

THE PERUVIAN EARTHQUAKE AND EFFECTS ON EMPLOYMENT

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by David Slater

In the late afternoon of Sunday, May 31st, Peru suffered its worst ever earthquake. In the space of two minutes an estimated area of up to 10,000 square miles was devastated. Estimates now put the number of dead to be over 50,000 and the number of homeless to be in the region of three-quarters of a million. The area worst hit was in the interior of the Department of Ancash, a zone referred to as the Callejón de Huaylas. The Department of Ancash contained an estimated population of 677,600 in 1966 with a population density of 19 per square kilometre (one of the highest figures for a Peruvian Andean region). The departmental capital of Huaraz had an estimated population of up to 80,000 and the coastal town of Chimbote an estimated population of 150,000. Huaraz was almost completely destroyed and Chimbote had from 70 to 80 per cent of its buildings cut away by the earthquake. In the Callejón de Huaylas zone, a well-known tourist centre, the settlements of Recuay, Huaraz, Carhuaz, Yungay and Caras have all been virtually destroyed. The northern towns of Yungay and Carhuaz were completely inundated by the floods which followed the breaking of the banks of Lake Llanganuco. These towns had populations of 30,000 and 20,000 respectively. Along the coast the towns of Huarmey, Casma, and Chimbote were worst hit, but the earthquake zone stretched along the coast for 175 miles north of Lima up to the small town of Virú which is 25 miles south of the regional centre of Trujillo (population 125,000), see Figure 1.

In the aftermath of this disaster, we are presented with a rather conflicting and uncomprehensive picture of the scale and long-term effects of the earthquake by various reports coming out of Lima. Piecing together the various items, it is the purpose of this paper to try to estimate the various effects the earthquake will have on the employment structure of the region most affected. In order to approach this problem I intend to divide the disaster zone, which basically corresponds to the department of Ancash, into two basic regional components - the coastal zone and the Sierra zone, and attempt to estimate the effects on employment caused by the earthquake.

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# PERUVIAN EARTHQUAKE ZONE

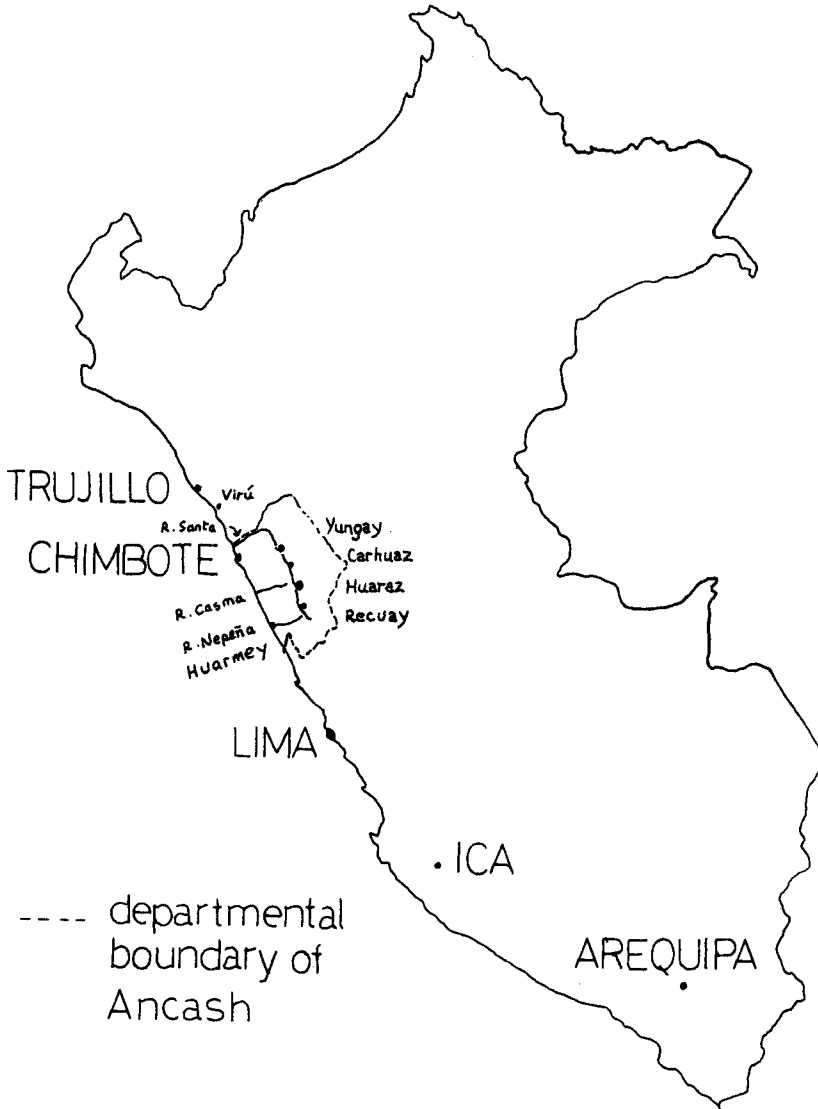


FIG 1

## 1. The coastal zone

This region is primarily desert, being interspersed with a number of fertile valleys where rice, maize, cotton and sugar cane are cultivated. The coastal valleys affected by the earthquake are, running north to south, the Virū, Santa, Nepena and Casma. The crops grown in these valleys depend almost entirely on irrigation and in the lower valley of the Santa there has been serious flooding, causing much damage to the rice crop, and destroying the majority of the irrigation canals. In the Nepena valley the flow of water had been stopped by a landslide high in the mountain zone, and if the natural dam suddenly breaks, it will cause disastrous flooding of all the communities in the valley. However, in terms of the most important economic activity of the coastal region we must look at the town of Chimbote where Peru's fishmeal and iron and steel industry is centred.

According to the 1963 Peruvian Economic Census the iron and steel industry of Chimbote (Soc. Siderúrgica de Chimbote S-A), set up in 1958, had an employment figure of 1,386.<sup>1</sup> The average monthly salary of the employees was stated to be 8,331 soles, a figure well above the average for industrial workers in Peru.<sup>2</sup> In 1965 it was estimated that the Chimbote iron and steel industry had an output of more than 73,000 metric tons.<sup>3</sup> The H.E.P. plant necessary for the operation of the iron and steel industry was constructed in the Cañón del Pato de Huallanca region in the northern part of the Callejón de Huaylas. This power plant, originally designed to produce 50,000 kwh, was producing 100,000 kwh in 1968; because of a lack of expansion in iron and steel production, surplus capacity was used to provide the villages and settlements of the Callejón de Huaylas region with electric

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<sup>1</sup> Primer Censo Nacional Económico, Lima, 1963, p. 5.

<sup>2</sup> 'Acero es progreso', No. 67, September, 1968, p. 34. Chimbote Peru, Publicacion de Relaciones Industriales para el personal de la Sociedad Siderúrgica de Chimbote, S.A.

<sup>3</sup> op. cit., 2, p. 12.

lighting. Now, after the earthquake, both the H.E.P. plant and the iron and steel plant are thought to be seriously damaged, and production at Chimbote is certain to be halted for some time to come.

The other important industrial activity in Chimbote is the fishmeal industry. During the late 1950's and early 1960's Peru's fishmeal industry grew at a great pace. In 1956 there were 27 factories which produced 31,000 tons of meal, and six years later the number of factories had grown to 110, with a production of 1,120,000 tons. As the industry expanded it became a very important earner of foreign currency, surpassing the two main traditional exports of copper and cotton. Also, besides the industry's contribution as an earner of foreign exchange, fishmeal production has provided a considerable amount of direct employment. In addition, a number of ancillary industries have been brought into existence. Processing machinery is made by several firms, and there is a large boat-building industry. M. Roemer has estimated that in the period 1963 to 1966 the contribution of the fishmeal industry to employment has been in the range of 34,670 to 41,575. Of these totals (the former a low estimate and the latter a high estimate) direct employment i.e. fishing and processing has been in the range of 26,220 to 29,339. The supply industries of boat construction, equipment manufacturing, jute sacks, paper, transport and storage and maintenance have contributed a figure of between 8,450 and 12,236.<sup>1</sup>

Chimbote has been a centre of Peru's fishmeal industry and in 1963 produced 1,795,800 metric tons of a national total of 6,650,600 metric tons.<sup>2</sup> In the same year there were 31 fishmeal plants in Chimbote, providing employment for an estimated 3,567 persons. In one of the ancillary industries, packing and storage of fishmeal products, there were an estimated 1,610 persons employed in 1961.<sup>3</sup> Unfortunately, there is no information on the number of persons employed in fishing (which, together with processing forms the category of direct employment), but taking Roemer's

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<sup>1</sup> 'The Dynamic Role of Exports in Economic Development - Fishmeal Industry in Peru, 1956-1966' M. Roemer, unpublished Ph.D. thesis, M.I.T. September 1967, Table S-1. p. 8 - 2a.

<sup>2</sup> 'La Industria Pesquera', Actividades Productivas del Peru, Lima 1966, p. 82.

<sup>3</sup> op. cit. 1. pp. 3-6.

low estimate of 26,220 for the year 1964, it would seem reasonable to suggest that in Chimbote perhaps up to 5,000 persons were employed in fishing. This would make Chimbote's direct employment figure approximately a third of the national figure. In the smaller town of Huarney, to the south of Chimbote, the Peruvian Economic Census of 1963 lists six fishmeal processing plants accounting for an employment of 481 persons. It should be stressed that Chimbote has grown during the past decade almost entirely as a result of the rise in the fishmeal industry. It has acted as a considerable employment magnet, even attracting migrants from southern Peru in lieu of the more usual recipient area of the capital city. Private savings and deposits in the town of Chimbote increased from 21,886 thousand soles in 1955 to 360,658 thousand soles in 1967,<sup>1</sup> and the population increased from 4,243 in 1950, to 59,990 in 1961 and to an estimated 150,000 in 1970. With the growth of Chimbote's population there was a related growth in the percentage of people living in *barriadas*. In the mid 1960's it was estimated that between 60 and 80 per cent of Chimbote's population lived in these *barriadas* (squatter settlements).<sup>2</sup> Chimbote possessed the characteristics of an unplanned and rapidly expanding coastal city, based on a very labour-intensive industry. It is now desperately in need of replanning and perhaps the devastation left in the aftermath of the earthquake will provide an incentive for a more planned form of urban development, bringing also opportunities for employment in the construction industry. The fishmeal plants however have been severely damaged and with the exodus of large numbers of trained industrial personnel the future does not look promising.

## 2. The Sierra Zone

The centre of the Andean region of Ancash was Huaraz, a town approximately 240 miles from Lima and difficult of access under pre-earthquake conditions. It is now a mass of rubble and it took days before the road leading down to the Panamerican Highway could be cleared by Army engineers. The number of homeless from the highland zone is estimated to be in the range of 800,000, and the task of first keeping alive these survivors and secondly of

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<sup>1</sup> 'Memoria y Estadística Bancaria', Superintendencia de Bancos, Lima, Peru, 1967 pp. 314-315 - current exchange rate 43 soles to the U.S. dollar.

<sup>2</sup> Personal communication with the Director of Oficina Nacional de Planeamiento y Urbanismo, Lima, May 1969.

providing homes for them, and thirdly of creating employment is a formidable one indeed.

Agricultural production in the Sierra region of Ancash is dominated by barley, wheat and potatoes and to a lesser extent maize, which has a greater preponderance in the coastal valleys of Nepeña, Santa and Casma. In 1965 the department of Ancash produced 32,220 metric tons of barley out of a national total of 178,951 tons. This was the highest figure for a Peruvian department in that year. In the same year the department of Ancash produced a total of 90,600 metric tons of maize out of a national total of 557,171 tons. After the department of Lima, which produced 98,100 metric tons, Ancash contributed the greatest quantity for one department. In 1965, Ancash produced 31,550 metric tons of wheat out of a national total of 146,720 metric tons, again the largest contribution for one department. Finally, in the same year, Ancash produced 265,500 metric tons of potatoes out of a national total of 1,568,240 metric tons.<sup>1</sup> This again was the greatest quantity for any one Peruvian department. This predominance in the production of barley, wheat, maize and potatoes will be greatly diminished by the effects of the earthquake. Considerable drops in national production will ensue and the region itself will never retain its dominant position in the production of these staple crops.

To assess the effects of such a tremendous natural disaster on the employment structure of the Ancash region is a task that can only be approached in very general terms. There will be effects on the fishmeal industry, the iron and steel industry and on the structure of agricultural production in the sierra region of the Ancash department. Migration out of the disaster zone will augment the populations of the coastal cities of Trujillo and Huactio, plus of course Lima and employment opportunities for the migrants will be, as far as can be estimated, very limited. The immediate problem however, is to provide food, medicines and clothing for the thousands of homeless, and to somehow temporarily integrate them into the coastal communities that have not been affected by the earthquake. 'Employment' seems likely to arise mainly through the growth in the numbers of vendedores and other marginal occupations which should to a large extent be regarded as providing no more than disguised unemployment. In 1961 Peru

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<sup>1</sup> 'Anuario Estadístico del Perú', 1966, Dirección Nacional de Estadística y Cencos, Lima, Perú 1969, pp. 986-991.

had an economically active population of 39.4 per cent (the percentage of the population over the age of 6 that was gainfully employed) and unemployment has long been a major problem both in the coastal region and also in the Sierra. The earthquake and the consequent coastal movement of 800,000 serranos will greatly exacerbate the problem of the gap between job supply and job demand, but perhaps, the intensification of the unemployment problem may, at the same time, pressurise both government departments and foreign enterprises into providing more employment opportunities through setting up more labour-intensive industries.

The Peruvian Earthquake Appeal Fund is grateful for contributions, which may be sent to P.O. Box 999, London W.C.2.