17.1.2 Situation of Bolivia, Brazil, Argentina and Peru

This section is based primarily on interviews and observations conducted by the JICA Study Team in October – November 2000. Statistical data, obtained in these countries and through the Internet and other means, are also presented to support the findings. Results regarding Peru are based largely on interviews conducted in Arica during the Phase II period (the study team was not able to enter the country at this time due to an unstable political situation).

(1) Bolivia

Access and Transport

The road between Tambo Quemado and Patacamaya, which was constructed with Japan's assistance (an OECF loan), was found to be as good as the road between Arica and Chungara, the Chilean border point, at least good enough for the present volume of traffic. However, it will become necessary to improve the road for heavy trucks in the future, as indicated by the projection of the demand for transport in Chapter 12.

The ports in the North Zone are of great importance to Bolivia. Among them, the Port of Arica is definitely the most important, as many Bolivian people expressed, "Arica is the natural port of Bolivia." In fact, Arica accounts for about half of Bolivia's total imports (Table 17.1.5) and presumably a significant part of exports as well. Peru has completed road construction from the Bolivian border to the Port of Ilo, which has led to the following reality: "the distance is longer but the cost is lower." Although Arica is still competitive vis-à-vis Ilo, the Bolivian government has recently conducted a study to compare the competitive levels of Chilean and Peruvian ports. It is therefore crucial that the port take immediate action to improve facilities and services.

Table 17.1.5 Imports of Bolivia by Port of Entry, 1990-1999 (cif at port, US$1,000)

Port	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999 (p)
Total	**702,697**	**993,748**	**1,130,497**	**1,176,945**	**1,196,346**	**1,433,589**	**1,656,615**	**1,909,358**	**2,449,831**	**1,854,469**
Brazil										
Amazonas	256	421	275	390	1,596	2,701	877	3,083	94,374	2,016
Corumba	61,822	134,679	128,473	124,037	166,971	142,782	130,528	177,635	251,668	226,616
Chile										
Antofagasta	6,665	49,212	49,430	39,231	19,071	50,358	33,466	17,723	12,053	10,850
Arica	452,053	479,226	558,165	534,361	570,651	657,059	671,583	739,842	1,044,856	863,899
Iquique		11,079	21,585	41,859	71,607	88,889	118,786	157,730	174,584	48,159
Peru										
Mollendo	1,468	42	1,960	3,305	342	1,027	19	176	-	-
Desaguadero	7,317	27,446	40,499	61,353	77,688	96,509	116,613	112,962	107,002	93,719
Yunguyo	32	139	27	80	12	74	356	56	169	328
Moho	-	-	1	54	67	-	-	-	-	-
Argentina										
Pocitos	34,039	59,554	40,361	71,887	68,639	90,740	102,942	195,436	195,569	206,245
Oran	4,405	15,033	9,023	8,550	9,185	10,673	7,326	8,961	14,805	8,217
La Quiaca	16,431	47,118	59,092	28,810	33,270	32,278	30,166	36,890	23,493	26,565
Air	117,403	167,071	192,100	246,819	162,703	247,657	429,885	457,783	531,015	283,191
Postal mail	805	1,111	12,162	731	500	361	504	1,082	243	143
Not specified	**-**	1,618	17,343	15,480	14,045	12,481	13,564	**-**	**-**	84,520

Source: Instituto Nacional de Estadistica (INE), Bolivia, *Anuario Estadistico 1999* .
(p): Preliminary figures.

[5] Ibid.

The improvement of the Port of Arica, through concession or any other means, is the most urgent task so Arica may grasp the opportunities being brought about by expanding and deepening regional economic integration. It is also a prerequisite for Arica's further industrial development. Based on the Treaty of Peace, Friendship and Commerce signed between Chile and Bolivia in 1904, the Bolivian government contends that more than one operator must manage the port.[6] This condition partially delays the bidding process for concession and, therefore, some institutional arrangements are needed to transcend the present situation. One possibility may be to form an international consortium of investors. The issues related to the improvement of the Port of Arica are further discussed in Appendix A: "Why Is It So Difficult to Grant a Concession in the Port of Arica? – Analysis of Present Situation and Proposal for Development Strategy."

Transportation costs to Arica must be significantly reduced in order that the Chilean port receives more cargo from the eastern part of Bolivia, (e.g., US$120/ton of soybean grains utilizing the route from Santa Cruz through Arica to Buenaventura, Colombia vs. US$105/ton utilizing the route from Santa Cruz through Rosario, Argentina, to Buenaventura). According to Santa Cruz experts, cost competitiveness will be enhanced by: a) lowering handling charges of the Port of Arica by increasing its efficiency; b) connecting the railways between Aiquile and Santa Cruz; c) allowing Chilean transporters to operate in Bolivia (currently not possible due to the 1904 treaty); and d) reforming the Bolivian Port Administration Services (ASPB), which charges US$150/container, significantly higher than the normal price of US$40/container.

The construction of a railway from Aiquile to Santa Cruz, however, does not appear to be economically feasible. Its construction costs are estimated to be US$500-600 million, but it would be more difficult and costly to maintain the railway due to the physical conditions of the area, which demands that many river basins are crossed. Even the existing railway from Cochabamba to Aiquile is not operating because of the high costs for rehabilitation and maintenance. The present situation and problems of infrastructure development in Bolivia are further discussed in Section 17.3.

Production and Export

Major products produced and exported in Bolivia are soybean, mining, and forestry products (Tables 17.1.6 and 17.1.7). Soybean (grains) and other bulky agricultural products do not seem to bear costs for trans-Andean transport and it is necessary to introduce higher value added products to increase exports from Bolivia through Chilean ports. It should be noted that Bolivian soybean could bear the trans-Andean transport cost because Colombia imposes no tariffs on this product according to the Andean Pact.

[6] Strictly speaking, the 1904 Treaty does not impose this condition. However, even when the issue under discussion is not explicitly stated in the Treaty, according to Chilean experts, a final decision is made through the interpretation of the Treaty by both sides. The condition of multi-operators was set forth by Law No. 19,542 to prevent a monopolistic situation in which shippers cannot freely choose an operator at the port.

Table 17.1.6 Production of Major Products in Bolivia, 1990-1999

	Unit	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999 (p)
Agriculture (1)											
Corn	tons	..	390,952	429,713	503,481	537,025	493,533	515,439	498,414	390,605	482,911
Soybean	tons	..	393,618	342,463	491,451	708,968	870,074	867,488	1,040,365	1,151,626	800,812
Sugarcane		..	3,880,186	3,408,106	2,954,243	3,368,295	3,898,760	4,263,629	3,927,832	3,445,583	3,358,495
Agroindustry											
Soy flour	tons	117,568	141,719	110,693	184,137	212,637	253,224	292,203	333,846	422,311	420,831
Sugar	tons	257,726	303,101	225,939	222,828	276,772	332,155	349,698	331,664	284,791	293,541
Forestry											
Timber (2)	1.000 m^3	360	450	300	450	480	450	450	520	800	500
Mining											
Zinc	tons	103,849	129,778	143,936	122,638	100,742	146,131	145,092	154,491	152,110	146,144
Lead	tons	19,913	20,810	20,010	21,220	19,678	20,387	16,538	18,608	13,848	10,153
Tin	tons	17,249	16,830	16,516	18,634	16,027	14,419	14,802	12,898	11,308	12,417
Wolfram	tons	1,235	1,343	1,073	362	583	826	733	647	627	421
Silver	tons	311	337	282	333	352	425	386	387	404	423
Antimony	tons	8,454	7,287	6,022	5,556	7,050	6,426	6,487	5,999	4,735	2,790
Gold (2)	fine kg	5,177	3,501	4,688	10,403	12,791	14,405	12,634	13,291	14,445	11,782

Source: Instituto Nacional de Estadistica (INE), Bolivia, *Anuario Estadistico 1999* ; and Camara Forestal de Bolivia.
(p): Preliminary figures.
(1): Years are crop years (e.g., 1991=1990/1991).
(2): Figures for 1996 and 1997 are estimated production.
(3): Based on information of medium-sized mining enterprises and FENCOMIN.

More promising are mining products (e.g., zinc, silver, tin and gold), which are exploited mainly in the western part of Bolivia, i.e., Departments of Potosi, Oruro, and La Paz (Figure 17.1.2). The Vice-Ministry of Mining and Metallurgy expects that Bolivian mining production will expand substantially over the next 5 years because of new projects such as the San Cristóbal mine. In addition, the demand for Chilean ports by the Bolivian mining industry, especially the Ports of Arica and Antofagasta, will increase.[7] Although Chilean ports are still more important to them, the demand may shift to the Ports of Ilo and Matarani, if they find it more convenient to use these Peruvian ports. A significant problem concerning the use of the Port of Arica is its proximity to the commercial and residential areas, which compels Bolivian shippers to take measures against environmental pollution.

The expansion of mining production in Bolivia will provide an opportunity for those Chilean manufacturing and service sectors related to mining. Although some experts have mentioned that the Bolivian mining industry is not so easy to deal with, the potential should be further studied to find specifically which areas in which sectors have a higher possibility to export their products and services to Bolivia.

An important product for export-oriented manufacturing in Arica is wood extracted from tropical forests in Bolivia. The Bolivian forest resources with commercial potential are large, with an estimated timber stock of 317 million m^3 to be obtained from an area of 20 million ha (Figure 17.1.3 and Table 17.1.8). Some Bolivian forest companies have obtained certificates confirming sustainable managed tropical forests by internationally recognized certifying institutions. At least two entrepreneurs in the Bolivian forestry sector are seriously examining the possibility of manufacturing these woods in Arica, taking advantage of the Arica Law II and the Chilean government's support such as ProChile's export promotion and CORFO's industrial promotion.

[7] According to the Vice-Ministry of Mining and Metallurgy, for example, the production of zinc and lead will increase to 300,000 tons/year and 18,000 tons/year in 2005.

Table 17.1.7 Exports from Bolivia by Principal Product, 1990-1999 (US$1,000)

Product	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999 (p)
Total	955,650	895,283	773,838	808,939	1,124,232	1,181,213	1,295,347	1,272,099	1,324,735	1,401,885
Agriculture, livestock, hunting and forestry	126,132	89,466	47,095	52,476	106,308	123,342	155,477	175,946	123,596	123,782
Brazil nuts	13,024	9,477	11,162	15,236	15,773	18,702	28,616	31,092	30,872	30,929
Coffee (green bean)	14,132	7,058	6,280	3,724	15,039	16,743	16,454	26,040	14,952	13,840
Cocoa (bean)	1,854	343	180	435	540	331	242	377	329	263
Soybean (grain)	14,901	24,998	15,773	18,182	43,174	46,716	64,794	61,588	47,288	40,096
Beans	-	-	-	-	-	2,057	2,279	8,687	4,579	7,791
Quinua	256	642	586	710	1,441	1,613	1,863	2,186	1,883	2,726
Flowers	-	-	975	655	1,415	822	957	572	815	563
Cotton	3,265	10,151	6,877	8,257	13,876	29,971	31,287	39,263	15,475	18,750
Leather	81	20	21	452	-	3	0	142	11	80
Cattle	49,500	17,859		630	2,905	-	495	660	676	675
Logs	5,579	298	2	-	-	270	910	925	110	47
Other products	23,540	18,621	5,238	4,194	12,145	6,114	7,579	4,414	6,606	8,020
Fisheries	97	476	282	340	138	129	40	26	51	2
Extraction of minerals and hydrocarbon	492,926	483,224	400,803	290,354	283,293	384,392	370,431	377,269	329,235	289,731
Natural gas	226,701	234,406	124,668	90,621	91,621	92,407	94,539	69,882	55,451	35,507
Combustibles	-	5,309	1,585	5,787	6,577	48,168	38,494	28,181	30,716	26,112
Tin	23,267	19,480	20,453	8,763	7,796	8,210	12,583	10,954	7,837	5,279
Zinc	146,759	140,311	172,450	119,508	105,334	151,346	151,741	200,039	157,762	154,283
Wolfram	4,617	7,644	5,762	1,615	2,407	4,847	3,471	2,738	2,432	1,425
Antimony	11,051	5,480	1,442	979	4,934	4,819	2,723	1,580	1,212	465
Lead	15,069	10,832	11,073	9,806	12,009	12,550	11,814	10,981	8,903	4,667
Gold	18,493	17,032	20,011	4,697	10	9				
Silver	26,147	23,016	38,780	43,062	48,001	57,366	52,162	47,960	58,776	55,824
Other minerals	20,822	19,715	4,580	5,515	4,603	4,670	2,905	4,953	6,093	6,168
Other mining extracts	-	-	-	-	-	-	-	-	54	2
Manufacturing industry	303,592	277,289	292,750	442,420	699,790	629,456	688,346	700,546	655,145	618,714
Cocoa	1,781	675	610	699	253	284	341	471	495	564
Sugar	31,613	30,747	25,360	15,727	45,471	16,760	27,855	22,054	23,569	8,533
Beverages	2,744	4,089	3,254	3,990	5,287	7,284	9,314	6,869	9,482	9,015
Processed coffee	-	-	603	153	184	111	4	6	4	6
Soybean products	25,278	42,379	41,088	56,014	75,332	95,341	135,800	180,902	184,380	176,471
Food products	12,209	5,031	1,103	6,860	13,869	16,497	20,229	29,569	40,513	45,568
Tobacco products	1	-	163	490	1,743	3,185	3,754	3,587	3,007	2,575
Cotton and fibers	-	-	-	1,557	1,376	606	1,379	1,468	1,372	1,078
Textile products	2,083	2,522	10,060	10,793	14,682	9,853	12,774	14,416	23,338	29,662
Leather	27,038	14,135	11,664	14,043	11,919	12,324	12,163	14,640	11,284	12,228
Garments	6,620	8,528	3,221	4,230	6,159	9,307	17,437	16,825	9,371	11,668
Footwear	1,434	719	600	2,089	1,207	1,066	1,480	2,434	586	337
Timber & manufactures	44,249	48,550	49,882	53,385	86,434	75,597	81,668	86,655	67,403	50,975
Paper products	92	96	643	797	659	1,432	261	352	25	84
Petroleum products	16	16	7,312	6,378	8,567	12,047	8,313	8,923	10,516	12,130
Chemical products	5,561	4,549	1,654	1,245	2,296	1,630	700	209	355	583
Tin bullion	83,728	80,324	77,602	75,056	83,447	81,418	70,942	70,624	58,214	63,402
Zinc (crude, unalloyed)	-	-	-	-	13	-	-	-	434	61
Antimony bullion	1,602	5,017	8,045	6,356	8,106	7,540	6,858	7,322	5,277	3,162
Lead ingot	251	74	32	64	74	38	264	111	222	69
Gold bullion	46,828	22,249	1,874	71,612	119,086	130,802	119,602	110,543	112,695	89,109
Silver bullion	7,449	5,296	5,387	12,921	14,662	13,477	11,806	11,299	14,359	12,262
Other manufactured metals	1,046	426	599	986	611	568	420	420	962	903
Metals with imported raw materials	-	-	9,943	20,944	26,605	31,508	30,281	19,742	-	-
Furniture	-	20	476	1,117	2,398	3,063	3,356	4,700	8,890	21,559
Jewelry	-	-	823	39,265	139,499	78,548	39,809	19,956	3,356	15,419
Jewelry with imported gold	-	-	26,861	31,540	24,335	11,625	49,529	54,253	44,828	32,005
Other manufactures	1,968	1,846	3,892	4,106	5,517	7,544	22,006	12,196	20,212	19,285
Electricity, gas and water	-	170	192	251	282	291	220	68	120	68
Electric energy	-	170	192	251	282	291	220	68	120	68
Re-exports	32,706	44,363	31,771	22,232	33,230	42,146	79,152	16,456	214,659	367,113
Personal effects	197	295	945	867	1,190	1,457	1,680	1,788	1,929	2,475

(p): Preliminary figures.
Source: Instituto Nacional de Estadistica (INE), Bolivia, *Anuario Estadistico 1999* .

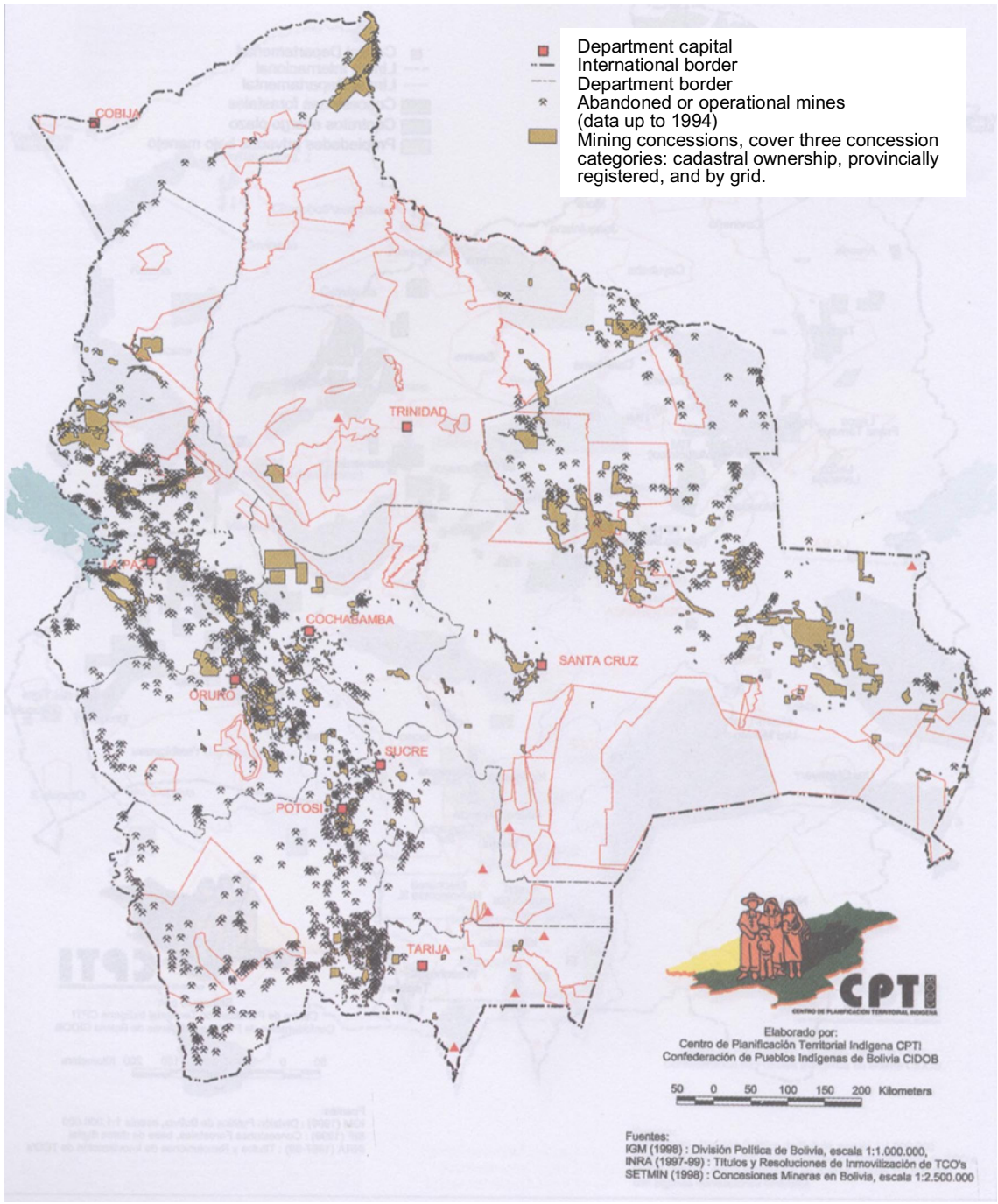

Figure 17.1.2 Mining Concessions in Bolivia

Source: Centro de Planificación Territorial Indígena de la Confederación de Pueblos Indígenas de Bolivia (CPTI-CIDOB), *Atlas Territorios Indígenas en Bolivia: Situación de las Tierras Comunitarias de Origen (TCO's) y Proceso de Titulación*, 2000, p. 36.

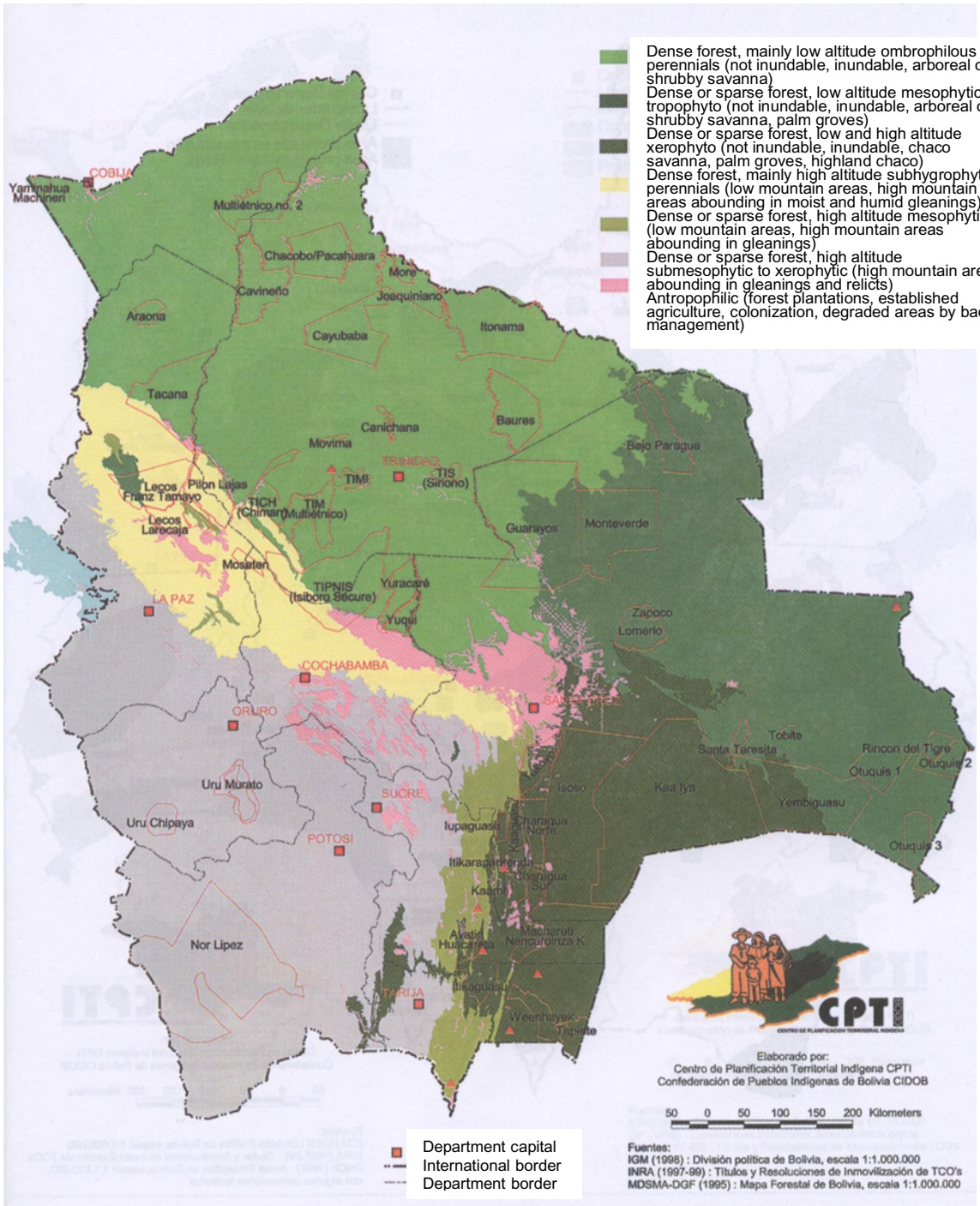

Figure 17.1.3 Forest Resources of Bolivia

Source: Centro de Planificación Territorial Indígena de la Confederación de Pueblos Indígenas de Bolivia (CPTI-CIDOB), *Atlas Territorios Indígenas en Bolivia: Situación de las Tierras Comunitarias de Origen (TCO's) y Proceso de Titulación*, 2000, p. 33.

Table 17.1.8 Sustained Timber (Logs) Production Potential in Bolivia

Producing Region	Area (million ha)	Stocks (m^3/ha) (1)	Total Stocks (million m^3)	MAI (2) (m^3/ha/year)	Sustained Production (million m^3 ha/year)
Bajo Paragua	2.7	11.4	30.8	1.0	2.7
Chiquitania	4.4	14.8	65.1	1.0	4.4
Chore	1.1	25.0	27.5	1.0	1.1
Guarayos	2.9	14.7	42.6	1.0	2.9
Pre-Andean Amazon	2.8	20.4	57.1	1.0	2.8
Amazon	6.1	15.4	93.9	1.0	6.1
Total	20.0	15.9	317.0	..	20.0

(1) Major commercial species
(2) Mean Annual Increment
Source: Forestry Chamber of Bolivia, Strategic Plan for the Development of the Bolivian Forestry Sector: Executive Summary, CFB-01/99 – Rev. 0, November 2000, p. 7.

Products based on certified Bolivian wood, such as furniture and construction materials, may be able to compete in the East Asian market with non-certified products imported from Southeast Asian countries such as Indonesia and Myanmar. Co-finance for the Bolivian Forest Certification Fund, managed by the Forest Chamber of Bolivia and assisted by the Swedish International Development Agency (SIDA), can be one of the short-term action plans for the North Zone with the purpose of ensuring the certified wood supply from Bolivia.

The business plan of a Santa Cruz meat packer interviewed by the study team exemplifies a competitive manufacturing industry to be promoted in Arica. The idea is to transport raw materials from Bolivia (and also possibly from Brazil), process them in Arica, and sell the processed products in Arica, other Chilean cities and to external markets. Bolivian meat can bear transport costs to Santiago when processed, owing partly to the benefits of the Arica Law II. At present, however, Bolivian meat, unless cooked, is not allowed to enter the Chilean market due to Chile's quarantine control over the foot-and-mouth disease (Bolivia is a country with some incidence of the disease).

The principal destinations for Bolivian exports are the United States, the United Kingdom and neighboring countries such as Colombia, Uruguay, Peru and Argentina (Table 17.1.9). Exports to Argentina, traditionally the most important market to Bolivia, have substantially decreased in recent years due to the economic recession in Argentina. The recession has adversely affected Bolivia's export business across the board, as noted by the majority of Bolivians interviewed during the study.

Import (Markets for Chilean Products)

Bolivian imports include various kinds of goods, but the most important are capital goods and intermediate products for agriculture, followed by non-durable and durable consumer goods (Table 17.1.10). The large share of goods for agriculture indicates the sector's dependence on imported inputs and machinery, as well as its importance in Bolivia's economy. Goods for agriculture, therefore, seem to be one of the potential areas where Chile's exports may enter the Bolivian market. Judging from statistical data (Table 17.1.11) and observations made in Santa Cruz, however, they are largely supplied by the United States and Brazil, the two major agricultural producers on the

American Continent. The markets of certain consumer goods may also have potential for Chile's export, though the present study was not able to find what such products were. It is desirable to conduct a more detailed study to find potential areas for Chilean products in the market.

Table 17.1.9 Exports from Bolivia by Principal Country of Destination, 1990-1999 (US$1,000)

Country	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999 (p)
Total exports	955,650	895,283	773,838	808,939	1,124,232	1,181,213	1,295,347	1,272,099	1,324,735	1,401,885
Exports	922,747	850,625	741,121	785,840	1,089,812	1,137,610	1,214,515	1,253,855	1,108,147	1,032,297
United States	184,664	165,596	145,778	208,244	353,526	309,794	316,776	258,745	203,291	221,186
United Kingdon	113,946	103,799	127,520	154,131	150,600	153,272	143,142	154,663	197,185	179,913
Colombia	4,010	30,538	25,037	36,607	59,534	63,883	115,705	87,523	84,375	126,413
Uruguay	3,229	1,933	1,353	1,526	4,754	1,923	8,444	2,767	50,073	77,905
Belgium	67,743	81,663	82,464	48,729	26,587	40,388	49,312	70,383	64,018	71,261
Switzerland	19,873	11,609	5,065	2,804	14,486	80,983	97,624	115,415	83,830	69,284
Peru (1)	53,040	47,566	58,179	74,967	120,716	141,767	134,969	155,969	131,585	68,583
Argentina	236,394	258,923	153,021	121,884	145,025	133,592	138,569	180,266	121,386	51,589
Brazil	77,985	37,825	13,117	20,955	34,889	20,266	35,171	36,482	26,712	37,144
Chile	33,747	32,740	17,487	14,210	18,544	25,234	39,308	56,405	32,389	23,910
Others	128,117	78,434	112,100	101,784	161,151	166,509	135,494	135,237	113,303	105,108
Re-exports	32,706	44,363	31,771	22,232	33,230	42,146	79,152	16,456	214,659	367,113
United States	17,719	30,229	12,884	6,388	7,027	21,343	10,050	4,919	99,395	243,556
Ecuador	25	145	823	82	86	590	120	66	64,560	65,813
Argentina	1,099	2,753	1,744	4,785	14,972	8,939	4,732	2,626	20,214	25,001
Not declared	-	5	-	933	1,458	596	742	955	2,827	7,273
Peru	5,044	6,507	2,829	4,196	2,114	2,551	3,562	2,357	8,813	6,685
Chile	857	361	824	600	575	514	4,034	2,795	1,777	3,794
Brazil	4,962	2,732	3,320	1,212	430	3,068	1,038	788	3,220	3,717
Mexico	179	-	80	38	13	311	4,003	147	728	3,012
Venezuela	595	136	4,650	131	136	97	233	149	1,700	1,947
France	12	97	209	8	-	520	61	62	969	1,912
Others	2,214	1,398	4,408	3,859	6,419	3,617	50,577	1,592	10,457	4,403
Personal effects	197	295	945	867	1,190	1,457	1,680	1,788	1,929	2,475

(p): Preliminary figures.
Source: Instituto Nacional de Estadistica (INE), Bolivia, *Anuario Estadistico 1999* .

Table 17.1.10 Imports to Bolivia, 1990-1999 (US$1,000)

Country	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999 (p)
Total	**702,697**	**993,748**	**1,130,497**	**1,176,945**	**1,196,346**	**1,433,589**	**1,656,615**	**1,909,358**	**2,449,831**	**1,854,469**
Consumer goods	**151,117**	**210,199**	**204,957**	**224,145**	**282,455**	**282,376**	**339,592**	**386,650**	**505,379**	**412,069**
Non-durable consumer goods	62,554	95,889	89,059	109,656	133,906	137,939	173,188	183,210	213,081	223,446
Durable consumer goods	88,563	114,310	115,898	114,489	148,548	144,437	166,404	203,440	292,298	188,622
Raw materials and intermediate products	**288,145**	**389,052**	**455,785**	**478,147**	**512,131**	**604,024**	**615,556**	**730,089**	**891,768**	**719,876**
Combustibles, lubricants and related products	3,563	7,858	25,974	51,680	57,352	66,996	52,205	135,072	99,055	59,345
Raw materials and intermediate products for agriculture	10,943	21,873	13,094	18,147	15,947	27,433	32,067	44,527	43,195	42,825
Raw materials and intermediate products for industry (excluding construction)	229,493	305,078	333,576	321,854	350,745	416,280	445,275	467,380	639,019	482,309
Materials of Construction	25,105	34,772	52,265	51,199	48,875	50,559	48,724	51,536	72,735	101,352
Parts and accessories of transport equipment	19,042	19,471	30,877	35,268	39,212	42,755	37,285	31,573	37,764	34,044
Capital goods	**253,579**	**365,907**	**438,488**	**455,601**	**387,527**	**534,958**	**659,254**	**748,398**	**1,007,079**	**693,214**
Capital goods for industry	16,276	24,790	18,679	13,258	18,458	17,441	19,316	16,175	15,882	12,755
Capital goods for agriculture	173,362	260,209	301,473	273,876	224,128	313,828	368,899	469,847	528,423	531,880
Transport equipment	63,940	80,909	118,336	168,467	144,942	203,689	271,039	262,376	462,775	148,579
Others	**9,379**	**28,521**	**30,707**	**18,809**	**14,186**	**12,221**	**42,212**	**44,222**	**45,604**	**29,311**
Personal effects	**477**	**69**	**559**	**243**	**47**	**10**	**2**	**0**	**0**	**-**

(p): Preliminary figures.
Source: Instituto Nacional de Estadistica (INE), Bolivia, *Anuario Estadistico 1999* .

Table 17.1.11 Imports to Bolivia by Principal Country of Origin, 1990-1999 (US$1,000)

Country	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999 (p)
Total	**702,697**	**993,748**	**1,130,497**	**1,176,945**	**1,196,346**	**1,433,589**	**1,656,615**	**1,909,358**	**2,449,831**	**1,854,469**
United States	154,246	253,115	267,201	255,552	228,804	313,354	458,902	443,035	626,151	437,991
Brazil	118,031	142,165	163,983	149,899	178,612	175,242	183,276	227,611	252,944	269,038
Argentina	73,638	112,343	103,145	114,713	117,482	127,018	137,688	259,550	234,069	243,808
Japan	69,315	122,324	135,413	128,859	181,826	180,385	199,118	236,156	489,883	155,490
Chile	87,790	63,304	78,011	88,539	93,961	106,892	112,558	122,531	142,186	129,853
Peru	22,200	21,322	27,122	54,091	65,060	76,576	90,232	97,492	95,462	87,395
Spain	8,315	10,297	17,751	36,603	16,870	19,584	35,004	25,237	32,985	50,919
West Germany	55,758	83,320	85,589	66,438	59,255	71,188	60,870	58,743	58,304	48,933
Mexico	7,082	10,612	10,283	12,811	16,657	19,929	26,056	37,242	38,461	43,181
Colombia	4,399	6,575	10,526	15,761	22,729	23,315	33,779	39,985	46,375	40,208
Others	101,923	168,371	231,473	253,679	215,089	320,107	319,132	361,775	433,011	347,652

(p): Preliminary figures.
Source: Instituto Nacional de Estadistica (INE), Bolivia, *Anuario Estadistico 1999* .

Exports from Cuiaba, Brazil

The Bolivian government has given priority to the improvement and construction of the road connecting Santa Cruz with Puerto Suarez, by which Bolivian products can be transported to Buenos Aires through the Paraná River and to Sao Paulo by road. It appears, however, to be costly not only to construct (estimated to be US$600 million) but also to maintain this road because it must go through lowland areas. The road from Cuiaba through La Paz to Arica, another possible bioceanic route, will be more stable and less costly as it goes through upland areas. The Japanese government has granted financial assistance to construct some roads and bridges near Puerto Banegas (colonies of Japanese immigrants are located around Santa Cruz).

This finding raises the following question, “What products are able to bear the transport cost from Cuiaba to Arica?” Some Bolivian experts mentioned wood-based products and semi-precious stones produced in the State of Mato Grosso as two examples.

The Bolivian transport system, in institutional rather than physical (infrastructure) aspects, is not well documented and it is difficult for outsiders to understand the issues thereof, for example, truck drivers’ syndicates, ASPB’s operations and the containerization process. A Bolivian transport expert emphasized the need for a master plan study to establish an optimal transport system (including transport administration, multi-modal transport, market information, etc.) in Bolivia. Technical and financial assistance for such a study by the Chilean government, or jointly by the Chilean and Japanese governments, or by some other bilateral/multilateral organizations, can be one of the short-term action plans for the North Zone. This is suggested because the improvement of the Bolivian transport system seems to have a significant influence on the competitiveness of Chilean ports.

Regional Integration Scheme

Bolivia has signed several free trade agreements and regional integration schemes, among which the most relevant to the North Zone’s macro-regional integration are the Andean Pact (later re-named the Andean Community of Nations, or CAN) the South America Common Market (MERCOSUR) and, at a departmental level, ZICOSUR (Central Western South America Integration Zone). These regional integration schemes are further discussed in the next section, while presented below is a brief report of the study team’s findings.

The Andean Pact, a customs union started in 1969, has had a significant impact on cargo flows from the eastern part of Bolivia to the ports in the North Zone, the Port of Arica in particular. The most notable case is the transport of soybean products from Santa Cruz to Buenaventura, Colombia. The cost for transport through Arica can compete with that through Buenos Aires mainly because of Colombia's preferential import duties on Bolivian products. In addition, during the dry season, a longer transport time is needed due to the low water level of the Paraná River that delays the navigation of bergs to Buenos Aires.

Bolivia is an associate member of MERCOSUR since 1997 while MERCOSUR is increasing its importance to Bolivia's external trade. The tendency is more remarkable in terms of imports (Tables 17.1.9 and 17.1.11), but there are also important developments in the export sector. For example, MERCOSUR has become Bolivia's principal gas market and the value of exports reached US$49.2 million in January-February 2001, exceeding those to CAN by US$6 million.[8] Bolivia's trade with MERCOSUR countries are likely to increase in the future as the country intends to acquire full membership in the common market.

Bolivia's departments (provinces), except Pandu and Beni, are members of ZICOSUR. ZICOSUR was created in 1995 by some regional and provincial governments of Chile, Argentina, Bolivia, Brazil and Paraguay. Its origin is the Interregional Enterprise Group of Central Western South America (GEICOS), founded by the initiatives of the private sector in Salta (Argentina) in 1975 and later joined by those of Antofagasta (Chile), Santa Cruz de La Sierra (Bolivia), Asunción (Paraguay), Tacna (Peru) and Cuiaba (Brazil). However, the integration scheme does not seem to be widely known in Bolivia. For example, an officer in charge of infrastructure development in the Department of La Paz was not yet aware of this. The study team has also found a subtle difference regarding expectations for ZICOSUR among the member regions/provinces. The difference can be partially explained by its origin.

(2) Brazil

Investment and Export Promotion Mission

Brazil's Central-Western Region has become increasingly important for the North Zone. The two areas have exchanged public and private missions more often in recent years, through which the Chilean side vigorously promotes their goods and services, particularly port services, and invites Brazilian investors. The JICA team joined one such mission during the visit to Mato Grosso do Sul and Mato Grosso in early November 2000. The mission, led by Mr. Calros Eduardo Mena, Chilean Ambassador to Brazil, consisted of mangers from public and private enterprises of Arica (including the Arica Port Company), an officer of CORFO Tarapacá Regional Office, a government official of Antofagasta, and two Chilean attaches in Brazil. The Brazilian counterparts were the Federation of Industries of the State of Mato Grosso do Sul (FIEMS) and the Federation of Industries of the State of Mato Grosso (FIEMT). The meetings held in Campo Grande and in Cuiaba were attended by people in the private and public sectors.

[8] Ministerio de Información Gubernamental, Bolivia (http://www.comunica.gov.bo/cgi-bin/informa.cgi?24110023.03L0).

Apart from the mission's activity, the JICA team visited an industrial fair, industrial parks, the Brazilian National Agricultural Research Enterprise (ENBRAPA), the Brazilian Institute of Geography and Statistics (IBGE), the State Secretariat of Planning and of Science and Technology in Campo Grande, and IBGE in Cuiaba. Despite the limited period, these visits provided the JICA team with a broad picture of the macro-regional market extended to Santos, one of the most important gateways to the Atlantic Ocean and the other end of bioceanic corridors for most ports of the North Zone.

Export Potential through Chile

Port service, both in the short and long run, is an area in the Brazilian market that possesses great potential for the North Zone. With this in mind, the principal question concerning this market is: "What are the products that can bear transport costs from Cuiaba (or Campo Grande) to Arica (or Iquique or Antofagasta)?" With the exception of woods and some mining products (e.g., precious stones), however, the two states currently do not produce and export many such products (Tables 17.1.12 and 17.1.13).

These two states are highly dependent on agriculture and livestock production. In terms of production volume, sugarcane is the most important crop in both states; 6.4 million tons in Mato Grosso do Sul and 10.7 million tons in Mato Grosso in 1998, followed by soybean, 2.3 million tons and 7.1 million tons, respectively. Their major manufacturing industries are based on natural resources, e.g., food processing (especially soybean oil and cakes), meat processing, wood processing (timbers, construction materials, furniture, etc.), metallurgy, textile, etc. While the importance of these manufactures as export products is increasing, about 70-80% of their exports are still accounted for by primary products (Table 17.1.14).

The principal destinations for exports of both states are Europe and neighboring countries (Table 17.1.15). However, Japan ranked fifth in Mato Gross do Sul's exports and China fourth in Mato Grosso's in 1999 (presumably mainly soybean products). This suggests the possibility that the two states will increase their exports to the Asian market through the Chilean ports when road infrastructure is more developed.

Table 17.1.12 Production of Major Products in Mato Grosso do Sul and Mato Grosso, Brazil, 1990-1998

(1) Mato Grosso do Sul	Unit	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Agriculture											
Soybean	1,000 tons	2,039	2,018	1,871	2,290	2,393	2,284	2,004	2,184	2,319	..
Corn	1,000 tons	597	933	855	921	1,093	1,435	1,472	1,931	1,695	..
Rice	1,001 tons	182	199	226	220	226	239	253	215	197	..
Cotton	1,000 tons	74	91	85	65	77	106	88	56	93	..
Sugarcane	1,000 tons	4,193	3,932	4,045	4,085	3,840	4,922	5,563	5,390	6,388	..
Cattle (stock)	1,000 heads	19,164	19,543	20,395	21,800	22,244	22,292	20,756	21,305	21,856	..
Cattle (slaughtered)	1,000 heads	2,190	2,514	2,628	2,661	2,897	3,286	3,873	3,710	3,623	..

(2) Mato Grosso	Unit	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Agriculture											
Soybean	1,000 tons	3,065	..	..	..	..	..	..	..	7,102	7,466
Corn	1,000 tons	619	..	..	..	..	..	..	..	1,138	1,454
Rice	1,001 tons	n.a.	..	..	..	..	..	..	..	735	1,802
Cotton	1,000 tons	56	..	..	..	..	..	..	..	254	558
Sugarcane	1,000 tons	3,468	..	..	..	..	..	..	..	10,707	10,378
Cattle (stock)	1,000 heads	9,041	..	..	..	..	..	..	..	16,914	17,142
Forestry											
Timber (2)	1.000 m^3	n.a.	..	..	..	..	..	..	..	n.a.	4,000

Source: Instituto Brasileiro de Geografia e Estatistica (IBGE).

Table 17.1.13 Exports from Mato Grosso do Sul and Mato Grosso Brazil by Principal Product, 1998-1999

(1) Mato Grosso do Sul	1998			1999		
	(fob US$ 1,000)	(%)	(tons)	(fob US$ 1,000)	(%)	(tons)
Total exports	175,388	100.0	2,462,168	218,323	100.0	2,182,459
Total exports of principal produc	169,112	96.4	2,389,624	217,674	99.7	2,180,598
1 Residues of oil extraction	41,972	23.9	284,904	45,895	21.0	329,865
2 Other soy grains, ground	13,045	7.4	63,752	41,918	19.2	253,627
3 Beef, frozen	12,532	7.2	3,331	21,280	9.8	7,405
4 Edible beef chunks	5,190	3.0	3,511	15,250	7.0	11,824
5 Iron ores	24,342	13.9	1,644,517	14,836	6.8	1,112,782
6 Cane sugar, crude	7,958	4.5	34,609	10,485	4.8	71,665
7 Beef, fresh or chilled	4,981	2.8	785	7,469	3.4	1,624
8 Other sugar, beet, saccharin, et	172	0.1	782	6,458	3.0	39,471
9 Other sugar	670	..	0	5,550	2.5	45,069
10 Portland Cement	7,798	4.5	145,013	5,074	2.3	100,283

(2) Mato Grosso	1998			1999		
	(fob US$ 1,000)	(%)	(tons)	(fob US$ 1,000)	(%)	(tons)
Total exports	652,661	100.0	2,496,327	741,095	100.0	3,453,242
Total exports of principal produc	650,359	99.7	2,493,750	740,748	100.0	3,452,643
1 Other soy grains, ground	315,417	48.3	1,365,447	305,043	41.2	1,733,333
2 Residues of oil extraction	155,699	23.9	974,192	195,302	26.4	1,377,044
3 Soybean oil, crude	33,476	5.1	56,463	52,159	7.0	121,700
4 Processed beef, canned etc.	44,559	6.8	13,674	41,154	5.6	13,196
5 Beef, frozen	35,614	5.5	10,659	35,758	4.8	11,788
6 Other swan wood	15,444	2.4	25,062	21,643	2.9	41,791
7 Reconstituted wood	5,141	0.8	9,071	13,683	1.9	25,180
8 Leather and hide	7,614	1.2	3,489	11,987	1.6	6,258
9 Beef, fresh or chilled	5,745	0.9	1,115	8,459	1.1	1,729
10 Other sugar, beet, saccharin, et	3	..	0	6,899	0.9	39,334

Source: Ministerio do Desenvolvimento, Industria e Comercio Exterior (MDIC) / Secretaria de Comercio Exterior (SECEX) / Departamento de Operacoes de Comercio Exterior (DECEX) / Gerencia de Estatisticas e Sistemas (GEREST).

Table 17.1.14 Exports from Mato Grosso do Sul and Mato Grosso, Brazil by Product Category, 1991-1999 (fob US$ millions)

(1) Mato Grosso do Sul	1991	1992	1993	1994	1995	1996	1997	1998	1999
Total	108.5	159.7	207.8	289.8	304.8	305.9	383.7	175.4	218.3
Primary products	99.7	148.8	189.5	235.9	229.0	242.4	332.5	117.4	159.4
Industrial products (A+B)	8.8	10.8	18.1	53.8	75.8	63.5	50.7	57.6	58.9
Semimanufactures (A)	6.0	5.0	8.9	39.4	54.5	49.0	34.9	38.4	25.3
Manufatures (B)	2.8	5.8	9.2	14.4	21.3	14.5	15.9	19.2	33.6
Special operations	..	..	270.0	89.0	29.0	12.0	463.0	371.0	11.0

(2) Mato Grosso	1991	1992	1993	1994	1995	1996	1997	1998	1999
Total	223.6	310.9	329.5	466.0	426.3	659.3	927.1	652.7	741.1
Primary products	172.0	253.8	247.9	345.5	250.5	422.4	753.6	522.8	559.6
Industrial products (A+B)	51.6	57.1	81.4	120.4	175.8	236.9	173.4	129.7	181.4
Semimanufactures (A)	9.0	17.6	29.4	29.4	113.2	165.7	111.7	67.9	104.7
Manufatures (B)	42.5	39.6	52.1	49.6	62.5	71.3	61.7	61.8	76.7
Special operations	..	4.0	194.0	74.0	3.0	1.0	106.0	119.0	48.0

(3) National Total	1991	1992	1993	1994	1995	1996	1997	1998	1999
Total	31,620.5	35,793.0	38,554.8	43,545.2	46,506.3	47,746.7	52,990.1	51,139.9	48,011.4

Source: Ministerio do Desenvolvimento, Industria e Comercio Exterior (MDIC) / Secretaria de Comercio Exterior (SECEX) / Departamento de Operacoes de Comercio Exterior (DECEX) / Gerencia de Estatisticas e Sistemas (GEREST).

Table 17.1.15 Exports from Mato Grosso do Sul and Mato Grosso, Brazil by Principal Destination, 1998-1999

(1) Mato Grosso do Sul	1998		1999	
	(fob US$ 1,000)	(%)	(fob US$ 1,000)	(%)
Total exports	175,388	100.0	218,323	100.0
Total exports to principal countries	159,826	91.1	210,735	96.5
1 Netherlands	12,778	7.3	19,196	8.8
2 Uruguay	24,690	14.1	18,565	8.5
3 Argentina	30,286	17.3	17,408	8.0
4 Germany	13,016	7.4	13,875	6.4
5 Japan	4,236	2.4	12,949	5.9
6 United Kingdom	2,882	1.6	12,773	5.9
7 Italy	11,902	6.8	11,710	5.4
8 Bolivia	7,211	4.1	11,376	5.2
9 France	4,616	2.6	9,667	4.4
10 Hong Kong	3,549	2.0	9,426	4.3

(2) Mato Grosso	1998		1999	
	(fob US$ 1,000)	(%)	(fob US$ 1,000)	(%)
Total exports	652,661	100.0	741,095	100.0
Total exports to principal countrie	623,492	95.5	727,249	98.1
1 Netherlands	283,816	43.5	279,844	37.8
2 France	32,485	5.0	44,576	6.0
3 Spain	37,247	5.7	42,827	5.8
4 China, People's Republic	35,230	5.4	41,154	5.6
5 Italy	40,027	6.1	36,035	4.9
6 United Kingdom	19,912	3.1	33,412	4.5
7 Germany	32,766	5.0	32,446	4.4
8 Belgium	13,711	2.1	29,331	4.0
9 Iran	22,819	3.5	26,497	3.6
10 Bolivia	18,309	2.8	18,090	2.4

Source: Ministerio do Desenvolvimento, Industria e Comercio Exterior (MDIC) /
Secretaria de Comercio Exterior (SECEX) /
Departamento de Operacoes de Comercio Exterior (DECEX) / Gerencia de Estatisticas e Sistemas (GEREST).

Another potential area is wood extracted from tropical forests of Mato Grosso. The Brazilian wood can be exported in the forms of timbers and other manufactured products through the Chilean ports, Arica in particular, and manufactured for export in Arica. The Brazilian trade statistics indicate that the state exports timbers of tropical species such as mahogany and cedro.[9] There exist dense tropical forests of at least a few million hectares in the area 100-200 km northwest of Cuiaba, though the remaining wood resources are not known (Figure 17.1.4). The study team encountered a Chilean entrepreneur who was seeking to import timbers from Mato Grosso and manufacture construction materials for export in Arica. According to the entrepreneur, the state has a large potential to produce wood of relatively high value.

Import (Markets for Chilean Products)

The Brazilian market is large, with a population of 162 million and the average per capita income of US$4,865 in 1998 (Table 17.1.1 above). For these reasons, the North Zone of Chile finds it attractive. Although the incomes of Mato Grosso do Sul and Mato Grosso are not as high as the national average, the imports of the two states are mainly industrial products and there may be an opportunity for the North Zone to export manufactured products to the market (Table 17.1.16). However, the Brazilian capacity of industrial production, particularly in the Sao Paulo area, is so great that there does not seem to exist a high possibility for the North Zone to export industrial products to the two states. This observation is more relevant to Campo Grande, which is located 1,000 km from Sao Paulo and has relatively dense road networks that lead to major cities and thus has closer economic relationships with industrial and commercial centers of the country.

[9] Ministerio do Desenvolvimento, Industría e Comercio Exterior (MDIC)/Secretaria de Comercio Exterior (SECEX) (http://www.mdic.gov.br/publica/SECEX/pag/balancaEstados.html).

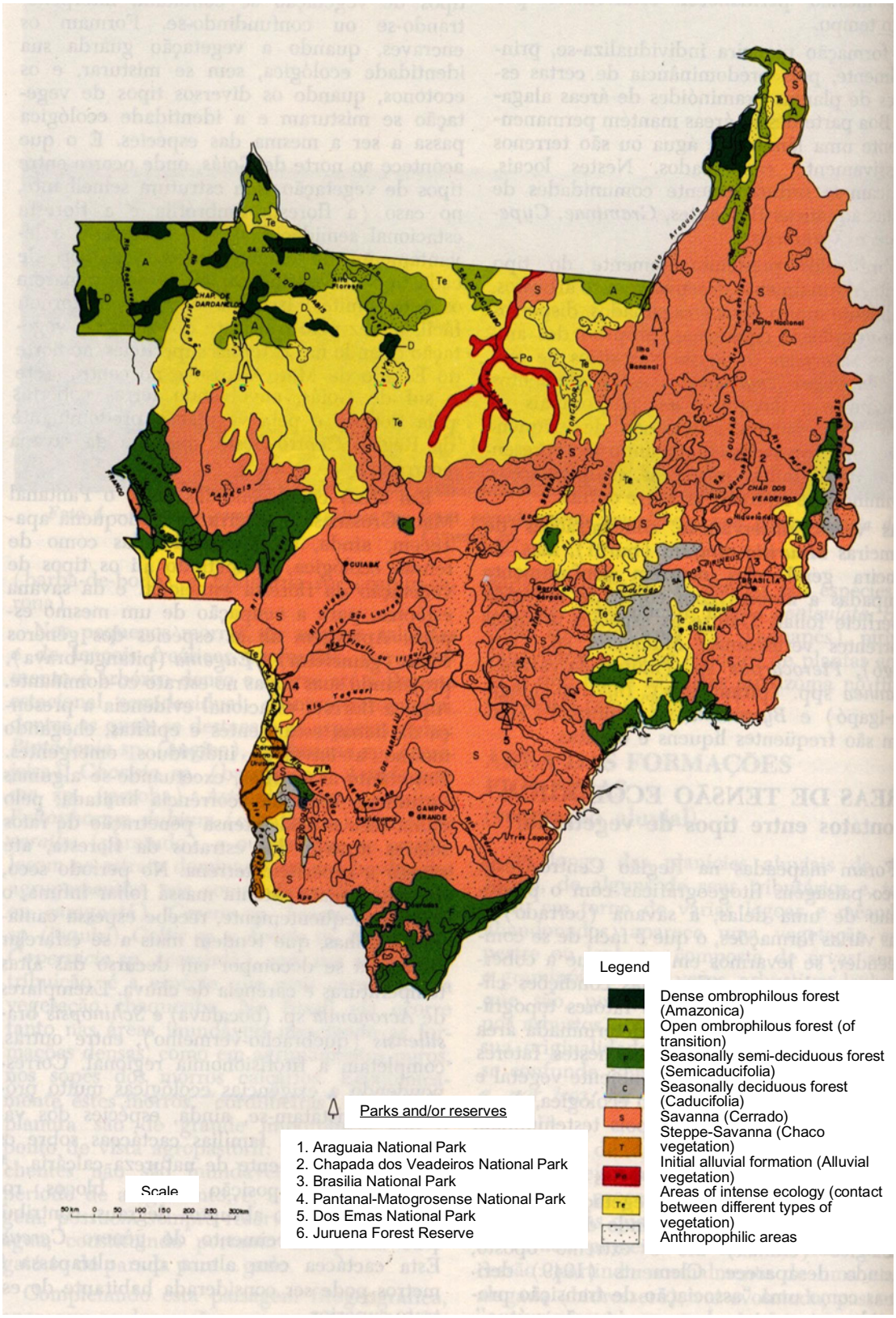

Figure 17.1.4 Vegetation of Central-Western Region, Brazil

Source: IBGE, Geografia do Brasil, Volume 1, *Região Centro-Oeste*, 1989, p. 118.

Table 17.1.16 Imports of Mato Grosso do Sul and Mato Grosso, Brazil by Product Category, 1991-1999 (US$ millions)

(1) Mato Grosso do Sul		1991	1992	1993	1994	1995	1996*	1997*	1998	1999
Total		7.0	0.3	1.6	0.6	54.2	55.1	137.6	159.4	57.3
Primary products		3.4	..	0.1	..	24.7	0.9	20.2	21.0	19.4
Industrial products	(A+B)	3.6	0.3	1.6	0.6	29.5	1.9	100.3	138.4	37.9
Semimanufactures	(A)	0.2	..	..	..	3.1	..	1.8	3.8	4.2
Manufatures	(B)	3.4	0.3	1.6	0.6	26.5	1.9	98.5	134.6	33.7

(2) Mato Grosso		1991	1992	1993	1994	1995	1996	1997	1998	1999
Total		15.5	27.2	41.0	49.2	46.3	55.9	84.8	88.4	154.4
Primary products		0.1	3.2	7.8	27.4	4.7	28.8	1.8	3.8	9.7
Industrial products	(A+B)	15.3	23.9	33.3	21.9	41.6	27.1	83.0	84.6	144.7
Semimanufactures	(A)	1.3	10.2	13.6	7.3	1.7	4.7	3.2	4.0	4.6
Manufatures	(B)	15.2	13.7	19.7	14.5	39.9	22.3	79.8	80.6	140.2

(3) National Total	1991	1992	1993	1994	1995	1996	1997	1998	1999
Total	21,041.5	20,544.3	25,237.0	33,052.7	49,971.9	53,301.0	61,352.0	57,714.4	49,210.3

(*): The totals are not the sums of imports of each product category but as indicated in the source.
Source: Ministerio do Desenvolvimento, Industria e Comercio Exterior (MDIC) / Secretaria de Comercio Exterior (SECEX) / Departamento de Operacoes de Comercio Exterior (DECEX) / Gerencia de Estatisticas e Sistemas (GEREST).

Some Brazilian experts have suggested that there is a chance for Chile to export agricultural and fishery products that cannot be cultivated or caught in Brazil, particularly in Mato Grosso do Sul and Mato Grosso such as temperate fruits (e.g., apples and pears).[10] For the North Zone, fishery products and fresh fruits and vegetables may have a higher export potential to the central-western Brazilian market. In fact, two Chilean companies that participated in the investment and export promotion mission have been promoting these kinds of products in the market including Sao Paulo.

Export Corridors to the Pacific

High expectations exist in the Cuiaba business circle for the improvement of the road that connects the city with Arica. They consider the development of transport infrastructure in the macro-region a solution to the most serious problem of Mato Grosso's economy, that is, a long distance from major markets both within and outside the country. One such advance in this regard is the following. The 2,130 km road corridor from Cuiaba to Arica will be completely paved with asphalt if the 560 km road from Caceres (Brazil) to San Javier (Bolivia) is paved. In this way, the products from Mato Grosso will physically have better access to the Asia and Pacific markets.

In addition to the need for physical improvement, there exist institutional problems regarding Bolivia's transport system. Specifically, Brazilian transporters cannot carry cargo through Bolivia because of the syndicate of truck drivers in Bolivia. Some members of FIEMT suggested that the transport cost from Cuiaba to Arica could be substantially reduced if there was not such an obstacle. It would be necessary to solve this problem to connect the Brazilian states with Chilean ports via bioceanic corridors.

Mato Grosso do Sul exports its products mainly through Santos (by road) and through Buenos Aires (by the Paraná River). The people of Campo Grande seem to be less interested in bioceanic corridors, compared to those of Cuiaba, most likely because of its closer proximity to the Atlantic rather than the Pacific. Nevertheless, the study team

[10] For example, Mr. Paulo Shiguenori Kanazawa, Chefe da Assessoria Tecnica, Estado de Mato Grosso do Sul, Secretaria de Estado de Planejamento e de Ciência e Tecnologia.

has found that they recently received delegations from Antofagasta and Ilo, supposedly for port sales. Specialists are examining the routes to the Pacific not only through Bolivia (Campo Grande - Corumba - Santa Cruz - Chilean or Peruvian ports) but also through Paraguay (Campo Grande - Puerto Montineo - Filadelfia - Antofagasta or Iquique).

Although there appear to be some differences in the degree of interest between the two states, those whom the study team met in Campo Grande and Cuiaba unanimously recognized the importance of the "physical" integration of the macro-region, i.e., the improvement of infrastructure and transport systems of the related countries. By such development, they expect that the two inland states can increase the possibility to export, to receive investment and thus to diversify their economies. The same can be said about the North Zone of Chile.

In recent years, the Ministries of Transport of Chile, Bolivia, Brazil, etc. are discussing issues related to the macro-regional transport systems more regularly in an effort to improve conditions through international cooperation. A publicized example is the Montevideo Plan of Action (Action Plan for Regional Infrastructure Integration in South America), agreed upon by the ministers of transport, telecommunications and energy of South American countries in December 2000.[11] This action plan aims precisely at increased physical integration to obtain higher competitiveness and sustainability of South America as a whole and is significant to the macro-region of the North Zone. The private sectors of Chile and Brazil are also expected to have increased business meetings in coming years. At first glance, Chile and Brazil appear to conduct policies in quite an individual manner, but it has become apparent that the public and private sectors of both countries are more actively exchanging their ideas and plans.

(3) Argentina

Production and Export

The six provinces of Northwestern Argentina (Jujuy, Salta, Catamarca, Tucuman, Santiago del Estero, and La Rioja) are highly dependent on agriculture and mining and among the poorest provinces in Argentina (Tables 17.1.1 and 17.1.2 above). The major products of these provinces are tobacco, citrus fruits, cotton, sugarcane, vegetables, limestone, and application rocks (Table 17.1.17). La Rioja is largely occupied by arid land and its main products are wine grapes and olives.

Although mining production is important and expected to increase in these provinces in the next 5 to 10 years, their major export products are largely agriculture-based (Table 17.1.4 above). For example, Salta's major export products are fuel and energy (natural gas), vegetables, tobacco (unprocessed), minerals, cereals, fresh fruits (mainly citrus), leather, and cotton, whereas those of Jujuy are tobacco (unprocessed), vegetables, sugar, fresh fruits, and beverages in 1998.[12] While tobacco and sugar, the main traditional

[11] Technical Coordinating Committee (TCC), Inter-American Development Bank (IDB), Andean Development Corporation (CAF), and Financial Fund for the Development of the River Plate Basin (FONPLATA), "Action Plan for Regional Infrastructure Integration in South America," Montevideo, Uruguay, 4-5 December 2000. For further information on this action plan, see Section 17.2.2.
[12] Information provided by the provincial government of Salta, based on INDEC data.

export products of the two provinces, are becoming less competitive due to diminishing government support, fruits and vegetables seem to have a brighter outlook. Catamarca, Tucuman and Santiago del Estero are also highly dependent on primary products for export (Table 17.1.18). Regarding La Rioja, manufactures of agricultural origin account for more than half of total exports, wine being its major export product.

Table 17.1.17 Production of Major Products in Northwestern Argentina, 1991-1998

(1) Jujuy	Unit	1991	1992	1993	1994	1995	1996	1997	1998
Agriculture									
Tobacco	tons	32,235	29,791	33,111	22,675.98	21,969	30,176	39,028	..
Cocoa	tons	..	..	3,474,014	2,415,580	3,580,355	3,938,805	3,761,508	..
Citrus fruits	tons	..	..	87,171	..	..	100,567	..	..
Cattle (stock)	heads	..	..	83,120	89,290	90,735	97,300	93,300	..
Sheep and goats	heads	..	..	667,833	757,620	750,662	712,200	758,300	..
Mining									
Metallic minerals	tons	..	53,605	43,244	36,737	37,103	37,528	43,186	..
Non-metallic minerals	tons	..	13,206	36,842	66,333	107,188	165,565	72,161	..
Application rocks	tons	..	916,685	1,137,518	951,409	1,295,569	1,145,803	1,351,308	..
Total	tons	..	983,496	1,217,604	1,054,481	1,439,860	1,348,896	1,466,655	..

(2) Salta	Unit	1991	1992	1993	1994	1995	1996	1997	1998
Agriculture									
Corn	tons	..	99,100	109,000	146,700	159,300	207,400	257,620	..
Soybean	tons	..	272,400	316,665	298,300	323,900	149,800	335,900	..
Citrus fruits	tons	..	159,080	146,886	181,886	181,586	180,546	161,040	..
Vegetables (*)	tons	..	295,981	252,069	291,847	356,386	302,938	362,031	..
Tobacco	tons	..	23,017	28,887	17,203	20,336	27,177	33,812	..
Cotton	tons	..	10,000	15,150	25,470	65,200	44,900	67,170	..
Sugarcane	tons	..	1,253,000	1,424,697	1,093,087	1,109,403	971,500	1,172,000	..
Mining									
Non-metallic minerals	tons	146,952	161,279	131,403	178,173	189,053	219,722	243,430	..
Application rocks	tons	118,242	159,349	103,076	375,163	375,310	610,450	445,225	..
Total	tons	265,194	320,628	234,479	553,336	564,363	830,172	688,655	..

(3) Catamarca	Unit	1991	1992	1993	1994	1995	1996	1997	1998
Agriculture									
Soybean	tons	34,500	34,500	34,881	..	..	..	11,200	..
Mining									
Limestone	tons	781,671	809,406	789,442	721,722	494,934	768,262	1,065	..
Rodocrosita	tons	20	..	58	103	69	76,182	54,259	..
Gypsum	tons	7,000	8,250	8,000	3,440	..	21,751	53,490	..

(4) Tucuman	Unit	1991	1992	1993	1994	1995	1996	1997	1998
Agriculture									
Corn	tons	100,000	148,930	131,880	156,300	157,000	66,520	210,000	247,000
Soybean	tons	190,000	191,210	190,050	173,200	..	..	..	..
Sugarcane	tons	7,000,000	8,019,099	6,107,963	6,898,081	..	..	..	..
Citrus fruits	tons	564,400	570,360	506,360	588,740	..	..	..	..
Mining									
Clay	tons	168,784	170,000	169,572	230,707	200,639	..	..	..
Salt	tons	28,218	29,800	43,389	33,623	27,110	25,537	..	..
Sand and cement	tons	758,694	422,173	512,453	700,000	535,035	..	..	..

(5) Santiago del Estero	Unit	1991	1992	1993	1994	1995	1996	1997	1998
Agriculture									
Corn	tons	189,475	150,580	222,850	141,720	175,000	133,725	..	..
Soybean	tons	163,261	158,362	180,700	128,420	110,000	187,600	..	..
Cotton	tons	49,500	53,095	68,390	87,535	273,440	150,688	..	..
Citrus fruits	tons	21,375	25,038	25,038	25,038	25,038	25,038	25,038	25,038
Vegetables (**)	tons	238,240	131,681	100,640	118,500	212,400	174,800	..	..
Mining									
Non-metallic minerals	tons	257,200	163,235	522,300	621,000	506,000	543,000	..	..

(6) La Rioja	Unit	1991	1992	1993	1994	1995	1996	1997	1998
Agriculture									
Wine grape	tons	97,306	85,754	87,000	90,000	118,308	116,363	100,586	..
Olive	tons	3,398	15,800	2,500	15,000	1,850	7,500	12,500	..
Mining									
Non-metallic minerals	tons	23,702	14,184	13,832	16,959	11,818	8,101	..	..
Application rocks	tons	8,913	7,924	2,782	4,186	30,114	8,389	..	..
Sand and cement	tons	63,120	63,487	30,139	360,000	308,250	374,682	..	..
Total	tons	95,735	85,595	46,753	381,145	323,182	391,172	..	..

(*) Total production of garlic, peas, sweet potatoes, eggplants, onions, melons, potatoes, pepper, beans, carrots, pumpkins, and strawberries.
(**) Total production of onions, *cucurbitaceas* , and beans.
Source: Instituto Nacional de Estadistica y Censos (INDEC) (http://www.indec.mecon.gov.ar/anuario/infoprov/).

Table 17.1.18 Exports from Northwestern Argentina by Product Category, 1991-1999 (fob US$ millions)

(1) Jujuy	1991	1992	1993	1994	1995	1996	1997	1998	1999*
Total	105.0	90.0	74.7	83.9	107.1	148.6	156.5	119.9	115.3
Primary products	..	..	..	..	75.7	111.0	122.5	93.7	97.1
Manufactures of agricultural origin	..	..	..	..	21.0	26.6	24.0	18.9	13.2
Manufactures of industrial origin	..	..	..	..	8.7	10.2	10.1	7.2	5.1
Combustibles	..	..	..	..	1.6	0.7	0.0	0.0	0.0

(2) Salta	1991	1992	1993	1994	1995	1996	1997	1998	1999*
Total	214.0	166.1	178.1	215.9	303.7	363.1	421.2	408.5	336.9
Primary products	..	..	..	..	198.8	230.9	266.3	258.4	181.3
Manufactures of agricultural origin	..	..	..	..	26.9	32.9	22.6	31.5	40.4
Manufactures of industrial origin	..	..	..	..	16.6	18.6	21.8	41.8	34.6
Combustibles	..	..	..	..	61.5	80.7	110.5	76.7	80.6

(3) Catamarca	1991	1992	1993	1994	1995	1996	1997	1998	1999*
Total	7.5	9.2	7.9	23.7	18.4	21.6	96.1	490.3	547.6
Primary products	..	..	..	..	13.2	12.2	82.3	462.0	529.5
Manufactures of agricultural origin	..	..	..	..	0.0	4.6	8.4	10.1	8.0
Manufactures of industrial origin	..	..	..	..	5.1	4.9	5.3	18.2	10.1
Combustibles	..	..	..	..	0.0	0.0	0.0	0.0	0.0

(4) Tucuman	1991	1992	1993	1994	1995	1996	1997	1998	1999*
Total	154.2	140.7	130.6	218.4	387.4	362.5	416.6	383.3	335.6
Primary products	..	..	..	..	81.7	109.5	118.4	127.2	119.6
Manufactures of agricultural origin	..	..	..	..	90.9	114.2	111.0	106.8	75.1
Manufactures of industrial origin	..	..	..	..	214.8	138.7	185.1	147.1	138.4
Combustibles	..	..	..	..	0.0	0.0	2.1	2.2	2.4

(5) Santiago del Estero	1991	1992	1993	1994	1995	1996	1997	1998	1999*
Total	30.1	17.0	17.5	38.8	133.5	174.0	142.9	142.9	97.1
Primary products	..	..	..	..	130.9	171.3	141.6	140.4	96.3
Manufactures of agricultural origin	..	..	..	..	1.3	0.1	0.2	0.6	0.4
Manufactures of industrial origin	..	..	..	..	1.3	2.6	1.0	2.0	0.4
Combustibles	..	..	..	..	0.0	0.0	0.0	0.0	0.0

(6) La Rioja	1991	1992	1993	1994	1995	1996	1997	1998	1999*
Total	..	..	..	..	136.0	114.3	145.6	123.5	137.5
Primary products	..	..	..	..	0.3	0.5	0.3	0.9	1.4
Manufactures of agricultural origin	..	..	..	..	109.3	90.6	117.2	87.8	82.0
Manufactures of industrial origin	..	..	..	..	26.4	23.3	28.2	34.8	54.1
Combustibles	..	..	..	..	0.0	0.0	0.0	0.0	0.0

(7) National Total	1991	1992	1993	1994	1995	1996	1997	1998	1999*
Total	..	..	13,118.0	15,839.0	20,963.1	23,810.7	26,430.9	26,433.7	23,332.7
Primary products	..	..	..	..	4,815.8	5,817.1	5,704.7	6,603.4	5,189.3
Manufactures of agricultural origin	..	..	..	..	7,437.7	8,439.2	9,104.6	8,762.0	8,181.6
Manufactures of industrial origin	..	..	..	..	6,504.1	6,465.7	8,334.7	8,624.2	6,951.5
Combustibles	..	..	..	..	2,169.4	3,088.6	3,286.9	2,444.2	3,010.4

(*) Preliminary figures.
Note: Some totals are not be the sum of figures indicated in each product category.
Source: Instituto Nacional de Estadistica y Censos (INDEC) (http://www.indec.mecon.gov.ar/anuario/infonacio/); and INDEC data provided by the Provincial Government of Salta.

Recession and Expectations for Chilean Ports

The prolonged recession since 1998, high tax rates and the unfavorable exchange rate have been undermining export and investment in Argentina. The president of a trading company in Salta explained the situation: "We do not have a (competitive) price for any product." They have also stopped importing, mainly consumer goods, through ZOFRI since mid-2000 due to the recession, as well as to some nontransparent customs operations in Buenos Aires (i.e., import prices through the Argentine port have become lower than those through ZOFRI). That is, the Argentine economic situation has adversely affected the market potential for Chilean goods and services.

Under these circumstances, the two provinces are anxiously anticipating that the completion of the roads to the Chilean ports, i.e., Antofagasta, Iquique, and future Mejillones in particular, will reduce the transport costs thereto and thus bring about a

considerable increase in their exports to the Asian market. The prevailing transport costs for commodities (e.g., soybean grains) by railroad are unfavorable to the Chilean ports as indicated below.

Salta --> Rosario (1,300km): US$26/ton
Salta --> Iquique (1,100km): US$50/ton

While Jujuy is hurrying to pave the road from its provincial capital to Jama Path (between the Province of Jujuy and the Region of Antofagasta), Salta places greater emphasis on the construction of the road through Sico Path (between the Province of Salta and the Region of Antofagasta) and the rehabilitation of the railroad to Antofagasta as its export corridors. The Chilean Ministry of Public Works has prioritized both paths, together with 11 other paths on the border with Argentina, to accelerate commercial integration between the two countries.[13]

In addition to trade expansion, these roads will facilitate the promotion of tourism currently underway on both sides of the border. As the Provinces of Salta and Jujuy expect for their own tourism, the Region of Antofagasta, which includes the Atacama Desert, will be more attractive to international tourists with easier transport across the Andes. Better coordination and cooperation among these regions/provinces will benefit both sides. The provincial government of Salta expects that the regular flight services between Salta and Antofagasta/Iquique, started in December 2000, will also increase the flow of business peoples between their province and the two Chilean regions in the future. According to their estimate, however, they are likely to transport mainly tourists in the initial stage.

Regional Integration and Free Trade Zones

There is a subtle difference between Salta and Jujuy concerning ZICOSUR activities. Salta hosted the second meeting in October 1998 and is eager to move towards regional integration through cooperation among the member regions/provinces/states of ZICOSUR, while Jujuy has somewhat separated itself from the integration scheme. The difference is due partially to the origin of ZICOSUR. As mentioned in the section on Bolivia, the scheme was created by the public sector but originated from GEICOS, which was formed in Salta in 1975 by private enterprises seeking new markets.[14]

Nevertheless, both provinces consider themselves located at the crossroads of South America and plan to establish free trade zones respectively (Salta's free trade zone has been legally instituted by private initiatives but yet to be physically established in General Martin Miguel de Guemes, located 25 km northeast of Salta). The provincial government of Jujuy is considering the establishment of a "primary customs zone" that will provide various services related to import-export activities at one place (e.g., customs, quarantine, immigration, transport, banking and so on). This kind of one-stop service center appears to be more relevant, and realistic, in these inland provinces. In particular, the situation in which two free trade zones exist only 60 km apart from each

[13] *La Tercera*, August 14, 2000.
[14] FIEMT, "Experiencia Empresarial de Mato Grosso no Processo de Integracao do Centro Oeste Sul-Americano," http://www.sice.oas.org/Ftaa/belo/forum/workshops/papers/wks1/fiemtp.asp.

other will not be favorable to either zone.

Both provinces are seeking to receive more foreign direct investment by providing investors with some incentives (e.g., exemption of income taxes and import duties), especially for manufacturing activities. There are four industrial parks around San Salvador de Jujuy, one in the suburbs of Salta, and another to be established in General Guemes. The occupancy rates of the existing parks are less than 30% and most of the factories in the Industrial Park of Salta have been shut down. The inactivity of these industrial parks can be partially explained by the recession of the national economy. It can also be presumed that the factories (e.g., textile, food processing, cement, etc.) that went out of business were not competitive internationally because the closures occurred primarily in the mid-1990s, when Argentina shifted more towards an open economy.

Markets for Chilean Goods and Services

Potential areas in the Argentine market for the North Zone's goods and services are not obvious, except for port services provided by the Ports of Antofagaasta and Iquique. The consumer goods market of Salta and Jujuy, at least of the two provincial capitals, are filled with imported products and those manufactured in southern industrial cities, e.g., Buenos Aires, Cordoba, and Santa Fe. Low-priced consumer goods sold in supermarkets, particularly electric home appliances, are largely made in China and other Asian countries. Consumer goods are also imported from other Latin American countries such as Brazil and Mexico.

A potential area for Chilean exports to these provinces seems to be mining-related manufacturing and services, though further research is necessary to find whether companies in the North Zone are competitive vis-à-vis companies based in other zones of Chile and companies of other countries. The Antofagasta Regional Offices of ProChile and CORFO have jointly conducted a study to find potential customers for Chilean mining-related companies.[15] The export potential of Chile's mining-related manufacturing and services to Argentina are further discussed in Section 17.4.2.

A provincial government official of Salta contended that human resource development would become the most important factor for regional integration upon the improvement of transport infrastructure: "Integration will mean nothing to us if there are no export-oriented human resources." Such people are most needed in the fields of management and business administration. This may imply future opportunities for Chilean universities that are competitive in these fields, though Argentine national universities may currently be more attractive to students due to lower tuitions.

In conclusion, the Argentine market does not appear to be highly promising for the next few years because of the prolonged recession and the low confidence of business people, those not only of Argentina but also of Chile and other neighboring countries, regarding the market. From a long-term perspective, however, there is potential for goods and services to be exported from the North Zone in some fields, e.g., mining-related manufacturing and services, tourism, higher education and business training, etc., in addition to port services.

[15] Nivaldo Rojas et al., "Estudio de Mercado: Minería Argentina," February 2000.

(4) Peru

The Peruvian market is even more important than other markets in the macro-region for the North Zone, though the JICA team was not able to visit Peru due to the country's political turmoil. This is not merely because of the advantages in distance and physical accessibility to the market, but also interviews with business people in Arica have revealed that it is less "difficult" to do business with Peruvians than with Bolivians, while the historical backgrounds of Chile's bilateral (national) relations are similar for the two neighboring countries (e.g., wars in the 19th century).[16] There are some restrictions and control over the importation of certain types of products, but for the most part, Chilean products can still enter the market. For example, the Peruvian government imposes import duties on chicken, whereas only processed chicken can be exported to Bolivia. Another factor that may facilitate the North Zone's business with Peru is that some people of the zone, Arica in particular, have roots in Southern Peru.

The variety of industries in Southern Peru, i.e., mining and tourism in Arequipa, agriculture in Moquegua, commerce in Tacna, offers a potential for the future economic development of the North Zone, especially as a gateway to the Pacific. Although recent data is not available, Table 17.1.19 shows major products of Southern Peru.[17] The importance of these hinterlands will become clearer when one looks at the development of Singapore, which could not have become the main gateway of Southeast Asia without the industrial and economic development of its neighboring countries such as Malaysia, Indonesia and Thailand. It is thus desirable to study further, and regularly, the situation and outlook of these departments.

Table 17.1.19 Production of Major Products in Departments of Southern Peru, 1994

	Unit	Arequipa	Moquegua	Puno	Tacna	National Total
Agriculture						
Rice	tons	148,108	..	406	..	1,391,172
Corn	tons	12,581	1,531	4,627	5,827	726,357
Potato	tons	91,140	10,065	293,268	18,030	1,744,642
Mining						
Copper	tons	6,067	..	..	..	308,511
Iron	tons	2,610	121,890	73	86,811	216,057
Zinc	tons	2,071	..	..	..	616,240
Silver	tons	234	48	0	42	1,548
Gold	kg	9,339	..	3,772	..	37,204

Source: Instituto Nacional de Estadistica e Informatica (INEI), Peru,
as quoted in IDCJ, Transport Economic Cooperation Study (Peru), March 1996.

The short-term outlook of the macro-regional market for the North Zone may not seem to be bright, but an important conclusion drawn from the field visits and data analysis is that the macro-region is dynamically moving towards wider and deeper economic integration. It is therefore important to grasp opportunities to be realized as a result of increased integration by preparing for future needs with a long-term perspective, specifically in areas such as infrastructure development and information and knowledge exchange.

[16] Based on interviews with some Arica-based businesses that are exporting to Peru, including poultry, confectionery and mining-related engineering services and manufacturing.

[17] The study team tried to obtain such data through the Internet but did not succeed in getting access to the electric library of the National Institute of Statistics and Information (http://www.inei.gob.pe/).