

MAPS OF CENTRAL AMERICA

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ZENTRALAMERIKA: KARTEN ZUR BEVÖLKERUNGS- UND WIRTSCHAFTS-STRUKTUR. By H. NUHN, P. KRIEG, and W. SCHLICK. (Hamburg: Universität Hamburg, 1975. Pp. 180.)

This volume of ten maps and accompanying text presents survey insights into the human landscapes of Central America with emphasis on population and economic factors. It is a welcome addition to information about one of the statistically least well known parts of Latin America.

Central America (Guatemala to and including Panama) is an ethnically and economically splintered region whose development has often been directed from various external spheres of influence. Because of the divergent outward connections of individual countries, and their lack of good internal contacts, very different social and economic infrastructures as well as economic competition have developed. Thus, until now, the few major efforts at political and economic integration have found little support. The authors of this work argue that cooperation is now necessary to keep the region economically and politically viable in the Western sense, and propose that a new trend in research is also necessary to help achieve this goal, namely that of more regionally oriented data analysis. They feel that criticism must be made of even the few "newer" atlases because of their continued use of older and often unreliable information, and because of their factually and spatially limited scope.

In order to present regionally oriented data, the authors—four cartographers, and a larger number of short-term assistants—began to prepare maps in the late 1960s for specific interests of the University of Hamburg, Germany, but between 1971 and 1974 expanded the project to serve regional scientists, planners, and politicians. The project required much extrapolation and simplification of available data because of information gaps and the multinational standards of measurement employed. Varying available map scales and publication size limitations resulted in choice of a scale of 1:2 million, with an overall size for each map of approximately 10×15 cm (25×35 inches). Legend information appears in Spanish and German.

The publication concentrates on five themes: (1) a series of three basic maps dealing with general Central American position, contours, and administrative units down to the *municipio* level; (2) two maps dedicated to the spatial structure of the population; (3) three maps of land use, including agriculture, industry, and transportation; (4) trade infrastructure; and (5) a complex summary map. Textual explanations accompany individual maps and offer comments on the meaning and aims of the material used, basic sources, and problems of cartography. Although background information is presented on the maps themselves, the accompanying text must be used for wider interpretation and extrapolation of data. Numerous tables and diagrams in the text augment the map information and are good summary sources in themselves. Small errors and color imperfections have crept into the maps because of the thirty-six different color combinations and the expense of making minor corrections. However, the themes are generally presented with the clarity necessary to facilitate modern investigation of areal differences in cultural phenomena.

A new base map series was devised for developing the thematic maps of this region. Recent data on Central America have been published at scales of less than 1:2 million (Mannheim, National Geographic, Haack, Hallweg), but all are highly generalized and often inaccurate. Since much better mapping techniques have been employed in the last two or three decades, and since many settlements have been newly founded (or abandoned), roads changed or added, populations expanded, and cultural significance of place generally altered, the attempt at a new and accurate base of 1:2 million (1cm = 20km) fills a large vacancy. In the base series there are political administration units dating from 1970–71 (Map 1), combined political administrative units and relief (contour intervals of 400m below 1,000m and 1,000m above that, map 2), and minor political subdivisions with municipal, cantonal, or district boundaries and their names (Map 3). The latter map will be especially appreciated because of the growing need to locate and understand all types of boundaries in Central America—some of which are still in dispute. National differences in political subdivisions occur even in terminology where, for example, for state boundaries the four northern countries use the term *departamento*, and *provincia* represents the same unit elsewhere. Moreover, the text warns about the difficulties of comparing political units in that there is no uniform rule for creation of these entities. For example, the minimum population for a *municipio* is 5,000 in Guatemala, 3,000 in Costa Rica, 2,000 in El Salvador, and 1,000 in Honduras. These differences, plus problems with unit size in small countries like El Salvador, not only make necessary some generaliza-

tions of actual map boundaries, but cautious comparative interpretation everywhere.

Central America has been affected by the pharmaceutical revolution since 1945 by joining the regions of the earth which have the highest annual population increases. The lowering of infant mortality rates has caused a startling downward shift to less than fifteen years as the largest age-category group. The authors reason, logically, that because of the need for economic planning to combat joblessness, declining living standards, and deteriorating social structures, a start should be made to map population densities and distribution. Map 4 portrays these factors, not by themselves, but in relation to the settlement structure. Thus, both urban and rural settlements of various sizes can be seen with their satellite populations down to groups of 100 persons—a portrayal of perhaps greater value than the usual contrast with physical geographical features. Principal land transport routes show linkages between settlement centers and overall population densities. This map depicts nicely the thinly inhabited border regions into which roads and railways are being pushed in order to improve food production and land tenure problems, and to supply already overpopulated cities. Furthermore, the nature of the uneven downward push into new lands can be examined closely by correlation with other maps in the series. Text comparisons of population data from 1950–60 help complete a fresh image of change in Central America. It becomes obvious that smaller settlements have stagnated while large cities have grown disproportionately fast, complete with slum rings. Runner-up cities, on the other hand, show lack of growth and reveal a poorly structured settlement mosaic over most of the region. The authors contend that this aggravates an already unbalanced economic scene. Some areas, such as El Salvador, lack settlement expansion possibilities and will continue to be sources of illegal migration to other countries.

In spite of common problems, population differences from country to country reveal the need for different planning approaches. For example, the life expectancy for males born in the 1960s in Honduras was only 42; for those in Costa Rica it was 63. In all countries, the number of dependents per laborer has increased because of the increased number of youths. They have, however, increased at different rates. Such population discrepancies are magnified when they relate to culturally separate groups of people. The significance of the latter stands out on the ethno-linguistic subdivisions map of Central America (Map 5).

Map 5 makes clear the unusual cultural diversity found in the area. Although the Spanish language dominates, the NW and E of the

region are primarily Indian. The text documents the decline of some groups, although others are expanding (Cusa, Kekchi, Black Caribs); a few are more associated with English than with Spanish. In all Central America in 1970 about 22 percent of the population was registered as non-Spanish speaking. Only in Costa Rica, Nicaragua, and Guatemala have special regional development programs been officially organized. These are attempting to link remote areas by road in order to hasten assimilation. Areas with mixed languages may be taken to indicate the considerable extent of assimilation occurring in the region. The map itself is remarkably legible in spite of the variety of colored subject indicators. The text provides additional data, such as lists of Indian reservations, and analysis of the present population distribution.

Land use Map 6 illustrates the fact that agriculture still occupies a dominant position in the Central American economy. Text statistics show more than half the working force so involved. Nevertheless, we learn that the contribution of agriculture to the GNP has dropped in recent years. Coffee, cotton, and bananas make up the main exports, and surpluses have gone more and more to the Communist bloc because of the use of trading in the absence of Western capital. Changes in the production of citrus, coconuts, cotton, and sugar cane from past maps such as those found in Goode's Atlas are marked. Sugar-cane production in El Salvador, for example, has become the third largest in Central America since 1971. Unfortunately, the color scheme on this map is such that the differentiation between sugar cane and cotton is bound to be difficult for some readers. Notwithstanding, the changes will force Latin Americanists to conclude that we have dropped too far behind in our assessments of what is going on here, and hence in our ability to judge politico-economic events.

Map 7 displays manufacturing activities. Although industry has steadily become more important in Central America (1960: 13.2 percent of the GNP; 1970: 17.5 percent), there is still a sizeable range of productivity from country to country, including a retreat in Honduras, and a greater-than-average leap forward in Guatemala. Food production is the most important industry, followed by leather, textiles, and clothing. The Common Market is briefly discussed in the text and the authors feel that it has helped to bring about some diversification and balance in production, but not enough to meet current needs. The map itself offers a bird's-eye view of industrial centers (there are six) with special inserts for the two largest. The centers are mainly in capital cities. The processing of raw materials, especially forest products, and metal industries, especially mining, are significant features of activity outside capital cities. In spite of underdevelopment, industrialization is intensifying, particularly in Guatemala and El Salvador. However, the overall view provided

by the map is one of imbalance crying for adjustment through some kind of overall planning.

One reason why settlement and industrial imbalances occur in Central America is the lack of sufficient and effectively coordinated means of transport. Map 8 devotes itself to the general communication and transport structure of the region. The general lack of good roads on the Caribbean side and the paucity of linkage roads everywhere is a fact of life in Central America. It is obvious that Central America, like South America, needs its eastern marginal highway to bring about a more rational distribution of human activities. Considerable stress is given to the role played by ports both on the map and in the text. The combined roles of general export and import values and Panama Canal statistics are impressive when seen in their proper regional context.

Map 9 is an export-import trade map based on a logarithmic system of values because of great statistical differences from country to country. A series of vertical bars represents the dollar value of exports (above horizon) and imports (below horizon) according to basic alimentary products, secondary products (coffee, tea, bananas), raw materials (including fuel), and industrial products (the terminology follows that of the Common Market guidelines). Superimposed on the bars are symbols for relative amounts of trade with the most important countries or groups of countries. Trade flow patterns are likewise shown, as are the volumes of trade for significant ports.

The map demonstrates the nature of trade connections very well, along with obvious zones of weakness. Ancillary data are, as usual, presented in the text. The latter may be used to compare map data (1970) with data for earlier decades. For example, in 1958, intra-Central American trade was no more than 5 percent of the total in any given country. After formation in 1959 of the Common Market free trade association among Guatemala, El Salvador, Nicaragua, and Honduras, a stepwise progression toward a planned expansion of the region's trade began. By 1963 Costa Rica had also ratified the proposals, and in 1969 a strengthened regional trade represented 25 percent of the total. The text traces the shaky history of cooperative trade development until 1974 when Honduras left the association and El Salvador began erecting protectionist tariffs.

For the period summarized, it becomes clear that external trade leans heavily on importation of fuel, and that exportation depends on too few products. Serious trade deficits characterize the economic community. Although Guatemala, El Salvador, and Costa Rica are the most industrialized countries and have trade surpluses, they still have large raw material deficits. Honduras and Nicaragua are increasingly aggravated by having to supply raw materials to Guatemala, El Salvador, and

Costa Rica, which it is claimed, underwrites the industrialization of the others.

Map 10 skillfully combines factors contributing to the economic structure of Central America. The regional settlement status is indicated in various grades for *tierra caliente* (dry and humid) and for *tierra templada* and *fria*. Agricultural lands whose products are exported, industrial centers by size of labor force, those outside the main centers, power lines, mines, land, sea, and air transport, population centers, and tourist attractions of note are illustrated in a variety of colors and with symbols. Growth rate data for the period 1960–70 point to an average Central American intraregional trade increase of some 30 percent per year. The products exchanged were primarily manufactured goods from new industries. Needless to say, the regional infrastructure also benefited. Development of population in rural and urban categories by country, income changes, relative industrial significance, and other related data are described and tabulated in the text accompanying this map.

The generalization of so many economic factors on one map is complicated, but may be justified on the basis that location of major areas of concentration, peripheral zones, isolated point features, and vast undeveloped zones is highly desirable. Any one of several indicators, however, would have shown the same thing, had one argued for a simpler map. It may be concluded from the map, at any rate, that three east-west development zones are emerging: the Honduran coastland, the Managua-Bluefields Nicaragua region, and central Costa Rica. The text is replete with observations on the differential development of economic functions at various elevational regions. Putting these together, it can be seen that an east-west integration is occurring, but that for effective development of the Caribbean side of Central America, a landward north-south communication link is going to be required. Planning for such a project should be multinational, and there is no doubt in this reviewer's mind that the present work will be of much use in assisting this planning, and that amplification of its regionally oriented principles should be the first order of business in preparation for much needed bold new projects. The authors (or someone else) might consider another service to the American community: translation of this material into English, following an intended Spanish version. Indeed, if we are to prepare ourselves for better understanding and long-needed closer contacts with this neglected part of Latin America, someone would do well to establish special funding for the rapid translation of this type of material.