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A faint, light gray outline map of the world is centered in the background of the page, showing the continents and major landmasses.

## Market Brief - Sector

## Croatia and Slovenia: Adriatic Seaports

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**Summary:**

Seaports on the eastern Adriatic coast provide an alternative entry point for agricultural commodities bound for central and eastern Europe. These ports are currently underutilized. Rail connections for the two most northerly ports (Koper and Rijeka) are excellent. Truck transport is currently available for the three major ports in the south (Zadar, Split and Ploce) but rail transport will return as an option as the situation in Bosnia-Herzegovina is resolved. This report focuses on five ports: Koper, Rijeka, Zadar, Split, and Ploce.

*Croatia's* major ports for handling agricultural commodities are Rijeka, Ploce, Zadar and Split. Three of these ports were intended by the pre-war, former-Yugoslav government to handle over ninety percent of sea cargo: Rijeka, Split and Ploce. These three are owned and administered by the Croatian government now. The other noteworthy ports, Zadar, Sibenik, Dubrovnik, and Pula, are administered by the county governments. Dubrovnik and Pula are largely passenger ports now and Sibenik deals exclusively with industrial commodities such as fertilizer, bauxite and chemicals.

*Slovenia's* only commercial port is at Koper. Intended as an auxiliary seaport before Slovenia's independence, it is now the most modern and the highest volume seaport on the eastern Adriatic.



## **Port of Koper, Slovenia:**

Koper is a modern, well-equipped, multi-purpose port featuring excellent inland rail and truck connections. Turnover in 1999 was 8.4 million tons, of which 71% was transit cargo for Austria, Hungary, the Czech Republic, Slovakia, Poland, southern Germany, Italy, Switzerland, and other central European destinations. The entire port is a free-trade zone and covers 400 hectares with options for expansion on another 1,000 hectares. The Port of Koper has 20 berths on 2,684 meters of wharfs, and is Ro-Ro and container capable. The port features 91 hectares of open storage area and 300,000 square meters of enclosed storage space. The numerous specialized warehouses include shore tanks, refrigerated storage, a grain silo, and an alumina silo. The Port of Koper is ISO-9002 port-service certified.

***Specialized facilities:*** The grain berth is 200 m. long with a draft of 14.5 meters. Loading/ discharge rate is 500 tons per hour and the port has a 60,000 mt silo. Panamax vessels can be accommodated. Soybean meal is handled in two berths with draft of 14 meters and 500 m. of berthing space. A dedicated soybean meal warehouse can handle 50,000 tons. The port offers bagging facilities. The port authority plans to expand grain handling facilities in 2000.

Vegetable oil and wine are handled at a bulk liquid cargo terminal at two separate berths, with 14 meter and 12 meters draft. There is 20,000 cubic meters of storage for vegetable oils plus dedicated 5,000 meter storage for palm oil, and 2,930 cubic meter dedicated storage for wine.

Wood products are handled in a dedicated timber terminal with two berths totalling 250 meters and draft of 6 to 12 meters. The terminal covers 25 hectares and features 50,000 square meters of roofed storage area. The timber terminal has modern equipment for pacing, sawing, planking, splitting, drying, sorting, and other services.

The container terminal covers 25 hectares and has three berths totalling 500 meters. Draft is 12 meters and terminal capacity is 200,000 TEU per year. The terminal can handle all container types, including standard, refrigerated, and assembly containers, and features dedicated container handling equipment. Warehouse capacity is 11,500 TEU with 175 electrical outlets for reefers. Filling, emptying, cleaning, washing, repair and other maintenance services are available. This terminal also handles some Ro-Ro traffic.

Other commodities are handled at the general cargo terminal, with 6 berths and 833 meters of wharfage. Draft ranges from 7 to 12 meters. This terminal has 154,000 square meters of enclosed warehouse space for miscellaneous break-bulk cargo, 11,000 square meters of climate controlled storage for fruits and vegetables, 1,900 square meters of refrigerated storage for meat and dairy products, holding pens for 1200 head of cattle, 39,600 square meters of specialized storage for cotton, textiles and hides.

The port is connected by good rail service to inland destinations, and 70% of the port's inland traffic is handled by rail. Rail lines currently cross part of Croatia but a new rail line which will go only across Slovenian territory to Hungary and Austria is planned for opening in 2000, which will reduce rail tariffs.

Currently 90 percent of bulk commodity shipments are handled by rail.

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### **Port of Rijeka, Croatia**

Rijeka was former Yugoslavia's largest sea port, and today is Croatia's largest seaport with annual capacity of about 9 million tons. The port dates back to the 13th century and is a natural entry point for Hungary, Austria, the Slovak Republic, and the Czech Republic. The port authority manages four facilities with two million square meters of area, 340,000 square meters of enclosed storage, and 8040 meters of berthage. Maximum draft in Kvarner Bay is 50 meters and maximum draft at the berths is 14 meters in Rijeka itself, 18.5 meters at the Bakar port facility, and 10.7 at Rasa. The port is Ro-Ro and container capable. The port has excellent rail connections inland and will benefit from the anticipated completion of the Zagreb-Rijeka freeway, which will also connect to the Ljubljana-Trieste freeway.

***Specialized facilities:*** The grain terminal with a single berth is designed for handling and storage of grain, soybeans, and other, similar bulk commodities. The silo capacity is 57,000 metric tons and annual throughput capacity is 800,000 metric tons. Ships of up to 60,000 DWT with maximum draft of 11 meters can be accommodated and the discharge conveyer capacity is 400 mt/hr.

The refrigerated products terminal has two berths with total 450 meters of length and maximum draft of 8 to 10 meters. The terminal features 4,000 square meters of chilled and frozen storage with an annual capacity of about 60,000 metric tons.

The livestock terminal can accommodate 1,000 head of cattle and can handle close to 200,000 head of livestock per year. Total area is 157,000 square meters with 2,600 square meters under cover. The terminal has a single berth with draft of 7 meters. This terminal is located in the Rasa Basin. Feeding facilities are available.

The timber terminal can receive, ship, dry, repack, mark and impregnate timber and processed wood products. Total area of this terminal is 237,000 square meters with 89,300 square meters under cover. There are two berths with maximum depth of 9.2 and 10.7 meters and 402 meters of berth space. This terminal is split between two of the facilities, Rijeka and Rasa.

The container and Ro-Ro terminal can accommodate 80,000 TEU annually and has total area of 135,000 square meters. The terminal has four operating berths of total 629 meter length with Ro-Ro ramps, two container cranes of 40.5 metric ton capacity, and draft of 10 to 12 meters. This terminal also features a car handling facility with capacity for 50,000 automobiles per year. Up to 5,000 vehicles can be stored at once, of which 1,000 can be under cover. Facilities for cleaning and repair of containers are available.

Other specialized terminals include the general cargo terminal and the dry bulk cargo terminal. The general cargo terminal has 11 berths, 42 shore cranes of two- to 32-ton capacity, mobile cranes of 6- to 100-ton capacity, plus forklifts, tractors and trailers. The general cargo terminal can handle conventional cargoes as well as paper, metals, hazardous cargoes, phosphates, soda, sulphur, and similar commodities. The terminal has bagging equipment with throughput of about 100,000 mt per year. This terminal also features bulk liquid handling facilities for wine, edible oils, and molasses, and has bulk liquid storage capacity of 3,500 cubic meters. The dry bulk cargo terminal is in the Bakar basin and is designed for industrial commodities (e.g. iron ore, coal.) It can accommodate vessels of up to 170,000 DWT at two berths of maximum 18.5 meter draft.

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## **Port of Zadar, Croatia**

Zadar is a medium-sized, multi-use port dominated by a soybean extraction facility and its conveyor. The port borders on an industrial park which features a fish freezing plant, sardine cannery, dairy processing plant, cigarette factory, a winery and brewery, as well as a rope and cable plant, electrical cable plant, and lots of room for expansion.

Communications inland are currently solely by truck transport. Rail connections exist but Zadar is competitive only over the Bihac rail line which is currently closed due to the political situation in Bosnia. The alternative line is a post-World War One line which loops north and then east, avoiding Bosnia, but which can only handle trains of maximum 500 tons (about 8 railcars) and which in many places has a maximum speed limit of 50 km/hr. The Bihac line can handle trains up to 5000 tons and has much higher speeds. Zadar port is accordingly grossly underutilized due to competition from Rijeka and Koper, which have better rail connections. Zadar has 60% higher rail tariffs inland than does Rijeka. In addition, rail transit time from Zadar to Zagreb is 12 hours versus 4 from Rijeka to Zagreb.

***Specialized facilities:*** Maximum port throughput is about 750,000 mt/yr, which was achieved in 1981. Of this, soybean capacity of about 300,000 mt/year is the largest component. The port has 40,000 sq. m. indoor warehouse space, 17,000 cu. m. controlled atmosphere for fruits and vegetables, and a wood terminal for milled lumber which includes 10,000 sq. m. covered area. The port is not container or RoRo capable.

The port has four berths in total. Berth No. 1 handles general cargo and fruit and vegetables; maximum draft is 6.6 m fore to 11 m aft. Berth No. 2 handles general cargo and lumber; maximum draft is 8.5 m. The soybean berth handles bulk grains and pelletized commodities and is also the berth used for vegetable oil; maximum draft is 11.6 m. Panamax vessels up to 80,000 mt can be accommodated at this berth. The tanker berth handles vinyl chloride monomer, petroleum, mineral and vegetable oils, and liquid chemicals; maximum draft is 8.7 m fore and 10.7 m aft. Warehouse space is currently underutilized so space is rented to local companies for general storage. The Port of Zadar handles loading and discharging with three mobile cranes of 100-, 40- and 32-mt capacity. The port prefers ship's gear.

The soybean crushing plant is owned by Sojara, a subsidiary of Agrokor. The plant is served by a bulk commodity conveyor constructed in 1977 by the former Yugoslav government with the idea that this plant would receive imported soybeans and crush them for feed mills throughout Yugoslavia. The breakup of the country means Sojara is looking for customers throughout the region. The conveyor is reversible but at a lower capacity: ships can discharge up to 400 mt/hr but can be loaded at a maximum 80 mt/hr. The intent was that Panamax vessels would discharge soybeans and smaller (5,000 ton) coasters would deliver soybean meal to other Mediterranean customers. The conveyor can also handle other grains and pelletized commodities, but not flour. Railroad and truck loading capacity is 200 mt/hr.

Storage consists of two warehouses, one each for soybeans and for soybean meal, and a 52-cell silo. Total storage volume is 158,000 cu. m. Silo volume is 38,000 cu. m, one warehouse is divided into

60,000 cu m and 20,000 cu m spaces (for 44% and 48% protein soybean meal, respectively), the other warehouse holds 40,000 cu. m. The soybean plant is currently operating at less than half of capacity. Nominal crush capacity is 1100 mt/day and the maximum crushed in one year was 272,000 mt in 1979. The plant includes nine 1,000 mt vegetable oil tanks and can load 1,000 mt oil per day. Oil can be degummed on site and the plant can produce lecithin. The plant cannot crush sunflowerseed.

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### **Port of Split, Croatia**

The Port of Split handled 700,000 to 1,000,000 mt/yr cargo before the Yugoslav war, roughly half of which was bulk grain or pelletized commodities. The port has 5- and 7-ton capacity cranes. There is a grain elevator, and a rail line comes directly to the wharf, but the rail line is currently unused because of the situation in Bosnia. The rail lines are theoretically open as far as Mostar but traffic at present moves exclusively by truck. Split suffers from the same problem as Zadar in that the rail line through Bihac remains closed, making movement by rail relatively slow and uncompetitively expensive to be worthwhile.

The major destinations for cargo delivered via Split before the war were Mostar and Bihac in Bosnia-Herzegovina; Split also handled exports of Hungarian wheat and corn and Serbian wheat.

**Specialized facilities:** The port has five berths numbered 1 through 5, with drafts of 8.6, 10.6, 7.6, 10.8, and 11.8 meters, respectively. Berth No. 5 is RoRo capable. Total shore length is 850 meters and with 500 meters of railtrack. Berth No. 5 can also discharge bulk commodities directly to railcars. The port is container capable but has no specialized cranes for containers.

A 35,000 mt grain silo owned by the Trast Co. is adjacent to the port and is connected to the port with a conveyor. Discharge/loading rate is up to 150 mt/hour or 2000 mt/day.

Enclosed storage totals 46,000 sq. meters. Covered storage is 6,000 sq. meters. There are plans for refrigerated storage, multi-purpose modular storage for frozen foods, fruit and vegetable ripening, and

controlled atmosphere storage, but at present nothing actually in existence. There are however two refrigerated warehouses in the Split area which belong to meat processors and which can be used for frozen storage. The port cannot handle bulk vegetable oil. There is no packaging equipment at the port.

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### **Port of Ploce, Croatia**

Ploce is a large multipurpose commercial seaport, second only to Rijeka in pre-war turnover. Capabilities include bulk, break-bulk, containerized, liquid bulk, and specialized cargoes including explosives and livestock. Ploce is in a natural harbor protected by the Peljesac Peninsula, which forms a natural breakwater. Of Ploce's 4.5 million mt/year pre-war turnover, three mmt was bulk and the rest general cargo. The major export item before the war was Bosnian lumber which went to Egypt, Israel and North Africa.

The main pier, damaged during the war along with the grain conveyor, has been reconstructed under a World Bank-financed project costing about \$22 million. Facilities are generally in good condition. Ploce is the terminus of a rail line through Bosnia which served customers before the war as far north as eastern Poland and Hungary. Rail connections to Bosnia have been re-established as far north as Zenica (all bridges have been rebuilt) but no cars are moving yet as questions of railroad authority are not yet settled. Rail capacity is 12 mmt/year, far in excess of the port's nominal capacity of 5 mmt/year. Major markets served before the war included all of central and eastern Europe as far north as eastern Poland, Slovakia, and Hungary. Ploce was a major point for loading of Hungarian livestock destined for the Middle East.

A large French United Nations Stabilization Force (SFOR) contingent currently occupies much of the port. The livestock holding areas are currently used as barracks, and the lumber yard as a vehicle park and heliport.

**Specialized facilities:** There are six main berths, two of which are dedicated to agricultural commodities. In general, vessels up to 40,000 deadweight tons can be accommodated. Cranes range from 5 to 10 mt in capacity, but there is one loading crane with 100 mt capacity.

The break-bulk berth, intended primarily for handling wood exports, is 110 m. long and has a 9.2 meter draft. This terminal includes facilities for drying, sorting, sawing and packing lumber.

The grain berth is 180 m. long with draft of 10 meters, and features a warehouse of 38,000 mt working capacity. Discharge capacity is 400 mt/hour and features a bagger with 1000 bag/hour capacity. The grain conveyer was reversible before the war but was damaged during aerial bombing and so now can only receive incoming shipments. Ships can be discharged to the warehouse or directly to either railcars or trucks.

The livestock berth is 80 m. long and features draft of 9.2 meters. Livestock barns of up to 9472 square meters exist but as noted above are currently occupied by French SFOR troops. Capacities are 12,000 head of sheep and 2,000 head of cattle. Throughput capacity is 500,000 head of small and 150,000 head of large livestock annually.

General cargo covered storage consists of several 2,000 square-meter enclosed metal buildings. Total capacity is about 50,000 mt of bagged or palletized cargo.

Specialized container handling equipment includes a 46 mt container forklift, new forklifts of 3- to 10-mt capacity, and 20 to 25 mt mobile cranes. The shore cranes have been renovated. There is no controlled-atmosphere storage at this port so incoming fruits and vegetables are kept in controlled-atmosphere containers. The port has no refrigerated storage *en situ* but there is reefer storage available nearby.

The Port of Ploce also operates an airport on the site of the port with a 1300-meter long, 21-meter wide paved runway and a modern arrival/departure terminal. International flights can be accommodated. At this time the Ploce airport features daily non-stop service to and from Zagreb.

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