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Economic Commission for Latin America and the Caribbean

**Progress in the privatization of water-related
public services: a country-by-country
review for South America ***

* This document has been prepared by the Environment and Development Division. Document not subjected to editorial revision.

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Abstract

This updated version of *“Progress in the privatisation of water-related public services: a country-by-country review for South America”* (LC/R.1697/Add.1, 2 January 1997) examines recent developments in private sector participation in the provision of public water-related services in Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Guyana, Paraguay, Peru, Suriname, Uruguay and Venezuela. The information given for each country includes a brief description of the status of private participation in the drinking water supply and sanitation, electricity, irrigation and drainage, and inland water transport sectors; and statistical data on the sectors discussed.

Private sector participation is still incipient in most countries and the greater part of the infrastructure is still managed by the public sector, but some examples can be found and there are ambitious plans. These examples are few in the provision of drinking water supply and sanitation services, where they are largely limited to Argentina, which has transferred the responsibility for major drinking water supply and sanitation systems to private companies. In other countries, the most common form of private sector participation are small private companies and subcontracting. Reforms are much more advanced in the power sector, particularly in Argentina, Bolivia, Chile, and Peru, where many countries have decided to break up the existing public monopolies into separate generating, transmission and distribution entities; to privatise them in whole or in part; and to use electricity pools and long-term contracts to introduce competition in electricity generation.

Introduction

Increasing private participation in the provision of water-related public utilities is the announced policy of almost all governments in Latin America and the Caribbean. The specific nature of the policy varies enormously from country to country both in content and, even more so, in execution. Moreover, policies encouraging private participation began very much earlier in some countries and, in consequence, these countries are more advanced in their application. Even, however, in countries where privatisation has gone furthest, this has not always included water-related public services. These differences and other factors, such as the level of government undertaking the privatisation of the service and the variations in regulatory systems suggest the convenience of a country by country guide of the kind presented here.

Variations in privatisation policies

Other than the earlier start of privatisation in Chile, the major differences among the countries of the region reside in whether, and to what extent, public services related to water have been included in the privatisation process. Only in a few countries has the management function for water supply and sanitation services been transferred to the private sector, although other more technical functions within the services have been transferred in many countries. Even electricity generation and distribution have only been extensively privatised in Argentina, Bolivia, Chile and Peru, in many countries the bulk of the electricity sector remains in government hands. In other countries extensive programmes for the privatisation of the electricity sector have been recently begun, especially in Brazil and Colombia, but also in a number of countries in Central America, including Guatemala and Panama. Even in Mexico, there is a limited opening for private investment in electricity generation. There remain, however, only four countries of Latin America in which management responsibilities for water-related public utilities have been transferred to the private sector. Only in one of the four, Argentina, has management responsibility for major water supply and sanitation systems also been passed to private companies.

It is important, therefore, in discussing private participation in water-related public services not to exaggerate its extent. In general terms, for the region as a whole, private participation remains incipient and in most countries, the greater part

of the infrastructure is still managed by the public sector. The experience in managing private participation in management is, in consequence, very limited. It is limited both in time and space and, because of this, the lessons of the existing experience, which on the whole has been very promising, may not be applicable generally within the region. Experience with more limited private participation in operational activities through service contracts is much more widespread.

Examples include, contracting out of installations and infrastructure maintenance and of billing activities, often to former employees, the use of consultants for design and to oversee construction works and even of system management. This type of private participation does not provide the same kind of challenge to the public administration as that caused by the transferring of management responsibility under concession or by direct sale.

The sale of existing infrastructure to private investors has been the chosen policy for most electricity generation in Argentina, Chile and Peru, and seems to be the likely choice in many other countries, including Brazil and Colombia. Sale has not been used for the transfer of water supply and sanitation services, although the Government of Chile is proposing to sell two-thirds of the shares in its regional water companies. In Argentina, concession arrangements have been used, although the Province of Mendoza has sold shares. In Bolivia, the water supply system of La Paz has been transferred through a concession to a consortium of private companies and the Government of Peru is considering a concession for the operation of the Lima service, SEDAPAL. In Mexico City, management contracts are the medium used, although the policy contemplates converting these to concession arrangements in the future. A similar policy has been adopted in Trinidad and Tobago. A further example is the extensive use of BOT contracts in Mexico for waste treatment plants.

A number of countries have adopted policies allowing private investment in new facilities, particularly in electricity generation. Private investment is also increasingly common in small water supply and sanitation systems, especially in resorts and in new high income suburban developments.

Regulation policies

The opening of water-related public services to private participation has been restricted, in part, by the lack in most countries of a regulatory framework to govern the operation of monopoly activities. In most countries, with such activities in public hands, it was not thought necessary to regulate provision. This opinion has now changed and regulatory systems are being developed, although, outside Argentina and Chile, few have as yet much real experience in their operation.

In most countries, it is proposed to regulate each industry separately, but in water supply and sanitation services in Argentina, regulation is basically company by company, as the responsibility for regulation lies with each province. In some smaller countries, as exemplified by Costa Rica and Jamaica, one regulator is proposed for all public services. The development of regulatory systems is not easy and it has been proved necessary to develop systems which can readily incorporate the lessons of experience, as it is not possible to foresee all problems from the beginning. The major obstacle is the lack of experience and a relatively steep learning curve for the regulators once in operation. These factors have been especially important for water supply and sanitation.

The decentralisation of operating responsibilities and the establishment of a well-structured regulatory system can be a powerful tool for improving the functioning of public services even within the public sector. Without any transfer of ownership or management responsibility to the private sector, a marked improvement in the efficiency of the management of water supply and sanitation services has been achieved in Chile over the six years since such a system was established. A key to the success of regulation in Chile has been the design and application of an effective tariff system.

It is clear that the transfer of responsibility for the management of water based public utilities to the private sector cannot be successful without an adequate and well functioning regulatory system. Undeniably, regulating private monopolies is very challenging for the public administrations of the region and the regulatory policy must make the most of competition, anticipate the need to renegotiate with providers to adjust the regulatory framework and rules to the lessons of experience and to place emphasis on tariff design and not to underestimate the problems that this can involve. The importance is illustrated both by the attempt to privatise water supply and sanitation services in Caracas, which failed in large part due to the lack of a sufficiently well defined regulatory structure, and the experience in Buenos Aires where despite the general success of the transfer of the water supply and sanitation system to private management under concession, problems remain with the design of an efficient tariff system.

Irrigation

The evolution of policy towards private participation in irrigation deserves separate treatment given its distinct characteristics. In irrigation, the policy trends in the region are strikingly uniform. Since 1990, nearly all countries have adopted policies to transfer the responsibility for the management, operation and maintenance of irrigation infrastructure to the farmers.

This has involved considerable changes in related policy areas, for example, the major modifications to the *ejido* land holding system in Mexico. It has also led to the development of new markets for the provision of the products and services required to manage and operate irrigation systems. Services once provided from within government departments responsible for irrigation management are now open to the private sector. In Peru, it has led to proposals for complete reform of the water law.

As yet, however, there has been no sale or transfer of irrigation systems as units to private investors in any country. The infrastructure has either been transferred totally to the farmers or the secondary works have been transferred leaving the major control works in the public sector. Only in Chile do the users control the total water management process from the distribution of river flows to the delivery of water to the farm or other ultimate user. This requires that the users also invest in major control structures, but even in Chile many large structures are still being built by the public sector.

Investment opportunities

The opening of the water-related public services to private participation has created a large number of different investment opportunities. The most interesting of these may well be the possibility of taking responsibility for the service either through direct purchase or through a concession arrangement, but the opportunities are not limited to these possibilities. Management contracts can also provide significant opportunities particularly for companies specialising in the provision of specific services with the larger number of companies participating in the market. The break up of former central government monopolies and the transfer to provincial, regional or municipal operators within the public sector has created in many countries a large new market for the private providers of services to the electricity and water supply and sanitation industries.

Investment in infrastructure in Latin America and the Caribbean according to World Bank data dropped markedly in the 1980's from the 1970's especially in drinking water supply and sanitation. It can be expected that investment demands will grow substantially, as the economies of the region finally recover from the recession of the 1980's and the impact of the 1992 Mexico devaluation.

So far, most of the interest shown by the private sector has been concentrated on the possibilities provided by the sale or concession of electricity generation and distribution. These investment opportunities have attracted many companies from outside Latin America and the Caribbean. Perhaps one of the most interesting phenomenon has been, however, the expansion of Chilean electricity companies outside Chile. They have become major operators of both distribution

and generation companies in Argentina and Peru, and are now beginning to enter the Brazilian and Colombian markets. As in all cases, these companies tend to operate in consortium with other investors both foreign and local. Two of these companies have also ventured into the operation of water supply and sanitation services in Chile and have announced an interest in investing in other countries.

In water supply and sanitation the offerings for private participation of whole systems has been limited to Argentina and to Mexico City. These contracts have generally been taken by consortia of local and foreign companies, mainly led by large European water supply and sanitation operators. In general, it can be expected that given the size of the companies that are likely to be opened for private participation that the consortia approach will continue to dominate. Should, however, smaller municipal systems be opened to private operators a large market could be created for smaller investors in a number of countries.

* * *

This is a country by country report summarising for each country both the current policies towards private participation in water-related public services and recent experience in the process of privatisation. It does not attempt to provide information on the progress of the privatisation of specific assets as this is a too rapidly changing phenomenon to report on through this medium. It is offered as a rapid means of obtaining the essence of what is happening in this area in Latin America and the Caribbean and as a reference for all those interested in increasing the effectiveness of private participation in water-related public services so that these services can be provided efficiently to the whole population of the region.

Explanatory note

Any reader wishing to supplement this report with new data and/or encountering errors please inform the Division of Environment and Development, Economic Commission for Latin America and the Caribbean (ECLAC).

The material, on which this report is based, has been taken from a large variety of sources, some not widely available. An attempt has been made to prepare this report from the best available sources, but access to detailed information on the privatisation programmes and regulatory framework for water-based public utilities has not always been available. Due to the pace of change in institutional structure in many countries, some information is no doubt already out of date.

Statistical data used in sector boxes have been compiled by ECLAC from national, international, and professional literature, including publications of the Pan American Health Organisation (PAHO), the Food and Agricultural Organisation of the United Nations (FAO), the United Nations Department for Economic and Social Information and Policy Analysis, the United States Central Intelligence Agency (CIA), and the Latin American Energy Organisation (OLADE). Data are based on differing sources, dates and definitions, and comparisons can therefore be misleading.

1. Argentina

In 1989, the Government of Argentina began profound economic reforms which have been accompanied by decentralisation of many activities to the provinces, as well as by one of the widest-ranging privatisation programmes in the region. The programme, which covers virtually all sectors of the economy, is almost fully complete.

The activities privatised include the provision of drinking water supply and sewerage services in the Buenos Aires metropolitan area and most power sector assets in the hands of the national government. Some provinces have also transferred their water and electricity utilities to the private sector and others intend to do so in the future.

Recently, bidding has been invited for contracting engineering services for the operation and maintenance of the hydrometric and hydrometeorological networks which belong to the federal government, as well as for related hydrological research. The contract will include the collection, processing and publication of the information obtained from the operation of the network, as well as maintenance and supply of the equipment and other inputs required for this. The network included in the bid consists of 314 stations of different types.

(a) Drinking water supply and sanitation

In 1980, the national government transferred the responsibility for providing urban drinking water supply and sanitation services to the provinces (Decree N° 258/80). The national agency which had been in charge of most of the sector since 1912, the Obras Sanitarias de la Nación (OSN), retained responsibility only for the Greater Buenos Aires area, comprised of the city of Buenos Aires - the federal capital - and thirteen neighbouring "partidos" or districts of the province of Buenos Aires.

The decentralisation of responsibilities in 1980 was abrupt and in some cases traumatic. With a few exceptions, no significant investments have been since made and increases in coverage have been slight and generally achieved at the cost of the deterioration of the existing systems. The inefficiency of the bodies responsible for providing drinking water supply and sanitation services created a favourable atmosphere for the current trend towards greater private sector participation.

The provinces have adopted different administrative approaches to the provision of services, ranging from public utilities, with varying degrees of autonomy, to ministerial dependencies, with little administrative and financial

autonomy, while some have further decentralised responsibilities to the municipal level. A few (usually small) municipalities have always managed their own drinking water supply and sanitation systems. In the provinces of El Chaco, Chubut, La Pampa and San Luis, co-operatives provide most services.

The Secretaría de Recursos Naturales y Desarrollo Sustentable del Ministerio de Economía y Obras y Servicios Públicos (MEyOSP) provides technical and financial assistance to both service providers and provincial and municipal regulators.

Privatisation, in the drinking water supply and sanitation sector in Argentina, has taken the form of the granting of a concession for the administration, financing, operation and maintenance of a system. Concessions have been usually granted for 30 years through competitive bidding, stipulating that the concessionaire must meet basic standards for water quality, pressure, quality of effluents before discharge, as well as goals for meeting demand, coverage targets, etc. The selection of the concessionaire has usually included technical and financial prequalification and a bidding stage where the prequalified participants are invited to submit bids. Concessions have not always covered the whole of a province. For example, the areas served by co-operatives are often excluded.

Services have been transferred to private concessions, in the Federal Capital District and surrounding municipalities of Greater Buenos Aires and in many provinces including Córdoba, Corrientes, Formosa, Salta, Santa Fe, and Tucumán, and bids are in progress, in Buenos Aires province and Mendoza, and other provinces are considering private sector participation, although others will probably keep their co-operatives. In total, it has been estimated that, at present, private operators provide services to half the population. Parallel to the process of privatisation, the provinces, which have given services in concession, have created regulatory bodies.

The form of private participation has varied among provinces, but the Greater Buenos Aires example illustrates the basic characteristics. In 1993, the federal government signed a contract with Aguas Argentinas, a consortium led by the

Estimated coverage

Some 73 per cent of the urban population has drinking water supply, 69 per cent through house connections, but only 17 per cent of the rural population. Only 39 per cent of the urban population has sewerage. Many systems are old and in need of replacement, in part because maintenance has generally been poor. Unaccounted-for-water in the urban systems is estimated to be over 50 per cent. Two-thirds of sewage receives no treatment, 27 per cent receives primary treatment and only 8 per cent, secondary treatment.

Urban and rural by province	Service deficit (%)	
	Water supply	Sewerage
Buenos Aires	19	7
Capital Federal	1	2
Chaco	53	46
Córdoba	16	12
Entre Ríos	24	19
Mendoza	19	14
Misiones	57	50
Santa Fe	18	11
Tucumán	34	24
Other provinces	33	31

French company, Lyonnaise des Eaux, on the basis of which, the consortium assumed full responsibility for the operation and maintenance of the services and finances the investments necessary to meet performance objectives fixed in relation to a number of parameters. These include drinking water supply coverage (to be increased from 70 per cent in 1993 to 100 per cent in 2023), sewerage coverage (from 58 per cent to 90 per cent), percentage of wastewater to receive primary and secondary treatment (from 4 per cent to 93 per cent), percentage of the water supply and sewerage network to be renovated, and a maximum percentage for unaccounted-for-water (to be reduced from 43% to 25 per cent). The investment programme is expected to demand total investments on the order of US\$ 4 billion.

The contract is regulated by the Ente Tripartito de Obras y Servicios Sanitarios (ETOSS), an autonomous regulatory agency with representation from the national, provincial, and municipal governments in the area under the concession. Its functions are to regulate service provision, ensure the quality of service, protect the consumers, monitor the compliance with the existing norms and the provisions of the contract, and enforce regulatory decisions. The ETOSS is financed by a surcharge on the service bill.

(b) Electricity

Before privatisation and deregulation, the provision of public electricity service had been dominated by large companies owned by the national government, which performed generation, transmission and distribution activities. Companies owned by the provincial governments, had been in charge of distribution, and in a few cases, e.g. in the provinces of Buenos Aires and Córdoba,

Concessions in the Provinces	
Córdoba	In 1997 , the consortium Aguas Cordobesas, led by Lyonnaise des Eaux, was awarded a concession contract.
Corrientes	In 1991 , the provincial government awarded a concession contract to a consortium led by the Argentine firms, Sideco Americana and Ingeniería Tauro, with a minority participation by Thames Water.
Salta	In 1998 , the provincial government announced that it would sign an agreement to transfer the provincial company, Aguas de Salta, to the company Necón.
Santa Fe	In 1995 , the consortium Aguas Provinciales de Santa Fe, formed by the same companies which participate in the consortium Aguas Argentinas, won the concession contract.
Tucumán	In 1995 , a concession was awarded to Aguas del Aconquija, a consortium formed by Générale des Eaux of France and several local companies. In 1997 , however, various problems arose and the consortium decided to renounce the contract.

Sector statistics	
Net installed capacity in 1995 (MW):	
· thermal	10 584
· hydroelectric	8 008
· nuclear	1 018
· TOTAL	19 610
Percentage of population with residential connections in 1989	
	95

in generation. There had been many co-operatives, mainly distributors, although some also had limited generating facilities.

The sector was restructured under Law N° 24065 “Marco Regulatorio Eléctrico of 19 December 1991 and its regulations, and now Argentina has what is considered one of the most competitive and liberalised power industries in the region. With a few exceptions, most power sector assets of the national government have been privatised, and privatisation is advancing in the provinces as well. All utilities are operating in, and can benefit from, a much more competitive environment.

Within the national government, the responsibilities for the power sector, including sector policy making, are centralised in the Subsecretaría de Energía Eléctrica (SSEE) of the Secretaría de Energía (SE) of MEyOSP.

The Consejo Federal de la Energía Eléctrica (CFEE) provides: (i) advice to the national and provincial governments on electricity-related issues, including the priorities in the undertaking of studies and works, concessions and authorisations, prices and tariffs of the electricity sector and proposes changes to the legislation governing the sector; and (ii) it administers the Fondo Nacional de la Energía Eléctrica, the resources of which are destined for the creation of the Fondo Subsidiario para Compensaciones Regionales de Tarifas a Usuarios Finales and to the Fondo para el Desarrollo Eléctrico del Interior.

The Ente Nacional Regulador de la Electricidad (ENRE), an autonomous agency under the SE, regulates the power sector. It is responsible for enforcing the regulatory framework, issuing rules and regulations, preventing monopolistic behaviour, setting the bases for the calculation of tariffs for the contracts which give concessions to transmission and distribution companies, publish the guidelines for access to transmission and distribution systems, fix the conditions for new transmission and distribution concessions and undertake the corresponding bidding processes. It is financed by an annual inspection and control fee paid by generating, transmission and distribution companies.

During the reorganisation, the sector was vertically separated into electricity generation, transmission and distribution segments. As a result, from the privatisation of the companies owned by the central government - Servicios Eléctricos del Gran Buenos Aires (SEGBA), Agua y Energía Eléctrica Sociedad del Estado (AyE) and Hidroeléctrica Norpatagónica (HIDRONOR) - 26 generation, 5 transmission and 3 distribution companies were formed.

The regulatory framework is based on the existence of a competitive market for generation, while transmission and distribution, being natural monopolies, are subject to regulation. Generating companies, distributing companies and large

consumers are prohibited from being owners or majority shareholders in transmission companies. They can be authorised, however, to build transmission networks for their own use.

Under Law N° 24065, the private provision of electricity services under federal jurisdiction requires a concession for the use of hydroelectricity energy sources when the energy potential exceeds 0.5 MW, as well as, for public transmission and distribution activities.

Generation is completely deregulated and operates under competitive conditions. Generators sell their output on a bulk power market, known as the Mercado Eléctrico Mayorista (MEM), to which they have unrestricted access. They may sell under freely negotiated fixed-term contracts with wholesale customers, and/or on a spot market, where electric energy is sold at the price set according to the short run marginal cost of the system.

Transmission and distribution companies must allow indiscriminate access by third parties to that capacity of their networks which is not compromised to supply the contracted demand and they cannot give advantages or preferences in access to their installations. Transmission companies are not allowed to buy or sell electricity.

The Compañía Administradora del Mercado Mayorista Eléctrico S.A. (CAMMESA) administers the MEM, which includes the co-ordination of electricity despatch, the responsibility for setting wholesale prices and the management of the transactions realised through the grid. It is a non-profit corporation, owned in equal shares by the association of generation companies (Asociación de Generadores), the transmission companies (Asociación de Transportistas), the distribution companies (Asociación de Distribuidores), the major users (Asociación de Grandes Usuarios) and the federal government. It finances its operations by charging a fee to users of the MEM.

The national government's strategy for the sector now centres on the sale of its remaining assets including, three nuclear power plants (one under construction) and its share of the binational hydroelectric projects. Under Law N°24804, "Law Nacional de la Actividad Nuclear", it is now possible to privatise the nuclear power plants which will be transferred as a single indivisible production unit. The government will reserve a share of the capital and the new owner must take responsibility for finishing the third plant.

Although the reforms at the national level did not specifically address the privatisation of provincial utilities, under Law N° 24605 the provinces are invited to adopt the proposals in this law and many provinces have decided to privatise their electricity assets. Several provinces have already transferred services to private

companies, for example, Catamarca, Formosa, Entre Ríos, Jujuy, La Rioja, Río Negro, Salta, San Luis, Santiago del Estero and Tucumán, and others are considering the possibility of doing so.

(c) Irrigation and drainage

Irrigation in Argentina falls under provincial jurisdiction although formerly the AyE administered a number of irrigation districts. With the privatisation of the power sector and the dismemberment of the AyE, these districts have been transferred to the provinces.

Sector statistics	
Agricultural area in 1995 (1 000 has):	
· arable land	25 000
· irrigated land	1 700

Now that the provincial governments have taken over the management of all irrigation districts and as part of the process of government reform, management of the systems has begun to be transferred to the users; in many cases, such as Salta, these initiatives are being promoted by farmers' organisations. In Mendoza, where water management has been decentralised for more than a century, steps are being taken to confer on the users those functions and responsibilities that presently still pertain to the central authority.

(d) Water transport

The Dirección Nacional de Canales, Puertos y Vías Navegables is responsible for waterways and port access. It is being restructured and it is gradually decreasing its own activities, transferring them to the private sector. Other responsibilities are being decentralised to the provinces, while maintaining subsidies for the dredging of waterways.

Sector statistics	
Inland waterways: 11 000 km navigable.	

One example is afforded by a ten year renewable concession to modernise, rehabilitate and operate a 750 kilometre waterway from the Atlantic Ocean to the cities of Buenos Aires, Rosario and Santa Fe. A consortium formed by Jan de Nul, a private Belgian company, and its Argentine partners Albano, Emepa and Kocourek, started working in May 1995. The investment is to be recovered through a subsidy of approximately US\$ 400 million, payable in 10 annual tranches, and from shipping tolls. When completed, the US\$ 650 million project is expected to save Argentine grain exporters between US\$ 60 and US\$ 80 million a year in freight charges and the national government US\$ 30 to US\$ 40 million in expenditures.

2. Bilateral projects

(a) Itaipú

(Brazil and Paraguay)

The Itaipú plant is located on the Paraná River. It has a combined capacity of 12 600 MW with an average generation of 70 000 GWh per year. There are plans to increase its installed capacity to 14 000 MW.

The Itaipú project is unlikely to be transferred to the private sector.

(b) Salto Grande

(Argentina and Uruguay)

The Salto Grande hydroelectric project is located on the Uruguay River. The project has a generating capacity of 1 890 MW.

The Government of Argentina plans to privatise its share in the project, although the form of private sector participation is not known. Privatisation will demand an understanding with the Government of Uruguay, which reportedly is reluctant to transfer its part to the private sector.

(c) Yacyretá

(Argentina and Paraguay)

The Yacyretá project will have a capacity of 3 100 MW. The last turbine has been installed, but the plant can only produce a limited potential (at a potential of 2 100 MW) because it is operating with a reduced head corresponding to a depth of reservoir of 76 metres, it will be increased to 78 meters and finally to 83 metres, but for this it is necessary to complete various subsidiary structures and relocate population.

The Governments of Argentina and Paraguay have agreed in principal on the privatisation of the plant, although the details of the operation have yet to be settled. The proposed privatisation has provoked some controversy in both countries and a number alternatives have been suggested.

The discussion now centre around an operating concession under which the administration of the plant would be conceded for 20 to 25 years. The private operator would receive payment for its work from the public sector which would

receive the income from the sale of energy. In a second stage, the completion of the complex will be let out to tender to construction companies, including raising the head, in exchange for a percentage of the increased energy to be generated. There are other proposals, however, for the future of the complex.

(d) The Corpus Christi project (Argentina and Paraguay)

The proposed Corpus Christi project will be located on the Paraná River about 14 kilometres upstream from the city of Encarnación in Paraguay and Posadas in Argentina. It lies between the Yacyretá and Itaipú projects.

The project was the subject of comprehensive studies in the seventies and early eighties. The economic conditions prevailing in Argentina and Paraguay were not favourable for the realisation of the project and it was not undertaken. In the original studies of the project was conceived as a plant of 4 600 MW capacity with the possibility of a future expansion to 6 900 MW., but later studies showed that the original concept had to be modified to attract private sector participation. The project is now envisaged with a generation capacity of 2 900 MW.

It is currently expected that the project will be privately financed under a BOT arrangement. Given the project's size, progress is likely to continue to be gradual, its commercial viability like that of Yacyretá, depends in part on the sale of electricity to Brazil. The project is expected to be entirely financed by the concessionaire, although certain elements, such as the navigation lock, relocation and compensation of the population displaced, the development of regional infrastructure and environmental programmes, would probably be excluded.

A plebiscite held in April, 1996 in the province of Misiones, Argentina went overwhelmingly against the project. This could dissuade potential investors. Both the governments of Argentina and Paraguay, however, reportedly remain committed to it.

(e) Garabí project (Argentina and Brazil)

The proposed Garabí project will be on the Uruguay River. It is conceived as a plant with a capacity of 1 800 MW.

The governments of both countries have agreed to make undertaking the project viable through granting a concession for construction, operation and maintenance to private risk capital. Once the joint revision of the project is finished

and the corresponding binational agreements and protocols are signed, it will be possible to begin the preparation of the tender documents.

(f) The Arrazayal, Cambarí and Las Pavas projects
(Argentina and Bolivia)

Under an agreement signed in 1995, the governments of the two countries created a bilateral commission charged to offer a concession to private investors for the construction and operation of three hydroelectric plants. These are Cambarí on the Tarija River with a proposed capacity of 120 MW, Las Pavas on the Bermejo River, 88 MW and Arrazayal, also on the Bermejo, 93 MW. It is expected that regulation of the flow of the river and the incorporation of 1 million hectares into agricultural production will bring complementary benefits. The total cost of the three plants is estimated to be some US\$ 520 million.

3. Bolivia

The Government of Bolivia has sold many state-owned companies to the private sector, but the unique “capitalisation” programme has been used for the largest six. This programme, under the “Ley Marco de Capitalización” of 21 March 1994, seeks to mix private capital from local and foreign companies with the savings of individual Bolivians.

Under the capitalisation programme, the Government contributes the assets of state companies to the formation of new joint companies. Once the company has been formed, it is capitalised through an increase in capital by new contributions from private investors. The investors are selected and the size of their contribution is determined through an international public tender. The contribution gives the investors the right to 50 per cent of equity and management control of the capitalised company. This capital contribution goes directly to the enterprise in the form of an infusion of capital to fund investment programmes and not into general government revenues. The other half of the shares are transferred without cost to the benefit of all Bolivian citizens, adult on the 31 December, 1995. These citizens benefit from the transfer of these shares to individual capitalisation pension funds.

The Ministerio de Capitalización administers both the capitalisation programme and the traditional privatisation processes. The privatisation process is governed by the Ley de Privatización of 1992 and its regulatory decree of 1995.

The Sistema de Regulación Sectorial (SIRESE), created under Law N° 1600 del Sistema de Regulación Sectorial, of 28 October, 1994, under the Ministerio de Hacienda y Desarrollo Económico, is responsible for enforcing legislation and regulating the provision of public utilities, including electricity and water. SIRESE has a two-tiered structure, which includes the Superintendencia General, an appeal and supervision entity, and the Superintendents for each sector, which are entrusted with day-to-day regulatory oversight. The main responsibilities of the Sector Superintendents are to promote competition and efficiency in the provision of public utilities; to grant, modify and revoke concession, licences and authorizations; to monitor the correct provision of public services and compliance with contractual obligations; to regulate tariffs; and to handling complaints.

(a) Drinking water supply and sanitation

The drinking water supply and sanitation sector has been restructured. The Ministerio de Vivienda y Servicios Básicos, through the Viceministerio de Servicios Básicos, is responsible for the normative aspects of service provision, including formulating policies and standards. The Ministerio de Desarrollo Sostenible y

Planificación, through the Viceministerio de Recursos Naturales y Medio Ambiente, is responsible for the normative aspects of water resources management. The Superintendencia de Aguas of the SIRESE, which began to function in 1997, is responsible for economic regulation and the granting of concessions.

Under the Law Orgánica de Municipalidades of 1985, the municipalites were given jurisdiction over the provision of services. Municipal authority in basic sanitation was widened under Law N° 1551 de Participación Popular of 20 April, 1994. The sector is characterised by a diversity of institutional arrangements, such as co-operatives and autonomous municipal companies, in some cases serving more than one municipality. The companies providing services are transferring some activities to the private sector.

On 30 June, 1997, the Aguas de Illimani consortium, led by the French company Lyonnaise des Eaux, which acts as operator, and in which Argentinean and Bolivian companies also participate, was awarded a 30 year concession contract for the provision of water supply and sanitation services in the cities of La Paz and El Alto and surrounding areas.

A similar contract is under negotiation for Cochabamba and surrounding areas. It is expected that these will be concluded in 1998. Other privatisation's are expected during 1998.

(b) Electricity

The state-owned power companies were restructured following the adoption of the "capitalisation" programme in 1994. A new regulatory framework was provided for the sector opening it to competition under Law N° 1600 of October 28, 1994 "Ley del Sistema de Regulación Sectorial" and "Ley de Electricidad" of December 21, 1994.

Estimated coverage		
Service coverage for the urban population averages 84 per cent for drinking water supply and 63 per cent for sanitation, compared with 24 per cent for drinking water supply and 17 per cent for sanitation in rural areas.		
Department	Service deficit (%)	
	Water supply	Sanitation
Beni	63	34
Chuquisaca	57	70
Cochabamba	51	55
La Paz	38	63
Oruro	35	78
Pando	74	52
Potosí	57	78
Santa Cruz	28	32
Tarija	37	50

Sector statistics	
Net installed capacity in 1995 (MW):	
· thermal.....	498
· hydroelectric.....	307
· TOTAL.....	805
Percentage of population with residential connections in 1989.....	
	25

Policy setting is now the responsibility of the Ministerio de Hacienda y Desarrollo Económico. The Secretaría de Energía, through the ministry, propose general regulations for the approval of the government and prepares the Plan Referencial for the Sistema Nacional Interconectado and indicative plans for isolated systems. The Superintendencia de Electricidad of the SIRESE is responsible for regulation and awarding concessions, licences and provisional licences. The Fondo Nacional de Desarrollo Regional promotes rural electrification in small towns and in rural areas.

A public utility concession is needed for distribution and for integrated companies in isolated systems. For generation, transmission and transmission associated with generation a licence is needed. Finally, provisional licences are required for studies of generating plants which use natural resources and for transmission installations.

The electricity companies in the national interconnected system must be divided into generating, transmission, and distributing companies and dedicated to only one activity. In the law, it is also established that the generating companies cannot be owners of the equivalent of more than 35% of the installed capacity of the national interconnected system, capacity dedicated to export is excluded from this restriction. Distributing companies can directly own generating plants, which use renewable resources, as long as this capacity does not exceed 15% of their maximum demand. In isolated systems, companies can be vertically integrated.

Generating companies can sign contracts to buy or sell electricity with other generating companies, with distribution companies and with major consumers. The national interconnected system is operated under an open access regime, subject to the corresponding payments. Transmission companies cannot buy electricity. The system remains state-owned. A committee of representatives of generators, distributors, the transmission companies, large consumers and Superintendencia de Electricidad, "Comité Nacional de Despacho de Carga", co-ordinates system operation and manages load dispatch.

Tariff regulation is restricted to: (i) to the prices of transfers not contemplated in supply contracts between generators, between generators and distributors. These transfers will be valued at the marginal cost of the system as determined by the "Comité Nacional de Despacho de Carga"; (ii) the maximum prices for the use of transmission and distribution facilities; (iii) the maximum prices for the supply of distributing companies at the point of delivery; (iv) the maximum prices for supplying small consumers; and (v) all electricity supply prices in isolated systems.

Under Law N° 1604, two transition periods were defined: (i) until 31 December, 1999, the granting of new generating licences is restricted to companies that at the moment the law came into force were operating in the national interconnected system and those resulting from the capitalisation of the Empresa Nacional de Electricidad (ENDE), this restriction can be modified if the Superintendencia de Electricidad demonstrates that the growth in demand is not being adequately met; and (ii) until 31 December, 1998, the granting of generating licences for export is limited to the same group of companies.

Both the state-owned and the privately-owned Compañía Boliviana de Energía Eléctrica (COBEE) have been reorganised as solely generating companies under the new law. The latter sold its distributing division, ELECTROPAZ, to the Spanish company IBERDROLA. Prior to capitalisation, the reorganised ENDE was divided into three generation companies, Corani (126 MW), Guaracachi (183 MW) and Valle Hermosa (149 MW). In June, 1995, 50 per cent of the shares and management control of these companies was awarded to three United States companies, Dominion Energy, Energy Initiatives and Constellation Energy. In June, 1997, a consortium led by Unión Fenosa won the bidding for ENDE's transmission unit, Empresa Transportadora de Electricidad (ETE).

Recently, the Empresa Eléctrica Valle Hermosa has signed a contract with the state mining corporation (COMIBOL) to manage, and increase the capacity of, three hydroelectric plants on the Yurá River.

Other electricity companies have been privatised in a more traditional form. For example, the Empresa de Luz y Fuerza Eléctrica de Cochabamba (ELFEC), the electricity distribution company for the department of Cochabamba, was sold through an international bidding process to EMEL of Chile in 1995.

(c) Irrigation and drainage

Most irrigation in Bolivia is privately managed. Traditional small irrigation schemes account for most private sector irrigation. These schemes often belong to peasant communities and are based on very ancient systems.

Sector statistics	
Agricultural area in 1995 (1 000 has):	
· arable land	2 130
· irrigated land	78

4. Brazil

Both the federal and state governments in Brazil are transferring state-owned companies to the private sector. A number of electricity companies have already been privatised and there is incipient private participation in the provision of water supply and sanitation services.

The federal government has adopted Law N° 8.987 “Dispõe sobre o regime de concessão e permissão de prestação de serviços públicos previsto no artigo 175 da Constituição Federal, e dá outras providências” of 13 February 1995, Law N° 9.075 “Estabelece normas para outorga e prorrogações das concessões e permissões de serviços públicos e dá outras providências” of 7 July 1995 implementing the above Law, and other measures to open attractive opportunities for private sector participation in public utilities and to create a more competitive environment for the public sector concessionaires obliging them to become more efficient.

The general thrust of the reforms is to reduce the role of the public sector as an investor and manager of infrastructure services and to increase and reinforce its role as a regulator of private initiative. The Union, the States, the Federal District and the Municipalities may grant - through a bidding process open to both public and private sector companies - fixed-term concessions to third parties to provide public services on their behalf; the concessionaire invests its own funds, operates at its own risk and recovers the investment by charging fees.

The Conselho Nacional de Desestatização (CND), set up in January 1995, directly subordinated to the President of the Republic, supervises the national privatisation programme, known as “programa nacional de desestatização”. The Banco Nacional de Desenvolvimento Econômico e Social (BNDES) provides administrative, operational and secretarial services to the CND and carries out the role of governmental administrator of the privatisation process. It also manages the Fundo Nacional de Desestatização, a fund of deposit for the shares of the companies to be privatised. BNDES is also a major source of federal credit. One of the priority areas for its funding are infrastructure projects, especially those in key public utility sectors such as electricity generation, involving both privatisations and joint ventures between the public and the private sector.

(a) Drinking water supply and sanitation

Policies for the improvement of basic sanitation are a joint responsibility of the Union, the States, the Federal District, and the Municipalities. The federal government sets national policies for drinking water supply and sanitation, co-

ordinates activities in the sector, and provides financial and technical assistance to other levels of government.

Everywhere in Brazil, the provision of drinking water supply and sanitation services is the responsibility of the municipalities. The municipalities either operate the systems through municipal autonomous entities, known as *Serviços Autônomos de Água e Esgotos (SAAE)*, or administer them directly through the *Departamentos de Águas e Esgotos (DAEE)*, or delegate their operation under a concession or license.

In many cases, the municipalities delegate the responsibility for service provision to the *Companhias Estaduais de Saneamento Básico (CESBs)*, state basic sanitation companies, under a concession agreement. These agreements cover the whole territory of the municipality and run from 25 to 50 years. There are 27 state companies. CESBs promote the necessary studies and investigations; participate in the elaboration of state sanitation plans; and plan, construct, operate, maintain and administer drinking water supply and sanitation systems. They are responsible for all aspects of service provision and the municipalities do not interfere in the administration of drinking water supply and sanitation systems. CESBs increasingly use service contracts, known as “*terceirização*”, for specific services such as metering and billing. The CESB’s provide services in some 5,200 municipalities, while a further 1,300 municipalities provide services, themselves, the majority of these are relative small cities of between 30 and 100 thousand inhabitants.

One example of a CESB is afforded by the *Companhia de Saneamento Básico do Estado de São Paulo (SABESP)*, which is responsible for drinking water supply and sanitation services for 329 of the 672 municipalities in the State of São Paulo. It plans, builds, operates and maintains drinking water production and distribution systems; and collects and treats domestic sewage and industrial wastes. SABESP is a large company: it provides drinking water supply to almost 22 million people and sanitation to more than 16 million. The state government has decided to reduce its participation in SABESP and, in 1997, sold 4.3% of the shares for US\$ 370 million. It is expected that a further 20% valued at US\$ 1,500 million will be sold during 1998.

Estimated coverage

Nationally, 71 per cent of Brazilian households are served by a public water supply system. Sanitation services are less well developed, only 35 per cent of households are connected to public sewers. About 80 per cent of the sewage does not receive treatment.

Region	Service deficit (%)	
	Water supply	Sewerage
Central West	34	73
North	55	99
Northeast	47	91
South	29	86
Southeast	15	37

Other states are contemplating privatising their CESB. The World Bank approved a loan, in 1997, to finance, among other things, the privatisation of SANEMAT, the basic sanitation company of the state of Matto Grosso, which is responsible for water supply and sanitation services in 98 of the 122 municipalities in the state. It will be privatised through a concession or management contract. Another CESB which will partially be privatised is the Companhia de Saneamento de Minas Gerais (COPASA). The government of the State of Minas Gerais proposes to sell up to 49% of the shares in the middle of 1998. It is proposed that COPASA will undertake some waste treatment projects with private participation, under BOT arrangements. The plans include waste treatment plants in the city of Belo Horizonte and other municipalities.

There is also a growing interest in the 1,300 municipalities which run their own water supply and sanitation services in transferring this responsibility to the private sector through concessions.

(b) Electricity

Companies owned by the federal government and state governments predominate in the power sector. Federal utilities account for the bulk of transmission and, together with the Itaipú bilateral project with Paraguay, for more than half of the generation capacity. Utilities owned by the states and the municipalities account for the majority of distribution. There are several private utilities mostly providing distribution services in marginal markets and accounting, until recently, for only about 2 per cent of sales.

Sector statistics	
Net installed capacity in 1995 (MW):	
· thermal	7 068
· hydroelectric	51 311
· nuclear	657
· TOTAL	59 036
Percentage of population with residential connections in 1989	
	70

At the beginning of the 1990's, the Federal Government began to restructure the electricity sector to open it to competition and to private capital investment. The more serious reforms came about in 1995 under Laws N° 8987 and 9074. In the first of these laws, established the system for the concessions regime for the provision of public services as envisaged in article 175 of the Federal Constitution. The law permits the granting of concessions for the provision of public services through tenders open to private companies. It also establishes that all public utility concessions are subject to tender. The price of the concessions is fixed by the value of the winning bid and it is readjusted according to the terms set in the call for tender and the contract so as to assure the economic and financial equilibrium of the concessionaire. Under the second law, the nature of an independent electricity producer is defined.

It has been estimated that when the law was adopted 56 hydroelectric projects under construction had been suspended or not started due to the lack of finance. The paralysed projects represented an investment of US\$ 10 billion. Under the new laws, some projects may be cancelled or auctioned and others finished through joint programmes with the private sector.

Another important step was the creation - under Law N° 9427 of 26 December, 1996 - of the Agência Nacional de Energia Elétrica (ANEEL), an autonomous agency under the Ministério de Minas e Energia, responsible for the regulation and supervision of the electricity sector.

The Centrais Elétricas Brasileiras (ELETROBRÁS) is the federal government's holding company for power sector assets. It is a joint stock company and its shares are almost all owned by the federal government. A minor portion of the shares has been traded in the stock exchange since its creation. ELETROBRÁS is responsible for implementing the government's electric power policy and also has planning, co-ordinating, financing and supervisory responsibilities in the power sector.

The major holdings of ELETROBRÁS are four large federal regional companies - Furnas Centrais Elétricas (FURNAS), Centrais Elétricas do Norte do Brasil (ELETRONORTE), Centrais Elétricas do Sul do Brasil (ELECTROSUL) y Companhia Hidro Elétrica do São Francisco (CHESF) - which are responsible for large-scale generation and transmission in their respective areas. ELETROBRÁS also holds the Brazilian share in the Itaipú hydroelectric project on the Paraná River, as well as majority and minority stock interests in many generation and distribution utilities. Both ELETROBRÁS and its subsidiaries are included in the federal privatisation programme. The main exceptions are the nuclear plants and the share in Itaipú.

It is expected that prior to privatisation, ELETROBRÁS subsidiaries will be separated from the holding company and vertically restructured into generation, transmission and distribution units. The generation and distribution parts will be privatised, while transmission will remain in the hands of the government in order to ensure free access to the networks, although the possibility exists that transmission operation will be privatised in the future. The companies will be privatised in large units beginning with the thermal electric plants. The first privatisation's will be of FURNAS and ELECTROSUL. It is estimated that with these sales the government will obtain US\$ 5.8 billion and US\$ 2.3 billion respectively. ELETRONORTE and CHESF will be privatised later for an estimated US\$ 6.2 billion and US\$ 7.5 billion respectively.

The privatisation of the power sector assets owned by the federal government started with distribution utilities. The first company to be privatised

was Espírito Santo Centrais Elétricas S.A. (ESCELSA). A controlling stake was sold in 1995, to a local consortium of banks and pension funds. The second company to be sold was a part of the much larger Light Serviços Eletricidade S.A. (LIGHT), again mainly a distribution company. Prior to privatisation, the LIGHT was divided into two companies: LightRio, which holds the electricity distribution business and other assets, and LightPar, a holding company for LIGHT's 47.5 per cent stake in Eletricidade de São Paulo (ELETROPAULO), a power utility of the state of São Paulo. In May, 1996, a consortium led by Electricité de France (EDF) paid US\$ 1.7 billion for a controlling 34.04 per cent of the stock in LightRio, while a group of local investors bought US\$ 500 million worth of shares.

Privatisations in the States	
Rio de Janeiro	In 1996, the state sold 70% of the shares of the Cia de Eletricidade do Rio de Janeiro (CERJ) for US\$ 587 million to a consortium led by the Chilean company Chilectra.
Bahia	In 1997, a consortium of local companies and the Spanish firm, IBERDROLA bought 65% of the shares of the Cia de Eletricidade de Bahia (COELBA) for US\$ 1,600 million.
Brasília	In 1997, 18% of the shares in Cia Energética de Brasília (CEB) were sold for US\$ 74 million.
Goiás	In 1997, a consortium formed by ENDESA of Chile, the Peruvian company Empresa de Generación Eléctrica de Lima (EDEGEL) and international investment funds bought 79% of the 658 MW Cachoeira Duorada hydroelectric plant for US\$ 715 millions.
Mato Grosso	In 1997, the local consortium Rede-Inegás bought 87% of the shares of Centrais Elétricas Matogrossenses (CEMAT).
Mato Grosso do Sul	In 1997, a consortium led by the local company ESCELSA bought the Empresa Energética de Mato Grosso do Sul (ENERSUL) for US\$ 565 million.
Minas Gerais	In 1997, a consortium formed by AES Corporation and Southern Electric and a group of investors bought 33% of the shares in the Companhia Energética de Minas Gerais (CEMIG) for US\$ 1 billion.
Paraná	In 1997, the state government sold 8.27% of the shares in the Cia Paranaense de Energia (COPEL).
Rio Grande do Norte	In 1997, the local company COELBA bought 78% of the shares in the Cia Energética do Rio Grande do Norte (COSERN) for US\$ 600 million.
Rio Grande do Sul	Companhia Estadual de Energia Elétrica (CEEE) has been restructured into 6 units. Two of these were sold in 1997 for US\$ 2,900 millions: the Companhia Centro-Oeste de Distribuicao de Energia Electrica was sold to AES Corporation, and the Companhia Norte-Nordeste de Distribuicao de Energia Electrica to a consortium of Brazilian companies.
São Paulo	In 1997, a consortium of Brazilian companies bought 57.6% e shares in the Companhia Paulista de Força e Luz (CPFL), for US\$ 2.730 million.
Sergipe	In 1997, a consortium led by the Brazilian company Força e Luz Cataguazes-Leopoldinha (CFLCL) bought 86% of the shares in the Empresa Energética de Sergipe (ENERGIPE) for US\$ 520 million.
Ceará	In 1998, the consortium Distriluz, formed by Endesa of Spain, the Chilean group ENERSIS-Chilectra and the local company CERJ, bought 51% of the shares in the Companhia Energética do Ceará (COELCE) for US\$ 868 million.

Several states have transferred electricity utilities to the private sector, while several others have plans to do so. In some cases, the states may retain control and only sell a part of the shares in the companies; some of these companies are expected to be vertically and horizontally restructured prior to privatisation. Some states have announced proposals to form regulatory bodies similar to the federal ANEEL.

The Companhia Energética de São Paulo (CESP) will be privatised in 1998 and the state government received US\$ 10 billion for the sale. Before privatisation CESP was restructured into four separate companies: transmission, distribution and two generating companies. The sale will begin with the distribution assets to be followed by the generating assets (CESP owns 20 hydroelectric plants with an installed capacity of 10,232 MW).

ELETROPAULO is another company which will be privatised in 1998. It has recently been restructured into 4 separate companies: 2 distributors - ELETROPAULO Metropolitana and the Empresa Bandeirante de Energia (EBE), a generation company - Empresa Metropolitana de Águas e Energia (EMAE) and a transmission company - Empresa Paulista de Transmissão de Energia Elétrica (EPTE). In April, 1998, a consortium formed by the Brazilian company LIGHT, *Electricité de France*, *Houston Energy Industries*, *AES Corporation* and the Companhia Siderúrgica Nacional do Brasil, was awarded 74.8% of the shares in ELETROPAULO at a cost of US\$ 1,785 million. The tender for EBE was annulled while that for EPTE was cancelled. EMAE will not be privatised. It is estimated that with the sale of all the distribution units of ELETROPAULO some 70% of the electricity distribution of the country will be in private hands.

Many foreign companies, particularly from Chile and Argentina, have expressed interest in the privatisation process. In addition, local companies either already operate power stations or have an intention to bid for new ventures, either for independent power production or for self-generation. Three large local business groups - Bradesco, a commercial banking group; Camargo Corrêa, a large construction firm; and Votorantim, a cement producer - have recently formed a consortium, VBC Energia to participate in the privatisation of the power sector and have been awarded some companies.

(c) Irrigation and drainage

In Brazil, the private sector has always played a predominant role in the development of irrigation, accounting for over 94 per cent of the total irrigated area.

Sector statistics	
Agricultural area in 1995 (1 000 has):	
· arable land	53 500
· irrigated land	3 169

Most of the public irrigation projects are located in northeast Brazil and reflect a mix of production, drought control and poverty alleviation objectives. Outside the northeast, the role of the public sector has been largely limited to supporting private irrigation development through various means including the provision of infrastructure, such as electric power distribution and drainage of flood plains, as well as of credit and technical assistance.

5. Chile

Chile has the most mature privatisation programme in the region and most state-owned companies had been privatised by 1990. Chilean companies, including many formerly in the public sector, increasingly invest in privatisation processes abroad, particularly in Argentina, Bolivia and Peru, and increasingly in Brazil and Colombia.

A special characteristic of water management in Chile is that under the Constitution, private rights over water confers ownership to the holder. The Water Law of 1981 establishes the definitions and concepts governing the ownership and use of water. Once the right is granted, the owner is entitled to use the water or not, obtain benefits from it and freely dispose of it.

Water rights may be either “consumptive rights”, which entitle the holder to consume the water without any obligation to replenish it, or “non-consumptive” water rights, which oblige the holder to return the water in the condition established at the time of acquisition or of the constitution of the right and not to effect the rights of third parties constituted over the same waters. The former typically applies to drinking water supply companies and to irrigation, and the latter to hydroelectricity generation.

The Dirección General de Aguas (DGA) of the Ministerio de Obras Públicas (MOP) is responsible for the issuing and registration of water rights. It is legally obliged to grant requests for new rights whenever there is water available; when there is not enough water to satisfy competing claimants, water rights are allocated through public auctions. After the initial granting of a right, the State ceases to have authority over its allocation and the future distribution of rights among users is left to the market.

(a) Drinking water supply and sanitation

Under the “Ley General de Servicios Sanitarios” of 21 June 1989, the provision of drinking water supply and sanitation services is through concession. Four separate concessions are granted for drinking water supply and treatment, for drinking water distribution, for the provision of sewerage disposal, and for the treatment of sewage. Concessions are granted for an indefinite period of time and are transferable with the authorisation of the Superintendencia de Servicios Sanitarios (SISS). They are granted through a decree of the MOP subject to a previous report of the SISS. The holders of concessions operate subject to the juridical and technical supervision of the SISS.

The SISS is an autonomous, decentralised agency, with juridical personality and an independent budget. Its main responsibilities are: (i) to study, propose and control compliance with norms and technical standards; (ii) to apply and supervise tariff-setting regulations; (iii) to apply the concession system, including participating in the process of establishing, operating, transferring and dissolving the concessions; and (iv) to interpret all sector legislation.

Estimated coverage

In urban areas, 99 per cent of the population has drinking water supply through house connections and 90 per cent has sewerage. In rural areas, 75 per cent of the concentrated population and 15 per cent of the dispersed population have house connections for drinking water. The companies are generally efficient and profitable and provide a good level of service to their customers. Water losses average 31 per cent. Wastewater treatment is at a stage of rapid development and about 19 per cent of sewage receives treatment.

Tariffs are calculated using a "Model Company" system to reflect the marginal cost of service provision, covering all operation, maintenance and expansion costs of an efficient company, and generate a pre-determined minimum return. Tariffs are calculated on the basis of the replacement value of existing installations, expected service levels and a long-term investment programme. Tariffs are fixed in real terms for 5-year periods and adjusted in nominal terms whenever inflation exceeds a certain level. Under Law N° 18.778 of 2 February 1989, a system of direct subsidies for low-income households has been established. The subsidies are administered by the municipalities and paid directly to the companies.

The drinking water supply and sanitation companies provide service, to both rural and urban populations, within a defined area in accord with the terms of their concessions. 13 publicly-owned regional companies provide services to over 90 per cent of the population. There are, also, a large number of smaller systems administered by private companies and one municipal company.

The two largest publicly-owned companies, serving Santiago and Valparaíso, the Empresa Metropolitana de Obras Sanitarias S.A. (EMOS) and the Empresa de Obras Sanitarias de Valparaíso S.A. (ESVAL), were created by Law N° 18.777 as joint-stock companies. A very small proportion of the shares in both companies is in private hands and quoted on the stock exchange. The other 11 regional companies were created by Law N° 18.885 as joint-stock companies.

The companies contract with third parties for the execution of various functions (e.g. meter reading, billing and collection, system maintenance, vehicle leasing, as well as major construction activities, and operation of specific components of the system).

There are also management and investment contracts - "gestión con inversión" - under which the responsibilities for the administration and financing of

services are transferred to the private sector. For example, ESVAL awarded a 30 year contract starting 1 September 1993 to the Consorcio Aguas Quinta Región for part of its area of concession. The contract includes an agreement to undertake an investment plan in exchange for a certain percentage of the tariff income.

A similar approach has been used by the Empresa de Servicios Sanitarios de Antofagasta S.A. (ESSAN) for a waste treatment project in the city of Antofagasta. BAYESA, a subsidiary of Biwater International, has a 30 year contract to construct and operate waste treatment. BAYESA owns and can sell the treated wastewater, making a payment to ESSAN. After 20 years the works will be transferred to ESSAN.

The government recently decided to modify the sector's ruling regulatory framework. The most important changes include: (i) the SISS will be strengthened and the sanctions applicable to companies for not complying with their obligations have been increased; (ii) restrictions have been placed on the participation of holders of other public utility concessions in the same operating area; (iii) restrictions have been established on the capital structure of water supply and sanitation companies to prevent the formation of monopolies and to promote comparative competition; (iv) regulations have been placed on contracts between related companies, construction contracts are prohibited and other types of contracts will be supervised; (v) competition will be promoted by allowing large consumers to contract with external suppliers; and (vi) the methodology and the procedures for calculating and fixing tariffs has been modified and the procedure for resolving disputes has been improved.

Under the reform of the regulatory framework, the state will maintain at least 35% of the capital of each company, a proportion which provides a veto power over some decisions. The government can, however, reduce its capital share if it does not subscribe to capital increases, but it will still maintain a veto for 10 years if its share is not reduced to less than 10%.

The programme for incorporating the private sector will be announced once the new regulations of the sector are ready and the legal and financial situation of each company is in order. The government has already indicated, however, that the incorporation of private capital will be a gradual process, in which funds will be incorporated as required by the investment plans of the companies.

(b) Electricity

The "Ley General de Servicios Eléctricos" (Decree with Force of Law N° 1 of 22 June 1982) and its modifications and regulations, make up the regulatory framework for the power sector. All the significant electricity infrastructure is in the

private sector. The Empresa Eléctrica de Aysén (EDELAYSEN), to be privatised in 1998, and minority holdings in the Empresa Eléctrica del Norte Grande (EDELNOR) and the Empresa Eléctrica Colbún-Machicura remain in state hands

Sector statistics	
Net installed capacity in 1995 (MW):	
· thermal.....	2 660
· hydroelectric.....	3 294
· TOTAL.....	5 954
Percentage of population with residential connections in 1989	
	91

The Comisión Nacional de Energía (CNE) has as its functions: the calculation of regulated tariffs which are then imposed through a decree of the Ministerio de Economía, Fomento y Reconstrucción; propose technical rules; prepares the indicative electricity expansion programme; the preparation of technical studies related to the development and management of the sector. The Superintendencia de Electricidad y Combustibles (SEC) monitors compliance with current legal regulations and technical standards for the generation, transmission and distribution of electricity.

The two Centros de Despacho Económico de Carga (CDEC), co-ordinate system operation in the transmission systems for Central and Northern Chile, respectively. They are responsible for planning the short-run operations of the electricity system, calculating the instant marginal prices of electricity which result from the operational plans, co-ordinate major preventive maintenance of the generating plants, and determine the amounts and calculate the value of the transfers of electricity among the members of the CDEC.

In their concession area, public utility companies must provide service to everyone who requests it. The concession holders of all types must interconnect their systems when this is ordered by a decree of the Ministerio de Economía, Fomento y Reconstrucción, issued on the basis of the corresponding report of the CNE.

There is an non-regulated market, in which large consumers can freely negotiate prices, and a regulated market. In the regulated market, the CNE calculates prices termed "precios de nudo", these are used by the generating companies for sales to regulated clients (distributing companies and small consumers). The CNE also determines the prices for the distribution companies, termed "valor agregado de distribución". The price to the final consumer is a result of the sum of the "precios de nudo" and the "valor agregado de distribución". In order to ensure competitive rationality in the tariff calculations, the "precios de nudo" are closely related to prices set in the free market.

(c) Irrigation and drainage

About 75 per cent of agricultural production, equivalent to some 9 per cent of the gross domestic product, comes from irrigated areas. The private sector dominates irrigation development, while the

public sector plays a subsidiary role. Virtually all management decisions related to irrigation are in the hands of farmers and water users' organisations.

Sector statistics	
Agricultural area in 1995 (1 000 has):	
· arable land	3 980
· irrigated land	1 265

The ownership of irrigation works is very diffuse as many have been built by users and works built by public funds are subsequently transferred to the irrigators for operation and maintenance. The Dirección de Riego of MOP is responsible for studying, designing, building, maintaining, repairing and operating the irrigation works built with public funds that have not been transferred to users. It does not construct any works itself, works are put out to tender to private construction companies. The Decree with Force of Law N° 1.123 of 21 December, 1981 determines the regulation of irrigation works built with public funds.

The Comisión Nacional de Riego (CNR) was created to ensure the expansion and improvement of the area under irrigation. The CNR is also responsible for applying Law N° 18.450 of 30 October 1985, amended by Law N° 19.316 of 29 August 1994, to promote private investment in irrigation. Under the current regulations, the government may reimburse to private investors up to 75 per cent of the cost of studies, construction and rehabilitation of irrigation or drainage works, and investments in irrigation equipment, that increase the irrigated area, improve water supply on irrigated areas where there is a shortage, improve water application efficiency, reclaim farm land that does not have adequate drainage, etc. The costs of the total investment cannot exceed US\$ 400,000, except when the proposal comes from user organisations, these can present projects up to a value double this quantity. The funds are awarded through public competitions which the CNR must organise at least quarterly.

6. Colombia

The Government of Colombia has announced an ambitious privatisation programme, although only recently have companies begun to be privatised. Irrigation districts have been transferred to farmers, and all public utility services, including the provision of drinking water supply and sanitation services, have been opened to private sector participation. The privatisation process is regulated under Law N° 226 of 1995.

Law N° 142 “Régimen de los Servicios Públicos Domiciliarios” of 11 July 1994 removes barriers to private sector participation in the provision of public utility services, including electricity and drinking water supply and sewerage. The law gives any person the right to create and operate public utility companies.

The municipalities are responsible for assuring efficient provision of public utilities, grant subsidies to lower income clients and ensure the participation of the users in the management and regulation of the companies providing services. The Departments are responsible for regulating electricity transmission services, and for providing financial, technical and administrative assistance to public utilities and to municipalities which provide services directly. They are also responsible co-ordinating the activities of the utilities.

The Ministerio de Desarrollo Económico, for water supply and sanitation, and the Ministerio de Minas y Energía, for electricity, are charged with the formulation of sector policies, indicating the technical requirements for civil works, equipment and procedures used by the utilities, drawing up plans for the increase of public services, as well as, identifying the size of the subsidies to be given by the central government and the criteria for their assignment.

The Comisión de Regulación de Agua Potable y Saneamiento Básico (CRA), in the Ministerio de Desarrollo Económico, and the Comisión de Regulación de Energía y Gas (CREG), in the Ministerio de Minas y Energía, are administrative units with administrative and technical autonomy, which regulate public utility monopolies when competition is not possible; and, in other cases, to promote competition among utilities.

The Superintendencia de Servicios Públicos Domiciliarios, a technical office in the Ministerio de Desarrollo Económico, with administrative and technical autonomy, is charged with the supervision, inspection and monitoring of public utilities. Its functions are to supervise that current legislation and the contracts between the utilities and their clients are respected. It determines standard information and accounting systems. It also ensures that the publicly financed

subsidies are used as proposed in the pertinent regulations. It maintains a registry of public utilities, evaluates their financial, technical and administrative management and ensures that the civil works, equipment and procedures used by the utilities meet the corresponding technical requirements.

The commissions and the superintendent are financed from payments by the regulated companies and through the sale of their publications.

A "Comité de Desarrollo y Control Social de los Servicios Públicos Domiciliarios", with members drawn from users and potential user of public services, should be established in each municipality. The purpose of these committees is to assure public participation in the management and supervision of the public utility companies.

(a) Drinking water supply and sanitation

Since 1992, the government has introduced important modifications in sector policies, institutions, operations and finances with end of creating a new institutional and regulatory structure, widen private participation, increase efficiency and reporting and to achieve greater autonomy in public utility management.

Estimated coverage

About 90 per cent of both the urban and rural population has drinking water supply, 86 per cent of the urban population through house connections. Some 70 per cent of the urban population has access to sanitation services, 65 per cent through sewerage, but only 27 per cent of the rural population has adequate sanitation. Water losses are estimated in the 30 to 50 per cent range. Only some 2 per cent of the sewage receives any treatment before disposal.

Under Law N° 142/94, public utilities require a concession contract to use water. A water concession contract is time limited and conditions are set on how the holder of concession must return the water after use. Water concessions lapse after 3 years, if investments have not been made to ensure economic use during the following year, or in a period established by the regulatory commission for the type of project considered.

Government policy for the water supply and sanitation sector is that the municipalities should be gradually replaced as direct utility operators by specialised companies. At the moment, more than 50% of the municipalities directly provide services, 3% are provided by companies and the remainder by departmental companies of the regional corporations. The Financiera de Desarrollo Territorial (FINDETER), advises on increasing the capacity of the municipalities to provide drinking water supply and sanitation services. Utilities can receive financial and technical assistance for projects and investment programmes.

Private sector participation is still incipient. There are examples in mid-sized cities where frequent use is made of subcontracting or where the private sector participates in ownership. There are examples of successful privatisation and decentralisation, as in the city of Barranquilla, where in 1992 the municipal council replaced the public company with the Sociedad de Acueducto, Alcantarillado y Aseo de Barranquilla, a joint stock company of mixed capital. Since October, 1996, the company has had as a qualified partner, the Sociedad Interamericana de Aguas y Servicios, whose principal stockholder is the Sociedad General de Aguas de Barcelona.

In Bogota, as part of the plan to clean up the Bogota River, a 30 year concession has been awarded to a consortium of two French companies, Lyonnaise des Eaux and Degremont to construct, operate and maintain three sewage treatment plants. Also in Bogota, a twenty year concession has been given for the rehabilitation and operation of the Tibitoc water treatment plant and its associated aqueduct to the Sociedad Concesionaria Tibitoc, owned by the Corporación Financiera del Valle, Fanalca and the Compagnie Générale des Eaux.

In Cartagena de Indias, following an international bidding call, the Sociedad Aguas de Cartagena was created, a company with mixed capital. In July, 1995, it took over the management of the water supply and sewerage systems under an 26 year operation and maintenance contract. Ownership is divided among the municipality, with 50%, the operating partner, the Spanish company Sociedad General de Aguas de Barcelona, with 44.81% and local investors with the remaining 5.19%.

(b) Electricity

The power sector was also reformed under Law N° 142 and through the Law "Régimen para la generación, interconexión, transmisión, distribución y comercialización de electricidad en el territorio nacional" (Law N° 143 of 11 July 1994). Under Law N° 143 any economic agent, public, private or mixed, can participate in sector activities, enjoying the freedom to develop their activities in an open competitive environment.

Sector statistics	
Net installed capacity in 1995 (MW):	
· thermal.....	2 783
· hydroelectric.....	7 975
· TOTAL.....	10 758
Percentage of population with residential connections in 1989.....	
	64

The Unidad de Planeación Minero Energética, a specialised agency within the Ministerio de Minas y Energía, is responsible for the development and maintenance of the Plan Energético Nacional and the expansion plan of the sector. It makes studies to allow the formulation of plans and programmes for the energy sector and

recommends policies and strategies for sector development to the minister. The minister defines the indicative plans for the growth of generation and the grid and establishes criteria to direct transmission and distribution planning. The Financiera Energética Nacional (FEN) provides financial services in the energy sector, including the provision of guarantees to facilitate private investments. The Consejo Nacional de Operación, made up of company representatives, has as its principal role agreement on technical ways of guaranteeing safe, reliable and economical operation of the national grid.

The companies connected to the national grid must abide by the operating regulations and the agreements reached for its operation. The companies owners of transmission and distribution networks must allow the connection of electricity companies and users who make such a request, subjects to the corresponding regulations and payment. The sale of electricity can only be done by independent agents and by generation and distribution companies. Companies formed after Law N° 143 came into effect and which belong the national grid cannot undertake more than one activity in the electricity sector with the exception of the sale of electricity which can be combined with generation or distribution.

The company that manages the national grid cannot participate in generation, sale or distribution of electricity, Its income comes from charges on dispatch services, electricity transport and for access to and use of the interconnected networks and related technical services. The Centro Nacional de Despacho, an internal subsidiary, is responsible for the planning, supervision and control of the integrated operation of generation, interconnection and transmission in the national grid according to the agreements reached with the Consejo Nacional de Operación. It give instructions to the regional dispatch centres which supervise and control the operation of the networks and generating plants in each region.

The majority of the state-owned electricity companies have been restructured, going from vertically integrated companies to independent generation or distribution companies. Interconexión Eléctrica (ISA), a joint venture under the Ministerio de Minas y Energía, created in 1995, as part of the restructuring of ISA, the former generating and transmission company, owns 70% of the national grid and runs the Centro Nacional de Despacho. ISA has begun a programme to attract private investment.

Private generation was initiated through BOT and similar systems under a guarantee of payment by the FEN and energy buying contracts. The privatisation of electricity companies began in 1996 with the sale of generation plants. In December 1996, a consortium led by ENDESA of Chile, acquired the 500 MW Betania hydroelectric power station for US\$ 302 million. Another Chilean company, GENER (ex-CHILGENER), brought the 1 000 MW Chivor hydroelectric power station

for US\$ 643 million. In May, 1997 a consortium by the US company Houston Industries and the Venezuelan company Electricidad de Caracas, bought 56.7% of the shares of the Empresa de Energía del Pacífico (EPSA) for US\$ 535 million.

The Empresa de Energía de Bogotá (EEB) was privatised in September, 1997. Before its privatisation, it was restructured into a head office, responsible for transmission and the Centro Regional de Despacho, and two subsidiaries: EMGESA, a generation company and CODENSA, a distribution and sales company. The consortium Luz de Bogotá, formed by ENDESA of Spain, the Chilean companies, Enersis and Chilectra, the Grupo Financiero Popular de Colombia and the US company Fondelec bought 49.6% of CODENSA for US 1,226 million. Another consortium, Capital Energía, formed by ENDESA of Spain and Betania, a subsidiary of ENDESA of Chile, bought 49% of EMGESA for US\$ 951 million. EMGESA has a generating capacity of 2,458 MW, of which 2,224 MW are hydroelectric and 234 MW thermal electric, equivalent to 25% of the total installed capacity of Colombia.

(c) Irrigation and drainage

About 38 per cent of the area estimated to be under irrigation is in public systems concentrated in 22 districts, referred to as "Distritos de Adecuación de Tierras", three of which are exclusively drainage schemes; and approximately 62 per cent is under private schemes, most of them modest diversion works and unlined canals.

Sector statistics	
Agricultural area in 1995 (1 000 has):	
· arable land	2 406
· irrigated land	1 037

Since 1976 and until recently, public irrigation had been in the hands of the Instituto Colombiano de Hidrología, Meteorología y Adecuación de Tierras (HIMAT). HIMAT was reorganised under Law N° 99 of 22 December 1993 and renamed as the Instituto Nacional de Adecuación de Tierras (INAT).

Seven public irrigation districts are administered by users' associations, under "delegated authority" agreements whereby a public property could be turned over to a private sector corporate entity for administration on behalf of the state. The remaining 15 districts are under direct INAT administration. Under the "delegated authority" approach, the farmers assumed responsibility for day-to-day operation and maintenance of the system, and could employ and fire staff. Ownership of assets remained with the government and INAT retained considerable influence over management. The farmers established their own association, the Federación Colombiana de Distritos de Riego (FEDERRIEGO), to provide legal, managerial,

technical, and agricultural support and training, and to support and represent them in their dealings with public and private entities.

The legislation passed in 1992 mandated the transfer of the administration, operation and maintenance of all irrigation districts to the private sector, except in duly justified exceptional cases. The use of the “delegated authority” mechanism was eliminated, it is to be replaced by public service concession contracts which would give greater financial and operational autonomy to users' associations. Future administration arrangements will depend on the particularities of the district. Some districts could be transferred via concessions. In others, a private company might totally or partially manage a district. A combination might also be used. All publicly managed systems are expected to be transferred to farmer management within the next few years.

Public irrigation was further reformed under Law N° 41 “Ley de Adecuación de Tierras” of 29 January 1993. Under Law N° 41 the Ministerio de Agricultura has responsibility for developing irrigation policies with the advice of the Consejo Superior de Adecuación de Tierras (CONSUAT), which has five public sector members from different ministries and agencies, and four private sector members representing indigenous communities, commercial farmers, peasant farmers and irrigation users' associations. INAT, together with private and public entities, has executing authority; and the Fondo Nacional de Adecuación de Tierras (FONAT), is charged with financing studies and the design and construction of irrigation, drainage and flood protection projects. The Fondo para el Financiamiento del Sector Agropecuario (FINAGRO) grants credits for investments in construction, rehabilitation, complementation and enlargement of irrigation and drainage infrastructure by the private sector.

Under Law N° 41, the farmers, in each Distrito de Adecuación de Tierras, are to be organised into an Asociación de Usuarios, which will represent them and manage the district. Under the law, the associations can subcontract management to specialised companies. INAT is responsible for the supervision of the districts administered exclusively by the associations to ensure the rational management of water as a public good and to guarantee the rights of the farmers to the communal property.

7. Ecuador

The Government of Ecuador has made attempts to attract private sector participation to public utilities. In 1992, the government created the Consejo Nacional de Modernización del Estado (CONAM), within the Presidency of the Republic, with responsibility for the control of the processes established under the "Ley de Modernización del Estado, Privatizaciones y Prestaciones de Servicios por parte de la Iniciativa Privada", of 31 December, 1993. The Reglamento de la Ley de Modernización del Estado was published at the end of 1994.

(a) Drinking water supply and sanitation

Under the Ley de Régimen Municipal of 31 January, 1996, the municipalities are responsible for providing drinking water supply and sewerage services. In the major cities, the systems are operated by autonomous municipal companies, while in the other municipalities, water supply and sanitation departments or sections are responsible for the services. In rural areas, local committees (Juntas) administer, operate and maintain drinking water supply and sanitation systems; there are approximately 2 000 of them administering systems in small communities.

Estimated coverage

78 per cent of the urban population has access to drinking water supply, 74 per cent through house connections, but only 39 per cent of the rural population, 31 per cent by means of house connections. 60 per cent of the urban population has sewerage, but only 8 per cent of the rural population. In general, the quality of service is poor: few systems provide continuous supply and there are deficiencies in quality. Unaccounted-for-water is estimated to vary in the range of 40 to 60 per cent.

Urban and rural by region	Service deficit (%)	
	Water supply	Sanitation
Costa	48	51
Insular	11	80
Oriente	63	70
Sierra	27	41

The Instituto Ecuatoriano de Obras Sanitarias (IEOS), established in 1965, under the Subsecretaría de Saneamiento Ambiental of the Ministerio de Desarrollo Urbano y Vivienda, prepares sector plans and provides technical assistance to the municipalities; its operational activities are largely limited to rural areas. There are many other agencies, some of them operating regionally which execute or finance drinking water supply and sanitation projects.

One of the principal objectives of CONAM is the development of the project for the modernisation of the water supply and sanitation sector (PROMASAN), the core of this project is the preparation of the draft of the Law Básica de Servicios de Agua Potable y Saneamiento. The draft of the law has already been sent to the President's office for revision and approval for submission to the Congress. By means of the law it is hoped to ensure sufficient financial resources for water

supply and sanitation services through an adequate tariff structure, an increase in the efficiency of the services and the incorporation of the private sector.

Plans exist - for example in Guayaquil and Quito - to promote private participation in the water supply and sanitation services through concessions, and there are already service contracts. The Empresa Cantonal de Agua Potable y Alcantarillado de Guayaquil (ECAPAG) has created a technical concessions unit in order to study alternatives for private participation in its management.

(b) Electricity

The Instituto Ecuatoriano de Electrificación (INECEL), created by Decree N° 24 of 23 May 1961, under the Ministerio de Energía y Minas (MEM), with economic and administrative autonomy and its own capital and resources, is in charge of electricity generation and

Sector statistics	
Net installed capacity in 1995 (MW):	
· thermal	1 046
· hydroelectric.....	1 493
· TOTAL.....	2 539
Percentage of population with residential connections in 1989	65

transmission at the national level. The regional distribution utilities buy the bulk of the power that they need from INECEL, but they also have some generation capacity. INECEL is the owner of the largest part of the capital in most of the distribution companies, while the rest is largely in the hands of the municipalities, although there are also some private investors. There are privately-owned generation plants.

The electricity sector is being reformed under the "Ley de Régimen del Sector Eléctrico" of 10 October, 1996 and the "Ley Reformatoria de la Ley de Regimén del Sector Eléctrico" of 2 January, 1998. In the sector there will be concessions for generating companies and distribution companies for each of the geographical areas determined in the Plan Maestro de Electricidad; and a concession for the transmission company.

Distribution companies will not be able to produce electricity, apart from any generating capacity existing at the time that the act became law, on the condition that separate and independent companies are formed for the operation of the generation facilities. Generating companies will be unable to transmit or distribute electricity, except in exceptional cases. No company, except for the Paute hydroelectric plant, will be allowed to control more than 25% of the total installed potential. Paute may control up to 33%. Transmission and distribution companies will be obliged to permit free access of third parties to their equipment subject to the payment of the corresponding tolls and they are forbidden to grant advantages or preferences of access.

A wholesale electricity market will be formed, made up the generating companies, distributing companies and large consumers participating in the national grid. Transactions in the wholesale market will be limited to spot sales of long term contracts. Price regulation will be limited to: (i) transfers among generators not included in long-term contracts; (ii) transfers from generating to distributing companies; (iii) transmission charges; (iv) tolls for the use of the distribution system; and (v) the prices charged to final consumers by the distribution companies. The distribution companies and large consumers will be able to freely negotiate energy prices with generating and distributing companies.

The institutional structure of the electricity sector will be as follows. The Consejo Nacional de Electricidad (CONELEC) is an autonomous body responsible for the preparation the plans for the development of the sector, regulation and control and for the granting of concessions for generation, transmission and distribution. All the electricity companies will contribute the resources required to finance the CONELEC. The Centro Nacional de Control de Energía (CENACE) will be a private non-profit corporation, with technical responsibilities, the members of which will be all the generation, distribution and transmission companies as well as the major consumers which will be responsible for the technical and economic management of electricity in blocks. The Consejo de Modernización del Sector Eléctrico (COMOSEL), is the temporary executive agency delegated by CONAM to carry out the process of modernising the electricity sector.

The existing generation and transmission facilities, which are the property of INECEL, will be transferred to the new state generation and transmission companies which will have the structure of limited companies. At the same time, holding companies will be formed to which will be transferred all the shares held by INECEL in distributing companies. The Fondo de Solidaridad, in representation of the State, will be the holder of the shares in the transmission and generation companies and of the holding companies.

Investment and shareholding by the private sector in generating, transmission and holding companies will be permitted. In the case of hydroelectric projects which complement existing plants, the private sector can invest exclusively through increases in capital. In the other companies of the sector the Fondo de Solidaridad can sell existing shares or call for increases of capital, or any combination for up to 39% of the capital. A further 10% of the shares of the companies can be transferred to workers in the sector.

CONELEC will call for bids from private investors for the new generating projects contemplated in its Plan Maestro de Electrificación. Private investors can also propose the development of other alternative projects which must receive prior

approval from CONELEC. For plants of less than 50 MW only a permission is required.

Three large hydroelectric projects are under tender: (i) San Francisco with an installed capacity of 230 MW and a cost of some 245 million dollars; (ii) Toachi-Pilatón with an installed capacity of 190 MW and a cost of 375 million dollars; and (iii) Mazar with a capacity of 180 MW and a cost of some 375 million dollars. The government is examining the way in which the private sector could participate, including increases in capital, total private financing or leasing through a BLT (build, lease and transfer) scheme.

(c) Irrigation and drainage

The private sector has always played an important role in the development of irrigation in Ecuador: it is estimated that approximately 78 per cent of the area under irrigation is managed by farmers.

Sector statistics	
Agricultural area in 1995 (1 000 has):	
· arable land	1 574
· irrigated land	240

8. Guyana

The Government of Guyana has privatised a number of state-owned enterprises. The Divestment Policy Group, chaired by the President, makes all the important decisions on the privatisation programme.

(a) Drinking water supply and sanitation

The Guyana Water Authority (GUYWA) provides water supply services for the whole country with the exception of Georgetown, New Amsterdam and Linden, where the systems are run by the municipalities.

Private sector participation has so far been very limited. No information is available on the plans to encourage private sector participation in the provision of drinking water supply and sewerage services.

Estimated coverage

Almost 80 per cent of the population has drinking water supply, but service is intermittent, water pressure is low, and there are other problems. The water supplied is not always of high quality and not all water is disinfected. Only the city of Georgetown and two other towns are sewered; the Georgetown systems cover at most a quarter of the city. The rest of the population uses septic tanks or pit latrines. There is no sewage treatment.

(b) Electricity

The Guyana Electricity Corporation (GEC) is responsible for the generation, transmission and distribution of electricity. There is substantial self-generation by major industries, which also provide supply to nearby communities around them and to the GEC.

Sector statistics

Net installed capacity in 1995 (MW):

· thermal	112
· hydroelectric	2
· TOTAL	114

Percentage of population with access to electricity	65
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The government has decided to partially privatise the GEC, transferring 50% of the capital of the company to investors. The government is proposing a capitalisation plan or the formation of a joint venture with private and public participation.

In 1996, the IDB approved a US\$ 46 million loan to support a comprehensive reform of the electricity sector. The purpose of the loan was to support the privatisation of the GEC and the undertaking of policy reforms and related regulations for the sector.

In January, 1997, the Government announced that the best offer for 50% of GEC, US\$ 22.6 million, had been presented by SaskPower Commercial, a subsidiary of Saskatchewan Power Corporation. During 1997, the National Assembly approved three bills to facilitate the privatisation of the GEC, the public utilities commission bill, the electricity sector reform bill and the Guyana energy agency bill.

The negotiations between the Government and SaskPower continued until January, 1998. At that point, the Government of the Province of Saskatchewan formally informed the Government of Guyana that it had decided not to allow SaskPower Commercial to invest in the acquisition of GEC. SaskPower Commercial has, however, found various companies interested in providing the capital required. The Government will consider whether to accept SaskPower Commercial's proposal or whether to call for a new international tender.

Texas-Ohio Energy Inc. (TOE) has recently signed an agreement with the Government and the state-owned Linden Mining Company (LINMINE) for the rehabilitation and operation of LINMINE's electricity installations. Under the agreement, the Government will give a 25 year licence to the Linden Power Company, a subsidiary of TOE. The company will rent LINMINE's installations for 15 years and sell some of the energy to LINMINE for its own use, as well as, for distribution to the community of Linden.

9. Paraguay

The Government of Paraguay began to privatise state-owned companies at the end of the eighties, but few companies have been transferred to private ownership so far. There are plans to encourage private participation both in the provision of drinking water supply services and in the power sector. The Consejo de Privatización (CNP) oversees the privatisation process.

(a) Drinking water supply and sanitation

The Corporación de Obras Sanitarias (CORPOSANA) provides drinking water supply and sewerage services in Asunción and in all communities of more than 4 000 inhabitants. The institutional strengthening programme, initiated in 1993, encourages private sector participation in specific areas of CORPOSANA.

Estimated coverage

42 per cent of the urban population has drinking water supply and 35 per cent has sewerage. Only 17 per cent of the rural population has drinking water supply, although 60 per cent has adequate sanitation. Coverage is substantially higher in Asunción, where 86 per cent of the dwellings has drinking water connections and 68 per cent sewerage connections.

Several cities, including some areas of Asunción, rely on independent water producers. CORPOSANA allows independent services until its own system expands to the area in question.

The government has announced plans for a concession system for the expansion of urban drinking water supply and sewerage systems. Under these plans, CORPOSANA would be replaced by an autonomous regulatory agency to oversee the operational and investment activities of the private company granted the concession. The legal and institutional aspects of the reforms required to promote private sector participation are under study.

In rural areas and communities of less than 4 000 population, drinking water supply and sanitation services are the responsibility of the Servicio Nacional de Saneamiento Ambiental (SENASA). SENASA implements rural drinking water supply and sanitation projects through local sanitation committees (Juntas de Saneamiento) which administer, operate and maintain them with technical assistance from SENASA.

(b) Electricity

Electricity generation, transmission and distribution is the responsibility of the Administración Nacional de Electricidad (ANDE). Laws N° 966/64 and N° 976/82 comprise the regulatory framework of the sector. With the exception of one locality served by a private company, ANDE has a monopoly.

Sector statistics	
Net installed capacity in 1995 (MW):	
· thermal	43
· hydroelectric	6 490
· TOTAL	6 533
Percentage of population with residential connections in 1989	
	46

ANDE is expected to be either partially or totally privatised, at some future date. Studies are under way to determine an appropriate regulatory framework and the optimum form for private sector participation.

The Multilateral Investment Fund (MIF) of the IDB has awarded a US\$ 1 085 000 grant to assist Paraguay in restructuring the energy sector, paving the way for greater private sector participation and investment. One of the objectives of the grant is to enable the government to undertake the necessary legal and administrative steps to separate business activities from regulatory functions, opening up possibilities for private investors.

10. Peru

Since 1990, the Government of Peru has implemented a programme of widespread market-based reforms aimed at eliminating state intervention in productive activities and improving the regulatory environment to promote private sector participation. The reforms include a comprehensive privatisation programme which aims to transfer virtually all state-owned companies to the private sector by the year 2000. The electricity industry has already been reformed and its assets are being transferred to the private sector. The drinking water supply and sanitation sector is being opened to private participation.

In Legislative Decree, N° 674 of September, 1991, the promotion of private investment in state companies was declared to be in the national interest. Under the Decree, the Comisión de Promoción de la Inversión Privada (COPRI) was created. It is a multi-sector commission at the ministerial level responsible for planning, executing and managing the privatisation programme. The commission, itself is responsible for the administration and co-ordination of the whole programme. There are special committees to manage the privatisation of each individual company.

Under Legislative Decree, N° 758 of 1991, the government promotes private investment in infrastructure and public utilities. The central government, the regional governments and the municipal governments may grant concessions for the construction, repair, conservation and operation of public works.

In Legislative Decree N° 839 of August, 1993, the promotion of private investment in public works and in public utilities is declared to be in the national interest. The Comisión de Promoción de Concesiones Privadas (PROMCEPRI) is responsible for the promotion of private investments in basic infrastructure and public utilities. It will also manage the Fondo de Promoción de la Inversión Privada in basic infrastructure and public utilities (FONCEPRI).

(a) Drinking water supply and sanitation

The sector has been reformed decentralising service provision and creating the conditions for private participation. A series of legislative decrees adopted in the early nineties promote private participation in the provision of public utilities, including drinking water supply and sanitation: the “Ley de Promoción de la Inversión Privada en las Empresas del Estado” (Legislative Decree N° 674, 27 September 1991) promotes participation in state-owned companies, and the “Ley de Promoción a la Inversión Privada en el Campo del Saneamiento” (Legislative Decree N° 697, 5 November 1991) specifically encourages private participation in

drinking water supply and sewerage, excreta disposal and wastewater reuse. The latter law eliminates the public sector monopoly in service provision and opens the sector to domestic and foreign private participation.

The "Ley General de Servicios de Saneamiento" (Law N° 26338) of 24 July 1994, its regulation approved by the Decreto Supremo of September, 1995 and the "Ley de Superintendencia Nacional de Servicios de Saneamiento" (Law N° 26284) of 18 January, 1994 form the regulatory basis of the sector.

The provincial municipalities are responsible for the provision of water supply and sewerage services. They can provide services through municipal, private or mixed-capital companies, formed for the sole purpose of providing such services. The companies must be functionally and administratively autonomous. It is the responsibility of the provincial municipalities to: (i) form municipal utilities either individually or in association with other provincial municipalities; (ii) grant the rights of exploitation as well as supervise the respective exploitation contracts; and (iii) approve tariffs.

The one exception is the Empresa de Servicios de Agua Potable y Alcantarillado de Lima (SEDAPAL), which serves Lima and Callao provinces, which was transferred - under Decree Law N° 25491 of May, 1992 - to the Ministerio de la Presidencia.

The Ministerio de la Presidencia (MIPRE) has the overall responsibility for water supply and sewerage services, and is responsible for policy, dictation of service norms, and for the strategic planning of the national expansion of the services. The Superintendencia Nacional de Servicios de Saneamiento (SUNASS), the regulatory agency, established by Decree Law N° 25965 of December 1992, is a decentralised agency, with functional, economic, administrative and technical autonomy, of the Ministerio de la Presidencia. It is responsible for supervising the provision of services to ensure that they are provided under the best possible conditions. It establishes the policies and rules for the provision of services, supervises their provision, establishes the procedures and formulas for tariff calculation. It also applies the sanctions established in the legislation, evaluates the performance of the utilities and promotes their development. SUNASS is financed

Estimated coverage

In urban areas, 71 per cent of the population has drinking water supply and 56 per cent sewerage services. In rural areas, only 31 per cent of the population has drinking water supply and 23 per cent sewerage. Infrastructure has suffered serious deterioration due to the lack of appropriate maintenance and investment. As a result, the quality of the services provided has deteriorated and drinking water supply is provided on an intermittent basis even in major urban centres. The quality of water delivered has also deteriorated, particularly in the small and medium size cities. Water losses average 50 per cent.

through a transfer of up to 2% of the total monthly tariff income collected by the utilities.

Private or mixed companies can participate in service provision, under exploitation contracts in the form of concessions from one or more municipalities which grant the right to exploitation in their area of jurisdiction. The length of the contract is determined in the respective master plan for the expansion of the system, taking account of the time necessary to recuperate the investment, which in the case of water supply and sanitation cannot be less than 15 or more than 60 years.

Private or mixed companies can also enter into service contracts, contracts of association or secondary concessions with other companies, private or mixed, as long as the sustainability and expansive capacity of the services provided by the municipal utility. Under contracts of association, the private company provides goods and services for service provision, participating in the profits in a proportion agreed with the municipal utility. A secondary concession contract is a contract by which the municipal utility passes to a private or mixed company on or more of its services with responsibility for operation, renovation, maintenance, rehabilitation and expansion of the services.

In 1994 and 1995 a bidding process was begun to transfer SEDAPAL to a private operator. The service was expected to be transferred as a 30-year concession. A few weeks before the presentation of bids, the process was suspended by the President. It is no longer expected that SEDAPAL will be privatised, but the company has gone ahead with other forms of private participation, such as service contracts.

(b) Electricity

Before privatisation and deregulation, the provision of public electricity service had been dominated by government-owned companies: (i) the Empresa Pública de Electricidad del Perú (ELECTROPERU), a nation-wide generation and transmission company, which sold electricity to

distribution companies and major industrial consumers; (ii) the Empresa Pública de Electricidad de Lima (ELECTROLIMA), in charge of generation, transmission and distribution in Lima and its environs; and (iii) nine smaller regional utilities.

Sector statistics	
Net installed capacity in 1995 (MW):	
· thermal	1 358
· hydroelectric	2 473
· TOTAL	3 831
Percentage of population with residential connections in 1989	
	38

Legislative Decree N° 649 of July, 1991 declares that the promotion of private investments in the regional electricity utilities is in the national interest so as to remove the state monopoly, and to expand and modernise the installations. Under Legislative Decree N° 693 "Ley de Promoción de Inversiones en el Sector Eléctrico" of 5 November 1991, it was declared that the promotion of private investments in the generation, transmission and distribution of electricity was in the national interest.

The Decree Law N° 25844 "Ley de Concesiones Eléctricas" of 6 November 1992 and Supreme Decree N° 009-93-EM "Reglamento de la Ley de Concesiones Eléctricas" of 25 February 1993 regulate the legal regime for electricity generation, transmission and distribution, and establish regulatory bodies responsible for the sector. Law N° 26848 "Ley Orgánica de Recursos Geotérmicos", of July, 1997, regulates the exploitation of geothermal resources.

Both local and foreign companies formed under Peruvian law can undertake the generation, transmission and distribution of electricity. A concession is required for : (i) hydroelectric or geothermal generation plants with an installed capacity of more than 10 MW; (ii) electricity transmission when the installations affect public property or require a right of way from the state; and (iii) a public distribution utility when the demand is over 500 kW. Authorisations are required for thermal, hydroelectric and geothermal generation which does not need a concession when the installed capacity exceeds 500 kW.

The Ministerio de Energía y Minas is responsible for granting concessions and authorisations for generation, transmission and distribution, and maintaining a Registro de Concesiones Eléctricas. It is also responsible for ensuring that the legislation is complied with and the supervision of all aspects of the provision of public electricity services. The Comisión de Tarifas Eléctricas (CTE), a technical agency with functional, economic, administrative and technical autonomy under the Presidencia del Consejo de Ministros, is responsible for economic regulation, including setting tariffs in the regulated segment of the market. The budget of the CTE is financed from a charge of the holders of concessions and the companies subject to tariff regulation.

The Organismo Supervisor de la Inversión en Energía (OSINERG), an autonomous agency under the Presidencia del Consejo de Ministros, and created under Law N° 26734 of December, 1996, is responsible for supervising, at the national level, the application of the legal and technical regulations related to the electricity and fuel sectors, as well as, the application of the legal and technical regulations related to the conservation and protection of the environment in undertaking these activities. It forms part of the Sistema Supervisor de la Inversión

en Energía together with the CTE and the Instituto Nacional de Defensa de la Competencia y de la Protección de la Propiedad Intelectual (INDECOPI).

The Comité de Operación Económica del Sistema (COES), a technical agency formed from representatives of generating and transmission companies whose facilities are interconnected, co-ordinates system operations with the aim of achieving its operation at a minimum cost, guaranteeing the reliability of supply and ensuring the efficient use of energy resources. The COES plans the operation of the integrated system and co-ordinates dispatch and major maintenance activities. A COES is established for each interconnected system. All transmitters and generators must operate in accordance with the provisions issued by the COES in which they participate.

The same entity may not simultaneously perform generation, transmission in the principal system or distribution. An exception is made to this restriction for mergers which do not imply a reduction or restriction of competition. Holders of transmission and distribution concessions are obliged to permit the use of their systems by third parties. In the case of distribution, this obligation is limited to supplies which do not have the character of public service electricity. The companies owning the principal transmission system are barred from selling electricity.

A non-regulated and a regulated market, for supplies which cannot be offered in competitive conditions, have been created. Price regulation is limited to: (i) transfers between generators, to be determined by the COES, with the exception of contracts between generators for production above the stable capacity of the buyer; (ii) the payments to the owners of transmission systems; (iii) transfers from generators to distributors for the provision of public electricity service; and (iv) transfers to the users of the public electricity service. The tariffs fixed by the CTE cannot be more than 10% different from the prices in the free market.

Law N° 26786, "Ley Antimonopolio y Antioligopolio del Sector Eléctrico", of November, 1997, regulates vertical and horizontal concentration in the electricity sector. Under this law, an authorisation is needed from the Comisión de Libre Competencia of the INDECOPI for mergers in electricity generation, transmission or distribution where: (i) in horizontal mergers, companies have 15% or more of the market; or (ii) in vertical mergers, companies have 5% or more of any of the markets involved.

The government has already privatised many companies. Some of these companies have begun to invest in privatisations outside Peru. For example, the Empresa de Generación Eléctrica de Lima (EDEGEL) is a member of the consortium which in September, 1997 won the bid for 78.88% of the shares in the Cachoeira

Dourada hydroelectric plant in Brazil. In 1998, it is expected that 4 companies generating 620 MW and 9 distributors with 1.3 million customers will be privatised.

(c) Irrigation and drainage

Irrigation plays an important role in Peruvian agriculture, particularly in the coastal region where virtually all cultivated land is irrigated. Irrigated areas account for an estimated two-thirds of agricultural output.

Sector statistics	
Agricultural area in 1995 (1 000 has):	
· arable land	3 800
· irrigated land	1 753

With a few exceptions, most of the infrastructure is old, inefficient and in need of rehabilitation and modernisation. Some large publicly funded irrigation projects, initiated since the sixties, have been undertaken with little regard to their economic viability and the fiscal resources available. As a result, some are still not completed, while those that are, have suffered from a lack of appropriate maintenance.

Legislative Decree N° 653, "Ley de Promoción de las Inversiones en el Sector Agrario" of 30 July 1991, provides the necessary guarantees for the free development of agriculture and promotes private sector participation in irrigation development. With some restrictions, anyone, national or foreign, may own land and freely undertake agricultural activities.

One of the basic objectives of the government is to transfer the exploitation, maintenance, rehabilitation, and construction of the water infrastructure of the large projects of the Instituto Nacional de Desarrollo (INADE) to the private sector. Under Supreme Decree N° 027-93-PRES of 28 January 1994, the government authorised the Special Hydraulic Projects - "Proyectos Especiales Hidráulicos" - of INADE to transfer, by means of concession, the major hydraulic infrastructure of these projects.

11. Suriname

No information is available on the plans of the Government of Suriname to encourage private sector participation in the provision of drinking water supply and sewerage services, but there is some private participation in electricity generation.

(a) Drinking water supply and sanitation

The N.V. Surinaamsche Waterleiding Maatschappij and the Water Supply Division of the Ministry of Natural Resources provide drinking water supply services.

Estimated coverage

In urban areas approximately 95 per cent of the population has access to running water, 90 per cent by house connections. In rural areas about 70 per cent of the population has running water in the house. Sewerage coverage is low, although sanitation is adequate. In urban areas only some 3 per cent of the population has sewerage connections.

(b) Electricity

The Energie Bedrijven Suriname (EBS), under the Ministry of Natural Resources, is responsible for the generation, transmission and distribution of electricity.

The largest self-producer, the Suriname Aluminium Company (SURALCO), the local subsidiary of the Aluminum Company of America, sells electricity to the government under the so-called "Brokopondo" agreement which covers the purchase of 80 Gwh a year and another agreement "energy system" which covers the purchase of variable amounts between 72 and 175.2 Gwh a year. The government resells the energy to EBS.

Sector statistics

Net installed capacity in 1995 (MW):

· thermal	125
· hydroelectric.....	300
· TOTAL.....	425

Percentage of population with residential connections in 1989	n/a
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12. Uruguay

The Government of Uruguay has begun a programme of public sector restructuring and privatised a number of state-owned enterprises. The government is considering private sector participation in the provision of drinking water supply and sewerage services and encourages private participation in the power sector where the regulatory framework has been restructured.

The Grupo Asesor de Reforma del Estado (GARE) of the Oficina de Planeamiento y Presupuesto is the government's privatisation administration.

Under Law N° 16.211 of 10 October, 1991 the government can concede or grant permission for the provision of public utilities under its charge. In the case of utilities delegated to an autonomous agency or decentralised service, the board of directors or the director-general can grant - through public tender - a concession or licence, with the approval of the government. The granting of concessions and licences must be for a fixed term and the Administration must reserve the right to oversee that the services are regularly provided in a continuous and efficient manner. In fixing tariffs, the costs of the services and reasonable profit margins are taken into account.

(a) Drinking water supply and sanitation

The Administración Nacional de las Obras Sanitarias del Estado (OSE) administers, operates and maintains all drinking water supply systems in Uruguay and all sewerage systems outside Montevideo. Montevideo's

sewerage system is the responsibility of the municipality - Intendencia Municipal de Montevideo (IMM). There are also small private drinking water supply systems.

Estimated coverage

In Uruguay, 93 per cent of the urban population has access to drinking water supply, 83 per cent through house connections, and 92 per cent has access to sanitation, 48 per cent to sewerage.

The government is reviewing methods of private sector participation, including contracting, by means of concession and other similar schemes.

(b) Electricity

Electricity generation, transmission and distribution is the responsibility of the Administración Nacional de Usinas y Transmisiones Eléctricas (UTE), an autonomous public agency established in 1912. It operates under the provisions of the Law Nacional de Electricidad (Law N°14.694 of 1 September, 1997), it

regulations (Decree N° 339/979 of June, 1979) and the Law Orgánica de la UTE (Law N° 15.031 of 4 July, 1980).

Uruguay is a traditional exporter of electric power and UTE also participates in several joint ventures and technical assistance agreements overseas.

Sector statistics	
Net installed capacity in 1995 (MW):	
· thermal	702
· hydroelectric.....	1 350
· TOTAL.....	2 052
Percentage of population with residential connections in 1989	
	87

The electricity sector has been opened up. Under Law N° 16211, the Executive, on the advice of the Dirección Nacional de Energía and of the UTE, can authorise the integration into the national grid of generating stations and transmission lines owned or operated by third parties. The conditions of the interconnection and exchange of energy will be negotiated between the UTE and the interested companies and approved by the government.

Under Law N° 16.832 of 17 June, 1997, a new regulatory structure has been established for the sector, anyone can undertake generation of electricity, include sale to third parties. A wholesale electricity market has been created, with shared use of the grid which is freely accessible and a competitive market for the supply of the distributing companies and large consumers. Generating, transmission and distributing companies can participate in the wholesale market, as well as, large consumers. Generating companies can negotiate supply contracts directly with distributors and large consumers. Transmission and distributing companies must permit non-discriminatory access to their transmission lines.

Three new institution will be created: (i) the Unidad Reguladora de la Energía Eléctrica whose principle responsibilities are to oversee the carrying out of the law and its regulations; draft regulations on service security and quality; advise the Executive on the granting of concessions, licences and on the determination of tariffs for retail sales; (ii) the Administración del Mercado Eléctrico (ADME), is an independent public agency, responsible for the management of the wholesale market, financed through a charge on all the market transactions through the national grid; and (iii) the Despacho Nacional de Cargas, managed by ADME, which is responsible for the technical operation of the national grid.

Under the reform, UTE is authorised: (i) to contract with public or private companies, local or foreign in order to carry out its responsibilities; (ii) to participate, with prior government approval, in joint ventures, public or private, which have as their main task building new generating plants or transmission lines increasing the capacity of interconnection with neighbouring countries; (iii) to

provide technical assistance, within or outside the country; and (iv) to participate, subject to government approval, in electricity sector ventures abroad.

(c) Irrigation and drainage

Most irrigation in Uruguay has been privately developed with public sector involvement largely limited to smaller projects. The government intends to encourage private sector participation in the development of irrigation and drainage and to rehabilitate publicly-owned schemes and transfer their use and administration to farmers.

Sector statistics	
Agricultural area in 1995 (1 000 has):	
· arable land	1 260
· irrigated land	140

The Programa de Manejo de Recursos Naturales y Desarrollo de Riego (PRENADER) financed by the World Bank, the government and the farmers, themselves, has as one objective the development of irrigation, including training in the use and management of water for irrigation and both the rehabilitation of existing systems and the building of new structures. The latter form the largest investments in the US\$ 74 million programme.

13. Venezuela

The Government of Venezuela has announced ambitious privatisation plans but so far little progress had been made. The programme includes the sale of several electric power stations and promotes private sector participation in the provision of drinking water supply and sewerage services. The initial attempts were unsuccessful due in part to the lack of an adequate regulatory regime and the political and economic instability that has affected the country at that time.

The Fondo de Inversiones de Venezuela (FIV) oversees the privatisation and restructuring of state-owned enterprises.

The privatisation process is governed by the Ley de Privatización of 19 February, 1992 and subsequent amendments. Other relevant laws include Decree Law N° 138, "Concesiones de Obras Públicas Nacionales", of 20 April, 1994, regulating concessions, the "Ley Orgánica que regula la Enajación de Bienes del Sector Público no Afectos a las Industrias Básicas", of 1987 and the "Ley Orgánica de Descentralización, Delimitación y Transferencia de Competencias del Poder Público", of 1989.

(a) Drinking water supply and sanitation

The drinking water supply and sewerage sector was reformed at the beginning of this decade. A state-owned holding company, Compañía Anónima Hidrológica Venezolana (HIDROVEN) was created along with ten regional subsidiary water companies, Empresas Hidrológicas Regionales (EHR), known as "Hidros", which began to operate in 1991.

Estimated coverage

In urban areas, about 68 per cent of the population has drinking water supply, 51 per cent through house connection, and 55 per cent sanitation services, 33 per cent sewerage. In rural areas, 67 per cent of the population has drinking water supply and 59 per cent sanitation services. The quality of drinking water supply and sanitation services is generally poor and sewage does not receive adequate treatment.

HIDROVEN implements sector policies formulated by the Ministerio del Ambiente y de los Recursos Naturales Renovables (MARNR) which owns 100 per cent of its shares. HIDROVEN establishes the criteria and directives for the operation of the EHR and other companies responsible for service provision and coordinates, supervises and controls the performance of the companies in executing the agreements with the municipalities and other local authorities for service provision. The Ministerio de Industria y Comercio fixes the tariffs, together with MARNR and HIDROVEN.

Since 1985, the Corporación Venezolana de Guayana (CVG), a state-owned holding company for the heavy industry, provides drinking water supply and sewerage services in the states of Amazonas, Bolívar and Delta Amacuro.

The municipalities are responsible for ensuring the provision of local public utility services, including drinking water supply and sewerage. Service provision may be made (i) directly; (ii) through a contract delegating provision to a national, state or municipal public agency ; or (iii) through a concession contract with a private company. For example in Monagas state, ten municipalities created the Mancomunidad Monaguense de Acueductos. The Mancomunidad and the government of the state set up Aguas de Monagas (AdM), in which the municipalities hold a 51 per cent equity share, as the operating company to gradually take over the service responsibilities from the local EHR.

The EHR are providing services as a transitory arrangement until services are transferred to the municipalities. The EHR are responsible for all aspects of service provision and promote the creation of operating companies with the participation of local authorities. The majority of the EHR lease the services to private companies known as "operadoras".

The Comisión Nacional para el Desarrollo del Sector de Agua Potable y Saneamiento, created under Decree N° 1726 of 19 February, 1997, advises the President on matters related with the restructuring of the sector, to review and propose the legal framework for regulating the process of decentralisation of the services and to collaborate in the process. The commission is preparing a Ley de Servicios de Agua Potable y Saneamiento. It is expected that the proposal will include the separation of institutional responsibilities, the regulation of the process of decentralisation and of the private sector participation in service provision.

(b) Electricity

The Ministerio de Energía y Minas (MEM) has overall responsibility for the energy sector. The Oficina de Operación de Sistemas Interconectados (OPSIS), made up of the electricity utilities participating in the interconnected system, co-ordinates the operation of the system and manages load dispatch. In addition, OPSIS co-ordinates the preparation of expansion plans through a planning committee.

Sector statistics	
Net installed capacity in 1995 (MW):	
· thermal	9 300
· hydroelectric	10 675
· TOTAL	19 975
Percentage of population with residential connections in 1989	
	85

Twelve electricity utilities, 5 public and 7 private, form the public electricity service. The most important are the state-owned Compañía Anónima de Administración y Fomento Eléctrico (CADEFE) and Compañía Anónima Electrificación del Caroní (EDELCA) and the privately owned Electricidad de Caracas (ELECAR). In 1997, ELECAR entered into association with the American company Houston Industries, a subsidiary of Houston Light and Power, to buy 57% of the shares in the Colombian company, Empresa de Energía del Pacífico. Private companies account for approximately 13 per cent of installed capacity.

In 1992, the government announced a strategy for private participation in the power sector. Under this strategy, (i) large hydroelectric power plants and the main transmission system would remain in the public sector; (ii) large thermal generation facilities would be privatised; (iii) distribution systems would be regionalised and subsequently privatised; and (iv) concessions would be granted to the private sector for small- and medium-size hydropower development.

In 1997, the Ministerio de Energía y Minas presented to congress a draft of the new "Ley Orgánica del Servicio Eléctrico". This law would transform the present structure of the sector into a totally open model with competition in generation and free access to transmission and distribution systems, but both transmission and distribution will remain regulated. Among the principal proposals are: (i) the regulation of separating accounting for generation, transmission and distribution as businesses that are clearly differentiated; (ii) the creation of a national grid; (iii) the creation of a national load dispatch centre; (iv) unrestricted access to the grid and distribution networks; and (v) the creation of a wholesale electricity market. The draft of the law also proposes the creation of a Superintendencia de Energía Eléctrica, under the MEM, which will be responsible for the regulation and control of service provision and the setting and application of the tariffs, as well as, for granting concessions.

The economic crisis, the lack of an adequate regulatory framework and other problems have slowed down the reform process and led to repeated postponements of the sale of plants. A number of privatisations have been announced for 1998. It is expected that the first system to be transferred will be the Sistema Eléctrico del Estado de Nueva Esparta (SENE), a vertically integrated company serving the Isla de Margarita. It has also been announced that the Compañía Anónima Energía Eléctrica de Barquisimeto (ENELBAR) a vertically integrated company in Lara state, and the Compañía Anónima Energía Eléctrica de Venezuela (ENELVEN) and the Compañía Anónima Energía Eléctrica de la Costa Oriental (ENELCO), which distribute electricity in the state of Zulia, will be privatised this year. It is now expected that the government will sell the majority of the state electricity companies over the next two years.

(c) Irrigation and drainage

In Venezuela, the private sector plays an important role in the development of irrigation, accounting for approximately two-thirds of the irrigated area.

Sector statistics

Agricultural area in 1995 (1 000 has):

· arable land	2 700
· irrigated land	185

The Ministerio de Agricultura y Cría (MAC) supervises, monitors, operates and maintains public irrigation works. Generally, MAC has contracted the design work to private sector engineering firms, and then appraised the designs, approved the projects and supervised irrigation construction. It has also generally contracted out project maintenance.

There are successful private irrigation systems, particularly in the high valleys of the Andean region, where the farmers have organised users' committees - known as the Comités de Riego or the Juntas de Regantes. This has allowed the MAC to transfer the administration, operation and maintenance of the systems to the user associations.

(d) Water transport

It has been proposed, for some time, to establish a system of permanently navigable waterways to provide an efficient means of transporting coal and steel products from industrial centres in the West of the country to urban and industrial centres in the East. The proposed scheme would provide for the canalization of the Apure, Arauca, Capanaparo, Guanare and Portuguesa rivers and the construction of a massive system of dams, dikes, levees, reservoirs and other earthworks along them to ensure their permanent navigability from their upper reaches in the Andes to their confluence with the Orinoco river. If this proposal is implemented, it is expected to be financed largely by the private sector.

Sector statistics

Inland waterways: 7 100 km; Río Orinoco and Lago de Maracaibo accept oceangoing vessels.