

3.3 COST ESTIMATION OF THE MAIN PROJECTS

(1) Main projects

1) Improvement of export corridor

The promotion of exports is indispensable for the development of the Paraguayan economy, and improvement of transport infrastructure is necessary for that purpose.

Over half (52%) of the volume exported from Paraguay is transported by water, and this percentage is estimated to increase till 61% in 2010. Therefore, improvement of water transport is critical for the promotion of exports, and it is suggested to expand the function of the ports Pilar and Encarnación, and to improve the roads to access them. Paraguay River tends to accumulate sand sediment, so it is also necessary to expand and improve facilities for periodic dredging. Another point is to prepare a Paraguayan transshipment base of grain in the free zones of Rosario port (Argentina) and Nueva Palmira port (Uruguay).

Regarding railways, though a feasibility study is required, our suggestion is a triangular railway net connecting Asunción, Ciudad del Este, and Encarnación. The railway is connected only with Argentina at Encarnación, but its usefulness will increase by extending and connecting it also to Brazil (at Cascavel). It is worth considering the preparation of a freight line that connects to Villeta port. Preparing a port freight line connecting to Villeta shall also be considered as an effective idea.

Regarding export corridor by road, suggestions have been made to enforce the connection with Brazil by preparing the second Amistad bridge and Carmelo Peralta bridge, enforce the connection with Argentina by constructing the Pilar bridge, and enforce the connection with Bolivia by preparing a road to enter Bolivia through Mcal. Estigarribia and Neuland.

T.1.1 Road Projects for Export Corridor Development

T.1.1(1) Asunción - Guazú Cuá

T.1.1(2) Ciudad. del Este – Natalio

T.1.1(3) Carmelo Peralta - Loma Plata – Route 9

T.1.1(4) Mariscal Estigarribia - Infante Rivalora

T.1.1(5) Neuland - Pozo Hondo

T.1.1(6) Second Amistad Bridge

T.1.1(7) Pillar - Argentine Bridge

T.1.1(8) Route 9 (La Patria to Sargento Rodriguez)

T.1.1(9) Route 2 and 7 (San Lorenzo to Caaguazú)

T.1.2 Port and River Transport Projects for Export Corridor Development

T.1.2(1) Expansion of Pillar Port

T.1.2(2) Expansion of Encarnación Port

T.1.2(3) Acquisition of dredgers to be used in Paraguay River

T.1.2(4) Rehabilitation and functional expansion of foreign free trade zone located in neighbor countries

T.1.2(5) Improvement on River Navigation System

T.1.3 Railway Projects for Export Corridor Development

T.1.3(1) Functional renovation between Asunción and Encarnación

T.1.3(2) Villarrica~Ciudad del Este (Cascavel)

T.1.3(3) Ciudad del Este~Encarnación

T.1.3(4) Ypacaraí~Villeta Port

Figure 59 Locations for Export Corridor Project (1)

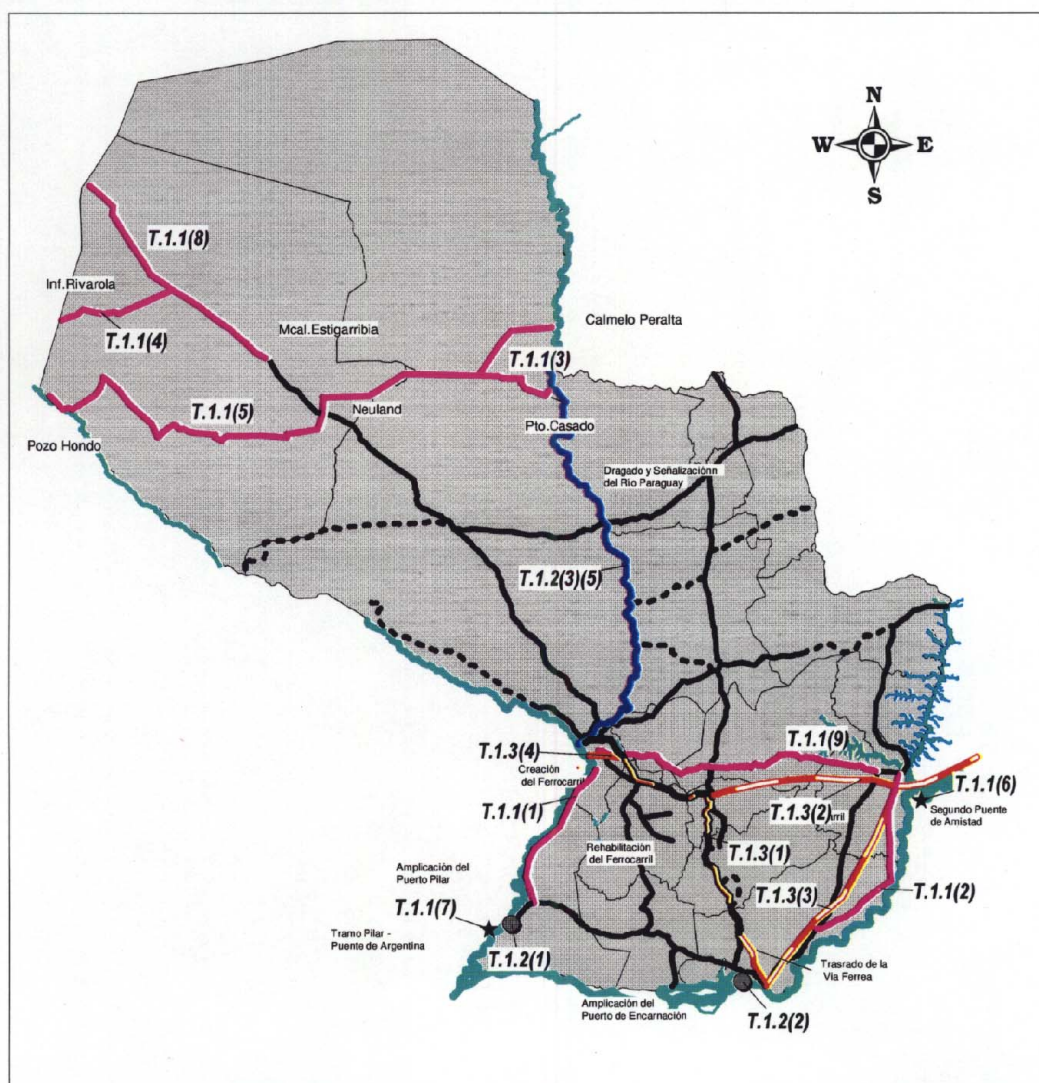


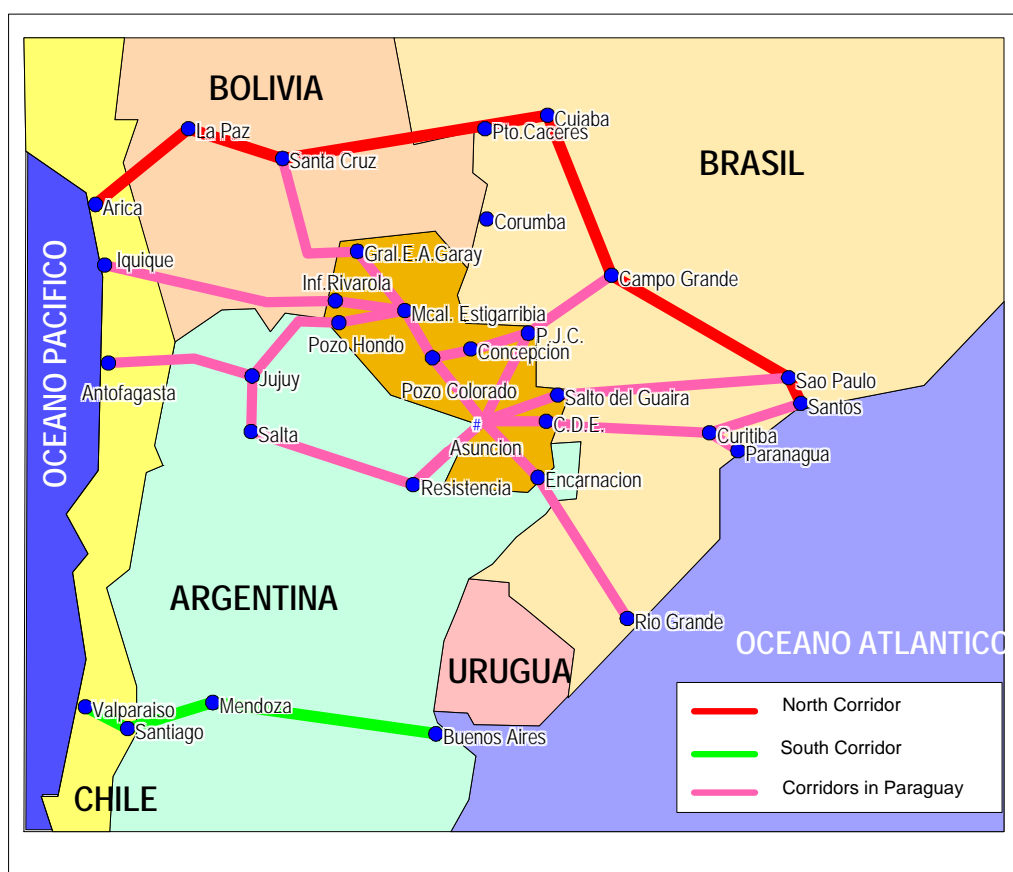
Figure 60 Locations for Export Corridor Project (2)



At present, several plans for Bioceanic Road are under consideration. There are four plans for the route that passes through Paraguay as shown in Figure 61. The most developed route is the one running from Asuncion, the southernmost side, through Resistencia and Salta in Argentina, to Antofagasta. However, other three routes are also important for Paraguay because they are expected to facilitate the development of Chaco region. While the shortest route to the Pacific Ocean is the one running to Iquique in Chile, the development of this route will need much time and cost. The route that Bolivia focuses on runs from Santa Cruz to La Paz, Arica. The distance of this route is a bit longer, but the northernmost route running from Paraguay to Santa Cruz has weight in consideration of the development of Chaco region.

The most serious problem in developing the Bioceanic Road in Paraguay is traffic congestion on and around Amista Bridge. Unless traffic congestion on and around the Amista Bridge is eliminated, there will be no use developing Bioceanic Road running through Paraguay. If more time is needed for the construction of the Second Amista Bridge, it will be necessary to examine ways to utilize the existing bridge more effectively.

Figure 61 Bioceanic Road Plan



2) Improvement of domestic mobility

Besides the improvement of the road network, water passenger transport between Asunción and Concepción, and between Puerto Olimpo and Bahía Negra are proposed, with the objective of improving domestic mobility.

Regarding the road network, it's necessary to improve the National and Departmental roads, which are the main domestic roads. They will be improved until 2020 according to the development plan: National road network 9,400 km (pavement rate 100%) and Departmental road network 12,000 km (pavement rate 20%) in addition to local road development of 93,000 km (pavement rate 5%). Figure 62 shows the proposed main road network. National roads basically follow the conventional ones, but a road network in Chaco area was added, and roads connecting the existing National roads in the south are proposed as new National roads. Table 53 shows the extension of paved roads that will be needed.

Figure 62 Proposed Main Road Network

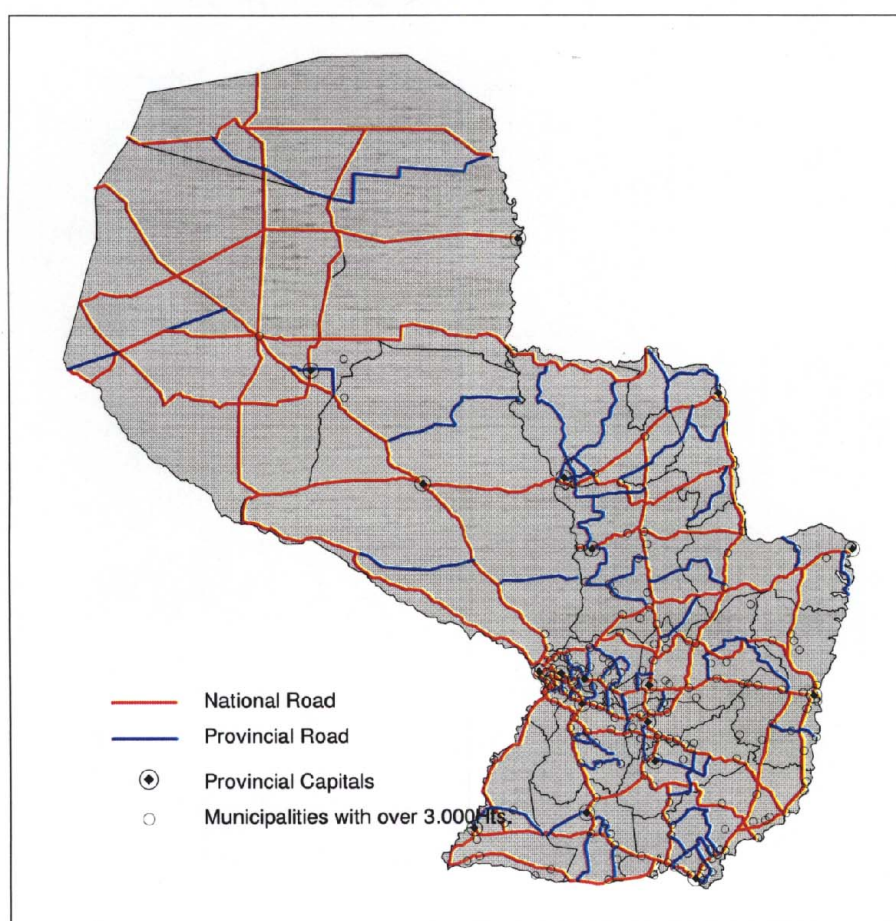


Table 53 Necessary Improvement in Main Road Network

	Existing			Plan			Improvement volume		
	National road	Departmental road	Total	National road	Departmental road	Total	National road	Departmental road	Total
Paved (km)	2,584.8	788.0	3,372.8	9,400.0	2,400.0	11,800.0	6,544.5	1,894.0	8,438.5
Not paved (km)	1,904.9	4,438.7	6,343.6	0.0	9,600.0	9,600.0			
Total (km)	4,489.7	5,226.7	9,716.4	9,400.0	12,000.0	21,400.0			
Pavement rate (%)	57.6	15.1	34.7	100.0	20.0	55.1			

3) Improvement of transport infrastructure supporting physical distribution

In order to improve efficiency in physical distribution functions, we propose the construction of truck terminals in Ciudad del Este and Ypacaraí. The functions of these terminals shall be to transship freight, provide simple pavement, provide information on physical distribution, etc. In addition, small size farms, which represent near 80% of the farms in Paraguay, are collecting and transporting their products under an association system, but the installations for collection and storage have limited capacity and thus are restraining the growth of production volume. Expansion of collection installations and silos at the production site are proposed in order to support the increase of production volume.