Chapter 1: An outline of Argentina

1. LAND AND NATURE OF ARGENTINA

(1) An outline of the land

With almost 2.8 million square kilometers of area, the second largest country of South America extends between 22 and 55 degrees of latitude. The Andean mountains form the western border with many peaks over 6,000 meters in the middle to north and lower peaks over 2,000 meters in the south.

The altitude gradually lowers to the Atlantic Ocean in the southeast or to the La Plata River or its tributaries which form borders with Uruguay, Brazil and Brazil. In the south, the mountains and hills directly face the Ocean without significant plains.

The country is thus classified into the five geographical regions (Association for Promotion of International Cooperation, 1994; Ministry of Foreign Affairs、1996)：

(a) Chaco Lowland

This subtropical area is composed by savanna grasslands, dense forests, flood plains and marshlands. While extensive flood plains are formed by flooding in summer when the temperature is high and it rains a lot, the same flood plains become alkaline sandy areas in winter when it is dry and rivers from the Andes are dried up.

(b) Mesopotamia Plain

This area between Parana and Uruguay Rivers is rich in fauna and flora thanks to its fertile soil. The fertile black soil in Corrientez Province is particularly thick and quite suitable for plant growth.

(c) The Pamapa

This fan-shaped temperate grassland where the city of Buenos Aires is situated is so extensive as 600,000 square kilometers in area and so flat as having only 150 meters in the difference in the altitude. Also, it has no significant woodlands. The area is famous as one of the major grain belts of the world with very fertile soils. The region where agriculture and cattle rearing are developed provides the primary sources of the wealth of Argentina.

(d) Patagonia

Patagonia extending from Colorado River at 40 degrees South to Fuego Island at the

Southern end of South America is a semi-cold plateau characterized by little precipitation and strong westerlies from the Andes. The climatic and pedological conditions are too harsh for trees to grow and thus results in semi-arid conditions. However, the regions is the primary producer of sheep. Also, it produces oil.

(e) The Andean area

The Andean Mountains forms a border between Argentina and Chile and divides the water between the Atlantic and Pacific Oceans. This area characterized by very high mountains over 6,000 meters. The southern part of the area, which is lower, characterized by lakes formed by glaciers.

(2) Climate

Because of its large size the Argentine's climate varies. The north and northeast are subtropical and humid. The climate in the Pampa is moderate. Patagonia is windy and cold except between October and March when it is comfortable.

Table 1.1 The Climate of Argentina

Place		Jan	Fab	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
Posadas	Temperature °C	26.6	25.7	23.6	19.6	18.0	16.4	15.7	17.4	18.6	20.0	22.9	25.2	20.8
	Humidity %	-		-	-	-	-	-	-	-	-	-	-	-
	Precipitation mm	73	125	132	188	155	106	88	120	173	211	107	133	1,611
Santiago	Temperature °C	26.8	25.4	23.4	19.4	16.7	12.6	12.9	15.1	18.3	22.0	24.4	26.4	20.3
del Estero	Humidity %	64	67	71	74	75	73	68	52	49	54	53	62	65
	Precipitation mm	119	119	81	27	11	7	4	2	10	31	67	77	563
San Luis	Temperature °C	24.0	23.0	20.3	16.4	13.0	9.3	9.3	110	14.6	17.8	21.2	23.2	17.0
	Humidity %	55	55	61	62	66	69	62	4	51	55	52	50	58
	Precipitation mm	102	74	80	40	44	13	6	58 3	13	44	76	109	558
Buenos	Temperature °C	24.1	22.9	21.3	17.1	13.9	10.8	11.2	11.9	14.2	16.6	19.8	22.6	17.2
Aires	Humidity %	-	-	-	-	-	-	-	-	-	-	-	-	-
	Precipitation mm	143	92	109	88	86	75	79	75	74	97	103	76	1,098
Trelew	Temperature °C	20.6	19.8	17.6	13.4	9.7	5.8	6.2	8.0	10.5	13.7	17.0	19.2	13.5
	Humidity %	35	38	41	48	52	61	64	55	45	42	40	35	47
	Precipitation mm	11	19	17	12	20	12	17	13	11	18	16	14	170
Ushuaia	Temperature °C	9.2	9.1	7.9	5.5	3.0	2.0	1.6	2.4	4.3	6.2	7.6	8.8	5.6
	Humidity %	69	69	66	74	73	82	76	78	70	64	65	67	70
	Precipitation mm	50	46	49	50	46	35	42	48	44	30	46	45	583

(Source: 理科年表1992)

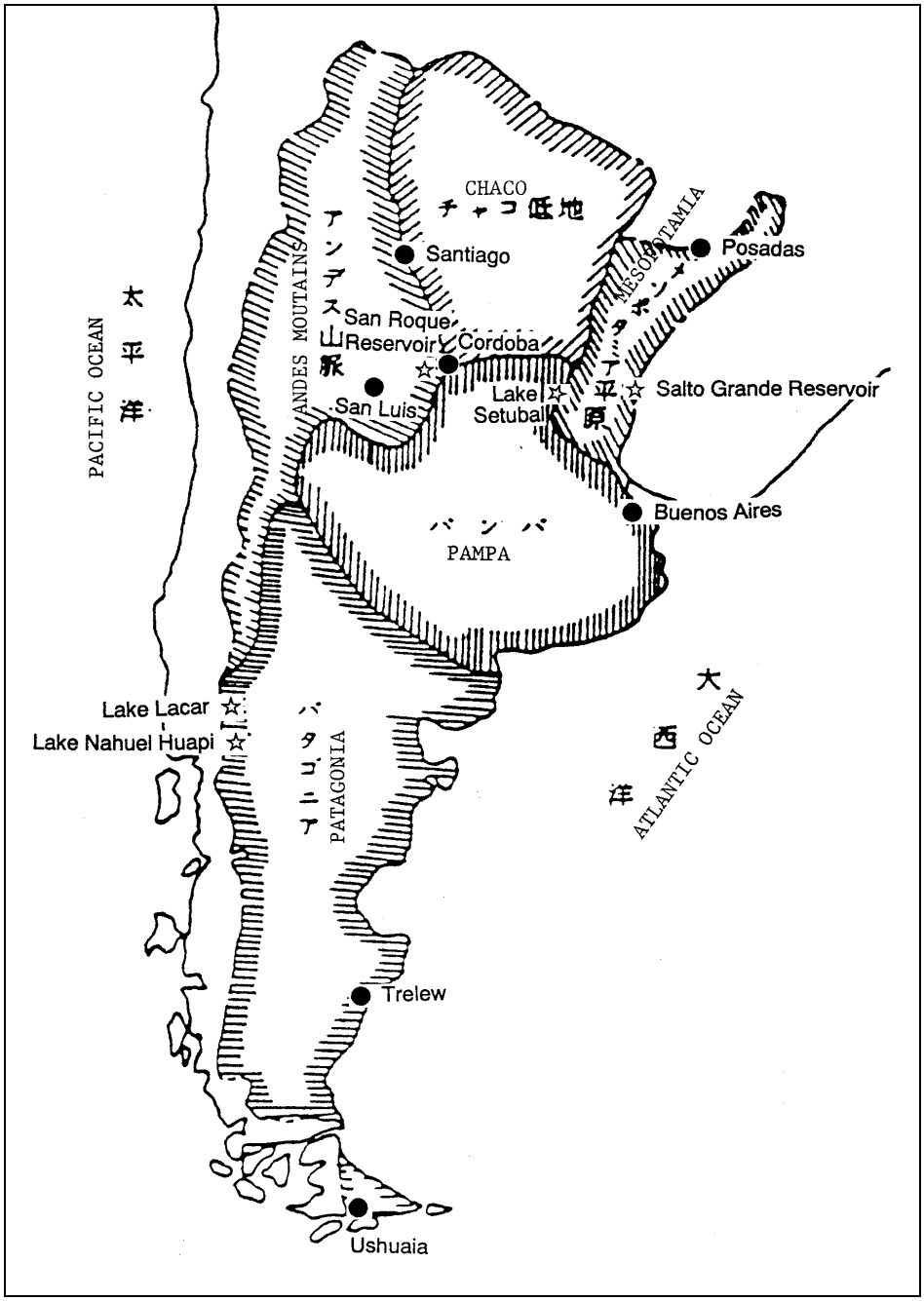


Fig 1.1 Geographical regions of Argentina (Association for Promotion of International Cooperation, 1994)

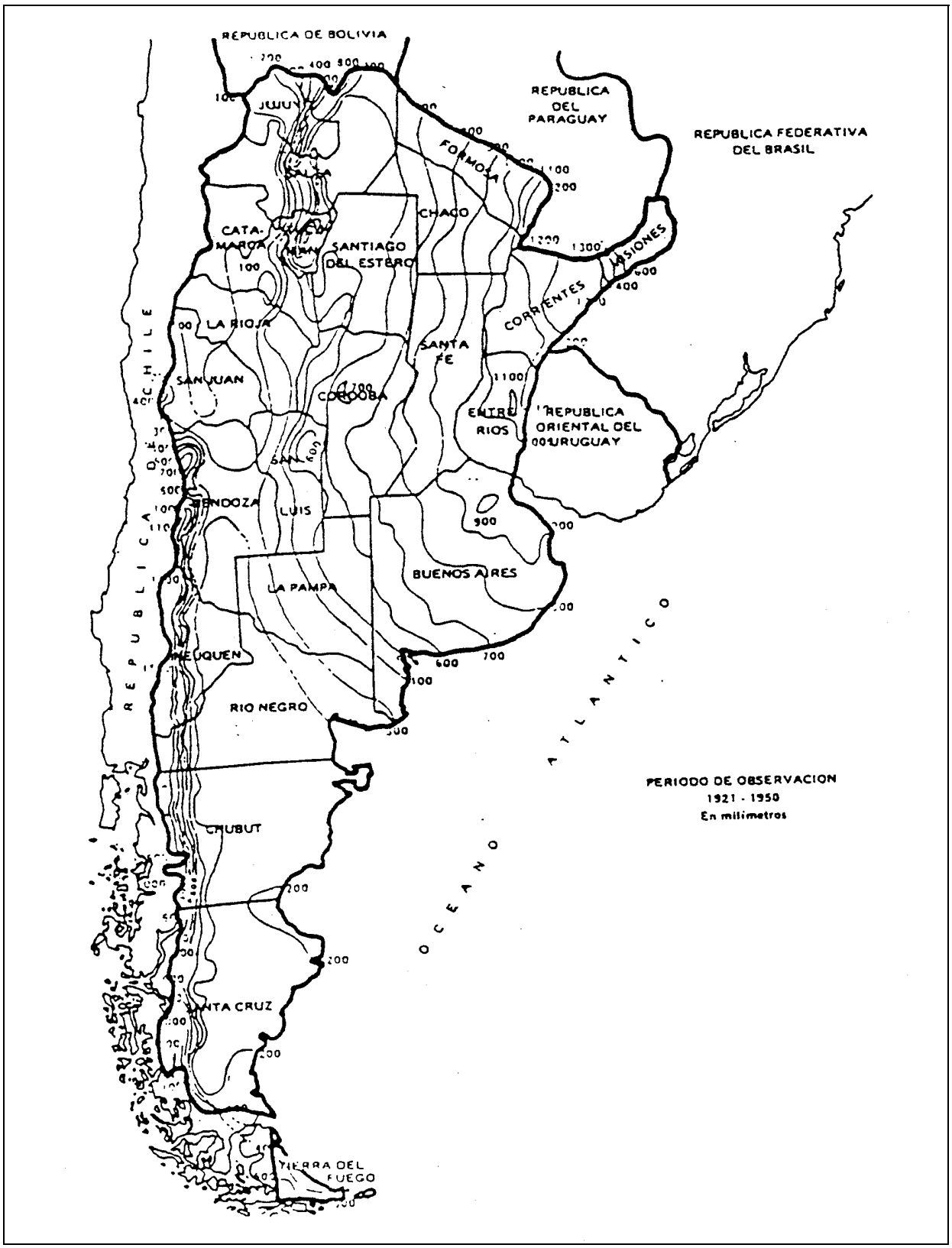


Chart 1.2 Distribution of precipitation in Argentina (Association for Promotion of International Cooperation, 1994)

(3) Vegetation

The vegetation is classified into the following four (Overseas Environmental Cooperation Center, Japan, 1995):

(a) Subtropical forests

40-meter tall forests and scrubs are found in Misiones Province in the northeast of the country characterized by high temperature, much rainfall and laterite soil. The trees gradually lower to fifteen meters in the southern part of the area.

(b) The Pampa and Mesopotamia plain

Surrounded by forests and mountains, the area is dominated by Gracenaceae grasslands.

(c) Central and northwestern mountains and plateaus

In the plateau area with much precipitation, tall forests are seen. However, in the mountains, the harsh climate results in poor vegetation.

(d) Patagonia

The cold, dry and windy climate and infertile soil result in steppe vegetation with scattered shrubs. However, Fuego Island with much precipitation is covered with forests.

(4) Hydrology

Argentina can be divided into the following hydrological regions, which belong to the basins of the Atlantic Ocean, the Pacific Ocean or Closed Basins (Subsecretaría de Recursos Hídricos, Dirección Nacional de Recursos Hídricos, 1995):

Table 1.2 Hydrological regions of Argentina (Subsecretaría de Recursos Hídricos, Dirección Nacional de Recursos Hídricos, 1995)

Atlantic basin	Pacific basin	Closed Basins
(a) Parana River System (b) Paraguay River System (c) Uruguay River System (d) The System of La Plata River and Buenos Aires Province up to Colorado River (e) Colorado River System (f) Patagonian Rivers System		(g) Independent Systems (h) Chiquita Lake System (i) Serrano System (j) Pampa System

Table 1.3 Major rivers of Argentina

Name	Length (km)
Parana	1,800
Uruguay	1,100
Salado del Norte	2,000
Bermejo-Tecuco	1,000
Pilcomayo	850
Bermejo-Desaguadero-Salado	1,200
Mendoza	400
San Juan	500
Colorado	860
Chubut	810
Salado (Buenos Aires Province)	700
Negro	635

(Source: Japan International Cooperation Agency, 1985)

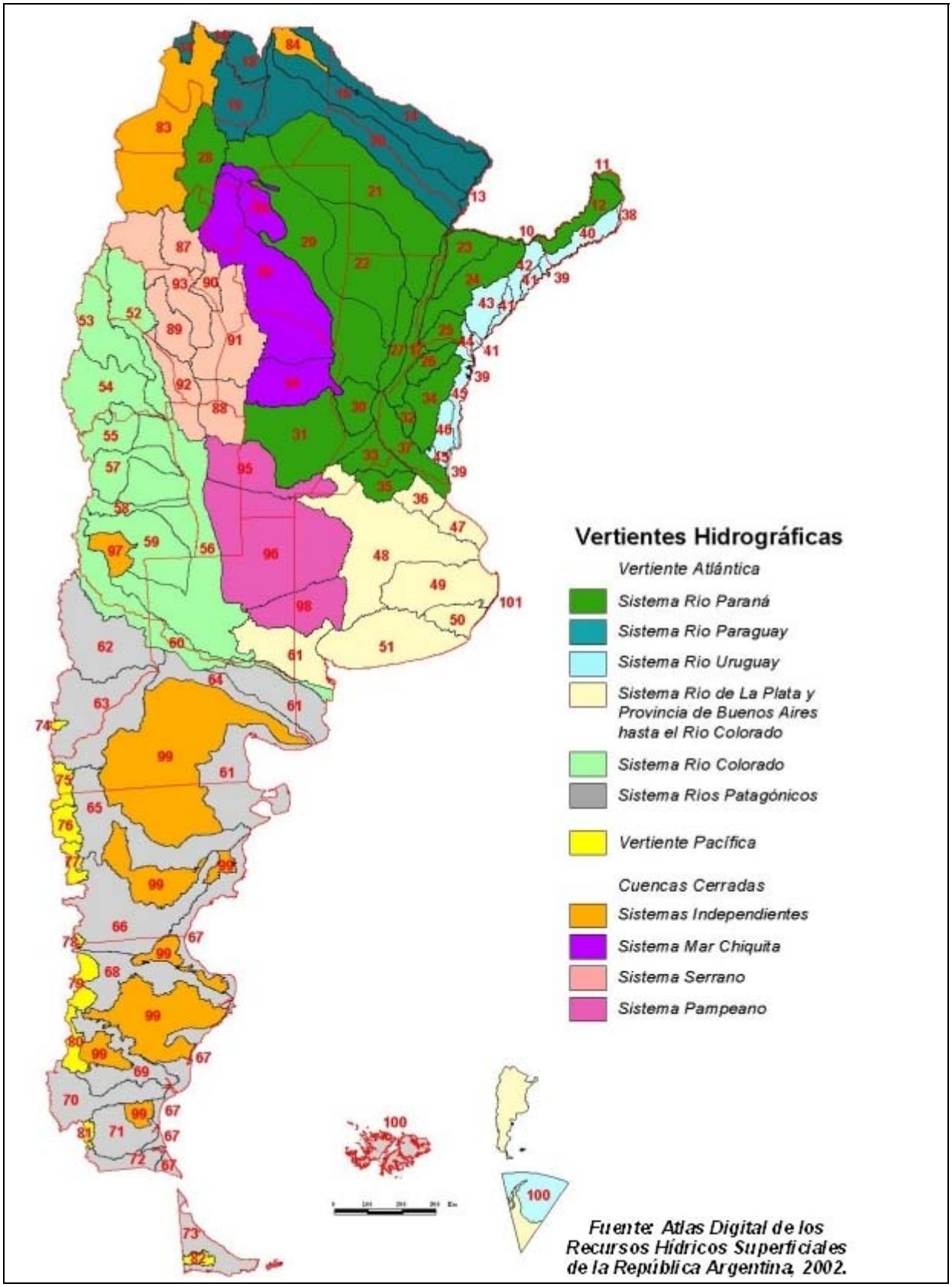


Fig 1.3 Hydrological Regions of Argentina (Subsecretaría de Recursos Hídricos, Dirección Nacional de Recursos Hídricos, 1995)

One fourth of the land of Argentina is said to be prone to flooding. Particularly vulnerable are the areas along the Parana River where flooding occur almost every year (JICA, 1995). JICA (1995) lists the following areas as vulnerable to flooding:

The most vulnerable areas are Northwest region (Mesopotamia and Chaco regions), the Pampa (Salado River, Quinto River, which flows near Mercedez, San Luis Province, and Escadenadas Lake System, which are a chain of lakes in a depression in the southwest of Buenos Aires Province), and the Metropolitan Buenos Aires. Other vulnerable areas include Salta Province (Bermejo River), Tucmán to Santiago del Estero Provinces (Sali (upper stream in Tucmán Province) - Dulce (lower stream in Santiago del Estero Province) River), Cuyana region (Desaguadero River - northern part of the border of Medoza and San Luis Provinces), and the Negro River valley (Negro (in Negro Province) and Neuquén Rivers).

2. POLITICAL, GOVERNMENTAL AND SOCIO-ECONOMIC CONDITIONS

(a)Socio-economic conditions

Argentina is rich in natural resources and has highly literate population, export-oriented agriculture and a diversified industrial base. However, following decades of political instability and mismanagement of the country, the economy in the late 1980s was plagued with huge external debts and recurring bouts of hyperinflation. (InterGO Communications, 1995-1996)

Elected in 1989 in the depth of inflation mounting to 3,000 % and decreased Gross Domestic Product, President Menem implemented a comprehensive economic restructuring program which included liberal macro economic policies, intensive privatization of public enterprises and even the government. This led to recovery of the economy with inflows of foreign capital and domestic consumption (InterGO Communications, 1995-1996, whose information is much benefited from CIA World Factbook 1995). The per capita GDP amounted to US$6,476 and the consumer price increase was suppressed to less than one per cent in 1996 and 1997.

However, the unemployment rate has doubled from approximately seven per cent.

The current Five-Year Plan for Economic Growth for 1995-1999 is focused on public investments. This is different from the former Three-Year Plans for 1992-1994, 1993-1995 and 1994-1996 which were focused on macro-economic policies and sectoral policies (an undated information sheet available in the Library of the Japan International Cooperation Agency, presumably prepared by the Embassy of Japan in Argentina.) Priority is given to improvement of social services targeted at low-income households such as access to education, healthcare, water and wastewater treatment, reduction of the regional gaps in economic development, improvement of the competitiveness of the industries such as human resource development, infrastructure development, and research and development, improvement of

national enterprises, and environmental protection. Therefore the public investments are primarily made for administration of justice, public security and the social sector including housing. The investments in the economic infrastructure sector are mostly made for transport, particularly roads. The investments in individual sectors are targeted as follows:

Administration of justice:	Construction of a Justice City
Public security:	Provision of infrastructure in prisons
Public health:	Construction of regional hospitals, mother and infants healthcare program, federal public health program, Greater Buenos Aires health program
Education:	Improvement of the primary education, strengthening of the secondary education and higher level education
Provision of water and waste water treatment:	Water provision and waste water treatment program
Electric power:	Construction of power stations and power transmission lines
Fuel:	Increase of oil production, export of natural gas, and supply of gas in urban areas
Communication:	Establishment of a national satellite system, expansion of telephone services
Transport:	Road: Construction of roads for export products, development of highway no. 40, transboundary roads, roads for access to the Federal District, construction of a bridge between Rosario and Victoria, construction of transboundary bridges, etc. Railroad: Expansion of cargo transport Ports, harbors and river navigation: increase of cargo and river navigation Air transport: Improvement of airport facilities, communication systems and radars, etc.
Environment:	Improvement of industrial pollution and solid waste disposal and the water quality of Matanza-Riachuelo River [flowing on the southeast border of the Federal District]
Technology development:	Space research: Promotion of the National Space Program Atomic energy: Promotion of the Atomic Energy Development Program
Agriculture:	Provincial agricultural extension services strengthening program, promotion of mineral development
Rural development:	Recovery from flooding disasters, prevention of flooding

Table 1.4 Some socio-economic figures

Population (1997)	35,672 thousand
Population under 15 (1996)	28.4 %
Population 60 and over (1996)	13.3 %
Average annual growth rate of population (1988-1997)	1.2 %
Rural population (1996)	13.4 %
Population density (1997)	12.8/km^2
Life expectancy at birth (1995)	72.7 years
Unemployment rate (1997)	14.9 %
Exchange rate (Pesos/US$) (January 1998)	1.0
GDP per capita: average annual growth rate (1988-1997)	1.7 %
Official language*	Spanish
Ethnic composition**	White: 85 % Mesotizo, Indian, or other non-white groups: 15 %
Dominant religion*	Christian (Catholic)
No. of Japanese residents*	11,709
Direct investment from Japan(FY 1996)*	US$ 116 million
Official Development Assistance from Japan (FY 1996)*	US$ 41.71 *Grant Assistance: 0* *Technical Cooperation: 27.78* *ODA Loan: 13.40*

Sources: *ed: Ministry of Foreign Affairs of Japan, 1997: 外交青書; **ed: InterGO Communications, 1995-1996; others: InterAmerican Development Bank, 1998 (Home Page: Basic Socio-Economic Data at: http://database.iadb.org/INT/_BRPTNET/english/argbrpt.htm)

Table 1.5 Yearly change in some socio-economic figures

	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Daily caloric intake	2,975.0	2,994.0	2,916.0	3,004.0	30,82.0	3,103.0	3,139.0	3,110.0		
Unemployment rate	6.3	7.6	7.5	6.5	7.0	9.6	11.5	17.5	17.2	14.9
Exchange rate per US$	0.0	0.2	0.6	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Consumer price index	348.3	3,084.6	2,315.5	171.7	24.9	10.6	4.2	3.4	0.2	0.5
Wholesale price index	466.7	3,347.1	1,606.5	110.5	5.5	2.1	2.0	6.2	3.3	
GDP 1990 US$ million	166,933.7	155,292.7	153,215.6	169.298.6	186,737.0	198,409.7	215,322.6	205,472.6	214,308.2	231,024.2
GDP per capita 1990 US$	5,278.5	4,840.6	4,710.4	5,134.3	5,587.4	5,858.1	6,274.2	5,909.7	6,084.9	6,476.4

(Source: InterAmerican Development Bank, 1998 (Home Page: Basic Socio-Economic Data at: http://database.iadb.org/INT/_BRPTNET/english/argbrpt.htm)

(b) Federal structure

The Republic of Argentina is a federal country of 23 provinces and one federal district of Buenos Aires. Only those matters delegated by provinces are under the national jurisdiction. Some provinces have even international agreements (JICA, 1995). Because the power to manage natural resources is not delegated to the national government, the management of freshwater resources, including lakes, is primarily the responsibility of provinces.

It should be noted that in Argentina "national" means "pertinent to the nation (composed by the union of the provinces)" while "federal" usually means "trans-provincial" or "inter-provincial" with the exception of the "Federal District" (Buenos Aires city).

(c) Politics and government of Argentina

The President, chief of the state and head of the government, is elected for six years' term by the electoral college whose number is twice of the total number of the Congress members. The members of the electoral college are directly elected by voters. The Cabinet members are appointed by the President.

The National Congress is bicameral. The Upper House is composed by 48 members elected from 23 Provinces and one federal district for nine years' term. The Lower House is composed by 257 members elected in proportion to the population of provinces for four years' term. The Upper House is chaired by the Vice President.

Although Argentina was said to be one of the richest countries with substantial foreign direct investments and export of agricultural products, the politics and economy were often chaotic with even many cruel tortures and other violation of human rights for many years after the first military coup in 1930. Only when the current civil government was resumed by the election of President Alfonsin in 1983, the country saw some change. But even the Aflonsin administration could not stabilize the economy.

President Menem who was elected in 1989 and reelected in 1995 changed his Peronist Party's policy from socialistic one to liberal one, introducing liberal macro economic policies and privatization of the public enterprises. His introduction of liberal economic policy has led to substantially stable economy and growth, although concern persists about the doubled unemployment rate.

Currently there are two major political parties: the Justicialist Party led by current President Menem, a Peronist umbrella political organization, and the Radical Civil Union led by former President Alfonsin, a moderately left-of-center party. Other parties include Union of Democratic Center led by Jorge Aguado, conservative party, Dignity and Independence Political Party led by Aldo Rico, right-wing party, Grand Front led by Carlos

Alvarez, cneter-left coalition, and several provincial parties. Some other political or pressure groups are also identified such as Peronist-dominated labor movement, General Confederation of Labor (Peronist-leading umbrella labor organization), Argentine Industrial Union (manufactures' association), Argentine Rural Society (large landowners' association), business organizations, students, the Roman Catholic Church, and the Armed Forces. (InterGO Communications, 1995-1996, whose information is much benefited from CIA World Factbook 1995)

The current Constitution limits the number of the ministries to eight, i.e. Interior, External Relations, Defense, Economy and Public Works and Services, Culture and Education, Labor and Social Security, Health and Social Action, and Justice. With this limitation, there are ten Secretariats in the National Presidential Office, i.e. General, Legal and Technical, Public Functions, Natural Resources and Sustainable Development, Communication Medias, Science and Technology, Program of Prevention of Use of and Trade in Narcotic Drugs, Intelligent, and Sports. (Association for Promotion of International Cooperation, 1994; Japan International Cooperation Agency, 1997)

Table1.6 Political history of Argentina

Year	
1816	Independence as United Provinces of Rio de La Plata
1853	Unitarist Constitution
1930	First military coup of Argentina followed by military and paramilitary governments
1943	Military coup
1946	Election of Peron as President supported by the military, labor and church
1955	Military coup followed by frequent change in the government
1973	Re-election of Peron as President with socialist and nationalist policies
1976	Military coup followed by closure of the Congress and political activities resulting in numerous arrests and torture
1983	Election and assumption of President Alfonsin from Radical Civil Union
1989	Election and assumption of President Memem from Justicialist Partiy (Peronist Party)
1995	Re-election of President Menem

3. ENVIRONMENTAL CONSERVATION IN ARGENTINA

(1) An outline

Due to the benefits the extensive land provides and due to the long political problems, Argentine people did not have occasions to seriously face environmental problems. However, as the political situation stabilized, the United Nations Conference on Environment and Development in Rio de Janeiro, Brazil in 1992 gave a good opportunity to raise the people's concern about their environment (Overseas Environmental Cooperation Center, 1995; Japan International Cooperation Agency, 1995). This concern led to the establishment of the Secretariat of Natural Resources and Human Environment in the National President's Office in 1991. Also, on the occasion of the amendment of the national Constitution in 1994, provisions for the nation's responsibilities for the environment were added in Articles 41 and 42 as shown in Box 1.1. While the nation's power for the environment had been concerned only with international agreements and environmental impact assessment of the activities of the nation because the provinces have the most power in this federal state, the amendment provided for the nation's responsibility to set minimum environmental standards and provinces' responsibility for supplemental standards. It also provided for people's right for sound environment and their duties to protect it. In addition, an agreement was made in 1993 between the nation and provinces on the following:

- Promotion of the policies of environmentally sound development, for which a comprehensive agreement will be made between the nation and provinces;
- Promotion of unification or coordination of environment-related organs within provincial governments;
- Establishment of a Federal Council of Environment which coordinates interprovincial action;
- Strict enforcement of environmental laws and adoption of policies for environmental education, environmental sciences and community participation in order to protect the environment.

However, there is still no comprehensive environmental law to integrated the environmental laws on specific subjects.

Box 1.1 Chapters of the Argentine Constitution that provide for the environment

Article 41.- All inhabitants possess the right to a safe, balanced environment, apt for the human development and with the aim that the productive activities satisfy the present necessities without compromising the ones of the future generations, and have the obligation to preserve them. The environmental harm will mainly generate the obligation to mend, as establishes the law.

The authorities will provide for the protection of this right, for the rational use of the natural sources, for the preservation of the natural and cultural patrimony and the biologic diversity, and for the environmental information and education.

It corresponds to the Nation the dictation of norms which contain the minimum protection budgets, and to the provinces, the necessary ones to complement them, without the alteration of the local jurisdictions.

It is prohibited the entrance to the national territory of presently or potentially dangerous residues, and the radioactive ones.

Article 42.- The consumers and users of goods and services have the right, in the consumption relation, to the protection of the health, security and economic interests; to an adequate and veracious information; to the freedom of election and to conditions of fair and suitable treatment.

The authorities will provide for the protection of those rights, for the education of the consumer, for the defense of the competition against all form of distortion of the markets, for the natural and legal control of monopolies, for the quality and efficiency of the public services, and for the constitution of associations of consumers and users.

The legislation will establish effective procedures for the prevention and solution of conflicts, and the regulative standard of the public services of national competition, foreseeing the necessary participation of the association of consumers and users and of the provinces concerned, in the control organisms.

(2) Environmental problems in Argentina

The major environmental problems of Argentina are pollution of water, solid wastes, air pollution from automobiles and industrial sources, and destruction of natural resources (Overseas Environmental Cooperation Center, 1995).

The most serious water pollution is found in the national capital area, Cordoba City, and Tucumán City. In the national capital area, the water contamination by the waste water from domestic sources and pulp, chemical, leather, meat processing industries and oil refineries is seriously affecting the citizens' health, particularly the poor households who are also prone to flooding.

The following are the representative water contamination issues of the lakes and reservoirs of the country:

(a) San Roque Reservoir

The water pollution there is quite serious.

(b) Some lakes in the Patatonian Andean area

There are concerns about the potential or actual water contamination of some of the lakes in the Patagonian Andean area such as Lake Lacár and Lake Nahuel Huapi.

(c) Salto Grande Reservoirs

There are not only issues of contamination and ecosystem conservation but also issues associated with the bilateral management by Argentina and Uruguay.

(d) Rio Hondo Reservoir (Sali and Dulce Rivers)

Sugar cane processing factories have contaminated the rivers, and the rivers have in turn contaminated the reservoir. Many aspects of environmental conservation are concerned with the sustainable management of the reservoir including conservation of it as an important habitat of migratory birds. This is a typical lake in the middle to north of the country where problems are caused by various activities including human population, industries, natural factors (often the subtropical climate), agriculture, oil exploitation, mining, etc. as Dr. Hugo López explained.

Also, it is pointed out that there is a potential threat to the lakes on Fuego Island because the low temperature and slow circulation of water make problems serious once the water has been contaminated by the on-going forest destruction and others according to Dr. Hugo López.

The conservation of lakes and reservoirs have been dealt with in the framework of the management of freshwater resources in the country. It has not yet been established as an independent concept. However, the preparation of a Catalogue of Argentine Lakes by the National Direction of Water Resources Issues in 1995 shows a growing concern of the Government of the issues of sustainable management of lakes and reservoirs.

The other issues in the area of freshwater resources than contamination include the scarcity of water in the northern arid region, the large percentage of the population who lack access to public water supply, even more delayed provision of sewage treatment systems and flooding. In the arid northwest region, not only the water scarcity itself but also the inappropriate management of the water use facilities are issues. In addition, efforts for efficient use of water have still to be sought. The lowland along the Paraná River, particularly in Santa Fe and Buenos Aires Provinces, is prone to flooding not only because the land is low but also because the gradient is very small. Sometimes raised water level of the River causes

flooding while on other times heavy rain in the area causes flooding because rain does not quickly flow to rivers.

In the past, there have been only two cases where dam construction plans were opposed by citizens. One is the case of Gorp Cristi Dam in Ricivas Province. 90 % of the local people opposed the dam in a referendum. However, because Argentina had already agreed with Paraguay on the construction of the dam, this can be not only a domestic issue but also an international issue. The other is the case of the Paraná-Merim project. 22 years have passed but still the construction has not started because of local opposition. A recent new proposal by a US company for construction of the dam has raised new concerns.

With regard to water resources, the most critical problem is unavailability of the information on the state of each water resource including lakes and reservoirs. The national system of water quality monitoring has not been complete yet.

The air pollution from automobile exhaust gas, particularly from diesel engines, is a serious problem and the combination of the use of low quality fuel, the insufficient automobile inspection system and the large number of old vehicles makes its solution difficult. Air pollution from industries is also an issue in Cordoba. While the citizens of Buenos Aires do not consider the air pollution very serious due to the windy climatic conditions and parks of the area, the air pollution level in Cordoba sometimes becomes very serious due to its topography of valley.

In the area of natural resources management, erosion and salinization of the soil in semi-arid areas as results of inappropriate land use and water management are seen in many places. In particular, the desertification in Patagonia has been an issue. In some humid areas, waterlogging is an issue. In the west Pampa, deterioration of the productivity of the land due to erosion by water is an issue.

The too small percentage of the protected areas of 3 % of the total area of Argentina is pointed out. This is said to be too small to support the forests and wildlife habitats. Also, the forest area has been decreasing. (Overseas Environmental Cooperation Center, Japan, 1995)

Three million hectares of land is now under protected areas. There are three categories of protected areas in Argentina of which National Parks are established for strict conservation and Reserves as buffer zones adjacent to the Parks. The National Park System of Argentina was set up in 1934 primarily for promotion of tourism, which resulted in the concentration of Parks in the Southwest region where expectations for tourism development were high. Those Parks established earlier have more established management institutions such as approximately 40 rangers per park.

It should be noted that all the Parks in Patagonia have lakes. Seeking the original purpose

of tourism development, exotic fish species like salmon and trout were released to such lakes. They played certain roles in tourism development but have disturbed the ecosystems. None of the park management offices have specialists in lakes even if lakes are important resources of the parks. However, in some parks, national park management authorities and local universities have been conducting surveys and studies of lakes. A sewage treatment system was recently completed in Bariloche to protect Lake Nahuel Huapi from pollution. The National Park authority itself did not make financial contributions for the project but played a promoting and coordinating role; although Baliloche used to be a part of the Park and thus under the national jurisdiction, it was later excluded from the Park area and is now under the provincial jurisdiction. Also, it is noted that a sewage treatment system with tertiary treatment was recently constructed in San Martín de los Andes.

(3) Law

While environmental laws concerning natural resources were enacted relatively early, laws concerning pollution were enacted recently. There is still no basic framework law that comprehensively provides for environmental conservation. Also, it is pointed out that the sectoral laws are not perfectly consistent with each other (Japan International Cooperation Agency, 1995). Although an Environmental Impact Assessment Law was adopted by the Congress in 1993, it was rejected by the President. As a result, the Law 23.879: Hydraulic Assessment Work of the Effects in the Argentine Territory of Dam Construction during Construction and/or Planning of 1990, which provides for EIA applied only to hydroelectric power generation, is still the only EIA law effective in Argentina (Overseas Environmental Cooperation Center, 1995).

The following are the major environmental laws of Argentina currently in force (Sisto, 1994):

(a) Environment in general

- Federal Environmental Agreement (Pacto Federal Ambiental), 1993

(b) Water

- Law 21.172: Public Health - Consumed Water: Fluorization or defluorization (Ley 21.172: Salud Pública – Aguas de consumo: Fluoración o defluoración)), 1975
- Law 23.615: Federal Council of Potable Water and Drainage – Creation as autarquic organization (Ley 23.615: Consejo Federal de Agua Potable y Saneamiento (CoFAPYS) – Creación como organismo autárquico), 1988
- Law 23.879: Hydraulic Assessment Work of the effects in the Argentine Territory of Dam Construction during construction and/or planning (Obras hidráulicas-Evaluación de las consecuencias ambientales que producen o podrían producir en territorio las represas construidas, en construcción y/o planificadas), 1990
- Decree 674/89: Regulation for industrial establishments and/or those which continuously

or discontinuously produce liquid waste or sludge originated from cleansing activities and dumped into rainfall drainage or water courses. Area of Application. (Decreto 674/89: Régimen al que se ajustarán las establecimientos industriales y/o especiales que produzcan en forma continua o discontinua vertidos residuales o barro originado por depuración de aquellos a conductos cloacales o a un curso de agua. Ámbito de aplicación)

- Decree 776/92: Assingment to the Secretariat of Natural Resources and Human Evnvironment the power to control the contamination of water and to preserve water resources (Decreto 776/92: Recursos Hídricos: Asígnase a la Secretaría de Recursos Naturales y Ambiente Humano del poder de control de contaminación de las aguas y presevación de lso recursos hídricos), 1992

(c) Air

- Law 20.284: Rules for the preservation of air resources (Ley 20.284: Nomas para la preservación de los recursos del aire), 1973

(d) Protected areas (Áreas protegidas)

- Law 22.351: Regal system of National Parks, Natural Monuments and National Reserves (Ley 22.351: Régimen legal de Parques Nacionales, Monumentos y Reservas Nacionales), 1980
- Decree 2148/90: Strict Natural Reserves: Definition, objectives and prohibition (Decreto 2148/90: Reservas Naturales Estrictas. Definición. Objectivos. Prohibiciones), 1990

(e) Environmental agrarian right (Conservation of soils) (Derecho agrario ambiental (Conservación de suelos)

- Law 22.428: Law of Promotion of the Conservation of Soils (Ley 22.428: Le de fomento de la conservación de suelo), 1981
- Decree 681/81: Promotion of the conservation of soils – Regulations of Law 22.428 (Decreto 681/81: Fomento de la conservación de los suelo – Regulamentación de la ley 22.428), 1981

(f) Fauna

- Law 22.421: Conservation of Fauna (Ley 22.421: Conservación de la Fauna), 1981
- Decree 691/81: Protection and conservation of wild fauna – Regulation of law 22.421 (Decreto 691/81: Protección y conservación de la fauna silvestre – Reglamentación de la 22.421), 1981

(g) Radioactive and dangerous substances (Sustancias radiactivas y peligrosas)

- Law 24.051: Dangerous Residues: Area of general application a d disposition, registration of generators and operators, manifesto, generators, transporters, plants of treatment and final disposition, responsibilities, offenses and sanctions, penal rules, authority of application, complementary dispositions (Ley 24.051: Residuos Peligrosos: Ámbito de aplicación y disposiciones generales. Registro de Generadores y Operadores. Manifiesto. Generadores. Transportistas. Plantas de Tratamiento y diposición final. Responsabilidades. Infracciones y sanciones. Régimen penal. Autoridad de aplicación. Disposiciones complementarias), 1991
- Decree 181/92: Dangerous Residues: Prohibition of transport, introduction and importation, whether permanent or temporary, into the national territory, Free Trade Zones and Open Areas created or under creation, of residues and wastes coming from other countries (Decreto 181/92: Residuos peligrosos: Prohíbise el transporte, la introducción y la importación definitiva o temporal al Teritorio Nacional, el Área Aduanera Especial y a Áreas Francas creadas o por crearse, de residuo, desecho o desperdicio de otros países), 1992
- Decree 831/93: Dangerous Residues: Regulation of Law 24.051(Decreto 831/93: Residuos Peligrosos: Reglamentación de la Ley No. 24.051), 1993

(4) Environmental impact assessment

As mentioned in (3) above, there are no environmental impact assessment laws in Argentina except one that applies to dam construction. Environmental impact assessment is mostly done in accordance with "handbooks" prepared by individual ministries with approval of respective ministers. Such environmental impact assessment applies not only during construction of a facility but also during the operation and management of it.

The area where environmental impact assessment has been most extensively conducted is hydropower generation, in which cases the contract between the national authorities and private firms that will manage the facilities includes the provisions for environmental impact assessment. The privatization of governmental enterprises resulted in several power generation and distribution companies and one power transmission company. The EIA by these are conduced in accordance with the Environmental Manual for the Water Works Involving Energy Exploitation (Manual de Gestion Ambiental para Obras Hidraulicas con Aprovechamiento Energico) prepared by the Subsecretaria de Planificacion Energetica, Secretaria de Energia in December 1987 and with contracts.

Environmental Protection Regulations (Normas de Proteccion del Medio Ambiente) are prepared for each facility. The provisions there include monitoring not only of water quality but also fish and many other environmental elements. The monitoring points are usually approximately five per facility. The frequency of monitoring of each element differs from an element to another; some at every half year, others at every quarter year. The results are

submitted to the National Entity for Electric Enterprises Regulation (ENRE) every quarter year. The report is then assessed by the ENRE. The number of the facilities where such environmental assessment is conducted has been increasing. Twelve facilities are now conducting such monitoring. It is expected that all the facilities will be conducting environmental monitoring in a year or two.

There are three environmental specialists in the ENRE. Because they are responsible not only for hydroelectric power generation but also for all areas including coal and oil power generation and electric transmission, the human resources may not be sufficient. There are a few other environmental specialists in the Ministry of Energy. At the local level for specific facilities, cooperation by universities and museums supports the activities of the staff of the facility operation and management companies.

Because water quality affects power generation, some facilities, particularly at Rio Hondo, are appealing to the authorities concerned the importance of coping with the contamination of upstream water.

There has not been criticism of the contents of the Environmental Manual. This may be related to the hearing of the views of provincial authorities and references to various existing procedures. The Manual provides for procedures, not environmental standards. The environmental standards for water and others are set by provinces while those for air are set by the Nation. According to Ing. Chenlo of the ENRE, there has been no case of disputes between provinces and the water power generation operators because there have been close contacts and communication with provincial authorities with regard to the operation and management of the facilities and environmental monitoring.

No pubic hearings have been introduced in planning of dams. However, there is a possibility of introduction of such hearings.

(5) Government agencies

The first Argentine national environmental agency was established in 1965 as the National Direction of Environmental Sanitation (Dirección Nacional de Sanidad Ambiental) in the Ministry of Public Health (Ministerio de Salud Pública). In 1973 this arrangement was changed by the Peron administration to the Secretariat of Natural Resources and Human Environment (Secretaría de Recursos Naturales y Ambiente Humano) under the Ministry of Economy (Ministerio Economía). Its function was dispersed by the military administration in 1976 but resumed in the Ministry of Public Health and Environmental Quality (Ministerio de Salud Pública y Medio Ambiente) in 1980. This arrangement was reorganized by the Alfonsin administration as the Secretariat of Housing and Environmental Quality (Secretaría de Vivienda y Medio Ambiente) under the Ministry of Health and Social Action (Ministerio de Salud y Acción Social). In 1987 the responsibility for the environmental policy was taken by the Subsecretariat of Environmental Policy (Subsecretaría de Política

Ambiental) in the General Secretariat of the President (Secretaría General de la Presidencia). In 1989 the responsibility was taken by the National Commission of Environmental Policy (Comisión Nacional de Política Ambiental). In 1991 the Secretariat of Natural Resources and Human Environment was re-established in the Presidential Office (Presidencia de la Nación). In 1997 this was renamed the Secretariat of Natural Resources and Sustainable Development (Secretaría de Recursos Naturales y Desarrollo Sustentable). (World Bank, 1995; JICA, 1995).

This Secretariat of Natural Resources and Sustainable Development is still evolving. While its organization in 1995 was shown in Fig. 1.4, the transfer of the National Direction of Water Resources (Dirección Nacional de Gestión de los Recursos Hídricos) in February 1988 and some other changes resulted in the new organizational arrangement as shown in Fig. 1.5 in 1998. The former Sebsecretariat of Natural Resources has been re-organized and re-named the Subsecretariat of Sustainable Development responsible for the natural resources such as forests, wildlife, fish and soil. The former Subsecretariat of Human Environment responsible for water, air and soil contamination has been re-organized as Subsecretariat of Environmental Management. The National Institute of Water and the Environment (INA), which was formerly a water research institute as the National Institute of Water Science and Technologies (Instituto Nacional de Ciencia y Técnica Hídridas: INCITH) established in 1973, has also been evolving as a national research institute on the environment attached to the Secretariat. The National Parks Administration is also attached to the Secretariat.

The agencies under the Presidential Office are, in principle, responsible for policy formulation while ministries are responsible for execution. In the area of water resources, the National Direction of Water Resources Issues under the Ministry of Economy and Public Works used be responsible for the management of water resources, particularly the quantity of water resources while the Secretariat of Natural Resources and Sustainable Development had been responsible for policy formulation concerning water resources, particularly for water quality. However, the transfer of the National Direction of Water Resources Issues unified the issues of water quality and water quantity. The staff of the National Direction which had a little more than 20 persons a few years ago has been expanding to approximately 50. While this number is said not to be sufficiently large, progressive privatization of national enterprises including those for environmental monitoring has reduced the burden on the agency for management of facilities for water resources use.

It should be noted that many other agencies are also involved in environmental management at the national level, although the Secretariat has been getting more responsibilities as the transfer of the water department from the Ministry of Economy and Public Works shows (World Bank, 1995). Also, provincial authorities have more power, although their concerns and actual activities and institutional development are substantially different among Provinces. As mentioned in (1) above, the Federal Council of Environment coordinates interprovincial action.

(6) Research

The National Institute of Water and the Environment (INA) has been engaged in research on water, in which generally rivers and lakes are not separated. Research on San Roque Reservoirs is rather an exceptional research specifically addressed to a lake (reservoir). However, there is a possibility that researches addressed to lakes and reservoirs will be conducted in the future.

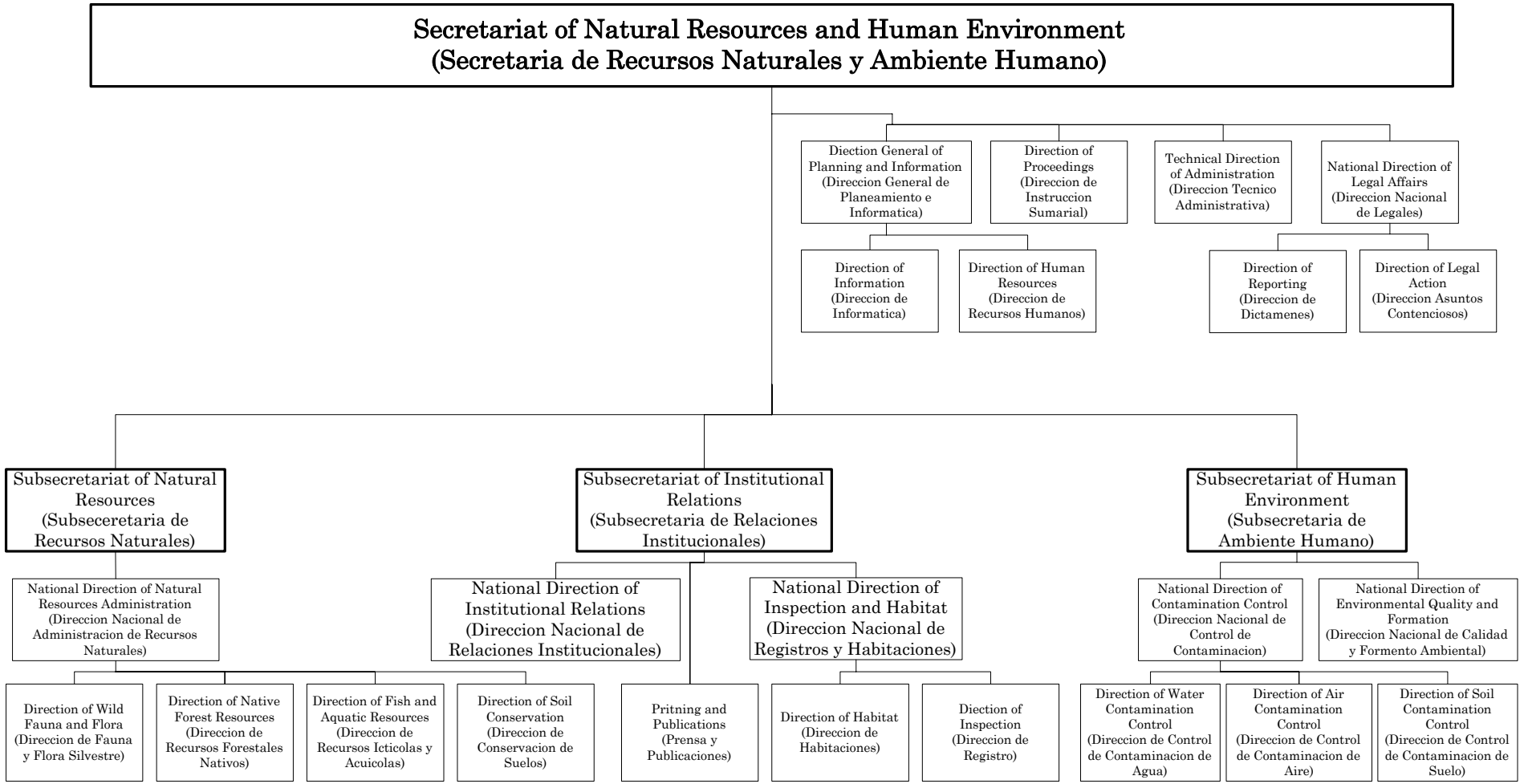
There are a few universities where researches on lakes are conducted.

The Dr. Raul A. Linguelet Limnological Research Institute is one of such institutions. It is a joint venture of La Plata University and CONICET (Consejo Nacional de Investigaciones Científicas y Técnicas). With approximately 20 researchers in various specialization such as chemistry, bacteriology, bentos, fish (morphology and classification), entomology, amphibia, biogeography, biogeochemistry, archeolimnology, etc. it focuses its research activities on Buenos Aires Province. In this regard the Institute published a detailed directory of the lakes of Buenos Aires Province.

Another institute is Litoral University in Santa Fe.

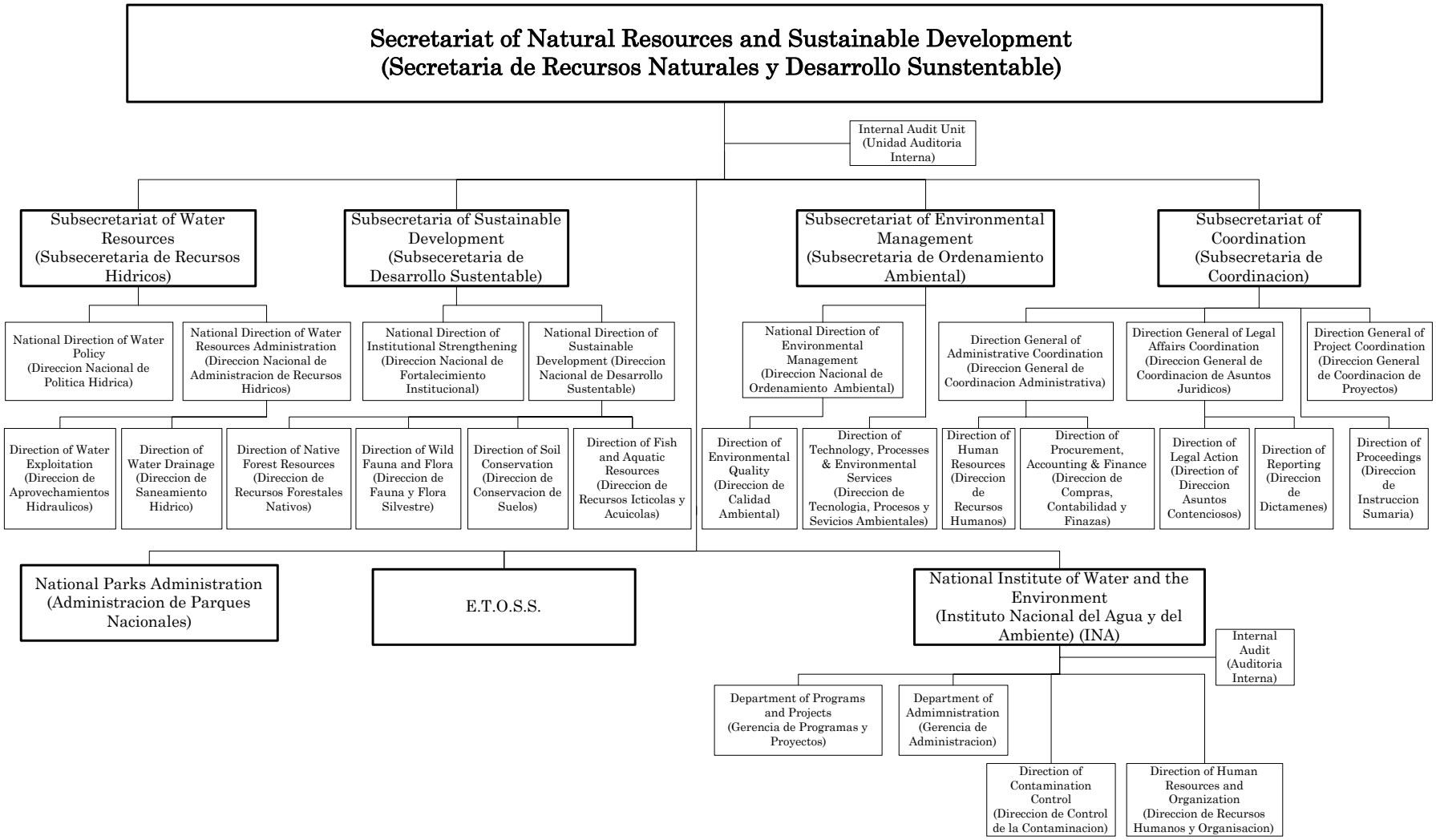
(7) NGOs

NGOs were not active under the military administration. However, in the recent process of liberalization of the economy, they are becoming active. Some of them are now receiving funds from intergovernmental agencies. Patagonia Natural receives a fund from the World Bank as mentioned above. Friends of the Earth, Greenpeace and World Wide Fund for Nature are the three major NGOs of Argentina (Ms. Sandra Cesilini, World Bank Argentine Office). Some foreign NGOs such as the World Resources Institute (USA), now have some cooperative activities with Argentine NGOs.



Organization of the Secretariat of the Natural Resources and Human Environment (1995)

Fig. 1.4. The organization of the Secretariat of Natural Resources and Sustainable Development in 1995



Organization of the Secretariat of the Natural Resources and Human Environment (1998)

Fig. 1.5. The organization of the Secretariat of Natural Resources and Sustainable Development in 1998

References

Brailovsky, Antonio Elio, 1995: Situacion Ambiental en la Argentina, Primer Informe: Lineamientos de la Politica Embiental, Argentine Office, Japan International Cooperation Agency (also, Japanese translation:アルゼンチンの環境保全対策：平成６年度在外専門調整員報告書)

World Bank, 1995: Argentina: Managing Environmental Pollution: Issues and Options Volume II: Technical Report, Environment and Urban Development Division, Country Department I, Lain America and the Caribbean Region, World Bank

InterAmerican Development Bank, 1998: Home Page: Basic Socio-Economic Data at: http://database.iadb.org/INT/_BRPTNET/english/argbrpt.htm

InterGO Communications, 1995-1996: Argentina (InterGO Communications Home Page at: http://www.teachersoft.com/Library/ref/atlas/sameria/ar.htm)

Japan International Cooperation Agency, 1984: アルゼンチン共和国における農牧林業の概況及び1979-1983年の精算流通機構、国際協力事業団(開発途上国技術情報データシート1996年度：アルゼンチン1/2に収録)

Japan International Cooperation Agency, 1995: 「ア国経済成長5ヶ年計画1995～1999年」について、(information note of the Agency available in its library), Japan International Cooperation Agency)

Japan International Cooperation Agency, 1995: アルゼンチンの環境保全対策―平成6年度在外専門調整員報告書(Sicutacion Ambinental en la Argentina)、JICAアルゼンティン事務所

Japan International Cooperation Agency, 1996: 開発途上国技術情報データシート1996年度：アルゼンチン1/2、Institute of International Cooperation, Japan International Cooperation Agency

---, 1997a: ---, ---, ---

Japan International Cooperation Agency, 1997: 任国情報・アルゼンティン、国際協力事業団国際協力総合研修所

Association for Promotion of International Cooperation, 1994: アルゼンチン経済社会の現状、財団法人国際協力推進協会

Ministry of Foreign Affairs, 1996: アルゼンチン共和国概観、First Latin America Division, Ministry of Foreign Affairs, Japan

Ministry of Foreign Affairs, 1997: 外交青書、Ministry of Foreign Affairs, Japan

Ministerio de Economia y Obras Servicios Publicos, 1995: Catalogo de Lagos y Embalses de la Argentina, Subsecretario de Recursos Hidricos, Ministerio de Economia y Obras Servicios Publicos, Argentina

Overseas Environmental Cooperation Center, Japan, 1995: 平成6年度環境庁委託開発途上国環境保全企画推進調査報告書―アルゼンチン共和国・パラグアイ共和国、社団法人海外環境協力センター

María Cristina Zebellos de Sisto (ed.), 1994: Dos Décadas de Legislación Ambiental en la Argentina, A.Z. Editora

Subsecretaría de Recursos Hídricos, Direcciòn Nacional de Recursos Hídricos, 1995: Mapa de

Cuencas y Regiones Hídricas Superficiales de la República Argentina - Vertientes Hidrográficas, Direcciðn Nacional de Recursos Hídricos
World Bank,1995: Argentina: Managing Environmental Pollution: Issues and Options, Volume II: Technical Report (Report No. 14070-AR), Environment and Urban Development Division, Country Department I, Latin America and the Caribbean Region, World Bank
理科年表1992、丸善