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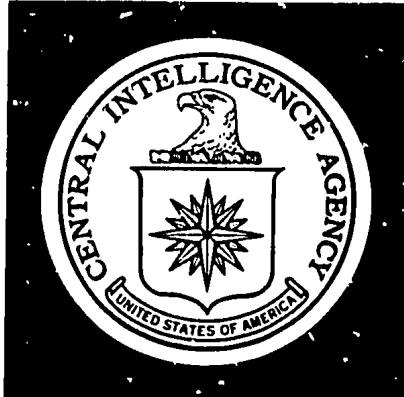
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**DIRECTORATE OF  
INTELLIGENCE**

# Intelligence Memorandum

*Impact of the Drought in Chile*

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November 1968

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CENTRAL INTELLIGENCE AGENCY  
Directorate of Intelligence  
November 1968

## INTELLIGENCE MEMORANDUM

Impact of the Drought in ChileSummary

The worst drought in 44 years will intensify Chile's economic problems and is likely to lead to a weakening in the position of President Eduardo Frei's Christian Democrats in the elections of 1969-70. Agricultural output is expected to drop by 20 to 30 percent in 1969. Through its impact on agricultural output, the agricultural processing industries, hydroelectric power supplies, and large industrial users of power, the drought could cause a decline of as much as 10 percent in gross domestic product per capita in 1969. Chile's chronic problems of inflation and balance-of-payments disequilibrium almost certainly will be compounded by the drought, and an increase in unemployment in both the countryside and urban centers seems likely.

This year's drought is affecting much of the Central Valley, where most of Chile's agriculture and industry and three-fourths of the population are located. Little precipitation can be expected during the next several months (Chile's summer). Despite a recent snowstorm, there is a below-normal accumulation of snow in the Andes, which is the main source of water supplies during the summer. If agricultural output declines as anticipated, Chile probably would have to boost agricultural imports from an estimated \$190 million in 1967 to between \$250 million and \$270 million in 1969 in

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order to maintain consumption levels. At the same time, export earnings are likely to decline because of weakening world prices for copper, a small decline in the volume of mineral exports, and losses in agricultural exports. The government's practice of devaluing the escudo every few weeks to reflect the inflation will help to keep Chilean manufactures competitive abroad but will do little to prevent a decline in total export earnings.

So far, the Frei government has not announced any changes in its own programs to deal with the budget and balance-of-payments problems that are arising from the drought. In its proposed budget for 1969, however, the government allocates to drought relief the proceeds from expected additional shipments of \$40 million worth of US surplus agricultural products under Public Law 480. Available evidence suggests that Frei is relying on the United States to cover almost all of the costs of drought relief.

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### Introduction

1. Chile is suffering this year from the worst drought since 1924. Rainfall has been below normal in the entire region between Puerto Montt and the Peruvian border, and the area extending from Concepcion to La Serena (the northern Central Valley) has been unusually dry. In the Santiago area, rainfall is expected to approximate only 3 inches in 1968, compared with a long-term average of about 14 inches annually. The area most seriously affected by the drought accounts for most of Chile's agricultural production and contains most of Chile's industry and about three-fourths of the population (see Figure 1). North of this area, there is normally almost no rain; while to the south, the rainfall this year -- although considerably less than normal -- still is sufficient for crop production.

2. Even more serious than Chile's lack of rainfall, however, is the below-normal accumulation of snow in the Andes. It is the runoff from the Andes that provides most of Chile's water for household use, irrigation, industry, and other vital purposes during the almost rainless summer months. Chile had a light winter in 1967, and despite a snowstorm in late October, the snow accumulated in the Andes this year is much less than normal in the severely affected zone. As a result, many rivers and streams that usually would be full now with spring runoff are nearly dry. Many reservoirs and ponds also are either dry or have very low water levels. In view of the normal seasonal pattern of precipitation in Chile, little relief from the drought can reasonably be expected until May 1969 (see Figure 2).

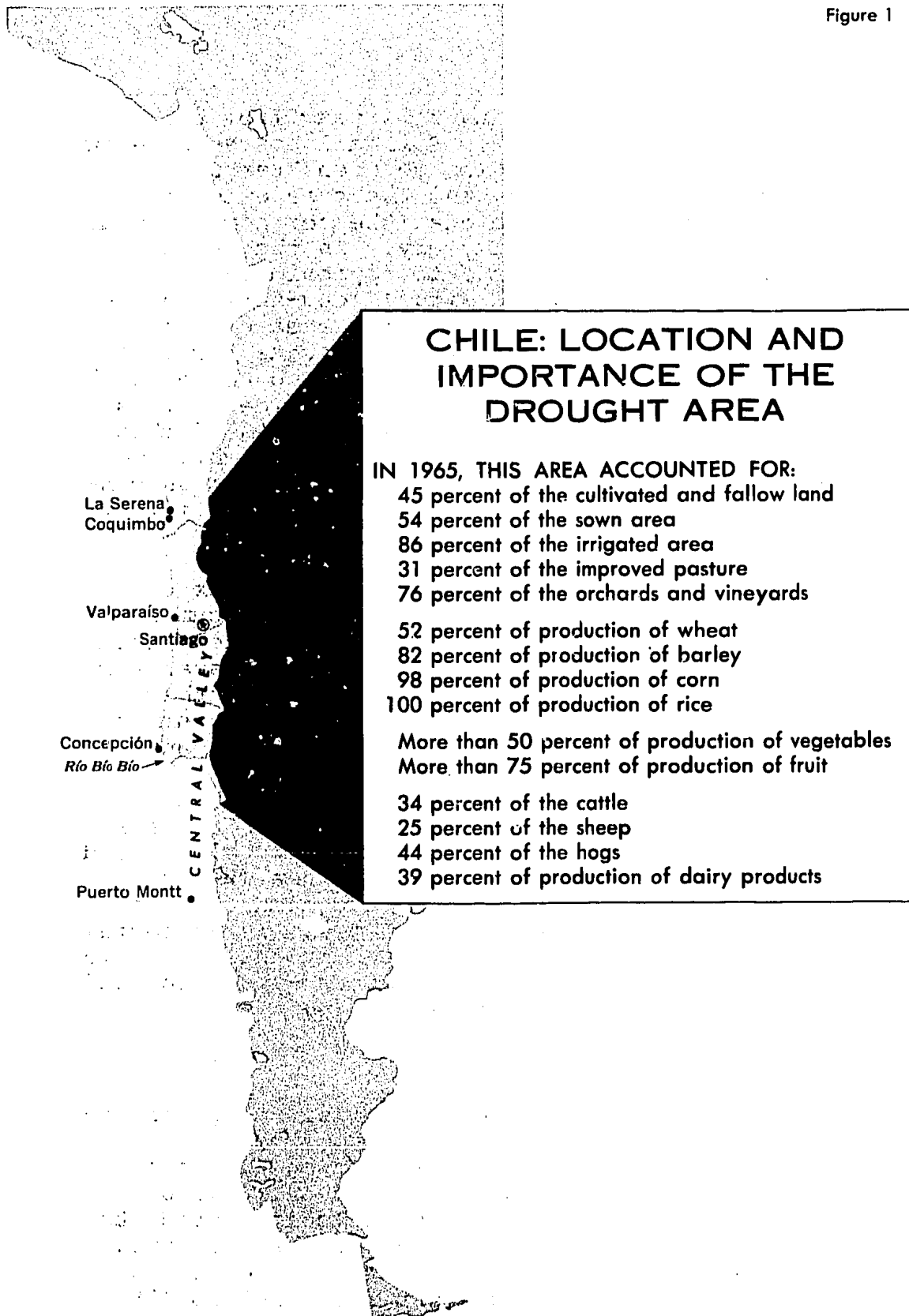
### Impact on Agriculture

3. The drought is severely disrupting Chilean agriculture. It is having serious immediate effects on crop output and is causing widespread slaughtering of breeding stock and dairy herds, which will hold down output of livestock products for some time after more normal weather returns. Chile's overall agricultural output is expected to decline by 20 to 30 percent from 1968 to 1969.

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Figure 1

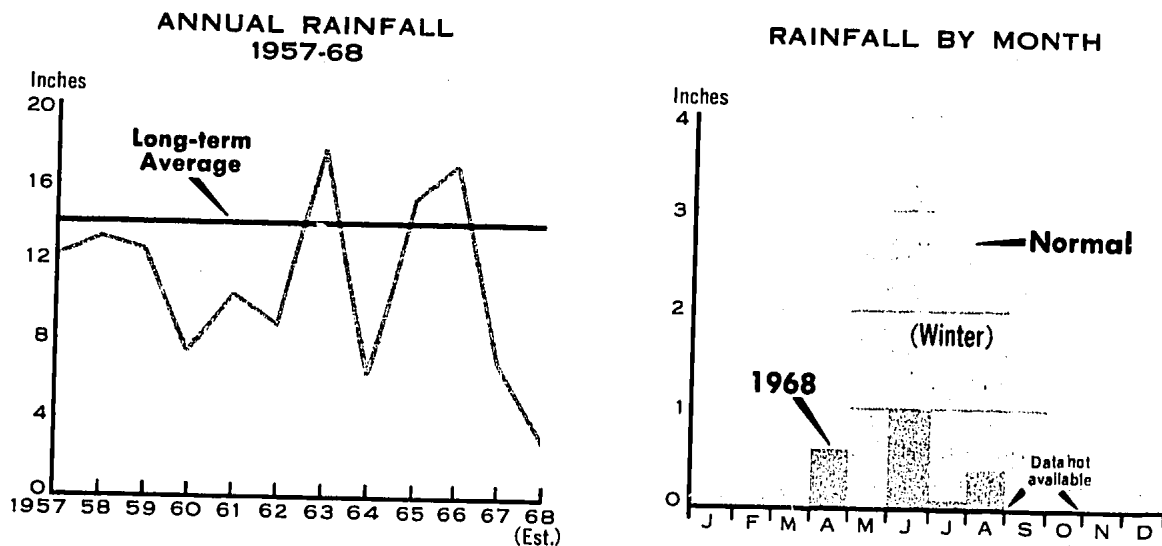


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Figure 2

## CHILE: RAINFALL IN THE SANTIAGO AREA



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Crops

4. Unirrigated winter wheat and forage crops in the northern Central Valley have been severely damaged, and some farmers -- faced with shortages of irrigation water and lack of soil moisture -- have decided that it would be futile to plant crops this year. The available supply of irrigation water during the coming summer probably will require that the irrigated area (three-fifths of which is used for crops) be reduced by about 500,000 hectares from its normal extent of 1.1 million hectares. Crop losses in the northern Central Valley, which usually accounts for almost three-fourths of the value of Chile's crop output, could range as high as 50 percent. Although losses in this region may be partly offset by increased plantings and improved yields in the area south of Concepcion, total output of crops is expected to drop by 25 to 35 percent.

5. The impact of the drought will be particularly serious for grains, oil seeds, and forage crops. Production of wheat, the most important crop in Chile, probably will drop to some 850,000 metric tons in 1969, compared with 1.2 million metric tons in 1968. Most available irrigation water will be used in an attempt to preserve valuable orchards, vineyards, and improved pastures

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or will be concentrated on crops of greater value per hectare, such as potatoes, green vegetables, and sugar beets. Despite these efforts, orchards and vineyards in some areas are likely to be severely injured, reducing production of fruit in future years.

Livestock

6. Chile's livestock sector also is being seriously hurt. Most of the unirrigated pasture in the northern Central Valley already has been largely destroyed by the drought. In some important grazing areas, rivers and ponds already are dry or nearly dry, causing a critical shortage of stock-watering facilities -- a shortage that is sure to worsen during the summer. More than 300,000 sheep (almost the entire spring lamb drop in the drought region) and 40,000 cattle out of a total of 3 million already have died. In addition, large numbers of cattle and sheep are in extremely poor condition because of the lack of forage. Some livestock owners have been selling their breeding stock for slaughter in anticipation of worsening pasture conditions in the summer. Indeed, increased slaughtering has permitted Chile to stop imports of beef from Argentina, which normally amount to about \$30 million annually.

7. During the next six months, the area of irrigated pasture and forage crops probably will amount to only one-third to one-half its normal extent of some 450,000 hectares. Forced sales of stock are likely to continue until January or February 1969 and probably will assure an adequate supply of meat during this period. With the approach of winter several months later, however, there could be a shortage of meat, as farmers begin to hold their stock off the market in anticipation of improved pasture and watering conditions.

Other Repercussions in Agriculture

8. Livestock losses and inability to grow crops during the coming growing season will bankrupt many Chilean farmers if the government does not grant emergency financial assistance. In the absence of such aid and public works programs, rural unemployment probably will be widespread in the northern Central Valley and could be as high

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as 100,000 workers, or about 30 percent of the agricultural labor force in the drought area.

9. The drought also will intensify the financial problems of the Agrarian Reform Corporation (CORA), the agency charged with carrying out Chile's agrarian reform. Although the government had planned to speed up the pace of agrarian reform during 1969, budgetary problems could force a slow-down. CORA is responsible for advancing living allowances to about 10,000 families settled on expropriated estates, almost all of which are located in the drought area. These loans normally are repayable at harvest time, but this year many of CORA's cooperative settlements will be unable to repay them because of the drought. In addition, CORA may have to meet some financial obligations of the agrarian reform cooperatives, such as payments due on past loans and installments due on land purchases.

10. The agricultural outlook is further clouded by CORA's stated intention to begin concentrating its activities in the southern Central Valley, which is outside the main drought zone and has been subjected to almost no agrarian reform activity to date. There is little doubt that CORA is extending its activities to the south because of the financial difficulties being raised by the drought-ravaged farms it presently manages. This move by CORA could further disrupt agricultural output, inasmuch as the farmers in the southern region apparently are organizing and arming themselves to oppose the reform by violent means, if necessary.

11. Thus far the Frei government has not taken decisive action to help the farmers being affected by the drought. Its main effort has been to distribute emergency P.L. 480 food donations to about 8,000 families and to grant free rail transport for livestock shipments to the southern Central Valley and for return shipments of forage. A National Drought Commission has been established, and the proposed 1969 budget allocates to drought relief the proceeds of the expected increase of \$40 million in shipments of US surplus foodstuffs under P.L. 480. The government also has started an emergency well-drilling program, and a request for a \$2.5 million loan from the US Agency for

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International Development to purchase drilling and pumping equipment is now under consideration. Although the government's Production Development Corporation (CORFO) has given high priority to this program, the available financial and technical resources probably will not permit enough wells to be drilled during the next few months to alleviate the drought materially.

12. Extensions of financial assistance to farmers have been stymied by conflict within high government and Christian Democratic Party circles. Some political leaders recognize the need for action, but supporters of agrarian reform generally have opposed assistance on the ground that it would strengthen the forces that are resisting reform. Some officials of the agrarian reform agencies, CORA and the Agricultural Development Institute (INDAP), have advocated that the workers organize and seize any farm that discharges them because of the drought. The officials view this as a way to further the reform in the northern Central Valley without burdening CORA with additional estates suffering from the drought.

Impact on Industry

13. Mining and manufacturing output is being cut back because of reduced output from hydroelectric powerplants, which account for about 60 percent of total generating capacity. Only two major hydroelectric plants, which are located in the southern provinces and account for less than 10 percent of hydroelectric generating capacity, have supplies of water that are nearly normal. Most of the other plants already are operating at reduced levels of output.

14. Production of hydroelectric power almost certainly will suffer a further sizable decline before the end of the summer. As a result of increased utilization of thermal powerplants, rationing of power to consumers in the urban areas has thus far been avoided. The government has announced, however, that rationing may be necessary starting in November. Increased reliance on thermal plants, which normally are used largely for peaking and seasonal needs, will increase Chile's need for imports of fuel oil.

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15. The El Teniente mine, which produced almost 30 percent of Chile's output of 665,000 metric tons of primary copper in 1967, is the only major mine threatened by power shortages, inasmuch as the others obtain their power from thermal plants. Inadequate supplies of power from the two hydroelectric plants serving El Teniente forced a reduction of 20 percent in its production during September and October, while the company installed temporary diesel generating units. El Teniente's output is presently being held about 20 percent below the pre-drought level by a shortage of water for concentrating the ore. El Teniente normally requires about 16 million gallons of water daily to wash and concentrate the 40,000 tons of copper ore mined. Although a search for underground water resources is now under way at El Teniente, production probably will be reduced further during the summer. The other large mines have not reported shortages of water, but more than 50 small mines in the desert around La Serena have closed as a result of falling underground water tables, which caused their wells to go dry.

16. The government is trying to alleviate the shortage of electric power and water for industrial use but can do relatively little in the short run. It is attempting, for example, to lease power-generating barges to increase the supply of power in the Concepcion area, which is heavily dependent on hydroelectric power. CORFO is undertaking to drill deep wells to supply water to small mines in Atacama and Coquimbo Provinces, but the resources being committed to this effort probably are not adequate to the task.

17. Although the losses in manufacturing output that will result from the drought are difficult to estimate at present, a small decline in manufacturing production seems likely in 1969, mostly as a result of a disruption of output during the first six months of the year. Electrolytic copper refineries, which are large users of power, may suffer sizable declines in output. Production losses also could become severe for the food-processing industry as a result of shortages of raw materials. Industrial unemployment could be fairly widespread as a result of mine closings and reduced manufacturing activity, but the government has not as yet made public any plans for dealing with it.

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18. The drought will have a growing impact on the Chilean economy during the remainder of 1968 and throughout at least the first half of 1969. Gross domestic product (GDP) probably has not been growing during the second half of 1968 and is expected to show only a small rise for the year as a whole. In 1969, GDP may fall below the 1968 level by as much as 3 to 8 percent -- or by 5 to 10 percent per capita. Consumption per capita will drop sharply in rural areas as a direct result of losses in agricultural output. Declines in marketed quantities of domestically produced grains, sugar, and other nonperishable commodities may be offset partly or wholly by increased imports, but there will be shortages of fresh vegetables, fruits, and milk. Since the Frei government probably will give priority to maintaining urban consumption levels, investment activity (which has been sluggish recently) is likely to be held down by import constraints and diversion of government revenues to more urgent uses.

19. Unless the government takes steps to create jobs, unemployment may increase in early 1969 by as much as 150,000 persons above the pre-drought level. Such an increase would double the present unemployment rate of about 6 percent. Unemployment will be most serious in agriculture, but decreased demand could force lay-offs in industrial, commercial, and service enterprises not affected directly by the drought. There is also a danger that the greatly reduced flow of rivers, into which most towns dump raw sewage, will bring serious pollution of drinking water and lead to epidemics.

20. The drought's adverse effects on the supply of foodstuffs probably will cause prices to increase more rapidly during the first half of 1969 than during the first half of 1968, when the rise amounted to 19 percent. Although the government maintains price controls for a wide range of foodstuffs, these controls will probably become ineffective for perishable items, which will be difficult to import in large quantities. The prices of fresh vegetables, fruit, milk, and some meat products thus are expected to increase considerably. Larger imports of basic foodstuffs

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such as wheat and rice should hold down price increases for these commodities in the major urban areas, although local shortages are likely because of inefficient distribution.

21. The drought also may intensify inflation by adversely affecting tax collections, thereby increasing the budget deficit. Tax revenues will be reduced by the decline in incomes in many sectors of the economy. In addition, the net operating revenues of ENDESA -- the government corporation that owns most of Chile's hydroelectric powerplants -- are likely to decline from their normal level of about \$10 million per year. Indeed, ENDESA may require emergency operating funds from the government in 1969.

22. The drought will raise additional difficulties for Chile's balance of payments, which has improved during the past few years but is threatened by a sharp drop in earnings from copper exports in 1969.\* The prospective decline in crop harvests from 1968 to 1969 will require a large increase in imports of foodstuffs, if the population's consumption levels are to be maintained. Imports probably will have to rise from about 450,000 to 800,000 metric tons for wheat and from 80,000 to 300,000 metric tons for feed grains and rice. Sugar import requirements may also increase substantially. Import requirements for beef will depend on whether the government's rationing program (which for several years has prohibited beef sales on several days each week) is made more severe. If no new effort is made to restrict consumption of beef, imports could reach \$50 million or more in 1969, compared with \$31 million in 1967.

\* *The Chilean government recently reduced the value of the escudo by 1 percent -- the twenty-first devaluation instituted this year to reflect the continuing rapid rise in domestic prices. Periodic devaluations can be expected to continue and will help to keep Chile's small exports of manufactures competitive in foreign markets. These devaluations will not, however, have much effect on the total dollar value of exports, which depends primarily on the amounts of copper, other minerals, and fruits and vegetables available for export and on their prices in world markets.*

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23. To compensate for the effects of the drought, Chile probably will require additional imports of foodstuffs of \$60 million to \$80 million in 1969. In 1967, its imports of agricultural products amounted to about \$190 million (or almost one-fourth of total imports). The drought probably will greatly reduce Chile's exports of fruits and 1969 as a direct result of the drought. This change may be partially offset by increased foreign assistance and reduced internal demand for imports of goods other than foodstuffs and petroleum. The Frei government apparently assumes that assistance from the United States and other foreign sources will finance most of its expenditure for drought relief. Chile, nevertheless, faces an added burden on its foreign exchange reserves (which now amount to about \$150 million) and will probably have to resort to additional foreign borrowing or more stringent import restrictions.

**Political Implications**

24. As the party in power, the Christian Democrats are likely to suffer at the polls next year from the voters' frustration and displeasure over the damage caused by the drought. The economic impact of the drought may well be at or near its peak by March 1969, when the congressional elections are scheduled to be held. The financial plight of many farmers, the prospect of growing unemployment, and the failure of the Christian Democrats to agree on an emergency assistance program have made drought relief a major political issue in the countryside. The Frei administration will be attacked by the other parties for having made inadequate provisions for drought relief and may have difficulty setting forth a convincing defense. Previous presidents have been able to use natural disasters, such as earthquakes, to rally support and explain away the economic shortcomings of their administrations, however, and the Christian Democrats may be able to use the drought in a similar manner.

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