

## NOTES ON CHILEAN ENVIRONMENTAL LAW

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Chilean ecological problems have been deeply and exhaustively treated by Rafael Elizalde Mac-Clure in his *The Survival of Chile*, a book published for the first time in 1958 by the Ministry of Agriculture. A second edition, considerably enlarged, appeared in October, 1970.

This volume outlines the situation in Chile during the sixteenth century, and then goes on to deal with the process of environmental deterioration suffered by that country up to the present era. The historic information is plentiful and well founded.

An idea of the seriousness of this process may be formed from naturalist Federico Albert's estimates, to the effect that the arrival of Spaniards to Chile had led to the destruction of thirteen million hectares of forested land, up to 1942. From this date up to 1970, another eight million hectares were laid waste. Besides, the pressing menace of desert encroachment in Chile was forecast as far back as 1855 by Benjamín Vicuña Mackenna,<sup>1</sup> in terms remarkably similar to those employed by present-day ecologists. He thus anticipated William Vogt, an American who warned against the same peril 90 years later, that is, in 1946.

In the third part of his book, Elizalde Mac-Clure carries out an exacting analysis of present-day Chilean environmental conditions, under the heading "The destruction of renewable natural resources". Therein he deals with the deterioration suffered by water courses, soils, forests, prairies, flora, fauna and landscape beauty, with the support of plentiful historical data and well-founded scientific research.

In the fourth part of his work entitled "The road to recovery", he describes the existing means available to curtail the process of desert encroachment, as well as to insure the preservation of the abovementioned resources. Fully aware of the gravity of the threat, he devotes an entire

<sup>1</sup> Vicuña Mackenna, Benjamín, *Le Chili considéré sous le rapport de son agriculture et de l'immigration européenne*, Paris, 1855, quoted by Rafael Elizalde Mac-Clure, p. 27.

chapter to the preservation of man himself and another one to outline a syllabus on education for conservation.

The indiscriminate felling of trees led the legislator to pass the first law for forestry protection in 1872. The third article of this law authorized the President of the Republic "to forbid the felling of trees on hillsides up to the height required to avoid the destruction of fertile soil". It was thus recognized that it was imperative to avoid razing the forested slopes to prevent hydric erosion. Unfortunately, this law could not be effectively enforced. The Supreme Decree of 1931, which enacted the forestry law still in force, failed to achieve its purpose, in spite of its usefull protective norms.

In the field of fauna conservation, mention must be made of law N° 4601, 1929, which forbade the hunting of 83 species of wild fowl and 13 species of mammals for an indefinite period, with latter additions.

The Fishery Law issued in 1931, lays down various prohibitions and restrictions intended to preserve the sea and river fauna, a vital resource for Chilean economy. Thus article 20 forbids chemical methods for fishing, as well as "the contamination of water courses and lakes with residues from agricultural manufacturing and mining industries which may prove harmful to the life of aquatic animals, unless said residues have previously been purified or suitably diluted, as laid down by the regulations". Furthermore, the 1964 Regulations governing the establishment of fisheries. Entrust the Agricultural and Cattle Service to provide information intended to protect these resources from irrational exploitation, or when the preservation of certain species is endangered. Amongst the various norms for the protection of ichthyological resources, mention should be made of the "Licensing Regulation" for foreign fishery ships operating in Chilean territorial waters (Decree 1130, 1959).

As for as vegetable health is concerned, Law 9006, 1949, enforced in 1950, was the first to lay down norms intended to avoid various plagues and epidemics, followed by many others, including international agreements.

Regarding the pollution of water courses, reference should first be made to the Penal Code, previsions included in paragraph 14 devoted to crimes and offenses against public health. In this connection, article 315 punishes those who should poison or infect foodstuffs, water, or other beverages intended for public consumption, so as to result in death or serious harm to health, while art. 317 covers the ensuing death or severe illness, and the commission of the deed through utter recklessness or mere negligence, with breach of the existing regulations.

Law 3133, 1916, on "Neutralization of residues issued from industrial plants" lays down in the first article that "no industrial plants, whether mining, metallurgical, manufacturing, or of any other kind, may discharge

into aqueducts, natural or artificial water courses, streams, lakes or reservoirs, the liquid residues from their industrial processes, which contain substances noxious to potability or irrigation, unless previously neutralized or purified by a suitable permanent treatment. In no case whatsoever, solid substance from these factories or seeds harmful to agriculture may be discharged into the abovementioned courses or reservoirs”.

The second article of this Law deals with air pollution, which is increasingly severe in the city of Santiago de Chile on account of its geographic features. The norm states that “the neutralization of residues should be mandatory in factories located in build-up areas or their neighbourhoods, in all cases where such residues may contaminate the atmosphere or damage drains and other sewage systems, even though they do not contain substances noxious to potability or irrigation”.

Articles 3, 4 and 5 compel the owners or administrators of said factories to submit the purification system they intend to adopt for administrative approval. In addition, administrative fines are specified.

Decree 2419, enforcing the Law under consideration, classified the factories involved in five categories: 1) Those discharging residues noxious to potability for humans and animals; 2) Those discharging residues noxious to irrigation; 3) Those discharging solid residues harmful to agriculture; 4) Those discharging residues which pollute the atmosphere of built-up areas; and 5) Those discharging residues which damage drains and other sewage systems.

Law 9006, 1948, empowers the Ministries of Agriculture or of Public Health to adopt the measures required in order to insure that industrial, manufacturing or mining firms may be constrained from discharging smoke, dust, or gases into the atmosphere, from evacuating products or residues into water courses used for potable water or irrigation, if by such acts they should harm the health of human, animal or vegetable life, or alter the arable conditions of the soil (Art. 11).

The Chilean Sanitary Code (Decree-Law N<sup>o</sup> 725, 1968) states several environmental provisions intended to protect public health. Amongst others, article 73 forbids the discharging of drainage waters and industrial or mining residues into rivers, lakes, or any other source or body of water from which potable water is obtained, or for irrigation or recreation, unless said contaminants are previously purified as demanded by regulations. The sanitary authority is empowered to order the immediate discontinuance of the discharges and demand the adoption of satisfactory treatment systems to insure against pollution. Likewise the treatment of garbage, offal, and so on, is foreseen, and must be carried out under the supervision of the National Health Service. As far as industrial hygiene and security are concerned, article 83 provides that “municipal authorities

are not empowered to allow the installation, enlargement, or change of location of industries, without previously securing a favourable report from the National Health Service. To issue said report, the Sanitary Authority will bear in mind the communal or intercommunal regulatory plans, as well as the dangers or nuisances that the operation of the industry may inflict upon its workmen and employees, upon the neighbourhood, and upon the community and its property.

Special mention should be made of article 89, dealing with air pollution, noises, and vibrations, which foresees the enforcement of norms regarding:

- a) The conservation and purity of the air, avoiding the presence of substances or odours liable to menace the health, the safety, or the well-being of human beings, or which may exert an unfavourable influence over the use and enjoyment of property. The enforcement regulations must establish, in each case, when the evacuation of said substances into the atmosphere may be forbidden or controlled;
- b) The protection of the health, the safety, and well-being of the tenants of the buildings of any nature whatsoever, of the neighbourhood, and of the general public, as well as of domestic animals and property, against the damages, dangers, and discomforts of mental or physical character, arising from the production of troublesome noises or vibrations whatever their source may be.