ownership (*dominio privado*). The courts gave this interpretation to the article.

The water Code altered this situation. Article 21, paragraph 1, says that the *use* of water which flows in artificial channels constructed at an individual's expense, belongs exclusively to the holder of the *derecho de aprovechamiento*¹⁰ who has legally constructed the channel.¹¹ This article suggests that individuals do not own the water but rather have a right to use it.

Also in respect to ground water, the Water Code of 1951 made some significant changes. Prior to the Water Code, ground water was considered the property of the owner of the land under which it flowed. Article 945 of the Civil Code said "anyone can drill a well on his own land, although it diminishes the water which supplies other wells; but if no benefit is derived from it or if the benefit is less than the damage to the other wells, it will have to be capped." Article 21 of the Water Code changed this. The right to *use* (i.e. *aprovechamiento*) water on private land belongs to the owner of the land. The use of the water, if not for domestic pur-

9. *Domino publico* (public ownership) refers to property held by all the people, that is, by the nation. No one, including the government, can appropriate property in *dominio publico* for his own use. Originally property in *dominio publico* was for the use of everyone (e.g. roads, bridges, parks). When water, which cannot be used by everyone in the same way as a public road, was brought into *dominio publico*, a good deal of effort was spent trying to reconcile the nature of property in *dominio publico* with the fact that water was being used by private parties to the exclusion of others. Finally, it was suggested that the government could administer property of public ownership within certain norms and these norms permitted the exclusive use of this public property by private parties.

10. The *derecho de aprovechamiento* might be translated as the right to make good use of, in this case, water.

11. The Agrarian Reform Law, *supra* note 2, replaces this article with article 122, paragraph 6. See discussion of this new provision on page 16.

poses, will be permitted only after a *merced* has been conceded. Under the Code, therefore, the property owner only has the right to use the ground water, and even this use will frequently require a *merced*. Thus, ground water has brought into the public domain by the Water Code in the same way as water in artificial channels.

With the enactment of the Water Code, the only water which remained private property were springs which originated, flowed and terminated on the same property and lakes not navigable by vessels greater than 100 tons. This water represented only a small percentage of the water of Chile.

From a discussion of the changes brought about by the Water Code, it can be seen that the right or *derecho de aprovechamiento* replaced private ownership over ground water and water in artificial channels. The Code also gave a private right of *aprovechamiento* over most other water. This right was a real property right over water of the public domain which permitted the use, enjoyment and disposition of the water in conformity with the rules of the Water Code. However, the substitution of this right of *aprovechamiento* for implicit or explicit ownership signified little more than a verbal change since the right had in practice the same characteristics as ownership (*dominio*). Nevertheless, the introduction of the right of *aprovechamiento* did begin to clear away thorny doctrinal problems; and it did establish the doctrinal and legislative foundations for subsequent changes of greater magnitude. The right moved water rights further out of the realm of private property, although with the characteristics given this right by the Water Code, further changes were necessary to clear up the ambiguous nature of private water rights.

The debate over the nature of water rights in a private-public contest had less immediate importance as a practical matter than the question of defining rights among the users themselves, for until recently conflicts arose in a private-private context. Private rights can be divided into riparian and non-riparian rights. Article 834 of the Civil Code said that the owner of land could use the water which naturally flowed through his property, although the water is not private

property, for domestic purposes, irrigation, mechanical power and the watering of livestock. Under this provision, the riparian owner could extract water without permission from the public authorities.

Non-riparian owners were governed by a system of *mercedes*. The *merced* is an authorization from the public authorities to use water and construct the necessary works to extract it. Civil Code article 860 said *mercedes* are conceded without prejudice to previously acquired rights. Thus, riparian rights and concessions of water prior to the Civil Code remained in effect. It is not clear whether rights from time immemorial were considered previously acquired rights.

If literally applied in a period of drought, the user with non-senior rights might find himself without water. To remedy this situation, the *Ordenanza General de Distribucion de Aguas* of January 3, 1872, and subsequent ordinances, introduced into the law a system of rotation and rationing of water.¹² During a drought, a water judge (of the executive branch, not the judiciary) would determine who would get what part of a particular flow of water. The decision would be based on asserted rights and perhaps on the amount of land to be irrigated.

This *ordenanza* also dealt with the problems of *mercedes*. It created the concept of the permanent and eventual *merced*. The permanent *merced* gave the user a right to extract water no matter what the quantity of the water in the river might be. Eventual *mercedes* conferred the right to extract water only in times when the river had sufficient flow to satisfy the needs of holders of permanent rights.

Permanent *mercedes* were conceded at a date prior to the date on which the river was first submitted to rotation of rationing. Eventual *mercedes* were those conceded after

12. Although the system of rotation and rationing might take a number of forms, I am familiar with only one. During a period of water scarcity, when the amount of water is too small to satisfy fully the needs of users with permanent rights, a period will be fixed of, for example, eight days, and each canal on the river will open its gates for a portion of this period; this portion is theoretically to equal the proportion of rights held by the canal out of the total rights in the river. Irrigators using the same canal may also divide their water on a flow per unit of time basis.

The most complete description of the *turno* (rotation) system is found in a dissertation by Stewart, *Aspects of Chilean Water Law in Action: A Case Study*, 148, 189, 286 (Univ. of Wis., 1967).

the first rotation or rationing, the thought being that the fact that a river has been submitted to rotation or rationing indicated that there was no more water over which a permanent right of extraction could be granted. Under this scheme, *mercedes* granted after rotation or rationing would not prejudice prior existing rights. As for rivers never put on rotation or rationing, all *mercedes* were permanent. After the Water Code was enacted, the President on granting a *merced* determines explicitly whether it is a permanent or eventual *merced*. Presumably if the *merced* is to permit the use of water in a river which had been submitted to rotation or rationing, the President would grant only eventual *mercedes*. At the request of users of the water of a particular river, the President can declare the river exhausted and only eventual *mercedes* can be granted thereafter. Between permanent and eventual rights, the former by definition have priority.

Among the holders of rights to permanently extract water,¹³ conflicts were likely to arise during periods of water scarcity. The Civil Code did not make an attempt to establish priorities among various users. Although Article 834 may talk of a preferential right of riparian owners when other persons allege use from time immemorial, it is doubtful whether among riparian owners or among riparian owners and grantees of permanent *mercedes* any concept of priority of rights existed in the law. Instead of setting up priorities among permanent rights, the law, particularly the Ordinance of 1872, set up a method for distributing water in periods of scarcity.

Under the Ordinance, a judge was in charge of distributing water among all users with permanent rights during droughts. This distribution was to be made by rotation or rationing among the canals whose owners could show permanent rights and the amount of water to which the right pertained. Under the Ordinance, the judge was to give water to the various canals in the "most equitable manner, taking

13. Included in this group are riparian users, holders of permanent *mercedes*, and holders of concessions and rights recognized before the enactment of the Civil Code. Article 605 of the Code said previous rights subsist, and the Water Code has a roughly similar article which is mentioned below in the text.

into account the amount of water usually carried by the canal." By showing a *merced*, title to riparian property, concessions prior to the Civil Code or use from time immemorial, one could prove the validity of one's permanent right to extract water. What constituted satisfactory proof, however, was a problem. During a procedure before the judge which was taking place during an emergency, rigorous proof could hardly be demanded, nor in any case was it often available. Thus, the judge frequently had to improvise a system of distribution on the basis of rotation and rationing systems used in prior years of drought. He would of course consider the titles claimed to the water, but many of the alleged rights were proved by self-serving documents, old deeds which included the transfer of water rights, witnesses, and occasionally government records or prior court proceedings.

To aggravate the problems of determining who held what rights, the water measurement units used in the documents often varied in the same locality. Prior to the Water Code, three or four units of measure were used, e.g. volume per unit of time, proportion of flow. Even if by examining each document or asserted claim the amount of water could have been determined, it would often have been impossible to correlate the various claims in a watercourse when the claims were based on different units of measure.

To simplify the situation, an attempt was made in the 1908 Law of Canal Associations to establish a system for recording water rights. This system was similar to the real property registry system in Chile. It was hoped that the water registry would ease the proof of private rights and provide information for subsequent water concessions. But under the law, the registry was to include only the rights of members of Canal Associations (by no means was every water user a member of a Canal Association); and many members of these associations never got around to recording their rights. Under this law the rules of real property, i.e. proof, title, etc., were applied to recorded rights, while the norms of personal property were applied to unrecorded rights. Thus, unrecorded rights were subject to difficulties and contingencies relating to proof of possession. But for mem-

bers of Canal Associations the system worked reasonably well.¹⁴

On December 16, 1924 during the worst drought in the history of the country (1968 excepted), a *Decreto-Ley* 160 was promulgated. Article 30 of the law made it obligatory for the owner of water rights, concessions or grants to record these rights within a certain period of time after presenting documents of proof. This recording system was to settle once and for all time the problems of proving water rights and of distributing future rights in rivers. Unfortunately, many holders of the rights tended to "overestimate" their rights in the records suggesting that the procedure for examining probatory documents to filter out spurious or exaggerated claims was not successful. In addition to the unreliability of the rights recorded, larger numbers of irrigators and other users did not record their rights within the mandatory period, perhaps because they had no proof of them. In any event, the government from a political standpoint could not have taken away the water from unrecorded users, nor would it have served any useful purpose to have done so. The law did not require the government to take away rights; it permitted it to do so.¹⁵ The recording system surely has had some effect on conflicts between recorded and unrecorded claims, but as an inventory of water rights and distribution on which the government could base future *mercedes* or as a system reliable enough to rely on in private conflicts, it generally did not live up to expectations. In respect to *mercedes* granted after the *Decreto-Ley* came into effect, the register was more effective, for in order to grant a *merced*, the details of the *merced* had to be recorded.

The Water Code also set up a system for recording *mercedes* granted after the Code's enactment using the cubic liter per second measurement,¹⁶ but the previous system (or

14. It should be mentioned that distribution problems and conflicts during periods of scarcity, when they involved irrigators of the same canal, were settled by the Directorate of the Canal Association in charge of the particular canal, if there was one.

15. The period for registering rights was extended by other laws, but with exaggerated claims and many claims not registered the system did not satisfactorily solve the problem of defining water rights.

16. Even with a standard unit of measurement the actual allocation of water will be difficult since most canals using river water have no measuring devices or have only the most primitive types. It will therefore often be impossible to apply the cubic liter per second unit. The lack of measuring

lack of it) in respect to prior rights continued in effect. The system set up by the Code appears to be functioning effectively.

The Water Code did change much of the prior Water Law,¹⁷ but it seems that many of the changes were of little practical importance. It did make legal research easier, and with its enactment only a small percentage of water remained private, the rest being public property. But the right of *aprovechamiento*, though only a right to use water, gave powers over water no different than ownership itself. Thus, in practice little practical change occurred in the nature of private rights over water, although more water was brought into the public domain.

In the enactment of the Code, one can see a clear tendency to emphasize the public rather than private law¹⁸ aspects of water law. And as the remainder of this article will suggest, the recent modifications of the water law contained in the Agrarian Reform Law indicate that the movement of water law into the public law sphere, a movement which had its origins in the Colonial Period, is accelerating at a very rapid rate.

PART II: MODIFICATIONS IN THE WATER LAW OF CHILE CONTAINED IN THE NEW AGRARIAN REFORM LAW

The Agrarian Reform Law substantially modified the water law system as established in the Water Code of 1951. The law set forth new provisions contained in articles 94 to 121, and 123 to 129, and modified or repealed a large number of articles contained in the Water Code itself. This section will not discuss all aspects of the system of water law, but

devices is one reason why previous units of measure were often based on flow per unit of time, i.e., the headgate open for a determined amount of hours. This latter measure requires only a watch and a device to open and close the canals to the flow of water. Of course, the volume distributed is very indefinite.

17. The Water Code modified many more aspects of Water Law than are discussed in this article.
18. Private law (*derecho privado*) is that branch of the law regulating the relationship among private parties. Public law (*derecho publico*) is that branch of law which regulates the public order of the state and those given power in the government. It also determines the organization and function of the government services and regulates the relationships between services and the individual citizen as well as relationships among the services.

rather will focus on the major changes brought about by the new Agrarian Reform Law.

A. Ownership and use of water.

The Water Code of 1951, and the Civil Code of 1857 as well, established as a general rule that all water, including ground water, is national property for the use of the public (*bienes nacionales de uso publico*). However, watersheds and watercourses which originated, flowed and terminated on the same property, and lakes which could not be navigated by vessels greater than one hundred tons were considered private, not national property. (art. 9, 10 & 11 of the Water Code adopted in 1951).

To bring this water, which accounts for less than 5% of the water in Chile, into the public domain, the following modifications were necessary. Article 10, number 10 of the Constitution of Chile, as amended by law No. 16.615, January 20, 1967, permits Congress through legislation to expropriate this water which is private property to incorporate it into the public domain.

On the basis of the constitutional modification, the Agrarian Reform Law establishes that "all water of the national territory is national property for public use" (*bienes nacionales de uso publico*) (art. 94, para. 1). Similarly it modifies the Civil Code, derogating various provisions and replacing article 595 of the Civil Code, which excluded from "national property for public use" watersheds and water originating, flowing and terminating on the same property, with the provision that "all water is national property for the public use." (article 123). Article 123 also derogated article 596 of the Civil Code, which excluded from public property lakes not navigable by vessels of more than 100 tons. But merely declaring this water to be national property was not enough. In order to bring this water into the national domain, the Agrarian Reform Law, under Article 10, number 10 of the Constitution, had to declare the public utility of water and expropriate it for the sole purpose of incorporating it as national property for the use of the public. (art. 95).

Thus, the small amount of water previously under private ownership was incorporated into the public domain by the constitutional amendment and the Agrarian Reform Law. The former owners of the expropriated water may continue to use it as holders of rights of *aprovechamiento* without having to obtain a *merced*, which is normally necessary in order to use public water.

The right of *aprovechamiento*, which the Water Code of 1951 recognized over water of the public domain had characteristics which contradicted its quality as national property. The right permitted its holder to use the water, to enjoy the water—that is, to make a profit from the very ownership of the right—and to dispose of the water as he saw fit. According to legal doctrine, the power to enjoy and dispose of the water conflicts with the nature of national property. No one, neither the government nor individuals, can use, enjoy and dispose, i.e., exercise dominion, over national wealth.

The characteristics of a right of *aprovechamiento* conforming to the norms set out in the Water Code of 1951 prevented the adoption of certain reforms which contemporary social and economic conditions demanded. In particular, the technicians and administrators in the government were unable to control or coordinate the distribution and utilization of water in a way which would permit an efficient employment of water resources. For this reason, the Agrarian Reform Law modified the nature and exercise of the right of *aprovechamiento*. Without this accompanying change in the nature of the right, the Agrarian Reform would be ineffectual.

The Agrarian Reform Law defines the new right of *aprovechamiento* as a real administrative right (*derecho real administrativo*). It is an administrative right because it is conceded and regulated by the norms and rules of administrative law.¹⁹ It is a real right in that the holder of the right can defend and protect it against any third party. It is not a right against another person, such a contract right, but

19. Administrative law is the body of rules governing the activities of the public services of the government. These norms establish the legal relationship among services of the State and between these services and individual citizens.

a right against the whole world. Article 122, No. 79 of the Agrarian Reform Law empowers the *Direccion General de Aguas* (the Office of the General Director of Water) to adopt all means necessary, including the use of police, to protect a holder of the right whose use of water is being obstructed.

The Agrarian Reform Law defines the right of *aprovechamiento* as a right to use water "with the requisites and in conformity with rules which the present Code sets forth." (article 122, No. 3 of the Agrarian Reform Law replacing article 12 of the Water Code of 1951). These requisites and rules are contained in the Water Code as modified by the Agrarian Reform Law. In addition to these modifications of the Code, the Agrarian Reform Law contains numerous new provisions which regulate the exercise of the right. The most important of these provisions follow.

The right of *aprovechamiento* cannot be transferred or ceded in any manner. The right is in a sense attached to the land and cannot be separated from it. In the case of alienation, transfer or judicial decision affecting ownership of property for which water is destined, the right of *aprovechamiento* will subsist in favor of the person who acquires the property. (art. 104). When all of the property is transferred, the water rights accompany the transfer; but when a transfer of only *part* of the irrigated property is involved, the law establishes that, prior to this transfer of ownership, the projected distribution of water among the various parts of the property will have to be submitted for approval to the *Direccion General de Aguas*. Once approved, the *Direccion* will authorize the respective rights of *aprovechamiento* for those who have acquired parts of the original property.

Because the right of *aprovechamiento* is a right to use property of the public domain, it cannot be acquired by prescription, that is, the utilization of water over a lengthy period will not in itself give the user any right to *vis a vis* the nation using the water in the future. Also prescription as between individuals is prohibited. In addition, the right can be extinguished or terminated under various circumstances and conditions as set forth in the law.

Because water is a scarce resource, particularly in Chile, it should be utilized in conformity with criteria of economic efficiency. To this end, the law authorizes the President to establish the water volume needed for diverse purposes, which conforms to the standard of rational and beneficial use. (*tasa de uso racional y beneficiosa*). (art. 105).²⁰ Once the volume is fixed under this standard for an area, users in the area cannot extract more than the volume fixed under this standard.

In respect to irrigation water, the volume under the standard of rational and beneficial use is to be established for each hectare (2.471 acres) of land. Since the water available and necessary varies seasonally, both the annual volume corresponding to the standard for rational and beneficial use and its monthly distribution will be fixed. The Law defines the volume fixed under the standard of rational and beneficial use for irrigation as "the annual volume of water, with its monthly distribution, necessary to exploit one hectare of land taking into account the crops common or preferable in the region, the ecological conditions of the region and the use of efficient techniques of irrigation." (art. 106).²¹

Article 105 establishes the procedure for fixing the volume of water, conforming to the rational-and-beneficial-use standard. Once technical studies are completed, the *Direccion General de Aguas* must publish notification to this effect in a newspaper of the capital of the Department (governmental unit) which will be affected by the determination of the volume. Persons interested may formulate their observations on the results of the studies before the *Direccion* by means of their respective *Asociacion de Canalistas, Comuni-*

20. *Tasa de uso racional y beneficiosa* is literally translated as the rate or level of rational and beneficial use. The level is expressed in terms of volume of water per hectare. In a real sense the *tasa*, particularly in the case of irrigation, is a standard under which the volume of water granted is established since the volume of water granted is the *tasa* or rate times the amount of hectare to be irrigated. For purposes of this article the concept of a "volume set under a standard of rational and beneficial use" is employed to express the concept of the *tasa de uso racional y beneficiosa*. It is not suggested that in fact the *tasa* is rational or beneficial.

Also to say that the President is to fix the volume is only to say that he will sign a decree drafted by technicians and administrators in the executive branch of the government who actually fix the volume.

21. It is important to note that the reforms in the water law contemplated the absence of a market system, indeed, a market in water is prohibited. The government almost totally controls the allocation of water.

*dad de Aguas*²² or directly, if neither of these organizations should exist. After a specified period, the President of the Republic will issue a resolution, by Decree, fixing the volume under the standard of rational and beneficial use. The volume is fixed for an indefinite period.

The President, however, can modify the volumes fixed under the standard throughout the various areas of the country, when any factor which has served as a basis for fixing the volume of water under this standard changes, or when new events or facts make a change advisable. (art. 105). The procedure for the modification of the volume is the same as that set out for establishing the volume initially. The volumes fixed under the standard of rational and beneficial use, as well as modifications of them, enter into effect from the beginning of the agricultural year immediately after the date of the decree establishing or modifying them.²³

The effects of fixing the volume under the standard of rational and beneficial use are twofold. The *Direccion Gen-*

22. There are three types of organizations which control the distribution of water. The organization with the most extensive jurisdiction is called the *Junta de Vigilancia*. This organization controls the distribution of all water extracted from a river or a section of a river. All the users of water from the same river are members of a *Junta*, although often an *Asociacion de Canalistas* or *Comunidad de Aguas* represents its members in the *Junta*. The *Asociacion de Canalistas* is made up of irrigators, along with other users, who extract water from the same artificial canal. It controls distribution of water among its members. The *Junta* and *Asociacion* are legal persons and have almost complete power over the distribution of water, the maintenance of irrigation works and the settlement of conflicts over water within their areas of jurisdiction. Their powers are great, and only the *Direccion* and the courts, in certain instances, can intervene in the operation. The *Comunidad de Aguas* is regulated more carefully by provisions in the Code. It is not a legal person, and unlike the other two organizations, it generally has no constitution or by-laws. Irrigators extracting water from the same artificial canal, if they are not members of an *Asociacion* are usually members of a *Comunidad*. Generally, a *Comunidad* has fewer members, less power and a more restricted jurisdiction than an *Asociacion*.

This is the theoretical structure of organizations in charge of water distribution. Unfortunately in many rivers and canals, these organizations do not exist or they function very poorly. A number of reports in the *Direccion de Riego* written by technicians of the *Direccion* who work in agricultural areas complain of the lack of organization among irrigators and request the aid of lawyers to set up these organizations. However, given the independent attitudes of many irrigators, it may take more than lawyers to organize them.

23. As of July, 1968, no technical studies for regions had been completed on the standards of rational and beneficial use; and consequently no Presidential decree had fixed the standards for any zone. However, the *Direccion General de Aguas* has been granting *mercedes* with the volume based on a standard of rational and beneficial use in terms of cubic liters per second. These volumes have been fixed in conformity with technical studies. Although the law does not authorize the fixing of standards for individual users without their being fixed for a zone, it is a logical extension of the law's spirit.

eral de Aguas will concede new rights of *aprovechamiento* for no more than the annual volume of water fixed under the standard. In respect to irrigation water in particular, the *Direccion* will concede a maximum annual volume for each landholding with its monthly distribution fixed. This volume will be determined by multiplying the volume fixed under the standard of rational and beneficial use by the number of hectares to be irrigated. As for existing rights of *aprovechamiento*, they will terminate in respect to the volume of water which exceeds that allowed under the standard of rational and beneficial use. (art. 108). In other words, the existing rights subsist only for the volume of water allowed under the standard of rational and beneficial use.

Another modification of the right of *aprovechamiento*, contained in article 97, establishes a new and potentially significant limitation on the rights of *aprovechamiento*. Water destined for irrigation can only be extracted from the natural channels when the need to irrigate exists, and in the manner necessary for this irrigation. Previously riparian owners were not limited in the amount of water they could extract. Under this provision, even when a volume is fixed under a standard of rational and beneficial use, an irrigator is prohibited from extracting it when no need exists. Only water which is to be stored in reservoirs is excepted from this restriction. However, the holder of a right of *aprovechamiento* may always extract water necessary for the domestic use of those living on the property, as well as for watering cattle, unless the contrary is expressly established in the *merced* granted to him. (art. 43 of the Water Code as modified by art. 122, No. 17 of the Agrarian Reform Law).

An emergency provision, article 101, contains a temporary restriction on the right of *aprovechamiento*. The serious conditions of 1968 caused by one of the most serious drought in Chile's history have required the intervention of the state in the distribution of water. Fortunately, the Agrarian Reform Law provides the means by which the state can take over the distribution of water in periods of emergency. The Agrarian Reform Law permits the Administration to adopt certain means to reduce the general damage

caused by the scarcity of water during a drought. To enable the Administration to apply those means, the President must declare a scarcity zone in a defined area or region by decree. (art. 101). Once a scarcity zone is declared, the *Dirección* can suspend the powers of the *Juntas de Vigilancia*, *Asociaciones de Canalistas* and *Comunidades de Aguas*, and redistribute the water available in a manner intended to minimize damage. As of July, 1968, all the river valleys of Central Chile had been declared scarcity zones, and commissions of technicians and administrators from various government services have been redistributing water and administering emergency measures. When these zones are declared, the rights of *aprovechamiento* are suspended in the sense that redistribution of waters is based on economic and other policy criteria, not on the rights alone.

The decrees of the President and the resolutions of the *Dirección General de Aguas* which are dictated in virtue of the power to declare scarcity zones under article 101, shall be complied with immediately without prejudice to a subsequent examination of their legality by the *Contraloría General de la República*.²⁴ (art. 101).

Article 101, since it is an emergency provision, gives the *Dirección* broad powers to redistribute water and take other action to minimize damages during droughts. Because the article lacks definite criteria for distributing water, the *Contraloría* will not have many opportunities to declare an act illegal. And even if an act should be declared illegal, an injured party would not receive damages. The declaration of illegality only results in an administrative act or decision being unenforceable. An individual wishing to prevent or get a reversal of an administrative decision or act can also petition superiors in the government to reverse it. As examples, one can petition the *Dirección* to reverse an action of one of its employees; one can petition the Minister of Public Works under whose authority the *Dirección* functions to reverse an

24. The *Contraloría* is an autonomous government department which has three sectors of activities, all concerned with the legality of government acts. It checks the constitutionality and legality of Presidential decrees, as well as resolutions of the various government services. It also examines the legality of payments made by the government. Finally, it has the power to intervene in the financial affairs of the government services in order to supervise investment, flow and custody of government funds.

act of the *Direccion*; and one can petition the President of the Republic to reverse a decision of the Ministry of Public Works.

As for damages, possible recourse is available through the courts, although in order to win one would probably have to prove that the government official abused the powers of his office. The Law does not provide that an individual is to be compensated for damages resulting from the loss of crops or livestock when he is deprived of water during a period in which the declaration of a scarcity zone is in effect.

The suspension of the rights of *aprovechamiento* in scarcity zones is temporary; however, under article 107 of the Agrarian Reform Law, the President may declare the permanent total or partial extinction of rights of *aprovechamiento*, when it is necessary to utilize the water for drinking or other domestic purposes, or when it is required for the economic development of a zone.

After the *Direccion General de Aguas* has proposed that certain rights be extinguished to free water for drinking, domestic purposes or development of a zone, the President may declare the extinction by Supreme Decree. Those who were holders of the right will be indemnified in conformity with the law. The proposal of the *Direccion* must be communicated to those possibly affected by the declaration so that they may make their observations known to the *Direccion*. The President will then issue the decree.

Rights are also extinguished in "areas of rationalization of the use of water." In most zones in Chile, the rights of *aprovechamiento* are not well defined, and the use and distribution of water are neither socially nor economically rational. To resolve these problems, the Agrarian Reform Law, by permitting the development of "areas of rationalization of the use of water" allows the administration to plan a solution for the water distribution problems in a given area. The areas of rationalization of the use of water must be declared by means of a Supreme Decree of the President of the Republic. He is able to create, modify or abolish the administrative boundaries (*secciones*) of a river or natural watercourse in

declared areas and thereby modify the areas of control of the *Juntas de Vigilancia*.

From the publication of the decree in the *Diario Oficial*¹ establishing an area of rationalization of use, all rights of *aprovechamiento* existing in the area are extinguished. Until the *Direccion* concedes new rights, however, the users may continue to use the water in the manner in which they are accustomed. In the concession of new rights of *aprovechamiento* in the area, the *Direccion* is not obliged to subject itself to the procedure established in the Water Code which is ordinarily followed in conceding rights of *aprovechamiento*. Presumably this permits the *Direccion* to develop a more streamlined procedure for conceding rights in "areas of rationalization of use" of water. It is probably intended that the concessions of new rights be based on economic criteria such as soil quality and on social criteria such as the fairer distribution of water among users. Once the new rights are authorized, the *Direccion* can require that *Juntas de Vigilancia*, *Asociaciones de Canalistas* or *Comunidades de Aguas* be formed to administer the distribution of water.

Under the Agrarian Reform Law, the right of *aprovechamiento* can be lost in two ways, which have been translated as termination (*caducidad*) and extinction (*extincion*). The termination of a right of *aprovechamiento* does not give rise to indemnification for damage suffered by a holder of the right. On the other hand, an extinction is followed by indemnification for damage suffered by the holder of the right. The law indicates the cases in which damages arise and when, therefore, indemnification for the extinction of the right follows.

Both the extinction and the termination of rights can be produced by the very existence of the law itself or by acts of the administrative authorities. As a general rule, a right is terminated when a law or policy is violated and is extinguished by expropriation.

Article 108 is the only provision providing an automatic termination of the right of *aprovechamiento* without a special administrative declaration or resolution. This termination of the right is only partial and occurs when a right of *aprove-*

chamienio was conceded for a volume of water which exceeds that fixed under the standard of rational and beneficial use. The right to the volume exceeding that under the standard is terminated.

Under Article 109, the *Direccion* must declare as terminated a right of *aprovechamiento* in the following cases: i) if the water is used for a different purpose than indicated in the concession; ii) if water is extracted from a natural water-course when no need to irrigate exists, or in an amount greater than is necessary for this purpose, except when water is to be stored in reservoirs; or iii) if a holder of a right does not produce or construct the modifications or repairs of irrigation works necessary for their security, the security of towns or roads, or necessary for the general welfare of the public. In the last case, before declaring the termination of a right, the *Direccion* will have to require the interested party to make the repairs and modifications within a specified period under threat of fine. Except for determining the work necessary for the security of the irrigation works themselves, it seems that a public safety criteria is to be used to determine what repairs and modifications of the works are necessary.

The *Direccion* can also declare the termination of a provisional concession²⁵ when the party holding it does not comply with the conditions imposed on him in the decree granting the concession. The provisional concession may also be terminated when the holder does not initiate or terminate the works necessary to use the water within a period fixed by the *Direccion*. Article 109 establishes procedure for declaring the termination of the right.

The Agrarian Reform Law provides that an individual, by means of an *accion popular*²⁶ can complain of infractions which lead to a termination of the right before the *Direccion*. If an individual affected by the declaration terminating the right believes it to be illegal, he can file a complaint before

25. The *Direccion* concedes provisional rights of *aprovechamiento* on the basis of, among other requisites, a plan for exploiting the water sought. Upon completion of the construction and other aspects of the plan necessary to use the water provisionally conceded, a final grant (*merced*) is made.

26. *Accion popular* is a procedure by which any citizen can file a complaint on a certain matter before a government functionary.

an Appellate Court. The court will resolve the dispute in a summary proceeding, and no recourse is available to appeal the court's decision.

As for the extinction of rights, the sole existence of the law automatically extinguishes all rights once an "area of rationalization of the use" of water is declared. (art. 117). Under article 107 the President must decree the extinction of rights to redistribute them where the water is to be "used for drinking domestic purposes or development of a zone." The difference between the automatic extinction and those requiring a declaration of the President lies in the administrative procedure used by the *Direccion*. Once an area of rationalization of the use of water is declared, the *Direccion* need not seek a Presidential declaration to extinguish the rights in the area, although the President does declare the area of rationalization.

Article 111 sets out the details for indemnification in cases where the right is extinguished. Where rights are extinguished by decree of the President for the purpose of using the water for drinking or other domestic uses or when the economic development of a zone requires it, indemnification will include emerging damages. (art. 111, para. 1). As for irrigation water, the indemnification includes only the diminution in value of the property caused by conceding to the holder of the extinguished right less water than he would receive if the standard of rational and beneficial use were applied to the number of hectares he irrigated before his right was extinguished. (art. 111, para. 1).

Where rights are extinguished in declared "areas of rationalization of the use of water," the holder affected will continue using the water in the manner in which he used it formerly until new rights are conceded. The law establishes that in areas of rationalization of the use of water, the holder of an extinguished right has a right to indemnification for the resulting damages which are experienced when the new right of *aprovechamiento* is not sufficient to satisfy, through a rational use of water, the same necessities satisfied before the extinction. (art. 111, para. 2). In respect to water for irrigation, the law establishes the same rule as described in

the case of extinction for the utilization of water for other purposes. It seems that emerging damage in this case will be measured in terms of the diminution in the value of the property, for paragraph 2 of article 111 states that the holder will only have a right to indemnification "in the form established in the previous paragraph." In both cases, the amount of indemnification will be fixed by the *Direccion* and the views of those affected will be heard.

Article 113 establishes that of the amount of indemnification for the extinction of the right of *aprovechamiento*, 33% will be paid in cash, and the remainder in five equal annual installments. Each installment will be readjusted to 100% of the variations in the consumer-price index, to compensate for the reduction in its value caused by inflation, and will pay 3% annual interest. The interest will be calculated on the amount of the installment increased by 50% of the readjustment, based on the consumer-price index. (art. 113). The payment in cash will be increased up to the amount of investments in irrigation works constructed by the holder of the extinguished right during the five years preceding the resolution declaring the total or partial extinction.

Article 115 permits complaints to be filed before the court (*Tribunales Ordinarios*) against the resolution of the *Direccion* determining the origins of the indemnification or fixing its amount.

As discussed in section one, above, the right of *aprovechamiento* had all the attributes of ownership; the preceding discussion indicates some of the radical changes in the nature of the right produced by the Agrarian Reform Law.

B. Technical provisions enacted for the purpose of better utilizing and conserving water resources.

The Agrarian Reform Law contains dispositions which are intended to protect and more efficiently utilize water resources. The Chilean Congress enacted these provisions with an eye toward diminishing the risks of filtration and loss of water, and toward developing a rational system of water distribution from the natural source to the property for which it is destined.

The law empowers the *Direccion* to demand of users of water originally extracted from natural channels, the repair or construction of irrigation works of private ownership when necessary for a more efficient use of the water. For the same purpose, the *Direccion* may demand that headworks and canals be eliminated and their functions taken up by other headworks and canals. (art. 100).

When the works constructed by a user of water benefit third parties, the *Direccion* will determine the form and conditions under which they will have to meet the expenses of the works. (art. 100). The same article of the Agrarian Reform Law empowers the *Corporacion de Fomento de la Produccion* (CORFO)²⁷ to make loans to those parties who must construct irrigation works under orders of the *Direccion*.

If users do not complete the works in a period fixed by the *Direccion*, the *Direccion* or another state institution will complete these works with costs assumed by those benefitted. An irrigator who is behind in the payment of these expenses for construction and reparation of irrigation works can be deprived of the use of the water during the time in which he is behind in payments.²⁸ In addition, the user in arrears will have to pay the cost of the inspection necessary to assure that he is not using the water.

The law empowers the *Direccion* to change the source of supply of any user when the most efficient use of the water so demands;²⁹ it also provides that water replacing the former is to be of appropriate quality for the use required and of equal quantity. (art. 102). The *Direccion* can delegate the job of completing the pertinent studies on this matter to other services or institutions of the state.

The expenses of the *Direccion* in changing the source of supply will be paid by those benefitted in the form and under

27. CORFO is the state enterprise which has the task of promoting economic development through industrialization. It is one of the oldest organizations of its kind in the Western Hemisphere.

28. This harsh penalty may increase the payment of expenses, but once it is imposed it defeats its purpose since a farmer without water is often without the productive capacity necessary to pay these expenses. There are very few examples of the imposition of this penalty under the Water Code, probably because it is too stiff. It is very possible that the *Direccion* will refrain from imposing this sanction in the future.

29. "Most efficient use" is a very open standard, and as with other standards in the law the government technicians have almost complete discretion.

the conditions determined through administrative regulation. In certain cases, the State can absorb all or part of the costs. Persons behind in the payment of expenses incurred in changing a source of supply can be deprived of the use of the water until they have paid these expenses. And they will have to pay for the inspection necessary to enforce the deprivation.

Under the Law, the *Direccion* may authorize an individual to use an artificial channel or works constructed at another person's expense to conduct water for irrigation or other uses. The owner of the channel or works will be indemnified by those benefitting from the authorization only for damage suffered. He does not have a right to receive payment simply because another person is using his canal or property. The beneficiaries, however, will contribute in the future to the common expenses which originate from the use of the canal or irrigation works. (Art. 21 of the Water Code as modified by art. 122 N° 6 of the Agrarian Reform Law). And should the enlargement of the canal or modification of the works be required, only those benefitting from this work will have to pay. The indemnifications will be governed by the provisions in Title VIII of Book I of the Water Code referring to servitudes.

Once the studies are completed which determine the technical changes necessary (e.g. elimination of headworks and canals, repairs, changes in source of supply, and utilization of a private canal by another) the *Direccion* must publish the results of the study in a newspaper of the capital of the Department affected.

Those persons affected by the technical changes recommended by the studies can make known their observations before the *Direccion* through their *Asociacion de Canalistas* or *Comunidad de Aguas*, or directly if neither of these organizations should exist. If, as a consequence of these technical changes, it should be necessary to authorize a new right of *aprovechamiento*, effect changes in headworks, or transfer a right, the ordinary procedure established by the Code for these purposes will not govern. Though the law does not say what procedure should govern, the relevant article suggests

it should be brief (art. 112). The article leaves it to the *Direccion* to set up a simplified procedure.

C. Special Rules for Ground Water.

The law empowers institutions of the State to explore and drill wells on private property to exploit ground water with prior authorization of the *Direccion*. (art. 99). Article 50 of the Water Code of 1951, permitted the state institutions to explore and drill wells on public land. But on private property, before the Agrarian Reform Law, only the owner could explore and drill wells. An owner of real property will have a right of indemnification by institutions of the State for damage caused by the exploration and drilling.

In conceding the use of waters discovered, the *Direccion* will give preference to those institutions of the State which have discovered and developed the source. These institutions, as well as other concessionaries of subterranean water, will be able to occupy private property from the date of the authorization or concession.

As a general rule, an owner of property may explore for ground water on his own land, and he may also dig a well to extract water for domestic use. However, he needs a *merced* to extract water for other uses. (art. 50 of the Water Code). The new law authorizes the *Direccion General de Aguas* to regulate, and when it considers necessary, to prohibit, the exploration for ground water. (art. 98). The terms of the article are broad enough to permit the *Direccion* to regulate the exploitation of ground water on private property and its use, even for domestic purposes.

Article 98 gives the *Direccion* strong sanctions to enforce its will. The *Direccion* has the authority to suspend the use of water or construction of a well, and to establish fines for those who, going against its orders or provisions of the law, construct wells or use ground water. The *Direccion* can order the cessation of construction in progress, or the capping of sources of ground water, when it believes that these works cause harm to third parties or destroy the water table.³⁰ If

30. "Third parties" is not defined in the law. The most likely group is other users of ground water from the same water table.

a party does not comply with an order to cap a well, the *Direccion* can cap it at the expense of the party.

D. Irrigation works.

The Agrarian Reform Law establishes rules on the construction of irrigation works with government funds belonging to the *Empresa Nacional de Riego* (the national irrigation authority). The *Empresa*, alone, has the job of planning, studying, projecting, constructing, and exploiting irrigation projects which are executed with government funds. (art. 279).³¹ The law provides for the declaration of "obligatory irrigation zones" and "area of irrigation" in order to construct irrigation works. The differences between these two approaches to developing irrigation projects are discussed below.

1. Obligatory irrigation zones (art. 298)

The area made up of agricultural property benefitting from an irrigation project constructed by the *Empresa Nacional de Riego*, will constitute an "obligatory irrigation zone."

It is the duty of the *Direccion General de Aguas* to determine the obligatory irrigation zones and the agricultural properties included in it. With the information supplied by the *Empresa Nacional de Riego*, the *Direccion* makes a provisional decision on the location and extent of the irrigation zone. When the *Empresa* declares the works or project "in exploitation," that is, when the irrigation works are in use, the *Direccion* will make the definitive determination of the extent of the zone. The "declaraton in exploitation" will be made when works are completed and the benefitted lands are declared in production by resolution of the Ministry of Agriculture.

The definitive determination of the "obligatory zone of irrigation" and the "declaration in exploitation" can be

31. Although the Agrarian Reform Law did not explicitly derogate or modify Law No. 536 of 1961, on the construction of irrigation works by the State, a large part of its dispositions must be considered implicitly derogated or modified by the new dispositions of the Agrarian Reform Law, *supra* note 2.

made in piecemeal fashion. As certain areas of the irrigation zone are utilized and the irrigation works come into use, the *Dirección* can declare that area in exploitation, and it becomes an obligatory irrigation zone.

In order to construct the works, certain lands will be occupied during construction and perhaps rendered permanently useless. Articles 307 and 284 establish the rules regulating the *Empresa's* activities on private land and the expropriation of land necessary for an irrigation project. The *Empresa Nacional de Riego* can, on private land, make the studies and do the work necessary for the planning and construction of irrigation projects. The landowners, lessees, administrators and other occupants of land on which studies and construction projects are to be executed will be notified administratively of the need to use their land, and upon notification, they will be obliged to allow government employees in charge of the studies or works onto their land.

The law declares the public utility and authorizes the expropriation of all land necessary for the construction and maintenance of the irrigation projects which the *Empresa* executes. (art. 284). The expropriation decision will be brought to the attention of the persons affected by means of a publication of an extract of the decision in the *Diario Oficial* and two publications of the capital city of the department in which the expropriated property is located.

The amount of indemnification for the expropriated land will be equivalent to the assessed value (*avaluo*) of the property for land tax purposes at the time the expropriation decision is made, plus the value of improvements which are not included in the assessment (unlike assessments in the U.S., the assessment includes very few improvements). (art. 284, para. 3). The evaluation of these improvements will be made by the *Empresa* prior to the expropriation decision. If an expropriation is to affect only part of a property, the *Dirección de Impuestos Internos*, (the equivalent of the U.S. Internal Revenue Service) will determine the proportional assessment on that part of the property to be expropriated. (art. 284, para. 4).

The evaluation of improvements can be challenged before a court having proper subject matter jurisdiction within 15 days after the publication of the decision of the *Consejo de la Corporacion de la Reforma Agraria* which makes all expropriation decisions.

The indemnification will be paid with 33% in cash and the remainder in five equal annual installments unless the amount is inferior to five "*sueldos vitales anuales para empleado particular de la industria y comercio del Departamento de Santiago*"³² in which case the amount will be paid in cash. The value of each annual installment will be readjusted in proportion to the variation experienced in the consumer-price index, as determined by the *Direccion de Estadisticas y Censos* between the calendar month preceding the date when the *Empresa* has taken possession of the farm and the calendar month preceding the date when the respective installment is due. Each installment will return an interest of 3% annually which will be calculated on the amount of each installment increased by 50% of the corresponding readjustment. The *Empresa Nacional de Riego* will have to consign to the Treasury of the corresponding *Comuna* (township) that part of the indemnification for the expropriation which must be paid in cash. The *Empresa* will make the consignment within a period of six months from the date on which the extract of the expropriation decision was published in the *Diario Oficial*. If the consignment is not made within this period, the landowner will be able to request that the Judge of *Letras de Mayor Cuantia de Asiento de Corte* (a designation of jurisdiction) declare as lapsed the expropriation decision. The judge will decide the case after notification to the *Empresa*. The *Empresa* will be able to oppose the complaint of the landowner only by proving that the consignment has been made.

32. The phrase "*sueldos . . . Santiago*" is translated as "five annual salaries essential for a reasonable standard of living for an employee of a private business in the Department of Santiago." This salary is fixed by the government every year and takes into account the rising cost of living. It is used as a standard by which fines, certain payments, and other matters which must be expressed in terms of economic value, are established. It permits legislators to avoid expressing provisions of economic values contained in laws in terms of fixed monetary values, which change with inflation.

Thus, in the case of indemnification for expropriation, the legislature considered that an amount of indemnification less than five annual salaries should be paid in cash.

Once the consignment is made, the *Empresa* can require the keeper of the register of real property (*Conservador de Bienes Raices*) to record the ownership of the property in favor of the *Empresa*. Upon presentation of the copy of the expropriation decision and a certificate showing that a consignment has been made, the keeper of the register will record the fact of ownership immediately. After ownership has been recorded, the *Empresa Nacional de Riego* will take physical possession of the expropriated property. Should the taking of possession be opposed by the landowner or a third party, the *Intendente*, a local government administrator, upon petition of the *Empresa*, must immediately provide the aid of the national police to eject or dispossess those opposing the *Empresa*.

It must be remembered that in "obligatory irrigation zones," land is only expropriated when irrigation works are to be constructed on it or when the land is necessary for the operation of the works. Thus, landowners keep their land and benefit from the works. However, the irrigation works constructed by the *Empresa Nacional de Riego* will be owned by the *Empresa* and cannot be alienated, encumbered or rented. (art. 297). Once constructed, the irrigation works cannot be transferred to the irrigators using them.

Those individuals benefitting from irrigation works constructed by the *Empresa* will have to pay for the privilege of using the works. They will have to pay an annual quota, related to the improvement in irrigation, for every unit-volume of water conceded to them under their rights of *aprovechamiento*. The quota will be fixed by taking into consideration the actual cost and useful life of the irrigation works, which cannot exceed fifty years. After receiving a report from the *Empresa* on this matter, the President must fix the annual quotas. The quota will be readjusted annually by 70% of the variation in the consumer-price index. This quota is more or less a payment for the capital invested in the project. (art. 299).

The President, on petition of the *Empresa* and by decree can authorize the modification of a quota when its value is inadequate to assure continuity of service. He can also

authorize a common quota to be calculated for all or some of the works of exploitation in a zone.

In addition to the permanent annual quota for the privilege of using the irrigation works, those benefitting from them must pay an annual quota for the expenses of operating the works. (art. 300). The *Empresa* will receive this quota unless the exploitation and regulation of use of water are in charge of an *Asociacion de Canalistas* or *Junta de Vigilancia*, in which case these organizations will receive the quota. (art. 303).

The amount of the quota will be determined in light of the cost of ordinary operation, which includes the expenses of cleaning canals and aquaducts, the expenses of minor repairs of gates and mechanisms, etc., and the salaries of personnel in charge of administration, the costs of energy and combustibles necessary for the exploitation of the works, and the costs of maintaining work and administration camps. However, extraordinary expenses which are incurred for repairs or to remedy major imperfections in the system will be financed by the *Empresa Nacional de Riego*.

The *Empresa* has the duty to maintain the irrigation works which are constructed with government funds and to regulate the use of water among users benefitting from the works until a *Junta de Vigilancia* or *Asociacion de Canalistas* is formed. (art. 280). However, it is the *Direccion General de Aguas*'s duty, not the *Empresa*'s duty, to concede the rights of *aprovechamiento* in the zone.

Once the irrigation works are declared in exploitation, the *Direccion* will dictate a resolution to the effect that the holders of rights of *aprovechamiento* benefitted by the irrigation works form an *Asociacion de Canalistas* or *Junta de Vigilancia*. What technical reasons make it advisable, however, the *Direccion* can order the *Empresa* to continue exploiting the works and regulating the use of waters. (art. 280, para. 3).

The *Empresa* can take over total or partial control of the works in order to operate them and regulate the use of water when circumstances warrant it, as for example, when

they are not cared for or operated properly. The *Junta de Vigilancia* or *Asociacion de Canalistas* affected by this recovery of control can file a complaint before the *Direccion*, which will resolve the dispute. (art. 280, para. 4).

Article 310 establishes rules concerning irrigation works constructed before the Agrarian Reform Law was enacted. With respect to these works, the *Empresa* can take temporary control of irrigation works in the hands of private parties, without additional procedure, if in its opinion the *Junta* or *Asociacion* controlling the works has not satisfactorily exploited them or cared for them to assure continuity of service. The *Empresa* must notify the *Direccion* within ten days of the takeover, and the subsequent regulation of the works will cease if the *Direccion* so orders. The *Empresa* will determine the repairs necessary, with the costs of reparation to be paid by the parties benefitted. The private parties will be charged in accordance with the volume of water available to them under their respective rights of *aprovechamiento*.

2. Reorganization of property in "areas of irrigation" (*areas de riego*). (Title III).

In "areas of irrigation," as distinct from "obligatory irrigation zones," the state plans an overall development scheme to coordinate an irrigation project with other aspects of agricultural development. In "obligatory irrigation zones" the state constructs works based on technical studies. In "areas of irrigation," the state does much more. In addition to the technical studies and subsequent construction of irrigation works, the state reorganizes the distribution of land among farmers and extends technical assistance and credit to the farmers.

The most important element of the development plan in "areas of irrigation," is the redistribution of irrigated land. The state will expropriate, then redistribute, land within the area. In "obligatory irrigation zones," only land necessary for the construction and maintenance of the works is expropriated. A number of requisites are necessary before the state can make the expropriations necessary for redistribution in areas of irrigation. The Ministry of Agriculture must

elaborate a plan for the agriculture development of an area in which the state is about to construct irrigation works or improve those existing. The plan must be proposed to the President of the Republic by the Minister of Agriculture. The President must then approve the plan and declare an "area of irrigation," by Supreme Decree, which must be published. (art. 114). Once an "area or irrigation" is declared, all the land within the area may be expropriated. (art. 13).

Expropriation in "areas of irrigation" is based on the concept that the State, upon constructing or improving irrigation works, adds to the value of property in the area. This additional value is the difference between the value of land before the works are constructed or improved and the value after they are completed. To prevent landowners from enriching themselves at the expense of the State, their land will be expropriated. However, within certain limitations, these landowners will be able to retain a limited area of land within the area.

A former owner of expropriated land, if he is a natural person or a society of persons³³ engaged principally in agriculture, has the right to reserve land within the "area of irrigation." However, a landowner whose land is abandoned or poorly exploited or who has leased or rented his land to third parties to exploit it, does not have this right of reserve. (art. 59). This last provision is consistent with other provisions of the Agrarian Reform Law which exclude former owners from holding land when they are found not to have worked the land directly and efficiently.

Once the irrigation project is completed, the landowner may retain lands having a value equal to that which his land had at the date of the expropriation decision, as calculated under article 42. This value will be equivalent to the assessed value, for land tax purposes, plus improvements not included

33. The society of persons has much in common with the partnership of the Common Law in respect to the formalities for constituting them, the method of control over their operations and the restrictions on members against transferring their shares. However, the society of persons may be of limited or unlimited liability, the former being more common. As a group, societies of persons are distinguishable from societies of capital (the Common Law corporation). The Agrarian Reform Law, *supra* note 2 permits only societies of persons of limited responsibility to own land.

in the assessment. Thus, the owner holds land of the same value before and after the completion of the irrigation works. However, the total area of land owned by an individual cannot exceed 80 *hectareas de riego basicas*.³⁴ With certain exceptions, this is the maximum amount of land which can be held by anyone under the provisions of the Agrarian Reform Law.

The determination by the *Corporacion de la Reforma Agraria* of the extent and content of the land to be reserved has two phases. The *Corporacion* will make a provisional estimate of the new value which the land will have in the area after the irrigation project is completed. This evaluation will take into account the cost of the projected works and improvements, the anticipated increase in productivity of the land attributable to the improvement in irrigation, and other factors established by regulations. (art. 60). This provisional evaluation will permit the owner to reserve land within 30 days after the expropriation decision is made. Under the law he must exercise his right of reserve within this period or he will lose the right.

Once the works are completed, the President, by Supreme Decree, will fix the form in which the cost of the works will be shared by the various competing uses for the water, and the portion of the costs which can be absorbed by the state. After the decree, the *Corporacion* will make a final determination of the extent and content of the land to be reserved by the former owner. As mentioned, the previous determination of reserve was tentative, since the irrigation works had not been constructed. For this purpose, the *Corporacion* will have to readjust the value of the property which the landowner had at the date of the expropriation decision in conformity with the rise which the consumer-price index had

34. An *hectarea de riego basica* is a measure of productive capacity expressed in hectares. It is not a fixed area, but varies in relation to the productive capacity of the land. It permits comparisons of surfaces of areas of land of varying productive capacities. For example, on land producing one crop a year, one *hectarea de riego basica* might equal 3 hectares of land, whereas in a region producing two or three crops per year one *hectarea de riego basica* might equal one hectare. The Agrarian Reform Law, *supra* note 2 fixes the number of hectares in an *hectarea de riego basica* in virtually all areas of Chile taking into account climatic conditions, quality of soil, and types of terrain. Thus, the 80 *hectareas de riego basicas* limitation can be applied to virtually all areas of Chile, in spite of the variations in productive quality of lands in these areas.

experienced between the calendar month preceding the expropriation decision and the calendar month preceding that in which the final determination of the value of the land is made.

After the value of the expropriated land has been readjusted, the *Corporacion* will have to determine the new value of the land in reserve which was provisionally estimated under article 60. For the purposes of determining this value, the *Corporacion* will take into account the cost of the irrigation project which cannot be absorbed by the State, the increase in productivity of distinct qualities of land attributable to the project, etc.

If there should exist a difference between the provisional determination and the final evaluation, the *Corporacion* will proceed to adjust the reserve of the expropriated owner to conform to the readjusted value of the original property. This adjustment can be made by common agreement with the landowner, or by the *Corporacion* itself, failing an agreement.

The following sums up the steps in determining the land which may be reserved. First, since an owner may reserve land which, after the irrigation is completed, is equal to the value of the land he held before it was expropriated, it is necessary to evaluate the land at the time of expropriation and provisionally estimate what a unit of land will be worth after the irrigation works are completed. The owner will then provisionally reserve land. When the works are completed, the land is once again evaluated and the value of the land originally held by the owner of the reserve is readjusted to changes in the consumer-price index. The area and content of the provisional reserve, after the final evaluation of the land, is adjusted to equal the readjusted value of the original landholding.

Paragraphs 5, 6, and 7 of article 61 deal with the resource a landowner has before the Agrarian Tribunal of the Province. In summary, if a landowner considers himself prejudiced in respect to the area of reserve, or adjustments relating to the value of land and improvements, he can file a complaint before the court. If the court should decide in his favor, it can order the *Corporacion* to extend the area of reserve or pay the difference in value between the actual reserve and

the correct reserve under law. Of these payments, 20% will be in cash and 80% in Agrarian Reform Bonds.

If the *Corporacion* determines that the reserve should be less than that provisionally estimated, it can request the court to authorize the taking of possession or the payment of the difference by the landowner (20% in cash, the remainder in 5 equal annual installments).

As mentioned above, certain exceptions to the 80 *hectareas de riego basicas* limit on reserves are provided for in the law under the general provision for expropriations of large landholdings. These provisions have their parallel in the provisions relating to "areas of irrigation." The landowner, who at the moment of the expropriation decision has more than 80 *hectareas de riego basicas* irrigated and is complying with all the requisites set forth in article 21,³⁵ can reserve up to 320 *hectareas de riego basicas*. The same requirements applicable to those exercising the right of ordinary reserve (i.e. up to 80 *hectareas de riego basicas*) are applicable to those exercising the right of extraordinary reserve (i.e. up to 320 *hectareas de riego basicas*).

The value of the reserve, including the improvements existing at the time of the expropriation decision, cannot exceed the value of the expropriated land. In respect to the determination of extent and control of the reserve, the same provisions applicable to ordinary reserves, discussed above, are applicable to extraordinary reserves.

If an irrigation project should render land useless for agriculture, the former owner cannot reserve this particular land. However, in place of the reserve, he will have a right to acquire other land within the irrigation area. The state will have numerous parcels of land in the "area of irrigation" equal in total value to the increase in value of the land in the area brought about by the irrigation project.

35. To come under the exception article 21 demands that a minimum of 95% or 80% of the irrigated and unirrigated land respectively be under cultivation, that the land is exploited with techniques superior to those used in the region, that the soil and other renewable resources are being conserved, that the employees receive two times the minimum salary fixed by the government and finally, that the landowners have complied with all the laws relating to peasants' housing, education and health, and have not been convicted or sanctioned for violating social or labor legislation.

This land will be available to former owners whose land is rendered useless and to those farmers who are to receive parcels on easy terms. The provisions relating to "areas of irrigation," because they permit the redistribution of land within an area, through expropriation make it possible to develop water and soil resources of a river basin in any way the state wishes within the norms mentioned above.

E. Organization of the public and private administration of water and irrigation.

Although the Water Code of 1951 speaks in terms of the *Direccion General de Aguas*, for some reason the Agrarian Reform Law in Title XII again creates the *Direccion General de Aguas* as a service under the authority of the Ministry of Public Works. (art. 262). The *Direccion* is in charge of securing compliance with the Water Code and has attributions and functions which the Code, the Agrarian Reform Law, and other general or special laws confer. The *Direccion* is also in charge of the application of water policy and the maintenance and development of the water resources of Chile. (art 263).³⁶

The principal functions of the *Direccion* are enumerated in the Agrarian Reform Law. They are as follows: To study water resources and plan their utilization for the betterment of the national economy; to exercise supervision and police power over waters and impede the unauthorized construction or destruction of irrigation works in natural channels; also to prevent both the extraction of water from these natural channels by persons without title and the extraction of more water than the title permits; to maintain and operate the National Hydrometric Service and to make available the information which it produces; to control and supervise the *Juntas de Vigilancia*, *Asociaciones de Canalistas*, *Comunidades de Aguas* and all other users of water resources; and finally to entrust, to the *Empresa Nacional de Riego* or spe-

36. Under the Water Code the *Direccion de Riego* carried out the functions entrusted by the Code to the *Direccion General de Aguas*. After the enactment of the Agrarian Reform Law up to the end of 1968, the *Direccion de Riego* still carried out the functions of the *Direccion General de Aguas*. Under the Agrarian Reform Law, the *Direccion de Riego* should split into the *Direccion General de Aguas* which will administer the Water Code as modified and the *Empresa Nacional de Riego* which will plan and construct irrigation works.

cialized organizations, the technical studies for the execution of water projects.

The head or chief of the *Direccion General de Aguas* will hold the title of the *Director General de Aguas* and will be exclusively responsible to the President. The functions and powers of the *Director* are established in article 265 of the Agrarian Reform Law. He has the power to delegate partially or totally one or more of his powers to functionaries in the *Direccion*, and to confer on them special powers for determined purposes. (art. 265, letter g).

The *Direccion General de Aguas* is empowered to dictate administrative resolutions which take effect immediately. (art. 114, para. 1). The *Director* himself, or his representative can require of local administrative officials the aid of the state police to compel compliance with the resolutions which he dictates in the exercise of his powers. These powers are set forth in Title V and XII of the Agrarian Reform Law, the Water Code, and various other laws. (art. 114).

The notification of resolutions issued by the *Direccion* will be made personally either by registered mail or by publication in a newspaper of the capital of the Department in which the property is located or the capital of the Province, if there is no paper in the capital of the Department. If the property affected is located in more than one Department or Province such publication can be made in any of them. (art. 116).

An individual affected by a resolution can attempt to have it reversed in two ways. First, he can ask the *Direccion General de Aguas* to reconsider its resolution. (art. 114). Second, he can attack in court the resolutions of the *Direccion*, which determine the origin or amount of indemnification. The interested party will have to prove the facts which serve as a foundation for his claim. (art. 115). In other words, the burden of proof rests on him.

The first section of this article discussed briefly the confusion produced by the lack of recorded rights and the unreliability of many of those recorded. The Agrarian Reform Law requires the *Direccion* to set up a new system. The

Agrarian Reform Law provides that the *Direccion* must maintain a Public Water Register which records all official acts, information and data related to water, and in which are inscribed all resolutions affecting water rights of private parties. The President is authorized to dictate regulations setting forth the details of the Register. (art. 118). While the Register is being organized and complementary provisions are being dictated, the rules governing registers and inscriptions are set forth in transitory article N° 5 of the Agrarian Reform Law. The provision for setting up the register contains nothing more than what is mentioned above. The provision appears to affect only future matters relating to water, and leaves the nature of the system open to the discretion of the *Direccion*.

To facilitate its work, the *Direccion* can demand sworn declarations in writing on points of fact relative to water matters. The declaration will be made before a person or authority designated in the resolution who will have the character of a minister of the faith, that is, one who can witness sworn declarations. If the user of water or holder of a right of *aprovechamiento* should fail to make a sworn declaration in the time and form designated, the *Direccion* has the authority to obtain the data from other sources; and the interested party cannot impugne this data before administrative or judicial authorities. If the declaration should be clearly false, the declarant will be punished with imprisonment from 541 days to three years. (art. 118). When a sworn declaration referring to water in an "area of rationalization" is manifestly false, the declarant can be excluded from the concession of a new right in the area and cannot claim any indemnification for the extinction of his old right. He may also be subjected to penal sanctions. (art. 120).

To complement the functions of the *Direccion General de Aguas* and take over the role of the *Direccion de Riego*, the Agrarian Reform Law in Title XIII creates the *Empresa Nacional de Riego*, a legal person of public law³⁷ with adminis-

³⁷ Public Law (*derecho publico*) is that body of law which regulates the public order of the state and those given power in the government. It also determines the organization and function of the government services and regulates the relationship between services and the individual citizen as well as the relationships among the services.

trative autonomy, its own funds, and full capacity to acquire property, exercise rights and enter into obligations. The *Empresa* is related to the government through the Ministry of Public Works. (art. 277).

In general, the *Empresa* has the task of planning, studying, projecting, constructing and exploiting irrigation and drainage projects on agricultural land, which are executed with government funds. (art. 279, para. 1).

The principal functions of the *Empresa* are: to regulate the use of water among holders of rights of *aprovechamiento* benefitted by irrigation projects which the *Empresa* constructs and exploits; to realize the studies on, and to execute the repairs and improvements of irrigation works of private ownership which the *Direccion* entrusts to it; to make agreements with private parties, nations, and international or foreign corporations and institutions to study, construct and exploit irrigation or drainage projects; and finally to formulate programs promoting practices of conservation, and to execute conservation projects, in agreement with the Ministry of Agriculture, to control erosion, sedimentation, floods, etc., which can affect irrigation works. As a catch-all the article enumerating functions entrusts to the *Empresa* the remaining functions entrusted to it by general or specific laws.

The highest authority within the *Empresa* is the *Consejo* (council) which is made up of: the Minister of Public Works, who will preside; the Executive Vice President of the *Empresa*; the General Director of Public Works or his representative; the *Director General de Aguas*; the Executive Vice President of the Corporation of Agrarian Reform or his representative; the Executive Vice President of the Institute of Agriculture and Livestock Development or his representative; the Agricultural Manager of the Corporation for the Promotion of Production (CORFO); and a representative chosen by the President of the Republic.³⁸

The direction and administration of the *Empresa* will be under the jurisdiction of an Executive Vice President who will

38. The names of these institutions have been translated into English to provide a better idea of the composition of the *Consejo de la Empresa Nacional de Riego*.

be solely responsible to the President of the Republic and will be able to represent the *Empresa* judicially and extra-judicially.

The functions and powers of the *Consejo* and the Executive Vice President of the *Empresa* are established in article 287 and 289 of the Agrarian Reform Law. Among the powers of the *Consejo* is that of delegating powers to the Executive Vice President or other high functionaries of the *Empresa* and conferring on them special powers when the objectives of the *Empresa* so require. (art. 287, letter k).

The Executive Vice President of the *Empresa* can create, combine or eliminate departments, offices and other subdivisions of the *Empresa* if the proper functioning of the organization so requires.

Footnote 22, *supra*, contains a brief description of organizations of water users in charge of distributing water. The new Agrarian Reform Law has, to some degree, changed the power structure in these organizations. Under the Water Code, before the Agrarian Reform Law, the water users in the various irrigation organizations were allowed to vote according to the amount of water held; each share represented a certain volume of water and each share was given one vote. The Agrarian Reform Law modified the one-share-one-vote rule in that it increased the voting power of those shareholders who have fewer shares. Under the new law, each shareholder, for the fact of being one, has a right to the number of votes which results from dividing the total number of shares by the total number of shareholders. In addition, each shareholder will have a vote for each share he possesses, as before the modification. (art. 122, N° 45).³⁹

The *Direccion General de Aguas*, under the new law, has been given greater power to intervene in these organizations and to require that they perform the functions for which they were established. To promote and compel the execution of works on the part of organizations of irrigators, the *Direccion*

39. One lawyer doing field research in a major river valley of the Central Zone suggested that the provisions had had little effect on the organizations he has studied. In some cases the organizations are not even aware of this change in voting rights, while in others the change has not been enough to give the smaller users sufficient power to have their interests taken into account.

“. . . can demand of the Board of Directors of a *Junta de Vigilancia, Asociacion de Canalistas* or *Comunidad de Aguas*, the presentation of programs of work and ordinary and extraordinary budgets, which these organizations must elaborate for the following year . . .” The *Direccion* will be able to modify these work programs and budgets in a manner it considers proper. The law does not provide criteria for modifying work programs.

The *Junta General* (general meeting) of these organizations will be restricted to taking notice of the resolutions dictated by the *Direccion* in respect to work programs and budgets. Should an organization fail to comply with its demands, the *Direccion* may intervene in the directorship of the organization in conformity with article 8 of Law 9.909, the law which approved the Water Code and put it into effect. (art. 127).

This discussion has touched on the major elements of the Agrarian Reform Law as it affects the water law system. Many other changes of less importance were made in the Civil Code and the Water Code to make these laws consistent with the modifications discussed above. To a large extent the law is but a skeletal structure of the Agrarian Reform; and it is up to the administrators to fill in this framework with detailed regulations. Some areas of the Law are ambiguous or vague. Only with the passage of time, if at all, will these areas be clarified.

The changes in water law brought about by the Agrarian Reform Law are widesweeping and ambitious. Since opportunities to enact reform legislation of this breadth are rare, when the opportunity did arise, the drafters took advantage of it and included in the reform every change they thought desirable, perhaps without considering whether in fact many of the changes could be implemented.

The implementation of the water reform, like the agrarian reform itself, will require extensive financing. The construction of irrigation works, and the renovation and maintenance of existing canals demand heavy public expenditures. Few studies of the river systems of Chile are available; thus teams of experts must be employed to gather and interpret

hydrological, agricultural and economic data. These studies need time and money.

It has been said that the Chilean government bureaucracy is top-heavy and over-centralized. Since water problems are often of a regional nature, there are good reasons to decentralize the administration of water by giving more authority to technicians in the various zones of the country. Unfortunately, the tendency is for the top men in the administration to make decisions out of proportion to what efficiency and human capacity permit. And these "top men" are not familiar with local problems of water use. Coupled with this tendency to pass the buck up the administrative structure is the scarcity of what might be called "middle" technicians or experts who can administer the reform on a day-to-day basis and deal with the practical problems which arise. Chile lacks technicians of this capacity. To aggravate this scarcity of middle technicians, the average technician seeks employment in Santiago, the capitol, rather than in the rural areas where there is a dearth of technically trained persons. The cost of training new technicians to apply the reform is high but this training is probably necessary if the reform is to percolate down to the farmers for whom it was enacted.

Many of the farmers of Chile at least in respect to water utilization seem to avoid organizing themselves except in periods of drought. These farmers for the most part lack any tradition of cooperation or communal effort. Often they hold government functionaries in suspicion, particularly if they only see them during droughts, as they live in Santiago and are unfamiliar with the problems of the area. The attitudes of independence and suspicion will have to change if reform is to come about because many of the changes in water law require a high degree of organization among irrigators, and cooperation with the government. Changing this attitude will require more contact between the government authorities in charge of water resources and the farmers. This contact can only come about through a larger staff of technicians and administrators working in the countryside.

The provisions of the law frequently contain nothing more than broad norms or directives. The administrators

must complement these norms and directives with regulations. The quality of these regulations will be an important factor in the ultimate application of the reforms. They must be drawn up by experts familiar with the problems with which the regulations are to deal and with an emphasis on the practical utility of these regulations to the process of applying the reforms. The quality of the regulations will be reflected in the effectiveness of the application of the law. Unfortunately, poorly drafted regulations could thwart the purposes of the reform.

Since the water law modifications were enacted in July of 1967, many things have changed and progress is evident, at least within the confines of the *Direccion*. However, it is difficult to know whether there has been any corresponding change in the administration of water in farm areas. Perhaps, the bureaucracy in adapting to the reforms has left the irrigators behind. Changes will occur; the question is to what degree they will occur given the multitude of obstacles lying in the path of effective reform.