

## The Historical Development of the Indonesian Statistical System

Anne Booth

SOAS, University of London

### The Development of the Colonial System: An Overview of Published Sources

The Dutch colonial authorities in Indonesia<sup>1</sup> were famous for their thoroughness and professionalism, and in the collection of statistics as in other aspects of their administration they showed a zeal which greatly surpassed that of English and French colonial administrations in Asia. An official statistical agency (Centraal Kantoor voor de Statistiek or CKS) was established in 1925, but before that year a vast amount of economic and social statistics had already been collected and published both by individual government departments and in official yearbooks. Among the official publications, the single most important were the *Koloniaal Verslagen* (Colonial Reports), which were published annually as appendices to the *Handelingen van de Tweede Kamer der Staten Generaal* (Proceedings of the Second Chamber of the States General). This series runs from 1849 to 1930 (CEI, Vol 1, p. 147). Each volume has numerous statistical appendices covering a broad range of demographic and economic data. From 1931 to 1941 the *Koloniaal Verslag* was replaced by the *Indisch Verslag* which was published annually in two volumes; the second volume was a *Statistical Yearbook (Statistisch Jaaroverzicht)*.

Annual statistical digests had already been published for the Dutch colonies since 1887, when the first *Jaarcijfers voor het Koninkrijk der Nederlanden: Kolonien* appeared as a publication of the Statistical Association in the Netherlands. After 1897, the *Jaarcijfers voor het Koninkrijk der Nederlanden: Kolonien* were compiled by the Dutch Central Bureau of Statistics. They relied heavily on data from the *Koloniaal Verslagen*, but also used other sources. After 1922, they were replaced by the *Statistisch Jaaroverzicht*, which after 1931 was in turn replaced by the second volume of the *Indisch Verslag*. These publications

---

<sup>1</sup>The term Indonesia will be used throughout this paper to describe the country which since 1949 has gone by that name, although the name only came into widespread use in the early twentieth century and was never officially sanctioned by the Dutch colonial authorities. Several English terms were current in the early part of the twentieth century to describe the huge archipelago controlled by the Dutch, including "Dutch East Indies", "Netherlands Indies" and "Netherlands India".

together comprise a continuous statistical record for the last five decades of the colonial era, up until 1941. The *Jaarcijfers voor het Koninkrijk der Nederlanden: Kolonien* were published with annotations in French and Dutch; the **Statistisch Jaaroverzicht** were published in Dutch and English.

During the 1930s the CKS published several Statistical Pocketbooks in Dutch; the final one of the series was published in English (Statistical Pocketbook of Indonesia, 1941). These publications mainly reproduced material from the *Indisch Verslag*, Vol 2, but contained some other material as well.

Between 1925 and 1941 the CKS published a series of *Medeelingen* (Bulletins), many of which contained valuable time series on topics such as international trade, food production and prices. In the latter part of the 1930s, a senior official in the CKS, W. F. M. Mansvelt edited a series of publications which were intended to give a complete statistical record of the development of Indonesia from the early nineteenth century to 1940. They covered trade statistics, price data and other indicators of economic development (CEI, Vol 1, p. 7). Unfortunately this series was brought to an end in 1942; the series were published as bulletins of the CKS in mimeoed form and only a few copies survived the 1940s in libraries in the Netherlands and in Indonesia.

Between 1942 and 1975, only a small number of scholars in the Netherlands, Australia and the USA were aware of the huge body of data contained in the Dutch colonial publications. The main development which triggered a change in scholarly awareness of the Dutch colonial statistical legacy was the production and dissemination of the volumes in the *Changing Economy of Indonesia (CEI)* series. These volumes (numbering sixteen by 1996) made available a large number of statistical series on agricultural and industrial production, prices, international trade and the balance of payments, money supply, investment, government revenues and expenditures and population growth. They were published in English with copious annotations, and provide not just an invaluable source of data for the quantitative study of Indonesian economic history, but also excellent bibliographic guides to statistical sources and to the secondary literature. The first five volumes were edited by Piet Creutzberg, who had been an official in the CKS during the 1930s (Schoffer 1979: 11-14).

Creutzberg had worked with Mansvelt, and was aware of the importance of his statistical compilations and the first volumes of the CEI republished material originally collected by Mansvelt. Creutzberg's work was supported by the Royal Tropical Institute in Amsterdam, and he was able to employ several assistants to help him in his work. Jan van Laanen worked with Creutzberg on the sixth volume of the

CEI series which dealt with monetary and banking statistics. Van Laanen (1989) used the monetary data to estimate growth of national output in the colonial economy.

After Creutzberg's death, the editorial work of the CEI series was taken over by Peter Boomgaard and a further ten volumes appeared (see the complete list in the bibliography). These volumes have in turn been used extensively by an increasing number of scholars who are interested not just in the economic history of Indonesia but in the comparative economic history of the Asian region. But it needs to be stressed that, in spite of the achievements of this series, there is still vast amount of statistical data in official Dutch colonial publications which have not been republished. Anyone researching Indonesian economic history in the Dutch colonial era must be familiar with a wider range of data sources than the CEI series, excellent though that series is. I will now look in more detail at the primary data sources and secondary literature by sector for the colonial era.

## **Colonial Population and Labour Force Statistics**

In contrast to British India, where population censuses were carried out every ten years since 1870, the Dutch did not carry out regular population censuses in Indonesia until 1920. Population data were gathered in Java from village surveys whose accuracy was, and continues to be, disputed, but they certainly improved in quality over the nineteenth century. Outside Java the quality of the demographic data was very variable until 1930. Boomgaard and Gooszen (*Changing Economy of Indonesia*, Volume 11) discuss the data sources in detail for all parts of the archipelago. They suggest that estimates can be made for Java for benchmark years from 1800, when the population of Java was around 7.5 million, until 1940 when population had reached 47.5 million. Certainly there can be little doubt that Java's population growth over the nineteenth and early twentieth centuries was rapid by Asian standards, mainly because of low mortality. In the early 1900s, some data on the breakdown of the gainfully employed population by occupation was collected in official surveys; these have been analysed by Boomgaard (1991) and White (1991).

In many regions outside Java, population data only became available after 1900; the quality was often doubtful. Even the first full population census, carried out in 1920, produced data which now appears to have been understated, especially for the more remote parts of the archipelago. The 1930 population census was more comprehensive, especially outside Java and gives us the most complete picture of the Indonesian population available for the colonial period. The 1930 census was published in eight volumes, two of which were devoted to the European and Chinese/other foreign Asian populations. The 1930 census also included questions about labour force participation and economic activity, which have been analysed by Mertens (1978a, 1978b) and Jones (1966). Perhaps the most remarkable finding was the very high female labour force participation rate in parts of Java, as well as in some regions outside Java.

A further population census was planned for 1940 but postponed because of the problems caused in colonial administration by the German occupation of the Netherlands. The Dutch colonial administration capitulated to the Japanese in early 1942, before the census had been conducted, and no further population census was held in Indonesia until 1961.

## **Colonial Agricultural Statistics**

The Dutch colonial authorities published foodcrop production statistics for Java from the 1830s onwards, although their accuracy continues to be the source of much debate (see e.g. Boomgaard (1989) and CEI, Vol 10). As with population data, the quality of the data on rice production and production of the other main foodcrops (corn, cassava, sweet potatoes, soybean and peanuts) improved in the last decades of the colonial era. Between 1905 and 1920, there was a radical reorganisation of the data on indigenous agricultural production in Java which greatly improved the quality of the data (CEI, Vol 10, pp. 32-34). Although the data continued to be prepared by multiplying the yields data (from test plots) by the extent of arable land, both the crop-cuttings system and the estimates of arable land in Java greatly improved over these years. New cadastral surveys were carried out from 1906 under the supervision of the Land Tax office, and all plots even the smallest were brought under Land Tax Assessment. These improved surveys led to a significant increase in the estimates of the amount of land under cultivation in Java. Dry land in particular had been severely underestimated in the pre-1916 data. Far more detailed data were also available on planted and harvested area of non-rice crops. During the 1930s, colonial officials compiled long-term series on rice consumption in Java (Scheltema (1936); see also van der Eng (1993a)).

While the quality of the food production statistics in Java between 1915 and 1941 were probably better than those from any other Asian colony, the Dutch authorities did not have the resources to extend the land tax, and therefore land cadastres, to any important region outside Java with the exception of Bali. Thus there were no consistent data on foodcrop production for Sumatra, Sulawesi, Kalimantan or the islands east of Bali. Some estimates have been made of foodcrop production outside Java by scholars estimating national income data for the colonial period, but these are inevitably "guesstimates" based on what little evidence is available up until 1940. The most ambitious estimates are those by van der Eng (1996: Appendix 1).

The colonial statistical sources consistently drew a distinction between indigenous foodcrop production and export crop production. This inevitably led to some ambiguities in the data. By the 1920s a significant percentage of all export crops were being grown not on large estates owned by Dutch or other foreign companies but by indigenous smallholders. In addition sugar in Java was produced by plantation companies on irrigated rice land (sawah) rented in from smallholders. Nevertheless the distinction between foodcrops and export crops (or treecrops although some such as sugar were not perennials) has persisted into the modern period.

Data on the output of the seven leading export crops (coffee, sugar, tobacco, tea, rubber, palm oil and palm kernels) are available from 1823 to 1940 (CEI Vol 1, pp. 52-3). The first volume of the CEI series also contains detailed series for each of these crops with production broken down by estates and smallholdings.

### **Colonial Statistics on Government Revenues and Expenditures**

The second volume of the CEI series contains data on both government revenues and expenditures from the early nineteenth century down to 1940, together with a detailed discussion of the data sources. From the latter part of the nineteenth century data are also available on public sector borrowing. In addition the third volume of the CEI series contains series on expenditures on fixed assets, broken down between private and public enterprises and public works including irrigation. Taken together these two volumes present a comprehensive overview of the growth of the public sector in colonial Indonesia. More detailed data on revenues broken down by type and on categories of expenditure can be obtained from the Colonial Reports, and from the statistical yearbooks discussed above.

### **Colonial Banking and Finance Statistics**

A modern banking and financial sector was slow to develop in colonial Indonesia, and right up until 1942, the sector was dominated by Dutch and other foreign institutions (Van Lannen 1990). A unified currency system was also slow to develop and until the early twentieth century a range of currencies were in use especially outside Java. The sixth volume of the CEI series discusses in detail the growth and changing nature of money in circulation from 1816 to 1940, and also key statistics from the Java Bank together with a brief history of its operations. Data are also provided on the lending operations of the three major commercial banks which together with the Java Bank dominated the modern financial sector up to 1940. This volume of the CEI series also contains data on the "popular credit system" which comprised a network of rural and village banks and pawnshops. This system developed rapidly between 1910 and 1930 and became by far the most extensive rural banking system anywhere in colonial Asia. It was studied by a number of French and British colonial administrators including Furnivall (1934a, 1934b).

From the 1870s until 1936, the colonial and metropolitan guilders were traded at par, and both were on the gold standard. Thus exchange rates between colonial Indonesia and other gold standard currencies such as the pound sterling were quite stable until 1913. After then there were greater fluctuations; data on exchange

rates with the pound, the Singapore dollar and after 1913 the US dollar are given in CEI, Volume 6, Table 8. More detailed data on exchange rates in the inter-war years are given in several *Medeelingen* (Bulletins), published by the CKS (see e.g. CKS 1938).

### **Colonial Statistics on Foreign Trade**

As was the case elsewhere in colonial Asia, the colonial foreign trade statistics were more complete than statistics for domestic production. The original Mansvelt series published in the 1930s contained data on exports from, and imports to, Java from 1822 to 1873 in guilders. These data were broken down between exports to (imports from) the Outer Islands and the rest of the world, by main country/region of origin or destination. From 1874 onwards, data on export and import values are available for the entire colony, again broken down by country/region of origin or destination. These series have been re-published in CEI Volume 12a. This volume also contains a good overview of the evolution of trade statistics from 1822 to 1940. A table in CEI, Volume 6, gives data on the rice trade in Indonesia (exports and imports) from 1822 to 1940. The original Mansvelt series also included a volume on trade with Singapore, and these data have also been reproduced in CEI Volume 12a.

More disaggregated data on export volumes by principal export commodity were also given in the trade statistics; some of these series are published in CEI, Volume 12a but any scholar wanting to construct volume indices needs to consult the original publications, details of which are given in CEI, Vol 12a. Van Ark (1986) has compiled export price and volume indices from the 1820s to 1940. An import price index was prepared by the CKS from 1913 to 1940; they also published an export price index and net barter terms of trade index for the same period.

From 1911 onwards data are available which permit greater disaggregation of the trade statistics by region. Volume 12b of the CEI series prepared by Thomas Lindblad and Jeroen Touwen present tables on the regional and commodity composition of both exports and imports for major regions in Java, Sumatra, Kalimantan and Eastern Indonesia. These data are now being used in a series of studies of the regional economic histories of Indonesia. A computerised data bank of regional trade statistics over these years has been prepared by Lindblad and Touwen at Leiden University.

The most comprehensive set of estimates for the balance of payments in the Dutch colonial era have been prepared by W. Korthals Altes and published in CEI, Volume 7. Korthals Altes used data on

merchandise trade from the above sources, but had to construct a series on investment income and "invisible" transactions to complete the current account estimates. He then estimated a series on private and government capital movements. The resulting tables give a very detailed picture of trends in the current account surplus/deficit and the resulting capital account movements for over a century. They raise important issues regarding the conduct of macroeconomic policy in the colonial era which have been addressed by several scholars (Booth 1998: Chapter 4; van der Eng 1993b)



## **Colonial Price and Wage Statistics**

The Dutch colonial authorities collected and published a range of price data, and from 1913 onwards several wholesale and retail price indices were published in the Statistical Yearbooks. Two volumes of the CEI series have been devoted to price data. CEI, Vol 6 (rice prices ) and Volume 15 (non-rice prices). As with other statistical series, price data are far more complete for Java than for other parts of the colonial economy. Rice price series can be constructed for Java from the 1840s onwards (see CEI Volume 4). From 1913 onwards price data were collected from both urban and rural markets in Java for a range of food and non-food items and published in the annual Statistical Yearbooks as well as in various bulletins of the CKS. From 1913 onwards the following price indices were calculated by the CKS:

Unweighted index of 71 import items

Unweighted index of 20 export items

Weighted index of 12 export items (from 1929)

Index number of import prices

Index numbers of freight rates (from 1923)

Retail price index for Batavia

Index number of the costs of food for the Indonesian population in Java/Madura

Index number of the costs of living for families at different income levels in Batavia

A range of wage statistics were also collected in the latter part of the nineteenth and early twentieth centuries; these have been discussed in detail in CEI Volume 13. The most comprehensive series are those for estate labourers and workers on government public works programmes. Unlike many other colonial statistical series, the wage data cover both Java and parts of the outer islands. Data on estate labourers' wages are available from North Sumatra, and "coolie" wage data are also available for different parts of the country. Volume 8 of the CEI series contains series on total wages in the small-scale factory sector from 1921 to 1940.

## **Colonial Data on Non-agricultural Production**

The colonial production data were far more comprehensive for the agricultural sector than for other sectors of the economy. Until 1913 most of the manufacturing industry in Indonesia was based on agricultural processing, with a very small sector making perishable products which could not easily be imported. During

the first world war, the severe disruption in world shipping gave an impetus to import substituting industries in Indonesia, as in many other parts of Asia. During the 1920s, there was little official encouragement for industrialisation, but government policy changed during the depression decade of the 1930s, and manufacturing output grew rapidly (Sitsen 1943).

Volume 8 of the CEI series summarizes the available data from a range of sources on employment wages and output in the manufacturing sector. Detailed tables are given on production of sugar, other food products, petroleum, weaving, batik, tobacco, and other manufactures. Data are also provided on production and consumption of electricity and gas. Volume 9 of the CEI series provides an overview of transport statistics including growth of roads, railways and shipping and growth of both passenger and freight transport.

Data on the service sector, excluding the modern banking sector were not regularly collected in the colonial era; as will be noted below, the growth of sectors such as wholesale and retail trade and government and personal services has to be inferred from employment statistics. This was to prove a problem for scholars wishing to estimate GDP for the colonial era.

### **GDP Estimates for the Colonial Era**

In 1943 an estimate of the "National Income of the Netherlands Indies, 1921-1939" was prepared by Dr J.J. Polak under the auspices of the Institute of Pacific Relations in New York. This was a pioneering exercise; at the time few national income estimates had been prepared for Asian countries and the United Nations System of National Accounts was yet to be drawn up. As was pointed out in the introduction to Volume 5 of the CEI series (where the Polak study is reproduced in its entirety) the method used by Polak was mixed; the production approach was used to calculate the value of economic activities carried out by the indigenous population. For many activities carried out in the "European" sector of the economy (large-scale manufacturing and mining) net value added was estimated on the basis of the total sum of earned wages and salaries and other types of income including profits from limited liability companies. The added value of the government in sectors such as general administration, defence and education was also based on salaries and wages paid out (CEI Vol 5, p. 13-14).

The Polak estimates, while recognised for their pioneering contribution, were felt by many scholars to be underestimates of net domestic product in the late colonial economy. In particular it was felt that value added in the "village economy" was under-stated. This criticism did not just apply to foodcrop production, but

also to output in sectors such as food processing, transport and other service sector activities. A more comprehensive set of estimates have been produced by van der Eng (1992), which were based on his series on value added in the agricultural sector. To this series he added estimates of value added in mining, manufacturing, utilities and construction, trade, transport, financial services, public administration and other services. His estimates were prepared in 1983 prices.

### **Welfare Studies from the Colonial Era**

From 1900 onwards the Dutch colonial authorities, under the influence of what became known as the "Ethical Policy" published a series of studies on the living conditions of the indigenous population of the colony and on tax burdens. In the first decade of the twentieth century a series of investigations were carried out on living standards of the indigenous populations which became known as the "Declining Welfare Reports". They were published in a series of volumes and summarised by Hasselman (1914). They have also been discussed by Husken (1994).

In the 1920s, investigations were carried out into tax burdens both in Java and elsewhere (Meijer Ranneft and Huender 1924). In the 1930s detailed investigations were carried out by the CKS into living standards among the coolie population in Batavia (CKS 1939) and into living standards among estates workers in Java (van Niel 1956). A large number of village surveys were carried out by colonial officials examining various aspects of the indigenous economy; they were published in a range of Dutch-language journals and reports. Some have been translated into English. (See e.g. Ochse and Terra (1934) and a number of translations in Penders (1977)).

### **The Post-colonial Development of the Indonesian Statistical System, 1950-69**

During the period of the Japanese occupation and the struggle for independence, the collection and publication of statistics was severely disrupted. Although the statistical reporting systems set up by the Dutch continued, the times were hardly conducive to the orderly collection, processing and publication of data. In some sectors, especially foodcrop production, it is likely that deliberate under-reporting took place to avoid heavy taxes in kind. Certainly the official data indicate a drastic decline in foodcrop production after 1942 (Metcalf 1952; van der Eng 1994). In 1950, the newly independent government of the Republic of Indonesia faced an enormous task. They had to restore administrative processes which had been disrupted over the

decade of the 1940s, and also establish new government agencies to draw up and implement ambitious national development programmes. It was recognised that an efficient statistical service was essential for achieving national development goals, and considerable progress was made in the 1950s, in spite of the unstable economic climate and funding constraints. The Central Statistical Bureau (Biro Pusat Statistik) was formed in place of the old CKS, and Indonesians trained during the Dutch era moved into senior positions. An academy was established to train young statisticians for a career in the CBS. Considerable assistance was given by specialist agencies of the United Nations in developing the national statistical system.

Many of the statistical reporting practices established during the late colonial period were carried over into the 1950s, and many statistical series were continued. The Central Statistical Bureau (CBS) began to publish annual statistical pocketbooks in the early 1950s, and a monthly statistical bulletin (*Statistik Konjunktur*) was published. The annual statistical pocketbooks contained data on population, education, health, government organization, farm agriculture, estate agriculture, forestry, livestock and fisheries, mining and quarrying, manufacturing, imports and exports, transport and communications, finance, banking and credit, consumption, prices, the cost of living and wages. A national accounts division in the CBS was established and estimates of GDP were prepared for 1953 and 1954 (Muljatno 1960). Further work was done on the preparation of national accounts through the 1950s. The United Nations *Yearbook of National Accounts, 1960* contained a series on GDP from 1953 to 1959 (see also United Nations 1964).

In spite of deteriorating economic conditions the period from 1961 to 1965 saw a number of new initiatives. In 1961 a Population Census was carried out, the first since 1930. Data were collected by province, on demographic and labour force characteristics of the population. In 1963 the first Agricultural Census was carried, followed in 1964 by the first Industrial Census. Prior to 1964, surveys of manufacturing enterprises had been carried out, but these were thought to have under-reported many medium and small-scale establishments. In 1963/64 the first National Socioeconomic Survey (SUSENAS) was carried out, modelled on the NSS in India and the FIES in the Philippines. A household expenditure survey (for Java only) was included in the first round of household surveys. Subsequent rounds of the SUSENAS surveys examined the labour force situation and migration trends.

Apart from the Central Bureau of Statistics, a number of other government departments and agencies collected statistics in the 1950s and early 1960s (CBS 1963). Bank Indonesia (the central bank which was created after the nationalisation of the Java Bank in the early 1950s) published an annual report with monetary and balance of payments data as well as data on government revenues and expenditures and foreign exchange

reserves. But after 1963 the publication of statistics from all sources became more erratic as macroeconomic management collapsed and inflation accelerated. The Central Bureau of Statistics reduced its publications to a trickle<sup>2</sup>. Probably the most valuable publication to emerge from the CBS in the years between 1963 and 1968 was the compendium of statistical data compiled by Nugroho (1967). This was published in English, and contained a number of valuable series from the early 1950s through to 1965. A further *Statistical Pocketbook* covering the years from 1964 to 1967 was published in 1968.

### **The Post-colonial Development of the Indonesian Statistical System, 1970-2000**

With the gradual return to economic stability in the late 1960s, the Central Bureau of Statistics was able to resume the collection and publication of statistical data. Considerable assistance was given to the Central Bureau of Statistics through the United Nations and bilateral aid agencies. A major revision of the national accounts data for the years 1960-68 was published in 1970 (Central Bureau of Statistics 1970). National income data were published on an annual basis thereafter, and in recent years quarterly national income data are also available. A fourth round of the National Socio-economic Survey was carried out between October 1969 and April 1970, which surveyed household consumption expenditures in most parts of the country (Central Bureau of Statistics 1973).

In 1971 a further Population Census was held; this led to a large number of publications including 26 provincial reports. In 1976 the first inter-censal Population Survey (SUPAS) was conducted, and in the same year a National Labour Force Survey (SAKERNAS) was carried out. SAKERNAS surveys are now conducted annually. In 1976 a further Household Expenditure Survey was carried out as part of the National Socio-economic Survey (SUSENAS). Since 1990, SUSENAS surveys have been carried out on an annual basis.

In 1973 a further Agricultural Census was held, and in 1974 a further Industrial Census was carried out. Comparisons could be made between the 1963 and 1973 Agricultural Censuses, and the 1964 and 1974 Industrial Censuses (See e.g. Booth and Sundrum (1976); McCawley (1979)). From 1975 onwards a Survey of Large and Medium Scale Manufacturing Establishments was carried out annually. After 1970 the Department of Agriculture took over from the Land Tax Directorate responsibility for harvesting test plots and preparing the production statistics on foodcrops; the Central Bureau of Statistics have published annual

---

<sup>2</sup>Mackie (1964) and Mackie (1967) discuss the effects of the economic dislocation of the mid-1960s, including the accelerating inflation.

volumes on food crop production. Food balance sheets have also been prepared and published since the latter part of the 1960s.

After 1968, *Statistical Pocketbooks of Indonesia* were published annually. Beginning in 1975, an annual *Statistical Yearbook of Indonesia* has been published by the Central Bureau of Statistics. This is a large format publication and contains tables on population, labour force, employment, social welfare, agricultural production, manufacturing industry, tourism, foreign trade, transport and communications, consumer price indices, and national and regional accounts.

Over the 1980s and 1990s, the range of publications from the Central Bureau of Statistics has steadily increased. The number of professionally trained staff have greatly increased, and the CBS is now one of the most sophisticated statistical agencies in Asia. The following census and survey publications appear regularly.

Population Census 1980, 1990, 2000

Inter-censal Population Surveys, 1985, 1995

Agricultural Census, 1983, 1993

Economic Census, 1985, 1995 (covers all non-agricultural production units including small enterprises)

Survey of Large and Medium Scale Manufacturing, annually

Labour Force Surveys (SAKERNAS), annually

National Socioeconomic Surveys (SUSENAS), annually

In addition to annual publications on national and regional accounts, input output tables and social accounting matrices (SAM) have been constructed and published at regular intervals. The most recent SAM data are published in Central Bureau of Statistics (1994b) and Central Board of Statistics (1999). Data from successive rounds of the SUSENAS surveys have been used to estimate the proportion of the population living below a stipulated poverty line (see Central Bureau of Statistics 1992, 1994a)<sup>3</sup>.

---

<sup>3</sup>Over the years, scholars have used the SUSENAS to estimate changes in living standards and poverty in Indonesia. The literature is quite extensive; see Sundrum (1973), (1974), Sajogyo (1975), King and Weldon (1977), Sundrum and Booth (1980), Booth and Sundrum (1981), Sigit (1985), Ravallion and Huppi (1991), Booth (1992), Booth (1993), Ravallion and Bidani (1994), Akita and Lukman (1995), Ahuja, Bidani, Ferreira and Walton (1997), and Akita, Lukman and Yamada (1999).

A comprehensive guide to the Indonesian statistical system can be found on the Central Bureau of Statistics web site([www.bps.go.id](http://www.bps.go.id)). This web site contains data broken down by the following subjects:

Population  
Employment  
Social welfare  
Wages  
Agriculture  
Manufacturing  
Mining  
Energy  
Construction  
Consumption expenditure  
Tourism  
Foreign Trade  
Transport and communications  
Public Finance  
Consumer price indices  
Wholesale price indices  
National and regional accounts

In recent years, the Central Bureau of Statistics has supplied an increasing amount of data in PC disk format. More is now becoming available on the web site.

Over the past three decades, the Indonesian government has published most economic and social statistics through the Central Bureau of Statistics. Other government departments do not publish much data. The main exception to this is the *Appendix to the State Speech of the President (Lampiran Pidato Kenegaraan)* which was published annually by the Department of Information up until 1998. It contained some financial and budgetary data which was not available from other sources. In addition Bank Indonesia (the central bank) publishes an annual report and a monthly statistical bulletin (*Indonesian Financial Statistics*). The monthly bulletin contains a range of financial and banking statistics.

### **Integrating Colonial and Post-colonial Statistical Series**

In Indonesia it is especially difficult to view economic issues in a long-term perspective because the two great political upheavals of 1945 and 1965 have encouraged many observers to see economic development as a very recent policy concern, and sustained economic growth as a very recent policy achievement. The availability of statistical data tend to support these perceptions. The CEI series only go up to 1940, and although after 1950 the Central Bureau of Statistics did attempt to continue many of the colonial statistical series, there were inevitably gaps and discontinuities. Since 1970, many new statistical series have been initiated and some old series dropped. For example the Consumer Price Index data have been rebased and reweighted several times on the basis of household expenditure survey data. The CPI is now collected for over 40 cities across the country, whereas in the latter part of the colonial era and in the 1950s, data were only available for Batavia/Jakarta. Although some work has been done on preparing long-term statistical series, spanning the entire twentieth century, much work remains to be done.



## BIBLIOGRAPHY

Ahuja, Vinod, Benu Bidani, Francisco Ferreira and Michael Walton (1997), **Everyone's Miracle? Revisiting Poverty and Inequality in East Asia**, Washington: World Bank

Akita, Takahiro and Rizal Affandi Lukman (1995), "Interregional Inequalities in Indonesia: A Sectoral Decomposition Analysis for 1975-92", **Bulletin of Indonesian Economic Studies**, Vol 31(2), August, pp. 61-82

Akita, Takahiro, Rizal Affandi Lukman and Yukino Yamada (1999), "Inequality in the Distribution of Household Expenditures in Indonesia: A Theil Decomposition Analysis", **Developing Economies**, Vol XXXVII (2), pp. 197-221

Ark, Bart van (1986), "Indonesian Export Growth and Economic Development: 117 Years of Empirical Evidence, 1823 to 1940", **Research Memorandum 189**, Institute of Economic Research, Faculty of Economics, University of Groningen

Asher, Mukul G. and Anne Booth (1992) "Fiscal Policy" in Anne Booth (editor), **The Oil Boom and After: Indonesian Economic Policy and Performance in the Soeharto Era**, Singapore: Oxford University Press

Asra, Abuzar (1989), "Inequality Trends in Indonesia: A Reexamination", **Bulletin of Indonesian Economic Studies**, Vol 25(2), pp. 100-10

Boomgaard, Peter (1989), "Java's Agricultural Production, 1775-1875" in Angus Maddison and Ge Prince, **Economic Growth in Indonesia, 1820-1940**, Dordrecht: Foris Publications

Boomgaard, Peter (1991), "The Non-agricultural Side of an Agricultural Economy Java, 1500-1900" in Paul Alexander, Peter Boomgaard and Ben White, **In the Shadow of Agriculture: Non-farm Activities in the Javanese Economy, Past and Present**, Amsterdam: Royal Tropical Institute

Booth, Anne (1988), **Agricultural Development in Indonesia**, Sydney: Allen and Unwin for the Australian Association of Asian Studies

Booth, Anne (1992), "Income Distribution and Poverty" in Anne Booth (editor), **The Oil Boom and After: Indonesian Economic Policy and Performance in the Soeharto Era**, Singapore: Oxford University Press

Booth, Anne (1993), "Counting the Poor in Indonesia", **Bulletin of Indonesian Economic Studies**, Vol 29(1), 53-84

Booth, Anne and R.M. Sundrum (1981), "Income Distribution" in Anne Booth and Peter McCawley (Editors), **The Indonesian Economy in the Soeharto Era**, Kuala Lumpur: Oxford University Press

Booth, Anne (1998), **The Indonesian Economy in the Nineteenth and Twentieth Centuries: A History of Missed Opportunities**, London: Macmillan

CEI Volume 1 **Changing Economy in Indonesia: A Selection of Statistical Source Material from the Early 19th Century up to 1940, Volume 1 Indonesia's Export Crops 1816-1940** (Initiated by W.M.F. Mansvelt. Re-edited and continued by P. Creutzberg), The Hague: Martinus Nijhoff 1975

CEI Volume 2 **Changing Economy in Indonesia: A Selection of Statistical Source Material from the Early 19th Century up to 1940, Volume 2 Public Finance 1816-1940** (Initiated by W.M.F. Mansvelt. Re-edited and continued by P. Creutzberg), The Hague: Martinus Nijhoff 1976

CEI Volume 3 **Changing Economy in Indonesia: A Selection of Statistical Source Material from the Early 19th Century up to 1940, Volume 3 Expenditures on Fixed Assets** (Initiated by W.M.F. Mansvelt. Re-edited and continued by P. Creutzberg), The Hague: Martinus Nijhoff 1977

CEI Volume 4 **Changing Economy in Indonesia: A Selection of Statistical Source Material from the Early 19th Century up to 1940, Volume 4 Rice Prices** (Initiated by W.M.F. Mansvelt. Re-edited and continued by P. Creutzberg), The Hague: Martinus Nijhoff 1978

CEI Volume 5 **Changing Economy in Indonesia: A Selection of Statistical Source Material from the Early 19th Century up to 1940, Volume 5 National Income** (Initiated by W.M.F. Mansvelt. Re-edited and continued by P. Creutzberg), The Hague: Martinus Nijhoff 1979

CEI Volume 6 **Changing Economy in Indonesia: A Selection of Statistical Source Material from the Early 19th Century up to 1940, Volume 6 Money and Banking 1816-1940** (Edited by P. Creutzberg and J.T.M. van Laanen), The Hague: Martinus Nijhoff 1980

CEI, Volume 7, **Changing Economy in Indonesia: A Selection of Statistical Source Material from the Early 19th Century up to 1940, Volume 7, Balance of Payments 1822-1939** (Edited by P. Boomgaard. Prepared by W.L. Korthals Altes) Amsterdam: Royal Tropical Institute 1987

CEI, Volume 8, **Changing Economy in Indonesia: A Selection of Statistical Source Material from the Early 19th Century up to 1940, Volume 8, Manufacturing Industry 1870-1942** (Edited by P. Boomgaard. Prepared by W.A.I.M. Segers) Amsterdam: Royal Tropical Institute 1987

CEI, Volume 9 **Changing Economy in Indonesia: A Selection of Statistical Source Material from the Early 19th Century up to 1940, Volume 9, Transport 1819-1940** (Edited by P. Boomgaard. Prepared by Gerrit Knaap) Amsterdam: Royal Tropical Institute 19

CEI, Volume 10, **Changing Economy in Indonesia: A Selection of Statistical Source Material from the Early 19th Century up to 1940, Volume 10, Food Crops and Arable Lands, Java 1815-1942**, (Edited by P. Boomgaard. Prepared by P. Boomgaard and J.L. van Zanden) Amsterdam: Royal Tropical Institute 1990

CEI, Volume 11, **Changing Economy in Indonesia: A Selection of Statistical Source Material from the Early 19th Century up to 1940, Volume 11, Population Trends 1795-1942** (Edited by P. Boomgaard. Prepared by P. Boomgaard and A.J. Gooszen) Amsterdam: Royal Tropical Institute 1991

CEI, Volume 12a, **Changing Economy in Indonesia: A Selection of Statistical Source Material from the Early 19th Century up to 1940, Volume 12 a, General Trade Statistics 1822-1940**(Edited by P. Boomgaard. Prepared by W.L. Korthals Altes) Amsterdam: Royal Tropical Institute 1991

CEI, Volume 12b, **Changing Economy in Indonesia: A Selection of Statistical Source Material from the Early 19th Century up to 1940, Volume 12 b, Regional Patterns in Foreign Trade 1911--1940** (Edited by P. Boomgaard. Prepared by Adrian Clemens, J. Thomas Lindblad and Jeroen Touwen) Amsterdam: Royal Tropical Institute 1992

CEI, Volume 13, **Changing Economy in Indonesia: A Selection of Statistical Source Material from the Early 19th Century up to 1940, Volume 13, Wages 1820-1940**(Edited by P. Boomgaard. Prepared by Nico Dros) Amsterdam: Royal Tropical Institute 1992

CEI, Volume 14, **Changing Economy in Indonesia: A Selection of Statistical Source Material from the Early 19th Century up to 1940, Volume 14 The Cultivation System**(Edited by P. Boomgaard. Prepared by Frans van Baardewijk) Amsterdam: Royal Tropical Institute 1993

CEI, Volume 15, **Changing Economy in Indonesia: A Selection of Statistical Source Material from the Early 19th Century up to 1940, Volume 15 Non-rice Prices** (Edited by P. Boomgaard. Prepared by W.L. Korthals Altes) Amsterdam: Royal Tropical Institute 1994

CEI, Volume 16, **Changing Economy in Indonesia: A Selection of Statistical Source Material from the Early 19th Century up to 1940, Volume 16 Forestry** (Edited and prepared by P. Boomgaard, with the assistance of R. de Bakker) Amsterdam: Royal Tropical Institute 1996

Central Board of Statistics (1999), **Sistem Neraca Sosial Ekonomi Indonesia 1998**, Jakarta: Central Board of Statistics, March

Central Bureau of Statistics (1963), **Statistical Pocketbook of Indonesia, 1963**, Jakarta: Central Bureau of Statistics

Central Bureau of Statistics (1970), **Pendapatan Nasional Indonesia 1960-8 (National Income of Indonesia)**, Jakarta: Central Bureau of Statistics

Central Bureau of Statistics (1973), **Survey Sosial Ekonomi Nasional Tahap Ke-empat (Oktober 1969-April 1970), Pengeluaran untuk Konsumsi Penduduk**, Jakarta: Central Bureau of Statistics

Central Bureau of Statistics (1982a), **Survey Sosial Ekonomi Nasional, Pengeluaran untuk Konsumsi Penduduk, Jawa, February 1980**, Jakarta: Central Bureau of Statistics

Central Bureau of Statistics (1982b), **Survey Sosial Ekonomi Nasional, Pengeluaran untuk Konsumsi Penduduk, Luar Jawa, February 1980**, Jakarta: Central Bureau of Statistics

Central Bureau of Statistics (1987), **Sensus Pertanian 1983 Seri I Sampel Pendapatan Petani**, Jakarta: Central Bureau of Statistics, August

Central Bureau of Statistics (1987), **Sensus Pertanian 1983, Seri I: Sampel Pendapatan Petani**, Jakarta: Central Bureau of Statistics

Central Bureau of Statistics (1988), **Indikator Tingkat Hidup Pekerja 1986**

Central Bureau of Statistics (1990), **Survei Biaya Hidup 1989, Buku 2, Ibukota Propinsi di Jawa**, Jakarta: Central Bureau of Statistics, November

Central Bureau of Statistics (1992), **Kemiskinan dan Pemerataan Pendapatan di Indonesia, 1976-1990**, Jakarta: Central Bureau of Statistics, February

Central Bureau of Statistics (1994a), **Penduduk Miskin dan Desa Tertinggal 1993: Metodologi dan Analisis**, Jakarta: Central Bureau of Statistics

Central Bureau of Statistics (1994b), **Sistem Neraca Sosial-Ekonomi Indonesia, 1990**, Jakarta: Central Bureau of Statistics

Central Bureau of Statistics (1995a), **Sensus Pertanian 1993 Seri B1 Sensus Sampel Rumahtangga Pertanian Pengguna Lahan (Land Holding Farmers Sample Census)**, Jakarta: Central Bureau of Statistics, February

Central Bureau of Statistics (1995b), **Sensus Pertanian 1993 Seri D1 Pendapatan Rumahtangga Pertanian dan Indikator Sosial Ekonomi**, Jakarta: Central Bureau of Statistics, November

Central Bureau of Statistics (1996), **Sistem Neraca Sosial Ekonomi Indonesia 1993**, Jakarta: Central Bureau of Statistics, March

Central Bureau of Statistics (1997a), **Pengeluaran untuk Konsumsi Penduduk Indonesia 1996**, Jakarta: Central Bureau of Statistics, February

Central Bureau of Statistics (various dates), **Gross Regional Domestic Product of Provinces in Indonesia by Industrial Origin**, Jakarta: Central Bureau of Statistics, September

Central Bureau of Statistics (1990), **Survei Biaya Hidup 1989, Buku 2: Ibukota Propinsi di Jawa**, Jakarta: Central Bureau of Statistics

CKS (Central Bureau of Statistics) (1938), "Prices, Price Indexes and Exchange Rates in Java, 1913-37", **Bulletin of the Central Bureau of Statistics 146**, Batavia: Department of Economic Affairs

CKS (1939), "The Living Conditions of Municipally Employed Coolies in Batavia in 1937" as translated and reprinted in **The Indonesian Town: Studies in Urban Sociology**, The Hague: W. van Hoeve 1958

Creutzberg, P. (1972-5), **Het Ekonomisch Beleid in Nederlandsch-Indie (Economic Policy in the Netherlands-Indies: Selected Subjects with a Preface, Introduction and Survey of the Documents in English, Three Volumes)**, Groningen: Wolters-Noordhoff NV

Department of Economic Affairs (1949) "Economic Data on Indonesia to the end of 1948", **Economic Review of Indonesia**, Vol III (I), January-March, pp. 5-22

Department of Information (1969), **The Five Year Development Plan, 1969-74**, Jakarta: Department of Information

Department of Information (1993), **Lampiran Pidato Pertanggungjawaban Presiden/Mandataris MPR**, Jakarta: Department of Information

Derksen, J.B.D. and J. Tinbergen (1980), "Berekeningen over de economische betekenis van Nederlandsch-Indie voor Nederland" in C. Fasseur (Editor), **Geld en Geweten**, The Hague: M. Nijhoff

Eng, Pierre van der (1992), "The Real Domestic Product of Indonesia, 1880-1989", **Explorations in Economic History**, Vol 29, pp. 343-73

Eng, Pierre van der (1992), "The Real Domestic Product of Indonesia, 1880-1989", **Explorations in Economic History**, Vol 29, pp. 343-73

Eng, Pierre van der (1993), **Agricultural Growth in Indonesia since 1880**, PhD dissertation, University of Groningen

Eng, Pierre van der (1993a), "Food Consumption and the Standard of Living in Indonesia, 1880-1990", **Economics Division Working Paper, 93/1**, Canberra: Research School of Pacific Studies, Australian National University

Eng, Pierre van der (1993b), "The 'Colonial Drain' from Indonesia, 1823-1990", **Economics Division Working Paper, 93/2**, Canberra: Research School of Pacific Studies, Australian National University

Eng, Pierre van der (1994), **Food Supply in Java during the War and Decolonisation, 1940-1950**, Hull: Centre for South East Asian Studies

Eng, Pierre van der (1996), **Agricultural Growth in Indonesia since 1880: Productivity Change and Policy Impact since 1880**, London: Macmillan

Furnivall, J.S. (1934a), "State and Private Money Lending in Netherlands India", **Studies in the Economic and Social Development of the Netherlands East Indies, IIIb**, Rangoon: Burma Book Club

Furnivall, J.S. (1934b), "State Pawnshops in Netherlands India", **Studies in the Economic and Social Development of the Netherlands East Indies, IIIc**, Rangoon: Burma Book Club

Furnivall, J.S. (1943), **Educational Progress in Southeast Asia**, New York: International Secretariat, Institute of Pacific Relations

Furnivall, J.S. (1944), **Netherlands India, A Study of Plural Economy**, Cambridge: Cambridge University Press

Hasselmann, C.J. (1914), **Algemeen Overzicht van de Uitkomsten van het Welvaart-Onderzoek, Gehouden op Java en Madoera in 1904-1905**, s'Gravenhage: Nijhoff

Huppi, Monika and Martin Ravallion (1991), "The Sectoral Structure of Poverty During and Adjustment Period: Evidence for Indonesia in the mid-1980s", **World Development**, Vol 19(12), pp. 1653-78.

Husken, Frans (1994), "Declining Welfare in Java: Government and Private Inquiries, 1903-1914" in Robert Cribb (Editor), **The Late Colonial State in Indonesia: Political and Economic Foundations of the Netherlands Indies, 1880-1942**, Leiden: KITLV Press

International Customs Tariffs Bureau (1937), **Bulletin International des Douanes/International Customs Journal: Netherlands East Indies**, Brussels: International Customs Tariffs Bureau, March

Jones, G.W. (1966), "The Growth and Changing Structure of the Indonesian Labour Force", **Bulletin of Indonesian Economic Studies**, Number 4, June, pp. 50-74

King, Dwight Y. and Peter D. Weldon (1977), "Income Distribution and Levels of Living in Java, 1963-1970", **Economic Development and Cultural Change**, Vol 25 (4), July, pp. 699-711

Laanen, Jan M.T. van (1990), "Between the Java Bank and the Chinese Moneylender: Banking and Credit in Colonial Indonesia", in Anne Booth, W.J. O'Malley and Anna Weidemann (editors), **Indonesian Economic History in the Dutch Colonial Era**, Monograph Series 35, New Haven: Yale University Southeast Asian Studies.

Laanen, Jan T.M. van (1979), "Het Bestedingspakket van de 'Inheemse' Bevolking op Java (1921-1939)" in F. van Anrooij et al. (Editors), **Between People and Statistics: Essays on Modern Indonesian History presented to P. Creutzberg**, The Hague: Martinus Nijhoff

Laanen, Jan T.M. van (1982), **The World Depression (1929-1935) and the Indigenous Economy in Netherlands India**, Occasional Paper No 13, Centre for Southeast Asian Studies, James Cook University of North Queensland

Laanen, Jan T.M. van (1989), "Per Capita Income Growth in Indonesia, 1850-1940" in Angus Maddison and Ge Prince (Editors), **Economic Growth in Indonesia, 1820-1940**, Dordrecht : Foris Publications

**Lampiran Pidato Kenegaraan, 1970-** Jakarta: Department of Information (annual publication)

Mackie, J.A.C. (1964), "The Indonesian Economy: 1950-63" as reprinted in Bruce Glassburner (Editor), **The Economy of Indonesia: Selected Readings**, Ithaca: Cornell University Press 1971

Mackie, J.A.C. (1967), **Problems of the Indonesian Inflation**, Ithaca: Cornell University Southeast Asia Program, Modern Indonesia Project Monograph Series

Maddison, Angus (1989), "Dutch Income in and from Indonesia, 1700-1938", in Angus Maddison and Ge Prince (Editors), **Economic Growth in Indonesia, 1820-1940**, Dordrecht : Foris Publications

Maddison, Angus (1990), "The Colonial Burden: A Comparative Perspective" in M. Scott and D. Lal, **Public Policy and Economic Development; Essays in Honour of Ian Little**, Oxford: Clarendon Press

Maddison, Angus (1991), "Dutch Income in and from Indonesia, 1700-1938", **Modern Asian Studies**, Vol 23(4), October, pp. 645-70

Manning, Chris (1998), **Indonesian Labour in Transition: An East Asian Success Story?**, Cambridge: Cambridge University Press

Manning, Chris, "What has Happened to Wages in the New Order?", **Bulletin of Indonesian Economic Studies**, Vol 30(3), pp. 73-114

McCawley, Peter (1979), "Industrialisation in Indonesia: Developments and Prospects", **Development Studies Centre Occasional Paper 13**, Canberra: Australian National University

McCawley, Peter (1981), "The Growth of the Industrial Sector" in in Anne Booth and Peter McCawley (Editors), **The Indonesian Economy During the Soeharto Era**, Kuala Lumpur: Oxford University Press

Mears, Leon (1981), **The New Rice Economy of Indonesia**, Yogyakarta: Gadjah Mada University Press

Mears, Leon (1984), "Rice and Food Self-sufficiency in Indonesia", **Bulletin of Indonesian Economic Studies**, Vol 20 (2), pp. 122-38

Meijer Ranneft, J.W. and W. Huender (1926), **Onderzoek Naar den Belastingdruk op de Inlandsche Bevolking**, Weltevreden: Lands Drukkerij

Mertens, Walter (1978a), "Population Census Data on Agricultural Activities in Indonesia", **Majalah Demografi Indonesia**, Number 9, June, 9-53

Mertens, Walter (1978b), "The Evaluation of the Agricultural Labor Force of Indonesia between 1930 and 1971", **Majalah Demografi Indonesia**, Number 9, June, 54-92

Metcalf, John E. (1952), **The Agricultural Economy of Indonesia**, Washington: US Department of Agriculture

- Muljatno (1960), "Perhitungan Pendapatan Nasional Indonesia untuk Tahun 1953 dan 1954", **Ekonomi dan Keuangan Indonesia**, Vol 13, pp. 162-211
- Niel, Robert van (1956), **Living Conditions of Plantation Workers in 1939-1940: Final Report of the Coolie Budget Commission**, Translation Series, Modern Indonesia Project, Ithaca: Cornell University
- Nugroho (1967), **Indonesia: Facts and Figures**, Jakarta: Central Bureau of Statistics
- Ochse, J.J and G.J.A. Terra (1934), "The Agricultural and Economic Conditions of the Natives and their Food Consumption", in **The Function of Money and Products in Relation to Native Diet and Physical Condition in Koetowinangoen (Java)**, Bogor: Department of Economic Affairs
- Penders, Chr. L.M. (Editor)(1977), **Indonesia; Selected Documents on Colonialism and Nationalism, 1830-1942**, St Lucia: University of Queensland Press
- Polak, J.J. (1943), **The National Income of the Netherlands Indies, 1921-39**, as reprinted in P. Creutzberg (editor), **Changing Economy of Indonesia, Vol Five, National Income**, The Hague: M. Nijhoff.
- Ravallion, Martin and Benu Bidani (1994), "How Robust is a Poverty Profile?", **World Bank Economic Review**, Vol 8(1), pp. 75-102
- Ravallion, Martin and Monika Huppi (1991), "Measuring Change in Poverty: A Methodological Case Study of Indonesia during an Adjustment Period", **World Bank Economic Review**, Vol 5(1), pp.57-82
- Sajogyo (1975), **Usaha Perbaikan Gizi Keluarga (ANP Evaluation Study, 1973)**, Bogor: Bogor Agricultural Institute
- Scheltema , A.M.P.A.(1936), **The Food Consumption of the Native Inhabitants of Java and Madura**, Batavia: Institute of Pacific Relations
- Schoffer, Ivo (1979), "Piet Creutzberg: From Ethical Economics to Economic History", in F. van Anrooij et al. (Editors), **Between People and Statistics: Essays on Modern Indonesian History presented to P. Creutzberg**, The Hague: Martinus Nijhoff
- Sigit, Hananto (1985), "Income Distribution and Household Characteristics", **Bulletin of Indonesian Economic Studies**, Vol XXI (3), December, pp. 51-68
- Sitsen, Peter H.W. (c1943), "Industrial Development of the Netherlands Indies", **Bulletin 2 of the Netherlands and Netherlands Indies Council of the Institute of Pacific Relations**,
- Statistical Yearbook of Indonesia 1975-**, Jakarta: Central Bureau of Statistics (from 1998 Central Board of Statistics)
- Sundrum, R.M. (1973), "Consumer Expenditure Patterns", **Bulletin of Indonesian Economic Studies**, Vol IX (1), March pp. 86-102
- Sundrum, R.M. (1974), "Household Income Patterns", **Bulletin of Indonesian Economic Studies**, Vol X(1), March, pp. 82-105
- Sundrum, R.M. and Anne Booth (1980), "Income Distribution in Indonesia: Trends and Determinants" in R.G. Garnaut and Peter McCawley (Editors), **Indonesia: Dualism, Growth and Poverty**, Canberra: Research School of Pacific Studies, Australian National University

United Nations (1960), **Yearbook of National Income Accounts**, New York: United Nations

United Nations (1964), **Review of Long-term Economic Projections for Selected Countries in the Ecafe Region, Development Programming Techniques, Series, No 5**, Bangkok: United Nations Economic Commission for Asia and the Far East

Wander, Hilde (1965), **Die Beziehungen Zwischen Bevolkerung und Wirtschaftsent-wicklung, Dargestellt am Beispiel Indonesiens**, Tubingen: J.C.B. Mohr

Weinreb, F. and Madjid Ibrahim (1957), "Penjelidikan Biaja Hidup di Djakarta", **Ekonomi dan Keuangan Indonesia**, Vol X (11 and 12), pp. 738-95

White, Ben (1991), "Economic Diversification and Agrarian Change in Rural Java, 1900-1990" in Paul Alexander, Peter Boomgaard and Ben White (Editors), **In the Shadow of Agriculture: Non-farm Activities in the Javanese Economy, Past and Present**, Amsterdam: Royal Tropical Institute