

# AVAILABILITY AND RELIABILITY OF STATISTICS IN SOCIALIST CUBA

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## I. INTRODUCTION

After a decade of revolution, Cuba is more than an open question to be answered, an experiment to be observed. It has become an exciting research topic which appeals to social scientists throughout the world. Yet several problems have obstructed the scholar in his research on Cuba and its revolution. Primarily, travel limitations have forced him to gather his material mainly from secondary sources (or from primary sources whose objectivity is questionable) rather than from direct observation. Even when travel barriers are overcome, free movement and inquiry are not always possible. The government's screening of visitors to Cuba introduces another problem, i.e., the ideological bias of the outsider has often been a distorting factor in the search for truth. In a sizeable number of cases, articles and books on Cuba written by the visitor or observer are frustrating: either the author has been limited in his information and therefore does not present a total picture of the subject in question, or he is biased either in favor of or against the socialist regime of the island, and has allowed this to interfere with an accurate presentation of the facts.<sup>1</sup>

The difficulties faced by the social scientist are intensified by other internal factors operating in Cuba. This is a developing country that has adopted the socialist model. Specialists on Latin America are familiar with the common lack of accurate statistics in this area. By the time that the revolution took over, Cuba was relatively advanced in her statistical output within the framework of Latin America; but, compared to North American and European standards, she certainly was underdeveloped.

The problem of a primitive statistical system has been aggravated by an ideological factor. Specialists in communist affairs have thoroughly discussed the reliability of socialist statistics. In the West two opinions prevail concerning this problem. The outstanding criterion maintains that most socialist data are fairly reliable, due to the fact that inconsistencies would be revealed by cross checks. A dual accounting system (i.e., a real system for domestic technical

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use, and another system altered for propaganda abroad) would be difficult to execute. The opposite view insists that statistics from socialist countries should be taken with extreme caution. It argues that because the statistics are not an unfolding of objective happenings reflecting reality, they primarily constitute an ideological tool in the international politico-economic struggle.<sup>2</sup> As socialist countries have become industrialized, and their economies more complex, the fear of statistical alteration has receded. This is largely due to the fact that former ideologically committed political leaders occupying key posts have been gradually replaced by technocrats who give more emphasis to pure science. Unfortunately, Cuba is not in this category. Her society and economy have been politicized perhaps as a logical consequence both of her immaturity as a socialist nation and of the polarization induced by a hostile power so close to her shore.

A third type of difficulty faced by those doing research on Cuba is the inconsistency and irregularity of data published by this country, together with the frequent contradictions in figures released by various Cuban offices or personalities. In the last five years, significant books and research papers dealing with Cuba, have been published by individual scholars and international agencies, based principally on statistical data supplied by the Cuban government. Too often, later data officially published by Cuba have drastically modified previous figures released by this country. In a few cases, these corrections have been acknowledged by the scholar or agency, the most outstanding example being the 1965 economic survey of the United Nations Economic Commission for Latin America (ECLA) which rectified part of the Cuban data published in the 39 tables of its 1963 economic survey.<sup>3</sup> In most cases, however, rectification has not been feasible and what initially appeared as sound research becomes partially useless in a short period of time.

To illustrate such a case, one may refer to a book published by a team of British and Chilean scholars who went to Cuba in the second half of 1962.<sup>4</sup> Presented to the public as "the first serious study of economic and social developments in Cuba since the Revolution," the book initially held great promise. It contains nearly 100 statistical tables, most of them based on information supplied by Cuban agencies. By the time of publication, the scholars feared that the situation might have become very different from that which they presented. The book relied heavily on the targets set forth in the Cuban four-year plan (1962–65) but the main lines of that plan were drastically changed in 1964. Later the Cuban government acknowledged that most targets were too optimistic and had not been fulfilled.

At this point the question may justly be asked, can these problems be overcome by the researcher, or are they the price to be paid by the scholar interested in Cuban affairs? This paper, the result of seven years of research, will provide answers to that question by setting forth guidelines for a better use of statistical

data from Cuba. In addition, it includes an inventory of the main sources of statistical data; a description of the evolution of Cuban statistics from 1959 to the present; an evaluation of the reliability of statistics made by Cuban statisticians; samples of significant contradictions and statistical misuse and reconstructed tables in important fields, e.g., population, national accounts, agricultural and industrial output, employment, foreign trade, public health, and education.

## II. AVAILABILITY OF CUBAN STATISTICS

### 1. *General, Economics*

Neither statistical yearbooks nor systematic periodical data are now published in Cuba. Since 1952 a statistical yearbook was prepared by the Department of Statistics of the Ministry of Finance, but its last issue, relating to the year 1957, appeared in 1958.<sup>5</sup> It included statistics on demography, agriculture, industry, consumption, building construction, transport, foreign trade, prices, wages, state budget, education and justice. A draft for a statistical yearbook prepared in mid-1963 by the Central Planning Board (JUCEPLAN) covered the period 1959–62 and had very limited circulation.<sup>6</sup>

A statistical bulletin, *Boletín Estadístico de Cuba*, giving comprehensive figures for 1962–67 on demography, economics, education, sports and public health has been prepared by JUCEPLAN in 1966 and 1967, for internal circulation only. Nevertheless, in 1968, an American scholar, Edward Gonzalez, was able to obtain copies of such bulletins, which are being prepared by Paul Roberts for publication at UCLA in 1969. This material will be extremely useful in checking the consistency and accuracy of Cuban statistics. Brief compendia of statistics have been published by the Central Department of Statistics of JUCEPLAN in 1965, 1966, and 1967, but apart from demographic and educational data, the material is very incomplete; there is an excess of index numbers, and statistical series lack continuity.<sup>7</sup>

The annual report of the National Bank of Cuba which provided important economic data in several fields was discontinued in 1960.<sup>8</sup> The monthly journal of the Bank, that began publication in January, 1955 ended in March, 1960.<sup>9</sup> Statistical Series of the Bank supplied systematic information on the following topics: national income, money in circulation, loans and deposits, public debt, the state budget, foreign trade, consumer prices (retail and wholesale indices), tobacco production, tourism, building construction, electric energy, and transports. Occasionally, articles dealing with specific topics included abundant data.

Four important books published in 1950–58, two of them through the National Bank, contain significant data and describe and analyze the pre-

revolutionary economy of Cuba.<sup>10</sup> Another study, written by a group of emigré Cuban economists, although controversial, provides the only available economic history of Cuba from colonial times to 1963.<sup>11</sup> The 1963 ECLA's survey of Latin America is the best study of the Cuban economy covering the period 1959–63. The absence of a similar study for the period 1964–68 creates a serious vacuum.

There are two current publications dealing with economic news of Cuba that contain statistical material. A monthly news bulletin published by the Chamber of Commerce, *Economic News*, was initiated in July, 1965. *Panorama Económico Latino-americano* (PEL) prepared by the news agency Prensa Latina is a weekly journal which began in June, 1960. Both journals are still being published at the time of this article.

## 2. *Vital Statistics*

Six population censuses were conducted in Cuba between the end of the War of Independence and the revolutionary take-over, i.e., 1899, 1907, 1919, 1931, 1943, and 1953.<sup>12</sup> The accuracy and comprehensiveness of the censuses varied greatly. For example, the 1931 census conducted for electoral purposes compiled only population data. The most recent census, completed in 1953, included statistics on population, economics, education, housing, social and sanitary conditions. The National Bank of Cuba published population estimates for the period 1954–59 in its yearly report and journal.

Although Soviet technicians in Cuba acknowledge the necessity for taking population censuses every 5 to 10 years, no population census has been taken during the revolutionary years.<sup>13</sup> Various samples were taken in 1965 and 1966 which led to estimates of population by age, sex, and location in municipalities and provinces as well as to projections up until 1975.<sup>14</sup> A new population and housing census has been scheduled for 1969; the preliminary work was done in February and the enumeration process will take place in August. The statistical compendia provide information on population size and density, migration, birth and death rates, rate of population growth, distribution by age and sex, and number of marriages and divorces for the period 1958–66.<sup>15</sup> Similar data is supplied to the United Nations by the Cuban government. ECLA has made some estimates of the rate of population growth.<sup>16</sup>

Specialized articles in demography are rare in Cuba, and the few published often deal with generalities and provide little data.<sup>17</sup>

## 3. *Planning, National Accounts, Budget, Finance*

Until the early 1960's there was no real economic planning in Cuba. Detailed data on the 1962 and 1963 plans for economic development were pub-

lished in Cuba but had limited circulation.<sup>18</sup> Only broad information and some targets are available regarding the 1964 plan.<sup>19</sup> Outlines for the discarded five-year plan (1961–65) and the four-year plan (1962–65) as well as evaluations of the latter plan were prepared by foreign specialists.<sup>20</sup> Also available is a report of the overall economic situation of Cuba in 1965–66, presented in 1967 by the Cuban delegation before the Twelfth Meeting of ECLA.<sup>21</sup> An article on the 1966–70 planning perspectives published in mid-1963 became partly useless when the Revolution's economic policy was drastically changed in late 1963 and early 1964.<sup>22</sup> Due to lack of information it is difficult to confirm the existence of a current five-year plan (1966–70) in Cuba. Theoretical discussions and descriptive articles on planning (e.g., econometric models, efficiency of planned investment) have been published in technical journals such as *Nuestra Industria: Revista Económica* and *Comercio Exterior*.

Systematic data on the national income for 1947–1958 were published by the National Bank.<sup>23</sup> In anticipation of the four-year plan, estimates of GNP and gross investment for the early 1960's were released by Cuban technicians and published by ECLA. Recent estimates of investment have been supplied by the Prime Minister.<sup>24</sup> The statistical compendia include index numbers of total and per capita GNP and national income for 1963–65, as well as percentage distribution of GNP by sectors of origin in 1962–65.<sup>25</sup> Data on the distribution of Cuban GNP by sector of origin and end use have been irregularly published by the UN, but Cuba does not supply information on GNP at constant prices to that organization. It may be said that GNP and national income figures are usually available in the form of aggregate indices (the methodology of aggregation is unspecified) or as totals which are not broken down into their constituent parts, except for rough percentages. Because of the lack of systematic and comprehensive national accounting statistics, Cuba is not included in the list of countries of the UN's specialized publication in the field.<sup>26</sup>

Financial and budgetary statistics were annually published in Cuba prior to 1959.<sup>27</sup> A specialized journal edited for many years by a private enterprise, *Cuba Económica y Financiera*, ceased publication at the end of 1960; it resumed publication in 1962–65 under government direction.<sup>28</sup> This journal published copious statistics on the 1961 and 1962 state budgets, and for a period included texts of fiscal and budgetary laws. In 1963 the government halted the publication of statistics and devoted the journal to the translation of articles published by foreign technicians. Schematic data on the 1963–65 state budgets were published in the official gazette and in newspapers.<sup>29</sup> Since 1965 no data have been available on the state budget, although the 1966 statistical compendium included incomplete information related to state expenditures in social services.

Articles referring to the role of the national bank in financing Cuba's

economy, the systems of budgetary and self-financed enterprises, prices, monetary reserves, and other financial matters are often published in specialized journals, but without figures. Increases in official prices are occasionally announced by the official gazette and newspapers, and a comparison of the 1968 and 1958 prices has been made by the Prime Minister.<sup>30</sup> On the basis of speeches of Cuban leaders and surveys taken among exiles arriving from Cuba, lists of official and black-market prices have been computed in Miami.<sup>31</sup> The noticeable vacuum in Cuba's financial statistics are in the areas of exchange rates, money supply, public debt, and wholesale and consumer price indices.

#### 4. *Agriculture, Sugar, Livestock, Fishing*

The first agricultural census ever taken in Cuba was conducted in 1946; it included data on land tenure, employment, types of cultivation, agricultural output, livestock, etc.<sup>32</sup> A new agricultural census ordered in 1960 was never carried out. Socialist statistics on agriculture come mainly from reports to international meetings and specialized agencies, articles in Cuban journals, and a few books.

Articles on sugar, tobacco, coffee, rice and citrus fruits were published in 1955–60 by the journal of the National Bank. Speeches, proceedings, and data from the first meeting on national production, held in 1961, are available in a booklet.<sup>33</sup> Data on several annual meetings on agricultural production are also available.<sup>34</sup> The Institute of Agrarian Reform (INRA) and other government agencies have published papers on agrarian reform and crop results and costs.<sup>35</sup> PEL has reproduced several reports presented by Cuban delegations before Food and Agricultural Organization (FAO) meetings.<sup>36</sup>

The statistical compendium publishes figures on cultivated areas of sugar, wood and fruit trees, as well as production of milk and eggs on state farms. Data on state buyings from private farmers are available in index numbers for 1963–66.<sup>37</sup> Periodical data reported by Cuba on the output of the most important crops are published by FAO in its monthly bulletin of statistics and in its yearbook. This international organization also computes an index of Cuba's agricultural production.<sup>38</sup> ECLA includes statistical data and an analysis of Cuban agriculture both in its 1963 and 1965 economic surveys and computes an index of output in its *Boletín*. Other sources of information are the statistical yearbooks published by the UN and the Pan American Union (PAU).

Former heads of INRA have prepared annual reports on agrarian reform and its results.<sup>39</sup> Several articles published in *Cuba Socialista* deal with various aspects of agriculture such as plans, output, productivity, state purchases to small farmers (*acopio*), fertilizers, and crops (e.g., sugar, tobacco, coffee, potatoes and timber).<sup>40</sup> The National Association of Private Farmers (ANAP)

has published a monthly journal, *ANAP*, since 1961, which gives general information but scanty figures on private agriculture. Other specialized journals in the field are *Revista Cubana de Ciencia Agrícola* (an irregular, scientific publication of the Institute of Zoological Science which began in November, 1967), *Revista de Agricultura* (triannual, technical publication of the Academy of Sciences, initiated in January, 1967), *Fruticuba* (a monthly magazine of the fruit division of INRA), and *Voluntad Hidráulica* (bi-monthly publication on water resources published by the National Institute of Hydraulic Resources).<sup>41</sup> Two other periodicals providing no statistical data were *INRA* (popular magazine which ceased publication in March, 1962) and *Agro* (the newspaper of agricultural trade unions which ceased publication in 1966).

Foreign advisors to the Cuban government have reported on their experiences, made appraisals and criticisms, and supplied some data.<sup>42</sup> The U. S. Department of Agriculture has published data on Cuba's agriculture, while a Soviet specialist has given another viewpoint on agrarian reform and land tenure.<sup>43</sup> Based mainly on Cuban statistics, a critical book was written by a group of emigré Cuban scholars. More favorable evaluations of the agrarian policy of the revolution are provided by an American scholar and a Chilean economist who did field research in 1961 and 1962.<sup>44</sup>

The best source of sugar statistics is the *Anuario Azucarero de Cuba*, a yearbook published from 1937 to mid-1960's, initially by a private undertaking, and later by the Cuban Ministry of Foreign Trade.<sup>45</sup> The statistical compendium of 1966 released figures on cultivated areas of sugar, as well as on the output in 1962–66. Three important books give information on the history of sugar plantation in Cuba, the pre-revolutionary sugar policy, and the developments up to 1965.<sup>46</sup> A new periodical, *Cuba Azúcar*, published yearly in Spanish, English, and French by the Ministry of the Sugar Industry provides data on sugar harvests, industrial activities, and other technical matters. Significant articles on the revolutionary sugar policy, annual crop results, the long-range sugar plan (1965–70), and the expansion and modernization of the sugar industry have been published in various journals.<sup>47</sup> International bulletins prepared by the International Sugar Council and firms such as C. Czarnikow Rionda Ltd., Merrill Lynch, and B. W. Dyer & Co. include sugar statistics on Cuba. Another periodical, *Economic Intelligence Report* (Miami), compiles and analyzes sugar data published in and transmitted from Cuba, and prepares an annual report on the sugar crop.

The first Cuban cattle census was taken in 1952, although some previous data were gathered in the 1946 agricultural census.<sup>48</sup> A second livestock census, taken in 1961, was questioned by Cuban statisticians and had limited circulation. The most recent cattle census was taken in August of 1967, but comprehensive data had not been released at the time of this article.<sup>49</sup> The Institute

of Zoological Science published two books containing abundant statistics on number and type of cattle, bovine genetics, artificial insemination, animal nutrition and hygiene, and teaching and research in this field.<sup>50</sup> Articles published in various journals and newspapers provide additional data on cattle development plans and their deficiencies.<sup>51</sup>

The statistical compendium supplies data on the tons of fish caught by state and cooperative vessels in 1961–66, and the distribution by species. Similar information is published by the UN's statistical yearbook. *Mar y Pesca*, a specialized journal published monthly by the National Institute of Fishing, includes occasional statistics on fish output and the fishing fleet.<sup>52</sup>

### 5. *Industry, Transport*

The best source of statistical information for the pre-revolutionary era is the now-defunct journal of the National Bank; it included an index of industrial output and occasional data on cement, construction, nickel, oil, steel, sulfuric acid, textiles, and sugar by-products (e.g., alcohol, bagasse). The sugar statistical yearbook provided abundant statistics on the industrial sector of sugar production. A technical mission that the International Bank for Reconstruction and Development (IBRD) sent to Cuba in 1949 gathered selected data.<sup>53</sup> Summaries of the most important statistics on industry before 1959 are included in two studies; one was conducted by a group of Cuban scholars at the University of Miami, and another was prepared by a Chilean economist in the research team that Seers led in Cuba in 1962.<sup>54</sup> The transformations taking place in the old industrial organization during the early years of the Revolution are described by an American scholar, although his study is not supported by quantitative data.<sup>55</sup>

A good introduction to industrial planning in Cuba which includes statistics is a series of lectures published by the Ministry of Industry (MININD).<sup>56</sup> The long-range industrialization plans, as initially conceived by the late Che Guevara, are discussed in an optimistic article, which may be compared to his more mature paper published two years later in an American journal.<sup>57</sup> An index of industrial output, as well as rates of growth, physical production of most significant industrial goods, and targets under the 1962 and 1963 plans were published in ECLA's 1963 economic survey.<sup>58</sup> Information concerning failures in the 1963 plan, explanations of reasons for the shift of investment from heavy industry to agriculture, and a summary of the 1966–70 plan for industrial development have been released in Cuba journals.<sup>59</sup> The Institute for Physical Planning and MININD have prepared an input-output table for the industrial sector. Discussions on the application of input-output tables and lineal programming to industry have also been published.<sup>60</sup> JUCEPLAN has



elaborated on the interrelation of regional planning and industrial development.<sup>61</sup>

Comprehensive reports on industrial development and physical output covering the period 1959–65 were prepared by MININD and submitted at the 1965 and 1966 ECLA meetings.<sup>62</sup> The statistical compendia offer index numbers of physical output of 50 selected industrial products in 1963–66.<sup>63</sup> The UN has recently published an index of Cuba's industrial output for 1959–65; it also gives periodical data on physical output of most industrial goods.

One of the most circulated journals in this field, *Nuestra Industria*, was published from January, 1961 to September, 1966 by MININD. It provided comprehensive information on organization of production branches, output, safety measures, and industrial plans. However, this magazine was primarily devoted to subjects of wide popular interest, and serious research was rarely included so that statistics were neither frequent nor significant.<sup>64</sup>

Substantial statistics on industrial branches (e.g., petroleum, electric power, knit fabrics, textile fibers and bagasse paper) and the planners' criteria for selecting alternative industrial projects are included in the 23 issues of a technical journal, *Nuestra Industria Revista Económica*, published from June, 1963 to February, 1967 by MININD.<sup>65</sup> Additional data on copper, chrome, cement, steam and hydraulic energy, steel and dairy industries are included in *PEL's* annual volume which is composed of the best monthly selections from that journal.<sup>66</sup> More data on electric power, light industry, sugar, tobacco, and food production, as well as on industrial productivity and efficiency are supplied by other journals.<sup>67</sup> Technical journals providing scanty statistics are *Arquitectura* (bimonthly published by the National Association of Architects), *Ingeniería Civil* (monthly journal of the Association on Civil Engineers), and *Nuestra Industria Revista Tecnológica* (bimonthly published by MININD).

Concerning transports and communications, the statistical compendia gives figures on transport of passengers and freight, as well as on mail, telephone and telegraph services for 1962–66. Rare data on agricultural highways and roads have been recently published.<sup>68</sup> Reports on the transportation situation in 1963, 1964, 1966, and 1967 are available.<sup>69</sup> Statistics on railroads were previously published by the journal *Ferrovías* which went out of circulation in the mid 1960's.<sup>70</sup>

## 6. Foreign and Domestic Trade

The most comprehensive, accurate, and regular statistics are found in the sector on foreign trade. For the period 1902–1958, the foreign trade statistical yearbook is the best source; it includes statistics on the volume of trade, composition by product, origin and destination, balance of trade, etc.<sup>71</sup> The journal

*Cuba Económica y Financiera* supplied monthly statistics from 1926 until the end of 1960.<sup>72</sup>

JUCEPLAN prepared annual reports on foreign trade for 1959, 1960–61, and 1965.<sup>73</sup> An analysis of the first trade agreement between Cuba and the USSR was made in 1960 by the Minister of Commerce.<sup>74</sup> From March 1963 until September 1966 the journal *Comercio Exterior* was published quarterly by the Ministry of Foreign Trade (MINCEX). It included a regular section on foreign trade statistics (e.g., imports and exports by product and trade partners, sugar markets, and trade agreements) and was one of the most useful sources of data on socialist Cuba. In addition, the journal printed highly technical articles on such themes as economic calculation, investment and foreign trade, and application of mathematical models for optimal imports.<sup>75</sup> A newly formed advertising magazine aimed at promoting Cuban exports is *Cuba, Comercio Exterior*. Published bimonthly in several languages by the Chamber of Commerce, it has not filled the vacuum left by the MINCEX's journal.

The statistical compendia give percentage distribution of exports and imports by countries during 1960–66. Summaries of statistical tables and analyses of foreign trade are occasionally published by *PEL*.<sup>56</sup> FAO releases Cuban figures on foreign trade which supplement those from trade partners of Cuba. Data refer to value of agricultural trade, quantum of trade in agricultural commodities and requisites (e.g., tractors, fertilizers, seeds, insecticides, and fungicides).<sup>77</sup> ECLA's economic survey for 1963 included abundant data on Cuba's foreign trade up to September of that year. The UN statistical yearbook and bulletin regularly supply data on volume and composition of Cuban trade.

Technical papers on export coefficients of profitability, the application of input-output matrices to determine needs of imports, and the international sugar market, as well as articles on general trade policy and addresses to international trade meetings have been published in various journals.<sup>78</sup> Details on bilateral trade agreements are often reported by the Cuban radio. Schedules for the presentation of imported goods from socialist countries are occasionally published in the newspapers.<sup>79</sup>

Data on domestic trade is hard to find. An exception is the article published in 1966 on the problems faced by internal trade; it includes some figures.<sup>80</sup> The topic is often discussed in public speeches, especially by Prime Minister Castro, but without the release of significant statistics. The UN statistical yearbook does not include Cuban data in this field.

## 7. *Employment, Wages, Trade Unions*

Pre-revolutionary statistics of varying accuracy on occupational structure, employment, and unemployment are supplied by the 1943 and 1953 popula-

tion censuses, the 1946 agricultural census, and the 1956–57 employment sample taken by the National Council of Economics.<sup>81</sup> Data on wages were regularly printed by the annual report and the journal of the National Bank. The International Labour Office (ILO) in Geneva reported Cuban statistics on labor force, employment, unemployment and wages up to 1960.<sup>82</sup> For a period, the Ministry of Labor (MINTRA) published a statistical bulletin as well as a specialized journal, but most of the articles in the latter were primarily on the field of labor law.<sup>83</sup> Useful information concerning size and skills of the labor force, working conditions in industry, labor-management relations, and regulations applying to longshoremen was furnished in the IBRD's 1949 technical report to the government of Cuba.<sup>84</sup> Monographs providing data on labor conditions, occupational structure and employment were scarce, and nothing significant was published on wages.<sup>85</sup>

With respect to the transformation of the labor system from the market economy existing prior to the revolution into the planned economy which began to develop in the early 1960's, divergent viewpoints are offered by emigré Cuban economists and American scholars.<sup>86</sup>

There are various samples, surveys, and analyses of the labor force which cover the period 1959–62, as well as projections until 1965. Foreign scholars visiting Cuba have obtained mimeographed copies of some of these reports.<sup>87</sup> Such statistics have been compiled and analyzed by the author.<sup>88</sup> A census of construction workers was taken in October, 1967, but its results have not yet been released.<sup>89</sup> From May, 1961 through December, 1964 the MINTRA published a journal, *Trabajo*. It included general information but scarce quantitative data on wages, output standards, occupational accidents, labor relations, industrial safety, emulation, and trade unions. The newspaper of the Confederation of Cuban Workers (CTC) *Vanguardia Obrera* began publication in 1963 and ceased toward the end of 1966. It included broad information on trade unions, organizations, voluntary labor, and union meetings. Reports and addresses presented at the two labor congresses held in Cuba (1962 and 1966) include general data but scant figures.<sup>90</sup>

Data on output standards and occupational classification were released at a meeting held in 1963 by representatives of MINTRA, MININD, and the Party.<sup>91</sup> The basic document on the establishment of output standards and wage scales was published in 1964.<sup>92</sup> Wage scales for agricultural laborers, industrial workers and state bureaucrats give grades, coefficients, and rates under both normal and strenuous labor conditions.<sup>93</sup> But the lack of statistics on the "wage fund" (total wage bill) and its distribution by occupations creates a serious vacuum. JUCEPLAN has reported figures on the wage structure for 1962–64, but in a highly aggregated way. These reported wages are apparently limited to the state sector.<sup>94</sup> The absence of quantitative data on income distribution is

significant.<sup>95</sup> Reports on the progress of and the difficulties faced in establishing the new system of output standards and wage scales in sectors such as agriculture, transport, and construction as well as the system's impact upon production were released in 1964–66.<sup>96</sup>

There have been four different systems (1961, 1963, 1965, and 1966) of "socialist emulation" in Cuba. Data on emulation techniques and their results in various sectors of the economy are abundant.<sup>97</sup>

Although figures are often fractionary and lack precision, statistics on number, types, frequency and cost of occupational accidents and diseases, as well as violations in safety standards and hygiene are available.<sup>98</sup> Most of the significant statistics released through Cuban news media on wages, output standards, emulation, occupation accidents, unpaid labor, and disguised unemployment have been compiled in various studies by the author<sup>99</sup>

#### 8. *Public Health, Housing, Education, Social Security*

Public health data prior to the revolution may be found in population censuses and in the 1958 statistical yearbook. For the period 1959–64 various reports prepared by the Ministry of Public Health (MINSAP) provide statistics on number, specialization and location of hospitals, and of physicians and other medical personnel, as well as budget expenditures on public health.<sup>100</sup> Supplementary data on control of infectious diseases, vaccination, and mortality rates are supplied by the Vice-Minister of MINSAP.<sup>101</sup> Recent data (1966–68) have been published in the statistical compendium as well as in newspapers and magazines.<sup>102</sup> Six specialized journals, most of which were being published by 1959, are edited bimonthly by MINSAP. They are *Boletín de Higiene y Epidemiología* (hygiene and epidemiology), *Revista Cubana de Cirugía* (surgery), *Revista Cubana de Estomatología* (dental), *Revista Cubana de Medicina* (general medicine), *Revista Cubana de Medicina Tropical* (tropical medicine, parasitology), and *Revista Cubana de Pediatría* (pediatrics). Other journals in this field are *Revista Cubana de Farmacia* (pharmacy) and *Revista del Hospital Psiquiátrico de La Habana* (psychiatry). Articles translated from foreign journals and some Cuban contributions, as well as occasional statistics, are published in these journals. The Pan American Health Organization and the UN statistical yearbooks release Cuban data in this field.

Until 1960 the National Bank and the National Association of Architects published data on housing but did not separate housing from other types of building construction in their statistics. The 1953 population census contains the most recent statistics on geographical distribution of dwellings and their facilities. Data for 1959–66 on the number of dwellings by builder (i.e., private and state) and location (urban and rural) have been published irregularly.<sup>103</sup> Cuba does not supply the UN with current data on housing.

Pre-revolutionary data are available from the 1953 population census dealing with illiteracy, school attendance by sex and location, and number of teachers. The statistical compendia, the Cuban commission before UNESCO, and the Ministry of Education supply comprehensive and detailed statistics on number, type and geographic distribution of schools, student enrollment in primary and secondary schools and colleges, number of teachers, state expenditures in education, number of fellowships, students abroad, and book production.<sup>104</sup> Similar information is regularly printed by UNESCO and the UN statistical yearbooks. Several articles published in 1961–1967 in *Cuba Socialista* study various types of education, including political indoctrination. Good sources of data until 1962 are a study by a Chilean economist and a report published by the U. S. Department of Health, Education and Welfare.<sup>105</sup> Perceptive studies on the political implications of Cuban education have been published by two American scholars.<sup>106</sup>

The best study ever completed on Cuba's social security was prepared in 1957 by a technical mission sent by the ILO to advise the Cuban government in unifying numerous social insurance funds protecting workers against the risks of old age, invalidity, and death. The ILO mission computed statistics on coverage, amount of benefits, contributions, funding and investment.<sup>107</sup> Other reports were prepared at the same time by Cuba's National Council of Economics and the General Comptroller's Agency.<sup>108</sup> Data on the number of insured and the amount of contributions to the various funds were published by the journal of the National Bank.<sup>109</sup> The maternity insurance fund prepared an annual report and published a bulletin for some time; both included statistics. The agency established in 1959 by the revolutionary government to cope with the task of unifying social insurance funds, published four issues of a monthly journal, *Boletín del Banco de Seguros Sociales de Cuba*, from January to April, 1960. It provided statistics on revenue and expenditures of such funds. Data on the number of beneficiaries and amount paid in benefits was released in 1962 by MINTRA.<sup>110</sup> General information on the new social security system, in force since 1963, is available from three articles, one written by a Czech technician and two by MINTRA.<sup>111</sup> The best compilation of statistics for the period 1956–63 was published by the University of Miami, and includes data on coverage, benefits, contributions, funding and investment of all social insurance funds, as well as of public health institutions.<sup>112</sup>

### 9. *Classes, Social Attitudes, Living Conditions*

Sociological studies were rare in pre-revolutionary Cuba, and although they have increased in number since 1959, such studies have been primarily conducted by foreign specialists. In the late 1940's an American scholar undertook a survey of living conditions in rural Cuba which has since become a

classic in the field.<sup>113</sup> A lesser known investigation is the survey on living conditions and social attitudes of Cuban peasants (*guajiros*) conducted by the Catholic Association of Students of the University of Havana. The sample was systematically taken from November 1956 to September 1957 throughout the countryside, and its results were published on the eve of the revolutionary takeover.<sup>114</sup> The survey compiled statistics on height and weight of the *guajiro*, his caloric intake, diet composition, health and diseases, socio-economic expectations, education, income, and housing and sanitary conditions. The Cuban socialistic government often draws data from this study. The only investigation on social stratification concerning the middle class was conducted by an advertising agency in 1957–58; it is neither accurate nor comprehensive and does not explain the methodology utilized to collect the data.<sup>115</sup> A young exiled sociologist has made an interesting attempt to apply various theories on revolution to factual data (mainly gathered from secondary sources) in order to analyze possible causes of the Cuban revolution.<sup>116</sup>

In 1959–60 two western scholars gathered information on social attitudes and expectations of Cubans living on the island. The first survey, taken in 1959, refers to attitudes of the people towards the Castroite regime, while the second, conducted in mid-1960, deals with the worries and expectations in both the individual and national spheres.<sup>117</sup>

Scholars conducting research in this field before the Bay of Pigs Invasion (April 1961) enjoyed some degree of freedom. Following that time, and particularly since 1962 opportunities for completely free, objective research have become increasingly limited. An exceptional case seems to be the survey dealing with factory workers taken by the American sociologist Maurice Zeitlin in the summer of 1962. It measures the relationship of variables such as economic insecurity, political ideas by generations and race upon political radicalism, and revolutionary support.<sup>118</sup> The author obtained special permission from Guevara (then Minister of Industry) to conduct the survey, and had the cooperation of state managers and trade-union officials. Zeitlin describes with precision the methodology used in gathering the sample and devotes several pages to explain why answers were not affected by dissimulation or fear. However, in the opinion of the author, Zeitlin does not lend sufficient importance to the possible reaction of a worker, neutral or opposed to the regime, before a stranger who presented himself by saying that he had "permission from the Ministry of Industries, your administrator and the union delegate," and who was then asked questions about his political ideas. The suspicion that simulation could have affected the results of the survey is accentuated by the unstable situation of Cuba at the time. According to Zeitlin, the nation was in a "war footing." Premier Castro had purged important members of the old communist party (PSP) and, as a result, a mood of untrust and suspicion had evolved between this group and

that of the new communists (*fidelistas*). In addition, the government feared a new American invasion, and the existing tension was a presage of events that would culminate with the Missile Crisis. Additional discussion on the validity of some of Zeitlin's conclusions is provided in another section of the paper.

The difficulties faced by foreigners doing research in Cuba since 1962 is illustrated by the problems described by Seers and his team when attempting to secure government cooperation. These authors acknowledge that the information that they obtained was often incomplete, of poor quality, and inconsistent; they therefore did not put much confidence in some data (e.g., agricultural output, national accounts, and planning targets). Because of these problems, a comprehensive analysis could not be carried out, and the team's conclusions were tentative in many instances: "We debated whether under the circumstances we would be able to write anything at all valuable. What really decided the issue was that information is so badly needed . . . Earlier we had discussed whether it was worthwhile staying in the country to collect material. There were some obvious risks in this, but we were still very interested, and naturally we were reluctant to admit defeat once we had drawn on the Cabot Foundation grant."<sup>119</sup>

More facilities were apparently granted in early 1967 to an American writer of Cuban ancestry, Jose Yglesias. For three months he lived in Mayarí, a small country town in the Oriente province. He attempted to describe the social changes taking place in that village.<sup>120</sup> Yglesias' approach resembles that of Oscar Lewis, but his results fall far below the quality of the studies produced by the reputed social anthropologist.<sup>121</sup> Yglesias presents himself as a sympathizer of the revolution and his book clearly shows bias. Nevertheless, it took him thirteen months to obtain a Cuban visa (despite his connections within Cuba, and a trip that he made to Prague to talk to Cuban officials there), and he was even arrested at the onset of his stay.

A recent sociological study has been conducted by Canadian scholars, Paul and Bella Skup. From January 1966 until mid-1967 they worked with the cooperation of the Central University in two small towns in Calabazar de Sagua, in Las Villas province. Surveys, open and closed questionnaires, interviews, and biographies provided data on aspects such as revolutionary support, living conditions, education, medical and sanitary conditions, diet and food habits, and female labor. A brief report of the study's results has been published in Cuba by the Party newspaper, which has also announced that the Skup party will stay another year to work in Cuba.<sup>122</sup>

The number of sociological studies prepared by Cubans is rapidly increasing, but unfortunately little is known about their results. In January, 1967, specialists from the University of Havana's political science, economics, history and geography departments conducted a survey in the most publicized agricul-

tural commune, San Andrés, which is located in the western province of Pinar del Río. The team prepared a questionnaire, took a sample, and wrote a report which included data on population, manpower, output, income, credit facilities, state investment, housing, food supply, education, reading habits and public health.<sup>123</sup>

A group of college students who are members of the Schools of Revolutionary Indoctrination (EIR) has been working on social research projects since 1965, and several surveys have been conducted by them.<sup>124</sup> Data on the incorporation of Cuban women into the labor force as a way to fight traditional values and sex discrimination is provided by a report of the President of the Federation of Cuban Women (FMC); it was released in late 1967.<sup>125</sup> A statistical study of Cuba's youth is available.<sup>126</sup> Figures on number of weddings and divorces for 1958–65, the latter distributed by causes and location, were published in 1968.<sup>127</sup> Other studies on technical training of the future worker, transformation of traditional values, and development of the "socialist man" have been published in three journals. These are *Ciencias Sociales Contemporáneas* (biannual, edited by the Academy of Sciences), *Pensamiento Crítico* (monthly, edited by the Center for Latin American Studies) and *Teoría y Práctica* (edited by EIR until the end of 1967).

#### 10. *Politics, Other Sources*

Politics is one of the most difficult areas of social science in which to find Cuban statistical data. The majority of the information is of the qualitative type. Cuban secrecy in such aspects as military affairs, and Party and bureaucratic apparatus, coupled with the lack of political institutions such as public elections (which are common sources of quantitative data) prevent the researcher from readily obtaining statistics. This section identifies primary sources for data that are mainly of a quantitative nature; formal studies on Cuban revolutionary politics are not mentioned.<sup>128</sup>

Lists of principal personalities of the Cuban government and the party are occasionally published in Cuba and abroad; these lists furnish scanty information on background or profession (e.g., military grade).<sup>129</sup> Information on the campaign to reduce bureaucracy is abundant.<sup>130</sup> Some material is available concerning the politico-administrative structure of the nation, and plans for its future modification.<sup>131</sup> Laws and other legislative material are regularly published in the official gazette (*Gaceta Oficial de Cuba*). The best source of revolutionary leaders' speeches for the 1959–65 period is the periodical *Obra Revolucionaria*. Since 1966 this task has been undertaken by *Ediciones el Orientador Revolucionario*.

In securing information about Party organization, *Cuba Socialista* is the



most significant source. From February, 1962 through November, 1964 this journal included a regular section of Party (first ORI, later PURS) news, such as the establishment of nuclei in factories, farms, the army, etc., ideological training, Party cards, contributions to the Party's fund, objectives, and guidance and control. Speeches, documents and reports released at the establishment of the Partido Comunista de Cuba (PCC) are published in a special issue of the journal.<sup>132</sup>

Information on the armed forces (FAR), compulsory military service (SMO), and military units to aid production (UMP) tends to be superficial or insignificant. The best source of data is *Verde Olivo*, a weekly magazine of FAR which began publishing in March 1960 and was still in existence at the time of this article.

In the early years of the revolution the Young Communist League (UJC) published a magazine, *Mella*. In 1965, *La Tarde*, an evening newspaper, became the official organ of the UJC under a new name, *Juventud Rebelde*. It had a circulation of 68,000 copies (as of mid-1967) and furnishes information on UJC organization and activities.

FMC publishes a popular magazine, *Mujeres*, which includes superficial information on female participation in national and international activities. Additional data has been released by the EIR regarding organization, tasks, and accomplishments of revolutionary schools of political indoctrination.<sup>133</sup>

Two journals which publish articles on internal politics are *Pensamiento Crítico* and *Teoría y Práctica*, while *Política Internacional* is a quarterly journal edited since 1963 by the Ministry of Foreign Relations (MINREX). The latter compiles information from the Institute of International Politics' research and data on problems of a judicial and political character. In April, 1966, the Organization of the Solidarity of the Peoples of Africa, Asia and Latin America (OSPAAAL) commenced publication of a monthly bulletin concerned with the revolutionary activities on these three continents.

Newspapers are an occasional source of statistical data in Cuba. On October 4, 1965, *Revolución* (official publication of the 26th of July Movement) and *Hoy* (official organ of the Popular Socialist Party) merged to form the newspaper *Granma*, which is now the official organ of the PCC. The regular edition of this newspaper had a circulation of 327,000 copies in mid-1967. In addition, a weekly abridged edition is published in English, French, and Spanish. *El Mundo* was the only remaining newspaper of the pre-revolutionary era; as of mid-1967 it had a circulation of 158,000 copies. In May, 1968, the publication of this newspaper became a practical exercise for the students at the school of journalism at the University of Havana. However, a former section of classified ads that provided information on prices of second-hand goods and wages of domestic help is no longer published. The pre-revolutionary maga-

zine, *Bohemia*, is still circulating. Other newspapers are *Sierra Maestra* (published in Santiago de Cuba, the second largest city), *Vanguardia*, *Girón*, *El Socialista*, *Adelante y Ahora*; their circulations in mid-1967 varied between 5,000 and 23,000 copies.

Transmissions of the strongest radio stations, *Radio Havana*, *Radio Progreso* and *Radio Liberación* are monitored daily, compiled, classified, and published in English by a United States government agency; they are also published in Spanish by an organization of exiled Cuban stenographers.<sup>134</sup> The validity and accuracy of such versions have been verified in the last six years by the author by random sampling.

Translations of significant articles and information published in Cuban newspapers, magazines, and technical journals are prepared by the U. S. Department of Commerce and classified by subject, i.e., economics, military, sociology, etc.<sup>135</sup>

### III. RELIABILITY OF CUBAN STATISTICS

This section is composed of three parts: a brief history of the evolution of Cuba's statistical system from 1959 to 1968; an evaluation of the quality and validity of such statistics according to official self-criticism (i.e., criticism emanating from prominent Cuban statisticians); and a description of outstanding contradictions and puzzles, noted in the various fields of Cuban statistics. Data in this section are limited almost exclusively to Cuban primary sources, reports of foreign advisors about the island, and information released by international agencies that the Cuban government supplies with statistics.

#### A. *Brief History of Socialist Statistics*

When analyzing the history of statistics in a decade of revolution in Cuba, three periods may be distinguished: an initial stage of disorganization which lasted from mid-1959 to the end of 1961; a second period characterized by the increase in the quantity of statistics but by stagnation and deterioration in their quality (from early 1962 to 1964); and a period that still is in process in which statistical sources have been strictly centralized and the amount of released data has declined substantially.

##### 1. *Early Disorganization of the Statistical System (1959–61)*

Before 1959, accounting in private enterprises and government agencies was organized on an individual basis, although it followed broad guidelines from the Ministry of Finance and the General Comptroller's Office. Most statistics produced by the state sector were based on estimates deduced from tax reports, e.g., enterprises' profits were derived from corporation taxes, wages from social security contributions, imports and exports from custom duties.

When gathering statistics, the state relied primarily on the flow of information from the private sector and fiscal agencies.

The nationalization process was initiated in 1959 with the agrarian reform and the confiscation of a small number of enterprises. This process gathered momentum with the large collectivization waves of 1960–61. As a result of these movements, the flow of statistical data gradually diminished. By 1962, the state was controlling the nation's means of production and services in the following proportions: banking and foreign and wholesale trade—100 per cent, transportation—92 per cent, industry—85 per cent, construction—80 per cent, retail trade—52 per cent, and agriculture—37 per cent.<sup>136</sup>

The newly established Ministry of Industry had to deal with thousands of operations that were previously handled by each industrial corporation or plant, now clustered in *consolidados* (combined enterprises). The customs administration was shifted from the Ministry of Finance to a new state agency, MINCEX, which lacked the organization necessary for compiling trade statistics from customs warrants. Systematic records on purchasing abroad were missing; imports were not accurately identified and lacked specification.<sup>137</sup> Import figures by category of merchandise were not tabulated for 1960, and those for 1961 were not computed until late 1962.<sup>138</sup> In the agricultural sector there was widespread ignorance of the amount of land in state and private hands, and its distribution by cultivation; this ignorance impeded the proper evaluation of output potentialities.<sup>139</sup> Inexperienced militia-men who appropriated cattle estates in 1959–60 destroyed cattle stock records. Coffee statistics were taken out of the files and lost by the bureaucrats who did not want to take the pains to copy them.<sup>140</sup> In the latter part of 1960 and the first half of 1961, the individualistic and uncoordinated work of government agencies, the lack of experience and knowledge on the part of new administrators, the tendency on the part of suspicious private enterprises—which still remained—to hide data, the deep transformation in the economic structure, and the absence of central filing and clearance of data caused serious damage to Cuba's statistical system. The automatic functions of the market had been partially eradicated, while the necessary substitute, planning controls, had not yet been developed. The French advisor of the Cuban government, the agronomist Dumont (1964:100) explained that a market economy can function with inadequate information because the laws of demand and supply work automatically to re-establish equilibrium and correct errors, but a planned economy cannot operate with a weak statistical basis. The French agronomist also indicated that the more collectivized economy is, the more accurate and precise statistics are needed; if they are lacking or improvised, the ultimate result is disorder.

The problem of a primitive statistical system in pre-revolutionary Cuba (again, when compared with U. S. and European standards) was aggravated

by the fact that the few trained statisticians worked mainly for private enterprises and the majority of those emigrated in the early years of the revolution. Some of the statisticians remaining in Cuba were theoreticians and did not have practical experience in making estimates of production, demand, or need for imports. New staffs were hastily improvised, and they were often incompetent. A dramatic example is reported by American economist and advisor to Cubans, Boorstein (1968:67): the head of the Research and Statistics Division for Foreign Trade did not have formal training in statistics, but rather some experience in a small market-research business.

The Vice Minister of Finance has described how his own office, as well as the National Bank and JUCEPLAN, fought for the introduction of controls, uniformity, coordination and rationalization in state accounts as a basis for better statistical information. These three parties attempted to construct a better basis for statistical information along with a procedure for avoiding duplications and contradictions.<sup>141</sup> Although these efforts led to some improvement, noted late in 1961, Cuban statisticians and foreign advisors agree that both the quantity and quality of statistics in this period declined in comparison with pre-revolutionary levels. The French planner and Cuban advisor, Bettelheim (1966:4) asserts that data for this period were so poor both in quality and quantity that it could be taken as indicative only. Boorstein (1968:153) classified the situation as "semi-chaotic."

## *2. Increase in Quantity and Decline in Quality of Statistics (1962–64)*

In mid-1961 Cuba embarked upon an overambitious attempt at physical, centralized planning of the type developed in the USSR and other well-industrialized East European countries. Guevara described his ideal planning system by comparing it to perfect clock machinery. Czech technicians were in charge of explaining to their Cuban partners the method of planning implementation.

Work on the 1962 plan commenced towards the end of March, 1961, but was interrupted by the Bay of Pigs invasion. The two or three weeks' delay increased the pressure on the individuals whose task was to fill hundreds of planning forms with thousands of estimates. Some 500 material balances (i.e., a Soviet substitute for the market equilibrium mechanism, based on the iterative technique of successive approximations) had to be developed. The computation of balance sheets and other planning forms required both a large number of trained people (ten per cent of which were perhaps available) and detailed statistics. Offices were staffed with unskilled personnel and statistics were not available. Seers (1964:50) reports that the forms were based on rough estimates prepared by managers in the midst of enthusiastic production meetings

held throughout the nation. In other cases, bureaucrats, who lacked data altogether and faced the obligation of filling out the forms invented statistics which were later accepted by JUCEPLAN without any check on their validity. Boorstein (1968:161) has accurately described this situation: "In filling out the forms, the measure of achievement became the quantity of statistics prepared, not their accuracy. At each stage in the hierarchy, the chiefs would check whether those below were fulfilling their assignments, and the closer the deadlines, the heavier the pressure to get the numbers . . ."

By September, 1961, the 1962 plan had been completed and preliminary estimates had been drawn up for the four-year plan (1962–65). However, several modifications were introduced into the 1962 plan, the last one coming in the middle of the year when the plan was already in operation. Boorstein (1968:176) asserts that this situation had improved in 1963, but Dumont (1964:100–101) reports that the 1963 plan had not reached the administration by September of that year; and that the delay caused serious disorganization.

An impressive campaign of self-criticism aimed at improving statistical accuracy began to develop late in 1963. At least five leading Cuban statisticians and economists wrote articles on the flaws of the statistical system. In 1964 the head of the Statistical Department of JUCEPLAN noted that the deficiencies of the statistical system could not be immediately overcome, but would take several years.<sup>142</sup>

The weaknesses of the statistical system caused negative side-effects. Excessive optimism in fixing output targets for 1962 and in making projections for 1962–65 led to goals which were impossible to fulfill. In some cases, the actual 1962 output in industry and agriculture fell 50 per cent below the planned targets. Ignorance of import needs resulted in shortages of raw material, chemical products, and spare parts; this in turn led to the paralyzation of several factories. On the other hand, machinery was received before building facilities were available or personnel could be trained to utilize it. Gross overestimates of export potentialities have, since 1962, provoked a serious imbalance of trade. The construction of rigid production plans that did not allow margin for error, the excessive confidence in large and rapid expansion in agricultural output, and the consumption policy of the government precipitated a serious disequilibrium in the supply and demand of consumer goods. By March, 1962, a rationing system had to be established. In 1964 the plans for accelerated industrialization and rapid economic growth had to be postponed.<sup>143</sup>

After discussing his personal difficulties with false statistical data fabricated by the Statistical Department of JUCEPLAN, Dumont (1964:100–102) commented that a highly centralized system planning such as Cuba's, coupled with upwardly biased statistical data and revolutionary enthusiasm, had to re-

sult in unrealistic optimism in setting over-ambitious targets. For a long period of time the revolutionary leaders did not become aware of the economic situation. They adopted audacious economic measures based on distorted knowledge of the economic conditions in Cuba, and the leaders and revolution suffered when the realities of the system became evident.

### 3. *Statistical Centralization and Secrecy (1964 to the present)*

Cuban statistics which reached the outside world in 1961–63 were prepared and released by JUCEPLAN and other state agencies. The failure of expectations and non-fulfillment of plans put the Cuban government in an embarrassing situation. To publish systematic data on real performance would have shown failures in several fields. Early in 1964 Castro announced a policy of strict secrecy concerning sugar statistics to “impede criticism of the enemies of the revolution.”<sup>144</sup> Since late 1964 a gradual elimination of multiple sources of statistical information has taken place along with a simultaneous program of centralization and control of data to avoid potential leaks.

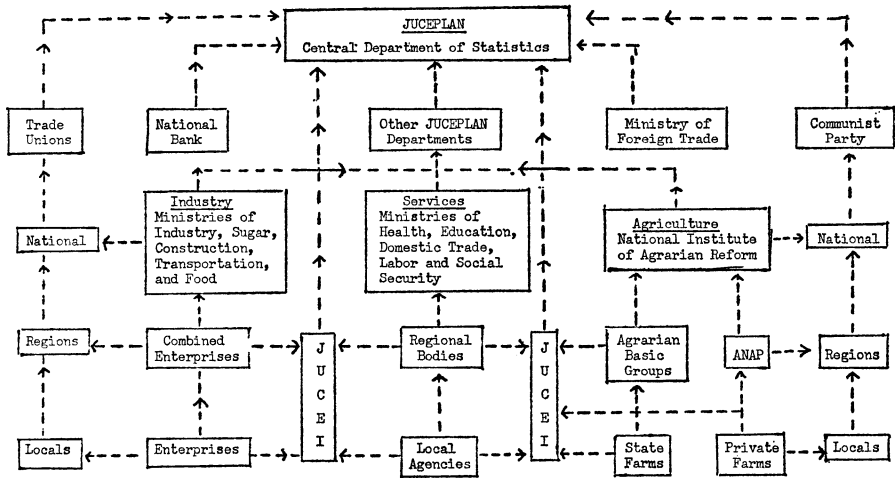
In December, the journal which specialized in labor, *Trabajo*, ceased publication. *Trimestre de Finanzas al Día* (finances, budget) suffered a similar fate in September, 1965, as did *Comercio Exterior* (foreign trade) in September, 1966, and *Vanguardia* and *Agro* (trade unions) at the end of 1966. In February, 1967, three other journals *Nuestra Industria: Revista Económica* (economics), *Cuba Socialista* (economics, politics), and *Nuestra Industria* (industry) were terminated. In mid-1967 the technological journal of the former Ministry of Industry, *Nuestra Industria: Revista Tecnológica*, published its last issue. Late in the year *Teoría y Práctica* (politics, ideology) suffered a similar fate.

The customary explanation for this trend is the shortage of printing paper. In one case it was said that the people had not reached the proper level of political education, and therefore public debate of important issues had to be postponed until such level had been achieved.<sup>145</sup> Castro’s speeches have become the main source of statistical information, although selected data are also supplied to international agencies, and published in the brief statistical compendia.

In late 1965, President Dorticós reported that the process of statistical centralization would go a step further.<sup>146</sup> Because of a reform in the planning apparatus, since 1966 all statistical data has been controlled by the Central Department of Statistics (DCS) of JUCEPLAN. Figure 1 shows the flow of statistics in Cuba after the planning system was reorganized. Output data are tabulated by local industrial enterprises, service agencies and state farms, transmitted to combined enterprises, regional bodies and agrarian basic groups, and then sent to the corresponding ministries which in turn report to the DCS. Pro-

Figure I

Flow of Statistical Data in Cuba, 1966



Source: Osvaldo Dorticós, "Avances institucionales de la revolución," *CS*, 6:53:2-23 (1966); and "El desarrollo industrial de Cuba," *CS*, 6:57:122-127 (1966).

duction data from private farms are collected by ANAP and sent to INRA, JUCEPLAN, and DCS. Financial data compiled by the National Bank (the Ministry of Finance was eliminated in 1965) flows directly to the top of the hierarchy. Import-export figures are gathered by MINCEX and passed to the DCS. Labor statistics are compiled by enterprises and trade unions, processed by the various ministries and CTC, and checked by the Ministry of Labor which in turn relays them to the DCS. Data on education, public health, and sports are tabulated by the corresponding ministries and transmitted to the top. The Party, as well as the Boards of Coordination, Execution and Inspection (JUCEI) function as the collectors of additional data and make checks at various levels. Other JUCEPLAN departments use statistics supplied by DCS to prepare short and long-range planning, as well as to implement such plans.

By 1968 the centralization, screening and secrecy of statistical data have made it almost impossible to determine whether the criticism and recommendations of 1962-64 (which are summarized in the next section) have had an influence in improving the quality and reliability of Cuban statistics.

**B. Cuban Self-Criticism of Statistical Reliability**

In socialist countries the government's control of communications media

and the tendency to impede political opposition and public criticism of the regime, makes it difficult at certain points to ventilate constructive criticism, which may be crucial for a better function of the system. To serve this latter purpose, occasionally the governments allow and exhort public officials and party members to make self-criticism of the systems' flaws. In principle, we may assume that the public revelation and evaluation of such flaws is objective due to its apparent goal. Nevertheless, such criticism may conceal other purposes. By exaggerating the magnitude of a problem, the government may present it dramatically and attract more attention to it. Also, the government may transfer, totally or partially, the blame for a failure to another objective, e.g., impersonal statistics. On the opposite side, a notoriously evident defect or failure that can no longer be concealed may be partially aired although keeping secret some significant facets of it.

The following pages provide a summary of Cuban officials' self-criticism on the statistical system in its various aspects: general situation, planning, agriculture, industry, foreign trade, labor and administration. The accuracy and objectivity of such self-criticism should be considered in light of the reasons explained above. Yet one factor that tends to support the validity of this self-criticism is the consistency in showing the flaws of the system, despite the fact that the pieces were written by specialists in various fields at different times.

### 1. *General Situation*

One report that summarizes the general situation of Cuba in mid-1960's has been prepared by the economist Pedro Ríos.<sup>147</sup> He notes that Cuban statistics are computed for no specific reason, without consideration of either the high cost of the system or the importance of the subject matter to be included. The most common vice is "mechanicism" because the tasks are routine and monotonous. The important thing is to deliver the figures, giving priority to quantity rather than to quality. Those in charge of gathering information forget that their work concerns real life, which must be accurately represented by the data obtained. In the next step, that is, the tabulation of data, there exists the defect of maintaining the traditional procedures and models while much more information could be obtained through simple innovations. Finally, the greatest flaws occur in the stage of analysis, where the task is limited to registering the past with a fatalist state of mind, and without orientation for the future.

The immediate result of "mechanicism" is the poor quality of statistical data. Ríos conscientiously analyzes this problem revealing several weak spots. The data are improvised under pressure, and compiled at the last minute. There are many duplications which lead to confusion, revisions and loss of time. The cause for these duplications is the lack of mutual confidence with respect to an-



other one's work. Results are costly checking, increase of unproductive work, and an unnecessary increase in personnel.

The poor state of the statistical data poses the question of their reliability. There are several types of mathematical and numerical errors resulting from mistakes by the operator, incorrect design of forms used, violation of operative systems, and vagueness in instructions and definitions. The result is disastrous from the viewpoint of speed, cost, and efficiency.

Another serious problem is the lack of technical personnel. Furthermore, the scarce existing personnel are burdened by administrative work. Ríos judges this problem to be extremely dangerous and declares its principal cause to be an excessive centralization which drowns the capacity of innovation. New technicians are not tested on their ability to assume responsibilities, their initiative wears away and their activities are restricted. The results of this attitude are frustration, discouragement, resignation, passive acceptance, monotony and routine. On many occasions leaders lacking the indispensable requirements hold their positions permanently, entrenched in bureaucratic procedures hampering the possibility of distributing the cadres in accordance with the real value of each one.

## 2. *Planning*

At the First National Production Meeting held in 1961 Guevara declared: "There cannot be planning without statistics. If there are no real statistics showing what is actually happening at the factory and the farm, planning becomes a simple good intention."<sup>148</sup> Guevara then analyzed the difficulties encountered due to lack of: periodical information, organization of the system, coordination among organisms, discipline of personnel, selection of the material subject to investigation, and accuracy of the data obtained.

Shortly before the launching of the experiment of the First Annual Plan of Economic Development, the Minister of Economics, Boti (1961:30–31) commented on the problem of statistics:

The insufficiency of the statistical basis has been one of the most serious obstacles to planning. . . . The lack of adequate knowledge of the past and present economic reality of Cuba has caused the drawing up of vague long-range targets. We must establish a statistical apparatus capable of providing more, and more precise information in all sectors concerning the economic activity.

The year 1964 was named the "Year of the Economy," and in an article devoted to the revision of planned targets, Cuban economist Lataste (1964:20) stated: "We have hardly the rudiments of what might be called a statistical-economic system, and much less a development of the statistical-economic analy-

sis itself." He added that the lack of system contributed to "subjectivity, *a priori* statements, and economic cretinism."

Shortly after the 1964 inauguration of the Third Annual Plan of Economic Development, the situation remained static, as indicated by the following statement by Alberto Martínez (1964:22) :

It is necessary to call attention to the fact that in practically all levels of planning, statistical information is not utilized conscientiously . . . In many enterprises, statistics are not looked upon as tools in the daily work, but as another bureaucratic instrument.

Three months later, the Director of Statistics of JUCEPLAN, Dorticós (1964:55) explained the impossibility of drawing up a real plan without good statistical information, and mentioned the bitter experience that Cuban planners had suffered in this respect. Dorticós then added: "If statistical indices do not correctly reflect reality, i.e., if they offer a distorted view of it, then the tasks to be performed in the next period, which are based on the present data, will not be true to reality."

The difficulties arising from the lack of agreement between the plan based on distorted statistics, and the actual results, have been more thoroughly studied by Ríos (1964:37). As the practical impossibility of fulfilling the targets of the plan is confirmed, adjustments are introduced to decrease the original targets and erase discrepancies between goals and actuality:

In this way a false impression of accuracy is created . . . If 365 revisions were to be made a year, the fulfillment of the plan would be perfect with respect to the last revision [on December 31.] The truth is quite different, and the discrepancies with the original plan show a gap between what actually happened and what was foreseen.

Economist Ríos admits that the formulation of the plan is defective because it contains errors in subjectivity and mechanicism which lead to optimistic calculations. The systematic nonfulfillment of the plans leads to "conformism"; that is, it leads to the passive acceptance of the decreases in the levels of production. Ríos strongly criticizes this attitude, which ignores the directive and compulsory character of planning, and which requires a rectifying change so as not to fall into too low growth rates.

### 3. *Agriculture*

In mid-1961 Guevara disclosed that INRA had never given exact figures.<sup>149</sup> Three years later, economist Martínez (1964:21) admitted that in statistical matters the agricultural sector was still in the rear. The president of INRA, Carlos Rafael Rodríguez, revealed in 1965 the uncertainty that existed in agricultural statistics: "An investigation conducted by JUCEPLAN of the

stock of fertilizers showed that figures given by the state farms lacked validity. It was a disgrace for our agency, and one which cannot happen again."<sup>150</sup>

Head statistician Dorticós (1964:47–48, 55–56) explained that in 1960 an agricultural census was ordered with the purpose of evaluating the effects of agrarian reform. However, it was never carried out. Therefore, when planners were faced with the task of preparing the economic plan, they were confronted with a serious problem because of the almost total absence of statistical information. In August, 1961 INRA carried out a cattle census. Dorticós agrees that this census "was not successful because technical standards of preparation and control necessary for this type of statistical task were disregarded."

Dorticós asserts that the mistakes precipitated a serious situation in view of the lack of bases on which to sustain objectively the development plans. A system of agricultural statistics was prepared, but it also suffered from many deficiencies, due to, among other factors: "the speed with which the tasks were carried out, the lack of knowledge of the personnel in charge, and the absence of essential conditions in the basis." Dorticós (1964:56–61) then explained the problem in detail:

Our statisticians violated a series of standards and working principles established by the statistical science . . . Because they did not conform to these elementary rules and did not duly evaluate the actual objective conditions, our statistics suffer from many defects . . . There are rather wide gaps in several important indices . . . There is no uniform system of statistical accounting . . . The mechanical processing of data is very deficient . . . Information for 1964 does not compare with that of previous years because of the organization changes introduced by INRA . . . There is a lack of skill on the part of our statistical personnel.

The result of these deficiencies is low quality statistics on cattle, machine and land utilization, cultivated area, crop productivity, and amount of state purchases. Dorticós (1964:57–58) summarizes the three principal defects of agricultural statistics by saying that they are not reliable, they are not opportune, and they do not analyze results.

#### 4. *Industry*

Compared on the technical level, industrial statistics are superior to agricultural statistics, but still suffer from some defects. In 1961 Guevara reported that there were industries, such as the shoe industry, which offered false information.<sup>151</sup> Furthermore, Guevara reported that MININD had turned into a receptor of abnormalities, a registry of mistakes that often dismembered the whole plan, inducing frequent changes. The essential defects of the system as reported by the Minister of Industry were: immaturity, lack of truly skilled cadres at all levels, need of calculators and computers for speeding up the

processing data, insufficient capacity for delivering exact figures, and absence of or deficiencies in analysis.<sup>152</sup>

In his welcoming speech to the first group of graduates from the People's School of Statistics at the end of 1963, Guevara stated that statistics was one of the lesser known disciplines in Cuba. He added: "A statistics assistant requires certain knowledge which not even our Director of Statistics has at present." As long as a solid statistical base is not established, concluded the Minister, the levels of production cannot recuperate and much less, increase.<sup>153</sup>

At the beginning of 1964 Guevara warned that to obtain an efficient production, the managers of the industries must order the preparation of statistical indices and know how to utilize them:

The controls start at the base, at the productive center, and the statistical base is still weak in Cuba. We must create a statistical base sufficiently trustworthy as to assure us that we are dealing with accurate figures.<sup>154</sup>

### 5. *Foreign Trade*

The opinion of Ríos (1964:35), economic advisor to MINCEX, is that statistics in this sector are among the best within the Cuban system, but that certain problems should be eliminated. His principal criticism concerns the models for the classification of statistics. Such models have undergone numerous modifications without any improvement. On the contrary, Ríos affirms that "successive changes made without due consideration have only caused confusion, additional work, loss of bases for comparing historical series, and loss of the experience acquired."

### 6. *Labor*

Antonio Benítez, a high official of MINTRA, has indicated several flaws in statistics in the labor sector.<sup>155</sup> Primarily he notes that there is a lack of general instructions. There exist no clear definitions, nor consistency in terms used. Secondly, models of primary control are absent. Without these forms it is impossible to obtain figures representing reality. The deficiency of statistical reports is an additional problem. On many occasions the forms on which the data is to be entered are prepared by personnel without sufficient statistical experience. Reports which have required great effort have been unable to offer the desired results.

There are also deficiencies in the control of information. The forms are incomplete, have errors or are completed off schedule. Furthermore, part of the information received is deficient because of lack of control. The main difficulty arises from the fact that JUCEPLAN and MINTRA do not have regional offices to gather information, and cannot do much to correct errors and delays in

the data obtained. Lower-echelon officials show a defensive attitude with respect to supplying statistics. Duplicate and excessive requests for data have made those officials react negatively.

Another defect noted by Benítez is the lack of statistical discipline. It is necessary to fight disorder in the forwarding of information, and the bad habit of answering the request for data with inaccurate figures that are not true to reality. Responsibilities must be demanded and sanctions duly established.

There is also a need for new methodology in the processing and analysis of information which hereto has been improvised along the way so that the figures do not show the expected results. Lack of qualified cadres is another defect in the statistical system. This problem is far from being solved, and training courses have not been conveniently oriented.

To summarize the noted flaws, Benítez concluded:

At the work centers we were able to witness how the employees made mistakes when filling out the requests for information . . .; how they tried unsuccessfully to look for a figure urgently needed . . .; and how they reacted against the requests for unnecessary information. At the combined enterprises we saw how . . . figures as important as those corresponding to the number of workers and wage funds of their units were ignored; and how undisciplined officials did not take the trouble to request and forward information on time. At the central organisms, we saw the evil effects of the low qualification of the cadres, and how the tasks were carried out without any method at all.

### 7. Administration

Public administration and territorial political organization are included within this sector. There has been no reference to the quality of statistics within this field except that in the article published by Cuban specialist Saladrigas (1963:43) in which he states that statistical bases in this field "are so meager, deformed and incomplete, that they do not represent an asset to the documentation required by the new phase of development."

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*The final section of Professor Mesa-Lago's article, on Examples of Statistical Misuse in Cuba, will appear in the next issue of LARR.*

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### ABBREVIATIONS

<i>Anuario Estadístico de Cuba</i>	AEC
<i>Anuario Azucarero de Cuba</i>	AAC
<i>Compendio Estadístico de Cuba</i>	CEC
<i>Comercio Exterior</i>	CE
<i>Cuba Económica y Financiera</i>	CEF
<i>Cuba en Cifras</i>	CC

## Latin American Research Review

<i>Cuba Socialista</i>	CS
ECLA, <i>Economic Survey of Latin America</i>	ECLA-S
ECLA, <i>Statistical Bulletin</i>	ECLA-B
FAO, <i>Yearbook of Agricultural Output</i>	FAO
<i>Granma (Revista Semanal)</i>	GRS
<i>Granma (Weekly Review)</i>	GWR
<i>Nuestra Industria</i>	NI
<i>Nuestra Industria, Revista Económica</i>	NIRE
<i>Obra Revolucionaria</i>	OR
Pan American Union, <i>América en Cifras</i>	PAU
<i>Panorama Económico Latinoamericano</i>	PEL
<i>Revista del Banco Nacional de Cuba</i>	RBNC
<i>Memoria del Banco Nacional de Cuba</i>	<i>Memoria</i>
<i>Trimestre de Finanzas al Día</i>	TFD
UN, <i>Demographic Yearbook</i>	UN-DY
UN, <i>Monthly Bulletin of Statistics</i>	UN-MBS
UN, <i>Statistical Yearbook</i>	UN-SY

### NOTES

1. One recent example of this problem is the book by Edward Boorstein, *The Economic Transformation of Cuba* (New York, 1968). This American economist, after working three years in top Cuban offices, was not able to provide fresh statistics on any basic topic in his book. The only two statistical tables concerning Cuba that Mr. Boorstein includes in his book offer data on foreign trade until 1962, while Cuban publications provide complete statistics on this matter up to 1966.
2. See as samples of both attitudes concerning Soviet data: Alec Nove, *The Soviet Economy*, 307–314 (London, 1961); and Harry Schwartz, *Russia's Soviet Economy*, 129–137 (New Jersey, 1963). For China see Choh-ming Li, *The Statistical System of Communist China* (Berkeley, 1962); and Leo Orleans, "Troubles with Statistics," *Problems of Communism*, 14:1:39–45 (1965).
3. ECLA, *Economic Survey for Latin America*, 1963, Part Four (New York, 1965), and *ibid.*, 1965 issue (New York, 1967).
4. Dudley Seers, *et. al.*, *Cuba: The Economic and Social Revolution* (Chapel Hill, 1964).
5. Ministerio de Hacienda, Dirección General de Estadística, *Anuario estadístico de Cuba*, 1957, (La Habana, 1958).
6. JUCEPLAN, Dirección de Estadísticas, *Proyecto de anuario estadístico*, 1962, (Mimeographed, La Habana, July 1963).
7. JUCEPLAN, Dirección Central de Estadística, *Compendio estadístico de Cuba*, 1965, (La Habana, undated); *ibid.*, 1966 issue (La Habana, undated), and *ibid.*, 1967 issue (La Habana, undated). Most quotes in this article come from the 1966 compendium. The 1967 issue has not been used due to the fact that several estimates are provisional and due to the impossibility of checking its figures.
8. The last two issues published were: Banco Nacional de Cuba, *Memoria del Banco Nacional de Cuba*, 1957–58 (La Habana, 1959), and *ibid.*, 1958–59 issue (La Habana, 1960).

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9. In 1959–60 only 5 issues of the *Revista del Banco Nacional de Cuba* were published. A five-year index of this journal appeared in the November–December 1959 issue.
10. Julián Alienes Urosa, *Características fundamentales de la economía cubana* (La Habana, 1950); International Bank for Reconstruction and Development, *Report on Cuba* (New York, 1951); U. S. Department of Commerce, *Investment in Cuba* (Washington, 1956); and Banco Nacional de Cuba, *La economía cubana en 1956–57* (La Habana, 1958).
11. Grupo Cubano de Insevtigaciones Económicas (CERP), *Estudio sobre Cuba* (Miami, 1963). English version: *Study on Cuba* (Miami, 1965). See also José Illán, *Cuba Facts and Figures of An Economy in Ruins* (Miami, 1964).
12. U. S. Department of War, *Census of Cuba 1899* (Washington, D. C., 1900); Oficina del Censo de los Estados Unidos, *Censo de la República de Cuba, bajo la administración provisional de los Estados Unidos, 1907* (Washington, D. C., 1908); Cuba, Dirección General del Censo, *Censo de la República de Cuba, año de 1919* (La Habana, 1920); *ibid.*, *Censo de 1931, estados de habitantes y electores* (La Habana, 1932); *ibid.*, *Informe general del censo de 1943* (La Habana, 1945); and Cuba, Oficina Nacional de los Censos Demográfico y Electoral, *Censo de población, viviendas y electoral, 1953* (La Habana, 1955).
13. N. I. Neliubin, "Estadística de población," *TFN*, 9:43–75 (1964).
14. *Estadística demográfica de Cuba: año 1960* (La Habana, January 1964); "Población estimada al 30 de junio de 1962 por provincias y municipios según el sexo y la edad," *Estudios sobre población*, 1 (1962); "Población estimada por provincias, parte urbana y rural, sexo y grupos de edad: 1962–1965," *Estudios sobre población*, 2 (1963); "Población nacional estimada 1959–1975," *Estudios sobre población*, 3 (1963); José Gabriel Gumá "¿Hay mas hombres o mujeres en Cuba?," *Granma*, 3, November 1, 1966; and Fidel Castro, "Speech on the Eleventh Anniversary of the Events of March 13, 1957," *GWR*, 3–6, March 24, 1968.
15. *CEC*, 8–12 (1966).
16. UN, *Demographic Yearbook, 1966* (New York, 1967).
17. Neliubin, 43–75; and Miguel A. Figueras, "Aspectos y problemas del desarrollo económico cubano," *NIRE*, 2:9:3–16 (1964).
18. "Resumen del plan de desarrollo económico para el año 1962," *Bobemia* (La Habana, October 29, 1961); and JUCEPLAN, *Informe sobre el plan de 1963* (La Habana, December 1962). See also Regino Boti, "El plan de desarrollo económico de 1962," *CS*, 1:4:19–32 (1961), and "El plan de la economía nacional de Cuba para 1963," *CS*, 4:31:1–22 (1964).
19. Albán Lataste, "1964: año de la economía," *CS*, 4:30:13–31 (1964); and Alberto Martínez E., "El plan de la economía nacional para 1964," *CS*, 4:31:1–22 (1964).
20. Michael Kalecki, *Bosquejo hipotético del plan quinquenal 1961–65 para la economía cubana* (La Habana, December 1960). Charles Bettelheim, *Modelo esquemático del plan 1962–65 para la economía Cubana* (La Habana, August 1961), *ibid.*, "Cuba en 1965, resultados y perspectivas económicas," *NIRE*, 4:18:3–32 (1966); Anatolii M. Efimov, *Kuba planiruet natsional miu eqonomiku* (Moskva, 1963); Leon Lavellée, "Problemes économiques à Cuba," *Economie et politique*, 114:53–61 (1964); and Francisco García and Juan Noyola, "Principales objetivos de nuestro plan económico hasta 1965," *CS*, 2:13:11–16 (1962).
21. Carlos Rafael Rodríguez, "La situación económica de Cuba: 1965–66," *PEL*, 7:242–4–17 (1967).
22. Albán Lataste, "El próximo quinquenio económico 1966–70," *CE*, 1:4:33–48 (1963).

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23. See *RBNC*, 5:5:756–757 (1959), and *Memoria*, 1958–59.
24. *ECLA-S*, 288 (1963), and Castro, “Discurso en conmemoración del oncenavo aniversario de la acción del 13 de marzo,” *GRS*, 5, March 24, 1968.
25. *CEC*, 13 (1966). See also *CE*, 5:1:99 (1966).
26. Cuba’s national accounts statistics are irregularly published by *UN-SY* and *UN-MBS*, but not by the *UN Yearbook of National Account Statistics*.
27. See as an example, Cuba, Dirección de Fiscalización Preventiva y Control de Presupuestos del Estado, *Recopilación y análisis de los ingresos presupuestales de Cuba, 1954–55* (La Habana, 1956).
28. Instituto de Estudios Financieros, Ministerio de Hacienda, *Trimestre de Finanzas al Día*; its first issue was published in January–March 1962, and the last in July–September 1965.
29. See *La Tarde*, January 8, 1963, *El Mundo*, January 10, 1964, and *Gaceta Oficial*, December 31, 1964.
30. Laws Nos. 1,000, February 6, 1962, 1099, April 3, 1963, and 1127, October 31, 1963; Decree No. 3288 of 1963, Annexes A and B; and Resolution of the Ministry of Labor No. 13610, August 1963. See also *El Mundo*, May 22, 1965; Castro, Discurso de inauguración de la fábrica de pastas Vitanuova, Radio-Havana, transmission of July 25, 1968.
31. “Official Quota and Official and Black Market Prices: January 1965–December 1967,” prepared by Rafael Rivas-Vázquez, *Economic Intelligence Report* (Miami, Summer 1968).
32. Cuba, Ministerio de Agricultura, *Memoria del censo agrícola nacional, 1946* (La Habana, 1951).
33. “Primera Reunión Nacional de la Producción,” *OR*, 30 (August 30, 1961).
34. “Reunión nacional de la producción agrícola,” *Hoy*, June 9, 1963; Rafael Francia, “La reunión nacional de la producción agrícola,” *CS*, 3:23:45–50 (1963); and “Reunión Anual del INRA,” *Hoy*, January 28–29, 1965.
35. INRA, Departamento de Enseñanza y Divulgación, *Reunión nacional de reforma agraria: memorias* (La Habana, 1963); *ibid.*, *Guía del agricultor* (La Habana, 1963); Administración general de Café y Cacao, *El Cultivo del Cacao* (La Habana, 1961); and Banco Nacional de Cuba, *Descripción e importancia económica de los 50 cultivos principales de Cuba y sus costos* (La Habana, 1965).
36. *Reforma agraria*, (Report to Rome Meeting of FAO, June 20–July 2, 1966), *PEL*, 207: 4ff, 208:14ff (1967); Carlos Rafael Rodríguez, *Ocho años de desarrollo agropecuario* (Report to Ninth Meeting of FAO), *PEL*, 225–226: 11–26 (1967); *La producción agrícola y animal en Cuba, 1965–67*, (Report to Fourteenth Period of Discussions of FAO, Rome, November 4–27, 1967), *PEL*, 266:4–9 (1967).
37. *CEC*, 14–15 (1966). See also, *CE*, 5:3:92 (1966).
38. FAO, *Production Yearbook*, 1966, 20 (Rome, 1967).
39. Antonio Núñez Jiménez, *Un año de liberación agraria* (La Habana, 1960), and “Informe sobre la reforma agraria cubana,” *El Mundo*, 5–6, June 25, 1966; Carlos Rafael Rodríguez, “Cuatro años de reforma agraria,” *CS*, 3:21:1–30 (1963), and “El nuevo camino de la agricultura cubana,” *CS*, 3:27:71–98 (1963). Other reports published in *CS*, 2:9:39–50 (1962), and *CS*, 3:17:76–94 (1963).
40. Due to space limitations, author and title have been omitted: private agriculture and *ANAP*, 3:22:42–60 (1963), 4:38:57–71 (1964), 6:60:126–134 (1966); state purchases



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- and prices, 4:33:66–78 (1964), 5:48:120–125 (1965); cooperatives and brigades, 1:3:17–27 (1961), 2:14:31–43 (1962), 3:21:50–55 (1963), 4:32:38–50 (1964), 4:34:51–64 (1964); forestry 7:65:62–74 (1967); coffee 5:42:123–133 (1965); potatoes 5:45/46:149–152 (1965); and fertilizers 6:63:128–134 (1966).
41. The Cuban plan for conservation and expansion of water resources including abundant statistics has been published by *Granma*, 6, August 26, 1967.
  42. Jacques Chonchol, "La reforma agraria cubana," *Panorama Económico* (Santiago, Chile), 15:227–229 (1962), and "Análisis crítico de la reforma agraria cubana," *El Trimestre Económico* (Mexico), 30:117:69–143 (1963); René Dumont, *Cuba: Socialisme et Développement* (Paris, 1964). See also Michel Gutelman, *L'agriculture socialisée à Cuba* (Paris, 1967).
  43. Leon G. Mears, "Agriculture and Food Situation in Cuba," *Economic Research Service*, 2–22 (May 1962); Donald Chrisler, "Cuba in 1965, Agricultural Situation and Food Supply," *Foreign Agriculture*, 4:9:6–7 (1966); Wilbur F. Buck, "Cuba's Agricultural Output is Lagging Despite Shifts in Farm Policy," *Foreign Agriculture*, 6:5:2–4 (1968); and Vasilii Vasilievich Adrianov, *Nash drug Kuba* (Moskva, 1963).
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  45. The latest volume checked by the author is Cuba, Ministerio de Comercio Exterior, *Anuario Azucarero de Cuba*, 26 (La Habana, 1962). Nevertheless, a 1965 sugar yearbook was advertised by *CE*, 4:17 (1966).
  46. Ramiro Guerra Sánchez, *Sugar and Society in the Caribbean, an Economic History of Cuban Agriculture* (New Haven, 1964); Raúl Cepero Bonilla, *Política Azucarera: 1952–58* (Mexico D. F., 1958); and INRA, *Primer Forum Azucarero Nacional*, 2 vols. (La Habana, 1965).
  47. *CS*, 1:1:34–46 (1961), 3:23:11–28 (1963), 5:41:123–131 (1965), 5:43:1–23 (1965), 5:49:33–49 (1965), 6:64:110–119 (1966), and 7:66:13–43 (1967); José Vázquez, "Plan perspectivo azucarero," *Cuba*, 5:55:24–27 (1966); *Cuba*, 6:63:29 (1967); and "La industria azucarera en Cuba," *PEL*, 245:8–15, 246:4–9, and 247:15–18 (1967).
  48. Cuba, Ministerio de Agricultura, *Memoria del censo ganadero, 1952* (La Habana, 1953).
  49. *Bohemia*, 67, August 18, 1967; and *El Mundo*, 1–2, August 26, 1967.
  50. Instituto de Ciencia Animal, *Informe anual* (La Habana, 1966); and *Zootecnia y sanidad animal en Cuba* (La Habana, 1967).
  51. "La ganadería en Cuba," *PEL*, 233:4–9, 235:4–13, 243:4–7, and 244:4–7 (1967); *CS*, 2:6:132–138 (1962), 2:8:39–47 (1962), 3:21:31–49 (1963), and 5:42:123–133 (1965); and *GWR*, 6, August 16, 1967.
  52. See as examples Julio Márquez, "La flota pesquera cumple los planes de producción de 1967," *Mar y Pesca*, 5–17 (August 1967), and Alvaro Lavastida, "Visión mundial de la producción naviera," *ibid.*, 41. See also "Cuba frente al mar," *PEL*, 9:114:3–9 (1964).
  53. IBRD, *Report on Cuba* (Baltimore, 1952). See also Philip C. Newman, *Cuba Before Castro: An Economic Appraisal* (New Delhi, 1965).
  54. CERP, *Study, and Stages and Problems of Industrial Development in Cuba* (Miami, 1965); and Max Nolf, "Industry," in Seers, 283 ff.

55. James O'Connor, "Industrial Organization in the Old and New Cubas," *Science and Society*, 30:2:149–190 (1966).
56. Ministerio de Industrias, *Ciclo de conferencias sobre planificación industrial* (Mimeographed, La Habana, 1961).
57. Ernesto Guevara, "Tareas industriales de la revolución en los años venideros," *CS*, 2:7: 28–46 (1962), and "The Cuban Economy, its Past and its Present Importance," *International Affairs*, 40:4:589–599 (1964).
58. ECLA, 282–287 (1963). See also Nolf, 376–388.
59. "Análisis de la ejecución del plan de 1963 en el Ministerio de Industrias," *NIRE*, 2:6:79–82 (1964); Carlos Romeo, "Acerca del desarrollo económico de Cuba," *CS*, 5:52:2–24 (1965); and Miguel Alejandro Figueras, "Experiencias e ideas sobre la planificación a mediano plazo," *CS*, 6:23:41–61 (1966).
60. Ricardo Rodas, "Aplicación de las tablas de insumo-producto al sector industrial cubano," *CE*, 2:3:2ff (1964); and Figueras, 57.
61. JUCEPLAN, *Industrialización y planificación regional en Cuba* (La Habana, 1966).
62. Francisco García Valls, "Informe de la delegación cubana al XI período de sesiones de la CEPAL," *NIRE*, 3:15:3–13 (1965); "El desarrollo industrial de Cuba," part one, *CS*, 6:56:128–183, and part two, 6:57:94–127 (1966). See also *PEL*, 201:4ff (1967).
63. CEC, 17 (1966). See also *CE*, 5:3:94–95 (1966).
64. An exception to the rule is the list of industries under construction given in *NI*, 4:1 (1964).
65. José A. Piñera, "Experiencias de la dirección centralizada de la empresa consolidada del petróleo," and Rolando Cuenca, "Análisis económico de la industria de hilados y tejidos planos," *NIRE*, 2:7:58–65, 81ff (1964); Miguel A. Figueras, "Análisis de la industria textil de fibras suaves en Cuba," Mario O. Fleites, "Un plan de desarrollo eléctrico hasta 1980," and Angel A. Pernas, "Bagaso, línea potencial de desarrollo," *NIRE*, 3:12:26–83; and Pernas, "Criterios para la selección de proyectos industriales en Cuba," *NIRE*, 4:17: 16–27 (1966).
66. *PEL*, 134–194 (1964), 281–290 (1966), and 270–279 (1967).
67. "Electrificación y desarrollo económico," *CS*, 6:59:124–128 (1966), Juan M. Castiñeiras, "La industria ligera en la etapa actual," *CS*, 4:34:1–12 (1964); Alfredo Menéndez Cruz, "Problemas de la industria azucarera," *CS*, 2:12:1–17 (1962); Orlando Borrego, "Problemas que plantea a la industria una zafra de 10 millones de toneladas de azúcar," *CS*, 5:44: 10–30 (1965); Evelio Lugo, "La industria del tabaco torcido y sus perspectivas," *CS*, 3:21:56–73 (1963); Sergio N. Ravelo, "Algunos comentarios sobre la industria tabacalera cubana," *CE*, 3:3:89–97 (1965); Rolando Alvarez, "Problemas actuales y planes futuros de la industria alimenticia en Cuba," *CS*, 6:60:38–63 (1966); José Fuertes Jiménez, "El plan de la eficiencia industrial en Camagüey," *CS*, 6:57:66–76 (1966); and Joel Domenech, "Aplicación del plan de eficiencia industrial," *CS*, 6:63:36–53 (1966).
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69. Omar Fernández, "Los problemas del transporte nacional," *CS*, 3:19:2–49 (1963); Fidel Castro, "Clausura de la primera plenaria nacional del transporte," *OR*, 28:7–40 (1964); Faure Chaumón, "Los problemas del transporte," *CS*, 6:62:175–186 (1966); and "Una nueva etapa en el transporte nacional," *CS*, 7:65:188–194 (1967).

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70. See also Rafael del Valle, "Algunos aspectos de los ferrocarriles cubanos," *Teoría y Práctica*, 37:31–41 (1967).
71. The last two issues published were Cuba, Dirección General de Estadística, *Comercio exterior, 1956–57* (La Habana, 1958), and *Comercio exterior, 1957–58* (La Habana, 1959). See also CERP, 700–715, *Study*.
72. Published by Editora Mercantil Cubana S. A., Vol. 1 (1926) and Vol. 35 (1960).
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79. See *El Mundo*, 5–8, May 20, 1966, and *ibid.*, 6–7, May 7, 1967.
80. Manuel Millares, "Problemas del comercio interior de Cuba," *CS*, 6:61:21–39 (1966).
81. Consejo Nacional de Economía, *El empleo, el subempleo y el desempleo en Cuba* (Mimeographed, La Habana, 1958).
82. See ILO, *Yearbook of Labour Statistics (1947–1959)*.
83. The *Revista Oficial del Ministerio del Trabajo* was published irregularly in the 1940's, while *Estadística del Trabajo* had ceased publication by the early 1950's.
84. *Report on Cuba*, chapters 3, 6, 16, and 17.
85. Carlos Raggi Ageo, *Condiciones económicas y sociales de la República de Cuba* (La Habana, 1944); Laureano Prado Pérez, *Clasificación ocupacional de Cuba* (La Habana, 1955); Raúl Lorenzo, *El empleo en Cuba* (La Habana, 1955).
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