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Agricultural Situation

Taiwan Earthquake Impact on Agricultural Production and Trade 1999

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Report Highlights:

On September 21, 1999, an earthquake registering 7.3 on the Richter scale struck Taiwan, claiming over 2,000 lives and leaving over 100,000 people homeless. Despite the quake's heavy toll on human life and property, its relative impact on agricultural production and trade should be minimal.

Includes PSD changes: No

Includes Trade Matrix: No

Unscheduled Report

Taipei [TW1], TW

THE IMPACT OF THE SEPTEMBER 21, 1999 EARTHQUAKE ON AGRICULTURAL PRODUCTION AND IMPORTS

SUMMARY

On September 21, 1999, an earthquake which registered 7.3 on the Richter scale struck Taiwan. The quake, the worst to hit Taiwan in 100 years, claimed over 2,000 lives and left over 100,000 people homeless. As of September 29, direct agricultural losses caused by the quake totaled NT\$ 1.75 billion (roughly US\$ 54.6 million). This figure, which probably captures about 90 percent of the eventual total, will not doubt increase as additional information becomes available. Nonetheless, losses are relatively minor. By way of comparison, direct agricultural losses resulting from Typhoon Zeb, which swept through Taiwan in October 1998, totaled NT\$ 6.2 billion (\$193.8 million). The total value of Taiwan's agricultural production in 1998 was NT\$ 376 billion (\$11.8 billion).

IMPACT OF LOSSES ON THE FOOD SUPPLY

Rice

Taiwan's current total rice stocks are calculated at 670,000 mt (brown rice basis). Central authorities feel that stocks of between 290,000 mt and 400,000 mt (brown rice basis) are adequate for food security. Four hundred thousand metric tons is roughly equivalent to three months' consumption. Therefore, no shortages will occur due to damage to storage facilities or lost production. Rice prices actually fell after the quake because rice millers, whose paddy rice storage facilities were damaged in the quake, quickly milled and packaged paddy rice stocks and released it onto the market to avoid losses. If rice prices do surge, central authorities will release stocks to bring prices in line with Council of Agriculture (COA) guidelines. However, this is highly unlikely because the fall crop, responsible for 40 percent of annual rice production, is being harvested.

Hogs

Relatively few pigs were killed in the quake. Only 5 percent of the pigs raised on Taiwan are produced in Taichung and Nantou counties, which were hardest hit by the quake. After the quake, pig auction prices remained at around NT\$ 5,500 per 100 kg (live weight), the pre-quake level. The supply of pigs to the market is expected to remain stable.

Poultry

Roughly 1.5 million birds were killed in the quake. The largest chicken processing plant in Taiwan, with a processing capacity of 120,000 birds per month, is situated near the epicenter. This company reports that its production capacity will be reduced by 20 percent while electricity rationing continues. Initial losses, and decreased production due to power outages and rationing, are expected to lower islandwide poultry production and processing by 5 to 10 percent until the power situation returns to normal. In the week after the quake, demand for poultry dropped because restaurant consumption fell, as did supermarket sales because consumers are without reliable electricity for home refrigeration. Therefore, poultry prices remain at pre-quake levels. Production will pick up as soon as the power supply returns to normal, in an estimated 2 to 3 weeks. (In 1998 Taiwan's total poultry production was 434 million birds. Forty-five percent were broilers which take only 6 weeks to raise to maturity.)

Fruit and Vegetables

Taiwan's vegetable production was virtually unaffected. Losses to fruit production were moderate. Prices of fruit and vegetables remained stable after the quake. No unusual movement in fresh produce prices are expected.

Food Processing

Food processing activity may be affected in the coming two weeks because of power rationing. However, overall supply is sufficient and the industry is expected to benefit from an increased demand for certain products such as instant noodles and canned goods. The Taiwan Confectionery, Biscuit and Floury Food Association has suggested that Taiwan authorities lower import duties on food ingredients so processors can lower food prices to help consumers affected by the quake.

Retail Sector

Supermarkets

Since the earthquake, average daily sales in Taiwan's supermarkets have fallen by about 30 percent per day. Consumers are buying almost no frozen and refrigerated products because power is being rationed, and is subject to unscheduled disruptions as well. When full power is restored, supermarkets will likely see a surge in sales of refrigerated and frozen products which will partially compensate for these losses.

Convenience Stores

Despite losses in refrigerated and frozen goods, sales of bottled water, instant noodles, canned foods, bread, and other dry food products have been brisk in convenience stores in the worst hit areas. Store owners transferred supplies from stores in commercial zones to residential areas where post-quake demand was higher.

Hotel, Restaurant, Institutional (HRI) Sector

In the first week after the quake, daily losses to the HRI sector, due to irregular power supplies and lower customer traffic, totaled about \$3 million a day. According to the Tourism Bureau, after the earthquake more than 85 percent of foreign tourists planning travel in Taiwan during the rest of the year have canceled their trips. Restoration of normal power will likely result in some improvement in HRI food sales. However, it is hard to say when restaurant and hotel business will return to pre-quake levels. Total annual revenues for Taiwan's HRI industry for 1998 are estimated at \$5.7 billion.

IMPACT OF QUAKE ON IMPORTS

Port Bulk Commodity Unloading Facilities

Taichung Harbor, Taiwan's second largest grain handling harbor, was damaged. There was no damage reported to Kaohsiung (the largest grain handler) and Keelung harbors. Reportedly, 5 of Taichung's 39 wharves sustained damage. Of the 5 that were damaged, 2 are used to discharge grains, and 3 are used to discharge molasses and other industrial products. No wharfs for unloading container ships were damaged. According to the Taichung Harbor

Bureau, one of the damaged grain wharves will be fixed in three months. The damage to the other grain wharf is more extensive, and will take longer to repair. While repairs are underway, grain will be discharged directly onto trucks and not into wharf-side grain elevators. This will increase handling losses by 0.1 percent and will increase unloading time by two to three days. About 42 percent of all Taiwan grain imports arrive at Taichung; 54 percent at Kaohsiung; and 4 percent to Keelung. Grain exports could be diverted to Kaohsiung, but inland transportation costs from this southern port to consumer and animal production centers in northern and central Taiwan are higher because it is not as centrally located as Taichung. Power rationing may slightly prolong Customs clearance time. Power rationing is expected to end within two to three weeks. The quake should have only a minimal impact on grain imports.

Wheat

Virtually all wheat consumed on Taiwan is imported. The unloading process has been slowed due to damages to Taichung Harbor. Four mills located near the quake epicenter sustained damage, but are still operational. Flour production has been slowed due to the power situation. These four mills supply 20 percent of Taiwan's wheat flour needs. However, Taiwan currently utilizes only about 30 percent of its installed wheat milling capacity. Therefore, reduced production sustained by these mills can easily be compensated by increasing production in other mills. The wheat milling industry plans to purchase an additional shipload of wheat (35,000 mt) because the demand for instant noodles will likely rise in quake-damaged areas. Taiwan imports about 900,000 mt of wheat each year.

Feed Grains and Oilseeds

The majority of feed ingredients used on Taiwan are imported. Some steel feed bins collapsed and several small feed mills and oilseed crushing operations were damaged. As stated above, 5 wharves in Taichung Harbor were damaged and the grain unloading process has been slowed. Eleven molasses tanks were broken, resulting in the loss of several hundred tons of molasses. Imports of corn, soybeans and other feed ingredients will be moved to other harbors or discharged alongside. Feed demand is expected to decrease somewhat while power rationing continues. In the first days after the quake, the wholesale price for feed corn rose to NT\$ 4,000 (\$125) per mt from NT\$3,600 (\$112.50) per mt, a jump of 11 percent. Feed millers estimate that total annual corn imports will decline about 50,000 mt due to poultry production decreases that resulted from the earthquake. Therefore, plans to contract for a 50,000 mt shipment, for delivery in the next few weeks, were postponed. This postponement may have contributed to price pressures. Domestic soybean prices have remained stable, even falling slightly, since the earthquake, and no plans to reduce shipments have been discussed. Taiwan imports about 5,000,000 mt of corn, and 2,000,000 mt of soybeans annually.

Cotton

According to the Taiwan Cotton Spinners Association (TCSA), the earthquake damaged 100,000 of the 3.0 million spindles on Taiwan, of which 2.5 million are normally used. Approximately 2.0 million of the 2.5 million spindles in use have been affected by power outages. However, cotton yarn supplies will not be affected because current inventories equal 1.5 months of consumption. However, there are concerns that Taiwan may lose some international textile sales due to the temporary reduction in textile production capacity occasioned by power irregularities. This will have long-term implications only if customers do not return to Taiwan after the power situation stabilizes. The U.S. usually supplies about 25 percent of the 300,000 mt of cotton that Taiwan imports each year. The impact of the earthquake on U.S. cotton exports to Taiwan should be negligible.

Consumer Ready Products

For reasons outlined above, imports of processed products for consumption in the HRI sector may decline during the next quarter. However, imports of canned and dry goods, and their ingredients, could show a temporary increase. Imports of fresh fruit and vegetables should not be affected.

DIRECT LOSSES TO AGRICULTURE

According to the Taiwan authorities at the Council of Agriculture (COA), estimates for direct agricultural losses as of September 29, 1999 are as follows:

Direct Loss to Crops	
Crops affected: bananas, tea, litchee, grapes, loquats, betel nuts, rice, carambola, longan	
Total number of hectares affected	8,938 hectares
Average degree of damage	44%
Actual damaged area equivalent	3,964 hectares
Total estimated value of crop losses	NT\$ 936 million (\$29.2 million)

Direct Losses to Livestock	
Total animal pens damaged	462,000 square meters
Pigs lost	1,088 head
cattle lost	10 head
goats lost	400 head
deer lost	293 head
geese lost	500 head
chickens lost	1,413,000 head
ducks lost	1,000 head
Total losses	NT\$ 648 million (\$20.3 million)

Direct Losses to Aquaculture	
Damage to aquaculture ponds	NT\$ 12 million (\$ 0.4 million)

Direct Losses to Forestry	
Damage to forests on 1,286 hectares	NT\$ 156 million (\$4.9 million)

There are 23 administrative areas on Taiwan. Seven of these are municipal areas with little agriculture. Over half of the agricultural losses occurred in central Taiwan in the rural county of Nantou.

Total Direct Losses by County (NT\$ million)					
Name of County/City	Total Losses	Crop Losses	Livestock Losses	Fishery Losses	Forestry Losses
Grand Total	1,752	936	648	12	156
Nantou County	1,024	485	496	7	36
Taichung County	347	256	89	2	-
Miaoli County	242	193	21	1	27
Yuanlin County	92	-	16	-	76
Chiayi County	18	-	18	-	-
Others	29	2	8	2	17

INDIRECT LOSSES TO AGRICULTURE

According to the Taiwan authorities at the Council of Agriculture (COA), estimates for indirect agricultural losses as of September 29, 1999 are as follows:

Damage to Agricultural Facilities and Resources:	
Rural land moved or sunken	2,303 ha
Rural land buried	239 ha
Irrigation ponds damaged	3,744
Fruit & vegetable wholesale market collapsed	1 (government-owned)

Damage to Livestock Facilities	
Automatic conveyers/equipment damaged	132 units
Waste water treatment facilities damaged	18 locations
Bulk feed containers damaged	220 bins
Feed mixers damaged	20
Water tanks damaged	5

Damage to Fishery Facilities	
Fishery buildings damaged	some
Fishery docks damaged	some
Fishery auction markets damaged	some

Damage to Forestry Facilities	
Log transportation roads damaged	some
Centrally owned recreation facilities damaged	some

Damage to Rural Roads and Soil Conservation Works	
Soil conservation works damaged	68 sites
Rural roads damaged or collapsed	304 locations

Damage to Irrigation Facilities	
Hectares affected by irrigation system damage	14,972 ha
Total number of hectares under irrigation	221,884 ha
Percent affected	7 %

Damage to Grain Storage Facilities	
Centrally owned: 11 barns and 6 silos	10,178 mt of paddy rice affected*
Privately owned: 1 barn and 326 silos	96,375 mt of paddy rice affected*

* It is estimated that only about 10 percent of this rice will be lost. Efforts are being made to mill the rice, transfer it to alternative storage facilities, or to cover it to safeguard it against rain.

COMPENSATION AND RELIEF

The Council of Agriculture (COA) has received Executive Yuan (EY) approval to designate Nantou, Taichung, and Miaoli counties and one village in Yunlin county, all in central Taiwan, as quake-damaged regions. Farmers in these regions will be eligible for 7 year loans at 3 percent interest to cover costs of rebuilding damaged facilities, and to restock lost livestock. (Commercial interest rates are between 7 and 9 percent.) The EY has also approved measures giving COA authority to pay farmers NT\$ 100,000 (\$3,125) for each hectare of farmland lost or damaged. Partly damaged land will be compensated proportionally depending on the degree of damage.

The COA has pre-existing authority, under the *Relief Measures for Agro-climatic Disasters* law, to provide cash compensation for crops damaged in natural disasters, usually typhoons. In accordance with this law compensation is NT\$ 8,000 (\$250) per hectare for lost rice, NT\$ 30,000 (\$940) per hectare for lost fruit, NT\$ 11,000 (\$345) per hectare for lost vegetables, NT\$ 5,000 (\$156) per head for lost cattle, NT\$ 500 (\$16) per head for lost pigs, and NT\$ 15 (\$0.50) per head for lost chickens and ducks. Cash compensation will also be provided for damage to livestock pens on the basis of the number of square "ping" (about 36 square feet) damaged.