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9. ABSTRACT

Surveys of household income and consumption are systematically conducted in all the four countries studies here, with varying periodicity. In section I, a careful assessment is made of the reliability of these surveys. The assessment is done at two levels. At the first level, if there is reason to believe that the primary data from the surveys will be available, what is important is the reliability of the sampling frame used, the sample design adopted, and the concepts used in the formulation of the questionnaire. At the second and more likely level, if there is reason to believe that the primary data from the surveys will not be available, there is the additional consideration of the quality and coverage of the tabulated output.

For any estimation of trends in the absolute condition of the poorest x% of the population, or of the degree of relative inequality, however, a second crucial input must be price data. Section II explores the options available on this front.

In Section III directions for future data collection are looked at. If the object of such empirical work is the estimation of relative inequality within either the population as a whole or sub-groups thereof, there is no alternative available but to overhaul the present surveys (even more importantly, the tabulated output of these surveys) along the lines suggested in Sections I and II, or to conduct independent surveys along the recommended lines.

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Review of Income Distribution Data:  
Pakistan, India, Bangladesh and Sri Lanka

by  
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Research Program in Economic Development

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## INTRODUCTORY

In the main body of this paper the four countries surveyed will not be covered separately in sequence; instead, the treatment of all four will thematically be united under criteria of evaluation of quite general applicability. The most important and comprehensive sources available in these countries of data on the basis of which trends in real poverty and inequality can be constructed are dealt with in this format. Comments will be provided alongside on studies that have been done using these data in either primary or tabulated form, though the focus throughout will be on the quality of the underlying data rather than on the results of the studies based on them. Peripheral and piece-meal sources of data will be covered in an appendix to the paper where each country will be dealt with in turn.

Sample surveys of household income and consumption are the only really adequate bases on which size distributions of income for a less developed country can be constructed. The alternative of using income tax statistics is not available in such countries where income taxes are typically not levied on the majority of the population that lives in the rural sector, and where only a tiny minority of urban incomes are subject to taxation. The further alternative of piecing together income distributions from data on wages and salaries, and figures of the distribution of agricultural land and other property together with figures on the average productivity of such assets is tedious and at best incomplete. The considerable self-employed sector consisting of rural artisans, urban small business, and traders both urban and rural is left out of such a reckoning -- unless data on this sector is available from a sample survey. Further, wage data must

have a coverage large enough to take care of seasonal, sectoral (urban/rural, agricultural/non-agricultural), geographical and skill variation, and be accompanied by figures on the incidence of yearly employment at each of these wage-levels (abstracting for the moment from the problem of intra-sectoral, intra-regional, intra-skill variation in the availability of such employment). Lastly, and most importantly, the three groups of wage-earners, and the self-employed, those deriving income from property (including self-cultivated agricultural land) are by no means mutually exclusive, with many workers drawing support from more than one such class of activity, so that the final size distribution of income is an amalgam rather than a summation of its various parts.

Surveys of household income and consumption are systematically conducted in all the four countries studies here, with varying periodicity. In Section I, a careful assessment is made of the reliability of these surveys. The assessment is done at two levels. At the first level, if there is reason to believe that the primary data from the surveys will be available, what is important is the reliability of the sampling frame used, the sample design adopted, and the concepts used in the formulation of the questionnaire. At the second and more likely level, if there is reason to believe that the primary data from the surveys will not be available, there is the additional consideration of the quality and coverage of the tabulated output. Special attention is given to whether or not the data at either level make possible breakdowns by sector, occupation, region, ethnic group, and demographic variables.

For any estimation of trends in the absolute condition of the poorest x% of the population, or of the degree of relative inequality, however,

a second crucial input must be price data. Section II explores the options available on this front.

At the end of both Sections it will be seen that the outlook for reliably estimating past trends is not especially good in any of the countries. The shortcomings in some cases are such that the direction of bias can be established, but in a study of trends it is important to know in addition if the degree of bias itself has changed.

In Section III directions for future data collection are looked at. If the object of such empirical work is the estimation of relative inequality within either the population as a whole or sub-groups thereof, there is no alternative available but to overhaul the present surveys (even more importantly, the tabulated output of these surveys) along the lines suggested in Sections I and II, or to conduct independent surveys along the recommended lines.

If on the other hand, the object of such empirical measurement is policy-oriented rather than purely academic, there might be other options available. The appropriate point of departure with such an approach would be the kinds of policy deemed the most urgent, or the most feasible, given existing political and social parameters.

In terms of urgency, there can be little disagreement on the fact that an attack on the most extreme aspects of absolute deprivation among the poorest sections of the population is what is most pressingly needed. The same goal is also perhaps the most politically feasible of all equity goals, more so than a radical or even marginal restructuring of overall inequality and of the system of power and privilege that backs it. Correspondingly then, there would be a need for empirical measures that reliably identify target populations for these kinds of policy. One way of

doing so would of course be through the household surveys of consumption and income, and through the construction of poverty lines and so forth. A promising alternative, however, is provided by a method used by the United Nations Relief Operation in Dacca in recent years. Known as the QUAC Stick method, it is essentially a quick way using anthropometric measurements of identifying those segments of the population suffering nutritional deprivation. Any measure of the kind must lose something in sensitivity, though it is hard to determine without delving into the appropriate nutritional or medical literature just where the direction of error may lie. If the target population so identified is merely a subset of the desired or true target population, the problem is not as serious as if the target population identified cuts across the "true" level and includes many who are not really nutritionally deprived at the same time that it excludes many who are. As against these shortcomings the advantages of the method are many. It is very quick, does not require an army of trained personnel, can estimate the incidence of nutritional deprivation by any of a number of sub-classifications of the population, and does not involve any tiresome impositions on the memory of the respondent. A strong case is made in Section III for the collection of data along these lines. Finally, the Appendix to the paper will list by country sources of data on wages and property distribution, along with sources of other data peripherally relevant.

SECTION I: SAMPLE SURVEYS OF HOUSEHOLD INCOME AND CONSUMPTION.

This section deals with those surveys of household income and consumption that are conducted by the official statistical apparatus of the countries on a systematic basis. These are the most comprehensive surveys available for an estimation of trends. Other surveys have been conducted, but they are more limited in their coverage and have usually been done on a one-shot basis so that they can yield estimates only for a point in time; these surveys are dealt with in the Appendix.

Initially here, it will be assumed that the data from all surveys conducted will be available upon request in primary form. Later on the assumption will be examined, and the secondary, tabulated information from the surveys looked at.

1. Year of first survey; periodicity.

Surveys of household income and consumption were conducted in the rural sector of Bangladesh and Pakistan, separately in each wing of what was then one country as early as 1959-60,<sup>1</sup> but it was only in 1963 that the surveys were expanded to include both urban and rural sectors, and instituted on a regular basis.<sup>2</sup>

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<sup>1</sup>A survey was done in 1960-61 also, though M.G. Ghaudhry speaks of the surveys as though they were done for the calendar years 1959, 1960 and 1961. See M. Chaffar Chaudhry, "Rural Income Distribution in Pakistan in the Green Revolution Perspective" PDR Autumn 1973, p. 243.

<sup>2</sup>The series is entitled the Quarterly Survey of Current Economic Conditions and is conducted by the Central Statistical Office. The "Sample Survey of Household Income, Expenditure, Savings, and Liabilities" is a part of the Quarterly Survey, the other part being the "Sample Survey of Pakistan's Labor Force and its Selected Characteristics" which will be dealt with in the Appendix.

The surveys were proposed to be conducted annually though initially their periodicity was a little erratic. After the 1963-64 survey the next complete survey was done in 1966-67. In between partial surveys were conducted for the second halves of each of 1964-65 and 1965-66, with the latter further limited to urban areas alone.<sup>1</sup> But after 1966-67, complete surveys have been conducted every single year. In the eastern wing the disruptions of 1970-71 which led to the emergence of Bangladesh as a separate nation put a temporary halt to the series.<sup>2</sup> Thus, because all the surveys done so far in what is now Bangladesh were conducted when it was still a part of Pakistan, they will be referred to throughout as Pakistani surveys; the countries will be referred to as if they are three in number rather than four.

In India, sample surveys of household consumption have been conducted by the National Sample Survey (NSS) right from its inception in 1950. The NSS conducts sample surveys on a variety of subjects in the course of yearly rounds (the numbering of the rounds and the survey period of each will be given further along). Until the 28th round (1973-74) the household consumption survey was a part of every round.<sup>3</sup> However, starting with the 29th round, which is the first in which a household consumption survey is not to be held, these surveys will not be conducted every year. Their periodicity is yet to be decided on; they may be held as infrequently as once in five years.

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<sup>1</sup>M. Ghaffar Chaudhry, "Rural Income Distribution in Pakistan," p. 249.

<sup>2</sup>Efforts are now (1974) being made by the Bangladesh government to get the surveys going again.

<sup>3</sup>The surveys done in the first two rounds were confined to the rural sector.

Between the 10th (1955-56) and 14th (1958-59) rounds, and again between the 19th (1964-65) and 25th (1970-71) rounds, the questionnaire used was designed to collect information on income as well.<sup>1</sup> The income data so collected is of doubtful value (as is that collected in the Pakistani surveys, and for much the same reasons, but more on that further along), and the practice of collecting income data was discontinued with the 26th round (1971-72) survey.

In the course of the 8th round (1954-55), a scheme was devised for a matching survey to be conducted by the state governments in each round (the "State" sample) alongside that conducted by the central government (the "Central" sample). Sample selection for the two is identical and is in fact done at the same time, the only difference being that the field work for the former is done by the state governments instead of by the NSS organization. This scheme greatly improved the usefulness of the surveys in providing the potential for a larger pooled sample on the basis of which to draw conclusions. Not all the states however responded at the same time, though by the time of the 16th round (1960-61) -- possibly a little earlier, most were participants in the scheme. (The last state to join was West Bengal, which started only during the 29th round).

The first Sri Lanka survey of household income and consumption<sup>2</sup> was conducted in 1953; since then, they have been conducted every ten years, in 1963 and again in 1973.

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<sup>1</sup>Income data were also gathered in the course of the 18th round (1963-64), but only for a certain class of household, viz., those dependent on income from rural unskilled labor. This survey will be covered in the Appendix.

<sup>2</sup>The "Sample Survey of Ceylon's Consumer Finances" is conducted by the Central Bank of Ceylon in association with the Dept. of Census and Statistics.

The most desirable periodicity for surveys of this sort is yearly for at least two reasons. Samples from adjacent surveys can be pooled if individually they are not sufficiently large to provide reliable estimates. Further, it is important for any study of trends that the points of comparison, the survey years, be "normal" -- free of climatic excesses, war and so on. Since the normality of any year is difficult to predict in advance, it is useful to have yearly surveys from which to be able to choose points of comparison.

Normally, administrative convenience favors yearly surveys because they are a way of holding together and providing work for the pool of investigators who have been trained to do the job. However, this does not apply in the case of the Indian NSS, which conducts many types of surveys in addition to those on consumer expenditure. Some of these surveys will be referred to in the Appendix.

## 2. Sample design.

a) Sampling frame. The basic frame for sample selection in India and Pakistan is provided by the population censuses conducted in each country at the beginning of each decade. The population map obtained from the census provides the basis for the initial division of the country into geographical strata, and for the selection of sampling units from within each of the strata.

On the whole, the population censuses of these countries are probably quite reliable (where the reference is to head-count alone, not to the supplementary information ranging from educational level to land cultivation, that is often collected in the course of a population census; this information is usually not as reliable). However, for surveys conducted

towards the end of any decade, several years removed from the last census, there would be some distortion involved in using the last census for a sampling frame. The distortion arises out of the fact that different regions have different rates of population growth due both to differential rates of natural increase and to migration. The direction of such distortion is quite impossible to establish in general terms.

In the case of Sri Lanka where there is universal rice rationing, the household lists maintained by the government for the issue of rice ration books provide the sampling frame. There is no problem here because these lists are always maintained up-to-date.

b) Sample selection. Sample selection in all the surveys typically involves a one to three stage selection procedure from each of the several strata into which the country is first divided.

The foremost stratification is by sector: rural and urban in the case of the Pakistani and Indian surveys,<sup>1</sup> and rural, urban and estate<sup>2</sup> in the case of Sri Lanka. Sample selection is done separately for each sector and a sufficiently large sample size chosen so that estimates may separately be obtained for each.<sup>3</sup> Further geographical stratification is then done within each sector, initially along administrative boundaries,

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<sup>1</sup>Since the 28th round (1973-74), stratification in the Indian case is first done geographically. The rural/urban sectoral stratification is done at the second stage from within each of the initially formed geographical strata.

<sup>2</sup>The estate sector covers plantations. In the first Sri Lanka survey of 1953, there were only 2 strata: estate and non-estate.

<sup>3</sup>For the first Sri Lanka survey of 1953, however, estimates were not provided separately for each sector in the published report.

and then, where further sub-stratification is done, with regard to factors like population density. These kinds of stratification are typically done only to facilitate sample selection; only very occasionally is the sample designed to provide reliable estimates at the level of each such stratum. Exceptions are the Pakistani surveys which have at all times been designed to provide separate estimates for each wing of the country (though not at any further level of sub-stratification), and the Indian surveys which after a point<sup>1</sup> were designed to provide reliable estimates for each state.

Within each sector, the selection from each sub-stratum of the final sampling unit, the household, is typically done through a multi-stage procedure.<sup>2</sup> In the rural sector, there is a first-stage random selection of sample villages<sup>3</sup> from which the final set of sample households is then randomly picked. In the urban sector again, there is a first-stage selection of "blocks"<sup>4</sup> in India, electoral units in Pakistan, from which the sample households are selected at the second stage. In Sri Lanka, urban households are selected directly through a one-stage procedure. Occasionally, the sample design calls for a stratification of the households falling in the sampling units selected at the first stage; this is done when it is felt necessary to ensure that the final set of sample households will give equal

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<sup>1</sup>The thirteenth round (1957-58).

<sup>2</sup>The 1953 Sri Lanka survey, the sole exception, was based on cluster sampling.

<sup>3</sup>In the Pakistani surveys, the taluk (an administrative sub-unit of the district) is the first-stage unit, and villages are selected from these at the second stage; households are selected at the third stage. In the Sri Lanka surveys the first-stage unit is a "village headman's division."

<sup>4</sup>An administrative unit.

representation to each of a certain type of household. There have been minor variations over the years on the pattern just outlined, but none so serious as to affect comparability. In the Pakistani case a revision in sample design was introduced during the break after the 1963-64 survey. No information was available on how far-reaching the changes were. At least one study<sup>1</sup> does a comparison across the date, though no reference is made to the revisions. The sample selection procedure used in the 1973 Sri Lanka survey is not known.

The sampling fraction in the 1970-71 Pakistani survey was 1/400 in urban areas and 1/2000 in rural areas (for East and West taken together), and appears to have been approximately the same since the 1966-67 survey.

The fractions for the Sri Lanka surveys were approximately 1/1400 (1953) and 1/400 (1963), uniformly for all sectors. The figures for the 1973 survey were not available.

Sampling fractions in India vary widely from state to state, and from round to round. In general, the sampling fraction varies inversely with the size (in terms of population) of the state and has increased steadily over the years<sup>2</sup> for all states.

On the whole, the procedures used for sample selection appear well-conceived and are in all probability well-executed. One problem, however, arising out of the use of the "household" as the ultimate sampling unit, is that in the urban areas of these countries a considerable segment of the population is houseless and not readily identifiable in terms of households.

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<sup>1</sup>M. Chaffar Chaudhry, "Rural Income Distribution in Pakistan."

<sup>2</sup>There were a few discontinuities in the steady increase. For the rural sector there was a doubling in sample size with the 8th round (1954-55), the 16th round (1960-61), and again at the 18th round (1963-64). For the urban sector sample size was doubled in the 13th round (1957-58) and again in the 14th (1958-59) and 18th rounds.

The bias against the inclusion of this population is serious and must be kept in mind whenever these data are used to estimate urban inequality, or more especially, the extent of urban poverty.

Another bias, one that is repeatedly referred to, has to do with the richer households in both rural and urban sectors; it is felt that the samples obtained tend not to give adequate representation to these. This is probably more due to the refusal to respond of such households rather than to any fault of sample selection; to the better-off household, the investigator would be someone with a low social status not to be taken seriously. Bergan as a part of his study of the 1963-64 Pakistan survey, found that of the cases of non-response most could be seen from the partial evidence of the incomplete questionnaires to belong to higher income levels.<sup>1</sup> The official report on the Sri Lanka 1963 survey says most of the cases of non-response occurred in the upper income brackets, and in urban areas; the poorer classes by contrast were found to have been very cooperative.<sup>2</sup>

Where the surveys provide income data, the urban figures can be checked for under-representation of higher incomes against income-tax sources,<sup>3</sup> which can further be used if necessary to provide a correction factor to the survey data. But for consumption data, such correction is much harder to do, and with rural figures for either income or consumption the option is not available at all.

The problem with biases like this one is that the degree of bias

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<sup>1</sup>Bergan, "Personal Income Distribution," p. 163.

<sup>2</sup>Central Bank of Ceylon, Department of Economic Research, Survey of Ceylon's Consumer Finances 1963 (Colombo: Central Bank of Ceylon, 1964) Part I, pp. 25-27.

<sup>3</sup>The data source on taxable incomes in each country is given in the Appendix.

itself changes over time. Chaudhry<sup>1</sup> suggests that the response failure rate of 25% for the 1963-64 Pakistani survey was a low point in the series; the 1968-69 and 1969-70 surveys are quoted by him to have had corresponding rates of only 1-2%.

In India, the tendency towards underestimation appears to have increased systematically over the sixties. At the beginning of the decade, the national accounts and sample survey totals for consumption were fairly similar, but a disparity has developed with the years. The disparity could arise of course from biases in both sources. The issue of which source is the more correct remains unresolved.<sup>2</sup>

c) Survey period. The Pakistani and Indian surveys have a year-long survey period usually going from July to June. The Indian surveys have run regularly from July to June ever since the 14th round (1958-59). Before that each round varied in duration from three months (the 2nd round) to nine months (the 8th and 13th rounds). Even after the 14th round, there have been a few exceptions. The 17th round survey was held from September of 1961 to August of 1962. The following round was started only in February 1963 because of disruptions caused by the border war with China. The 19th round was normalized to the July-June year and all subsequent rounds followed normally until the 27th round which ran from October 1972 to September 1973. The following round, the 28th, was of only nine months' duration, so that the 29th round (1974-75) has been restored to the July-June year. Each sample

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<sup>1</sup>M. Ghaffar Chaudhry, "Rural Income Distribution in Pakistan," pp. 243-250.

<sup>2</sup>See part 5 of this Section.

household is visited and interviewed only once in the course of the year; the date of survey is different for each. In Pakistan the survey year is divided into four quarters. Each quarter is assigned one of the 4 independent sub-samples in the form of which the total sample is selected; the sample households assigned to a quarter are surveyed at different times in the course of the 3 month period.<sup>1</sup> In India the survey year is divided into "sub-rounds," the number of these varying from two (of six months' duration) to as many as six (of two months' duration). Once again, the households assigned to a sub-round are surveyed at different times in the course of it.

There are a lot of problems that flow from such a design, but since they are not independent of the questionnaire used, specifically the period of reference for which information is collected, they will be considered in the next part of this section.

The Sri Lanka surveys are designed differently. All sample households are surveyed at the same time. The surveys are held in April which marks the end of one of the two major agricultural seasons<sup>2</sup> in the country. Both these factors, the timing and the simultaneous coverage,<sup>3</sup> are an improvement

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<sup>1</sup>CSO, Economic Affairs Division, GOP, Report on the Qtly. Survey of Current Economic Conditions in Pakistan (Household Income and Expenditure), Jan-June 1965 (Karachi: 1966).

<sup>2</sup>The Maha season goes from Sept./Oct. to March/April so that the survey would have to be held in April (as in 1963) so as to come at the end of the season. The 1973 survey, however, seems to have been held in Jan. and Feb. of 1973 (Central Bank of Ceylon, Annual Report of the Monetary Board to the Minister of Finance for the Year 1973 (Colombo: Central Bank of Ceylon, 1974)). The timing of the 1953 survey could not be ascertained.

<sup>3</sup>While all households were not surveyed at exactly the same time, the survey period for the different households could not have been more than twenty days apart.

on the non-simultaneous, year-round design of the Pakistani and Indian surveys, but several problems remain even with the Sri Lanka surveys; they will be considered in what follows.

### 3. Questionnaire.

a) Reference Period. The foremost point of interest in the questionnaire, to be looked at in conjunction with the timing of the survey, is the period of reference with respect to which the data on income and consumption are collected.

There are two conflicting considerations here. Since the average respondent cannot readily provide totals for what he earns or consumes, and since these totals must therefore be arrived at through a careful accounting of the components of each, the period of reference must be short enough so that such information can reliably be recalled. At the same time, the period of reference must be long enough so that the figures show what is usual for the household, without any distortions introduced by seasonal or other factors.

With consumption data, the second consideration is not as important as with income data. Consumption is much less subject than income to seasonal variation over the year. Thus, for the collection of consumption information it is possible to justify the use of reference periods as short as the month preceding the date of survey (as in the Pakistani and Indian surveys)<sup>1</sup> or even as short as a week (the Sri Lanka surveys)<sup>2</sup> --

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<sup>1</sup>In Pakistan, the reference period for durable and some non-durable but occasional expenditures, is the year preceding the date of survey.

<sup>2</sup>The consumption practices of each sample household were observed over a week. For non-food expenditures, the reference period in the 1953 survey was an "average" month, and in the 1963 survey the two months of Feb. and March that preceded the survey period. Corresponding information on reference periods used in the 1973 survey was not available.

periods that would be entirely too short for the collection of reliable income information. The shorter period of reference makes for greater accuracy of recall so that in general, consumption data are easier to collect than income data, and far more reliable when collected.

The timing of survey, however, is important because the seasonal element in consumption is not entirely negligible. Expenditure on clothing and food is higher at certain times of the year because of religious and other festive occasions, and where there is marked climatic variation over the year there would be a corresponding variation in the consumption of non-food items like fuel and clothing. If, as in the case of the Sri Lanka surveys, the households have all been surveyed at the same time, the direction of the seasonal bias would be the same for all the households,<sup>1</sup> so that the distribution among them would not be distorted unduly. But where the date of survey varies from household to household, as in the case of the Pakistani and Indian surveys, so that the reference month is different for each, some part of the variation in consumption figures must be attributed to seasonal variation. The data must therefore first be de-seasonalized by sub-round or quarter before they are used to obtain Lorenz curves of consumption inequality.

Income receipts on the other hand typically vary so greatly over the year that for the collection of income data, a reference period as short as a month simply would not suffice.<sup>2</sup> However, the reference period used in

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<sup>1</sup>In the 1963 survey that bias would have been upward because the survey time fell during Ramazan, a Moslem festival, and just preceded the Sinhalese and Tamil New Year.

<sup>2</sup>The income data gathered in all the Indian surveys, other than that conducted in the 25th round, were collected with reference to the month preceding the date of survey.

the Pakistani surveys (and for those income data collected in India in round 25), of the year preceding the date of survey is entirely too long for reliable recall.

The conflict here between the requirements of accurate recall and avoidance of seasonal distortion cannot really be resolved except by providing for repeated -- two or three -- visits to each household in the course of the year. Most of all, the timing of these visits would have to be such as to fall at the end of a natural accounting period, such as an agricultural season in the case of the rural sector, and all sample households would have to be covered simultaneously. Repeated visits, while always desirable<sup>1</sup> might not be actually necessary for the urban sector, and for a few minority groups in the rural sector such as traders and perhaps artisans, of whom accurate recall of receipts and disbursements for a whole year at a time might conceivably be expected. Once again, however, the visit would have to be arranged to occur at a particular time, say at the end of the traditional financial year. (The traditional financial year is usually synchronous with the agricultural year).

In terms of numbers, the agricultural sector is the preponderant sector in these countries, and repeated visits are unavoidably necessary in its case. Receipts and disbursements are strongly associated with the crop season taken as a whole and recall of these figures cannot be expected to last much beyond the end of the season. In light of all this, it is not

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<sup>1</sup>Given the investigator strength of the sample survey organization, repeated visits cut down on the possible size of the sample. There is a trade-off here therefore, between more accurate information from a smaller sample and less accurate information from a larger sample. Where the sample is above a certain threshold size the choice is obvious.

clear what possible value the income data obtained from the Pakistani surveys could have. Since the dates of survey were spread evenly over the year, most households would have been visited in the middle of a crop season, and the year preceding the date of survey would have consisted for them, most awkwardly, of one season and bits of two others.

Four sources of income in the Pakistani survey, viz. wages and salaries, pensions, boarders and lodgers, and professional, have a reference period of a month. In the case of seasonally invariant receipts, this would be all right, but many of these sources are not. In the case of agricultural wages in particular, receipts would be as strongly associated

with the seasons as farm receipts in the case of a respondent who is a farmer.

The Sri Lanka survey by contrast is vastly superior in its timing. All sample households were surveyed at the end of one of the two major crop seasons of the Sri Lanka year<sup>1</sup> (which also coincided with the end of the financial year). Two periods of reference were used -- one a year long (April-March) and the other two months long (February and March). The data for the year-long reference period would of course suffer from lapses of memory especially with respect to the season preceding the one just completed. Even so, they would probably be better to use than the data for the 2-month reference period,<sup>2</sup> which would give a distorting upwards bias to earnings in

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<sup>1</sup>The timing of the 1973 survey might not have been quite as good; see the discussion of survey period.

<sup>2</sup>In the 1973 survey the two periods were of six-month and two-month duration respectively. The choice here would normally be in favor of the former, though in this case, because of the strange timing of the survey, neither would be particularly good.

agriculture with respect to non-agricultural earnings.<sup>1</sup>

The trouble with the kind of unreliability introduced into the Pakistan income data because of the awkwardly specified periods of reference is that the direction of bias is impossible to ascertain. It would vary from respondent to respondent according to whether, when asked to guess at total income earned in a period that cuts across normal accounting units, each one tends to overestimate or underestimate. For this reason, if for no other, the income data from these surveys must not be considered a reliable basis on which to estimate inequality.

b) Concepts. The two most important sets of concepts to look at are the definitions of income and consumption on the one hand, and the definition of the receiving or consuming unit on the other.

In both Pakistan<sup>2</sup> and India the household<sup>3</sup>, the sampling unit selected at the final stage, is the unit in terms of which consumption and income data are collected. In the Sri Lanka<sup>4</sup> surveys, on the other hand,

<sup>1</sup>In the report on the 1963 survey the difficulties of getting farmers to recall figures with respect to the just completed Maha season let alone for the Yala season that went before it, are dwelt on; the report tabulates both sets of data, but the officially accepted figures are those based on the 2-month reference period.

<sup>2</sup>The Pakistani questionnaire referred to here will be the one used after the 1964 revisions; the old questionnaire is discussed in Asbjorn Bergan, "Personal Income Distribution and Personal Savings In Pakistan: 1963/64" (PDR Summer 1967, No. 2, Vol. VII, pp. 163-167).

<sup>3</sup>Defined as a group of persons usually living together and taking principal meals from a common kitchen.

<sup>4</sup>The 1973 questionnaire was not available; the concepts used in that survey might well have been different.

the recipient unit in terms of which income data are recorded is the individual "income receiver" and consumption data are recorded in terms of the "spending unit." The spending unit is much the same as the household, but is defined to exclude servants (who are included in the Pakistani and Indian definitions). The concept of the individual income receiver, however, is somewhat more problematical in a context where the household still retains its function as a producing unit. To ascribe the entire income of such a unit to one individual would be wrong conceptually, and yet that is what would have to be done in practice. (The alternative of imputing income to the different participating household members would be quite impossible). Fortunately, to users of the data the option still remains of treating the income of the "income receiver" in the spending unit as that of the spending unit. Where there is more than one income receiver in the spending unit, their incomes would of course have to be pooled.

The concept used of income itself varies from country to country. The Sri Lanka definition is unique in that receipts from sales of assets are included in income on the grounds that they add to spending power.<sup>1</sup> These receipts would have to be deducted when using the data so as to get an income total more in line with common usage. The Indian income data are collected in a balance sheet format, with all receipts whether from income or dissaving listed on one side, and all payments out whether due to costs or to saving listed on the other. Appropriate items would have to be summed or deducted to get an income total from these. In the Pakistani definition, rent from owner-occupied dwellings is imputed and included in the total. While this is conceptually perfectly valid and even necessary, it is

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<sup>1</sup>Central Bank of Ceylon, Department of Economic Research, Survey of Ceylon's Consumer Finances 1963 (Colombo: Central Bank of Ceylon, 1964) Part I, p. 6.

in practice very difficult to do. It leaves too much room for subjective judgment on the part of either the respondent or the investigator and is therefore best excluded from the income total by the data user.

Consumption is defined in the Pakistani and Sri Lanka surveys to include expenditure on births, deaths and marriages and on litigation; such expenditures because of their infrequent occurrence can cause distortions and are best deleted. The questionnaire used in the Indian surveys up to the 18th round (1963-64), included not only expenditure on rites of passage in the consumption total, but also expenditure on house construction. The latter was excluded in the 19th round (1964-65) survey, though/repairs and improvements on owned housing was retained. This item together with the rest were dropped in the 22nd and subsequent rounds. In the Pakistani surveys, imputed rent on owner-occupied dwellings is included in consumption also, and as in the case of income, it is best deleted before doing further computations with the figures. In the Indian surveys, imputed rent on owner-occupied dwellings is included in the consumption total, though not in the income total. There is an entry for income tax paid in the expenditure section of the Pakistani questionnaire. Aside from the fact that the entry would be relevant to only the smallest fraction of the sample, its inclusion in the consumer expenditure section is strange.

The questionnaires used in all three countries have far better provision for recording the item-wise composition of consumption than income.<sup>1</sup> The listing of all possible items of consumption in the questionnaire is a great aid to accurate recall, and is yet another factor in the greater

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<sup>1</sup>The only exception was the 1953 Sri Lanka survey where non-food consumption was not recorded by item.

reliability of the consumption figures from the surveys.

The absence of provision for item-wise listing in the income section of the questionnaire is particularly notable in the case of that problem component -- imputed income, from home-produced goods or from free collection.<sup>1</sup> In both urban and rural areas, a considerable part of fuel consumption and even food is obtained through free collection particularly by poorer households, and in rural areas farm and garden produce is a significant element in income. (A third source of income in kind -- government consumption subsidies, is important in the case only of Sri Lanka, where the government distributes free rice to non-income tax payers). It is important that the kinds of items that might be so obtained be listed to aid recall: where this is not done, there is sure to be an underestimation of income obtained from such sources. (In the consumption section of all the questionnaires on the other hand, there is provision for the recording of the imputed value of goods consumed but not paid for<sup>2</sup> against each item of consumption).

To conclude, in all three countries the consumption figures provided by the sample surveys are much more reliable than the income figures. They are more carefully recorded by item with much better provision for the recording of the imputed value of freely collected and home-produced goods. This is especially important because it ensures that the consumption levels of poorer and rural households will not be underestimated. Most importantly,

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<sup>1</sup>In the Sri Lanka questionnaire, there is no provision either for recording item-wise costs incurred in the earning of income; it is thus impossible to tell how carefully the totals for cost and net income were arrived at.

<sup>2</sup>In all three countries, goods consumed outside the house but not paid for, as for example, meals provided to laborers by employers as a part of income, are not included in the consumption total. Such payments are however included in income in all three cases as income in kind.

Because of the inherently lesser seasonality in consumption, the consumption figures are not affected by the timing of the Pakistani and Indian surveys, nor by the shorter period of reference used; the latter, if anything, is a factor that makes for greater reliability.

#### 4. Kinds of breakdown possible.

In any study of income or consumption inequality it is important not merely to obtain Lorenz curves from the data, but to be able to obtain the characteristics of the population falling in the different deciles, or to be able to assess the incidence of absolute and relative deprivation separately for different sub-groups of the population.

The kinds of breakdown that would be desirable are listed below. Their availability would be a function of the sample design adopted and the questionnaire.

a) Regional/Ethnic. A breakdown by region is quite possibly the most important kind of breakdown needed. In all the three cases the rural/urban breakdown is available right away<sup>1</sup> (and in the case of Sri Lanka a three-way rural/urban/estate sector breakdown). Thus poverty and inequality can separately be assessed for each sector.

In Pakistan, the sample design further ensured a breakdown by region so that estimates can be made separately for rural West Pakistan and rural East Pakistan; and similarly for the urban sector. The surveys however are not designed to provide reliable estimates at further levels of regional disaggregation.

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<sup>1</sup>This is true even for the Indian 28th round survey where initial stratification was not by sector.

In India, regional breakdowns for both rural and urban sectors are absolutely necessary; because of the size and diversity of the country, estimates of inequality or poverty for the country taken as a whole conceal more than they reveal. However the sample surveys were not designed to provide reliable estimates at the level of the individual states until the 13th round (1957-58). This revises the effective availability of the series by at least seven years. Even with the 13th round, samples of adequate size cannot be obtained (separately, that is, for urban and rural sectors) except by pooling the Central and State samples.

In Sri Lanka, regional breakdowns for each sector are not designed for<sup>1</sup> but then again they are not quite as necessary. The questionnaire does have a provision however for recording ethnic group, which in the case of this country is probably a much more useful kind of breakdown to have.

b) Occupation/Industry. The next most useful kind of breakdown to have is by occupation and industry. Here only the Indian surveys collect data to the necessary level of detail to make it meaningful. The Pakistani survey does classify by occupation but coarsely so that, for example, all laborers, whether agricultural or non-agricultural, are lumped into one category.<sup>2</sup> In Sri Lanka, too, the occupational classification is not sufficiently detailed; all laborers are grouped together.

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<sup>1</sup>Regional estimates however are possible because the different sectors seem to have little geographical overlap. See part 5 of this Section for the pooled regional breakdowns provided in the official reports on these surveys.

<sup>2</sup>The categories are the following: professional and technical, administrative, clerical, sales, farmers and fishermen, miners, transport and other laborers, services, other.

In the Indian surveys, on the other hand, each household is classified by a six digit code, three for industry and three for occupation, according to whichever occupation it derives the major part of income from. While this provides for the recording of information to a very great level of detail, the assignation of the third digit is not always done very carefully (probably because the investigator is not always able to obtain the detailed information necessary to do so). The two-digit level itself, however, is sufficient to distinguish between agricultural and other laborers, for example. Care must be taken in decoding the classification because the code used has changed several times over the years.<sup>1</sup>

c) Unemployment/Underemployment. Data on unemployment and on average annual days worked by those employed in each region and occupation would be particularly useful as a guide to policy. The recall/seasonality conflict is perhaps strongest of all here however. Recall of days worked is typically much poorer than recall of earnings and much more short-lived. At the same time, seasonal variation is quite pronounced. Unlike the case of income, however, there is more of an interest in knowing the extent of the seasonal variation itself. For this reason year-round coverage is more useful than the Sri Lanka type of design.

In the Sri Lanka surveys, the only ones with simultaneous (but non-repeated) coverage, information on employment was collected with a 2-month reference period. In the report on the survey the figures are

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<sup>1</sup>For a listing of the coding system used in the various rounds, see Indira Rajaraman, "Poverty, Inequality and Economic Growth: Rural Punjab 1960-61 - 1970-71." (unpublished doctoral dissertation, Cornell University, January 1974), Chapter 7.

acknowledged to be unreliable<sup>1</sup> (tabulations on the figures are provided in the report nevertheless).

In Pakistan a Labor Force Survey is conducted every year as part of the Quarterly Survey of Current Economic Conditions, the other part of which is the Sample Survey of Household Income and Expenditure. Identically the same households are covered in both surveys,<sup>2</sup> though it is not clear if both sets of data are collected on the same visit. The questionnaire used is well designed to collect information on hours worked, unemployment, and additionally on migration.<sup>3</sup> The period with reference to which all this information (except of course for that on migration) is collected is the week preceding the date of survey.

Surveys of employment were conducted in India in every round starting with the 9th (May-September 1955), but the surveys held in the 18th and subsequent rounds were confined to urban areas,<sup>4</sup> and starting with the 23rd round (1968-69) the series was suspended altogether. Sample selection for the surveys was done in the same way as for the consumer expenditure surveys, though the set of sample households selected was not the same. The reference

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<sup>1</sup>Central Bank of Ceylon, Department of Economic Research, Survey of Ceylon's Consumer Finances 1963, Part I, p. 25.

<sup>2</sup>CSO, Economic Coordination and External Assistance Division, Government of Pakistan, Manual of Instructions: Quarterly Survey of Current Economic Conditions (Selected Chars. of Population) NSS-I Schedule (Revised 1971), 3rd. ed. (Karachi 1971).

<sup>3</sup>Information on migration has been collected only since January 1968.

<sup>4</sup>The 13th round (1957-58) survey was also confined to urban areas.

period for the collection of employment data was the week preceding the date of survey; data were collected on the activity status of every member of the household, together with figures of hours worked by each in the preceding week. These kinds of data were also collected incidentally in the course of the consumer expenditure surveys of rounds 19 to 24, so that employment data are available even for rounds 23 and<sup>24</sup> in which formal surveys were not held. In the 25th round (1970-71), a special survey was held in rural areas of two groups that were thought to comprise the "weaker sections" of the population -- agricultural laborers, and the smallest 10% by size of household holding of cultivator households in each sample village.<sup>1</sup> The special survey, which was incorporated with the consumer expenditure<sup>survey</sup> of that round,<sup>2</sup> collected data on employment and hours worked in the week preceding the date of survey for these two groups of the population. In the 27th round (1972-73) an employment survey was conducted in both rural and urban areas of the country. The set of sample households selected for the survey was the same as for the consumer expenditure survey conducted in that round.

d) Sex, age. Data on household composition by sex and age are collected in the surveys of all three countries.

e) Education. Data on education levels are regularly collected in the surveys of all three countries.

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<sup>1</sup>Since the affluence or poverty of any household is determined by number of household members relative to means of support, the second group is by no means uniformly the weakest economically.

<sup>2</sup>The usual consumer expenditure data were collected in respect of the remaining population.

5. Availability of primary data: evaluation of the tabulated output.

Unfortunately, the primary data from the surveys are in most cases extremely difficult if not impossible to obtain. Even if access is granted by the government organizations concerned, the data are frequently simply not available. Storage facilities are typically inadequate, and the data are often destroyed after the officially prescribed tabulations have been done on them. This seems to be the case for example in Pakistan.<sup>1</sup> Further, since the reports on all the Pakistani surveys done after 1966-67 were issued after/breaking away <sup>the</sup> of Bangladesh,<sup>2</sup> no tabulations have been provided for these years on the data collected in the eastern wing. It is not clear if these primary data were destroyed together with those for the western wing after the tabulations done on the latter. If so, 1966-67 would be the last year for which official sample survey data are available for Bangladesh.

In India, primary data gathered in rounds upto the 19th (1964-65) are the property of the Indian Statistical Institute which does not normally grant access to them to individuals outside the organization. Duplicates of the filled questionnaires are available for each state at offices of the National Sample Survey Organization in the state capitals. These offices however suffer from a severe shortage of storage facilities, and data from earlier surveys are often destroyed to make way for data from more recent surveys. For rounds after the 19th the primary data collected have been centrally stored by the NSSO.

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<sup>1</sup>Private communication, subject to correction. The author would be happy to be advised otherwise.

<sup>2</sup>The 1967-68 survey has not been tabulated, but the surveys done in 1968-69, 1969-70, and 1970-71 have. The reports on these were issued between Feb. and May 1973 (the secession of Bangladesh was completed in December 1971).

As for the case of Sri Lanka, nothing could be learned about the availability of the primary data from the surveys.

Most of the studies that have been done on income or consumption distribution in these countries have been based on the tabulations provided by the government organizations responsible for the surveys. Unfortunately, these tabulations leave a great deal to be desired.

The Pakistani reports<sup>1</sup> for example provide no tabulations whatever by class of consumption expenditure. (It will be remembered that in part 3 of this section it was concluded that the consumption figures were the most reliable of all the data obtainable from the surveys). The consumption data are indeed used in the reports but only to provide figures of average consumption or of the composition of consumption by class of income. Income, then, is the variable by which the households are ranked and grouped into classes, which is unfortunate in view of the unreliability of the income figures collected. Further, the ranking is done in terms of total household income, not per capita household income.

The case for ranking by the per capita figures rather than by household totals is self-evident; the affluence or poverty of any household is a function of both the total size of the pie and the number of people among whom the pie has to be divided. Even granting the fact that there are economies of scale in household arrangements, so that ten people living on Rs. 1000 a month are probably better off than one person on Rs. 100, the disparity between the two households would by no means approach what is suggested by the total figures.

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<sup>1</sup>In addition to those for 1968-69, 1969-70, and 1970-71, reports are available for 1963-64, 1966-67, and for the partial survey conducted in 1965.

Table 1 provides a few figures from the 1970-71 report for West Pakistan of average household size in each class of total household income (monthly). It can be seen from the table that household size increases with household monthly income. If there were not such a strong positive correlation the Lorenz curves obtained from the two rankings would be similar. But where there is; the Lorenz curve obtained from a per capita ranking would show greater inequality than one obtained from a ranking by household income. (It also follows that the Lorenz curve for deciles of households as opposed to deciles of population obtained from a per capita ranking would show greater equality.)

For classes of monthly household income thus, the Pakistani reports provide (separately for rural and urban sectors, and for 1963-64 and 1966-67 for both East and West Pakistan), the distribution of earners<sup>1</sup> by employment status (whether employed, employer, etc.) and by occupational group (where the occupational categories were given in part 4 of section I). A breakdown is also available of income by source<sup>2</sup> for each class. Finally, figures from the 1970-71 report for saving by income class are given in Table 2, because they illustrate a point made earlier about the imputed value of freely collected and home-produced goods.

Because of the preponderance of the rural sector, overall saving in the country was also negative (-Rs. 2.05 every month).

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<sup>1</sup>"Earners" cover unpaid family helpers defined to include any family member who worked for 15 hours or more during the week preceding the date of enquiry for the family enterprise without pay or profit.

<sup>2</sup>The following categories are used: wages and salaries, self-employment, property other than owner-occupied houses, owner-occupied houses, social insurance benefits including pension, gifts and assistance, other.

TABLE 1: HOUSEHOLD SIZE BY TOTAL HOUSEHOLD MONTHLY INCOME CLASS:  
WEST PAKISTAN 1970-71

<u>Total household monthly income</u>	<u>Average household size</u>	<u>% age of total household</u>	<u>% of total population</u>
Less than 50	1.8	0.4	0.1
50-99	3.0	9.0	5.1
100-149	4.0	22.9	17.1
150-199	4.9	21.1	19.6
200-249	5.7	15.1	16.2
250-299	6.3	10.9	13.0
300-399	6.7	11.1	14.1
400-499	8.0	4.2	6.3
500-749	8.2	3.4	5.3
750-999	9.4	0.9	1.6
1000-1499	3.2	0.6	0.9
1500-1999	9.2	0.3	0.5
2000 & above	7.6	0.1	0.2

Source: Statistical Division, Ministry of Finance, Planning and Development. Government of Pakistan, Household Income and Expenditure Survey 1970-71 (Islamabad: 1973), Tables 2 and 8.

It must be remembered while looking at the figures in Table 2 that the monthly figures were obtained from annual data. The kind and magnitude of the dissaving indicated cannot possibly exist on a yearly basis. In some months of the year, say towards the end of the crop season in rural areas, there might be temporary dissaving, which is offset as soon as the harvest comes in. Or some households might in a particular year undergo net dissaving. But the kind of overall annual sectoral dissaving indicated can only mean that the income figures were biased downwards. (The alternative explanation, a uniformly upward bias in the consumption figures, is quite implausible.) In part 3 of section I it was said that there might well be an underestimation of freely collected and home-produced consumption in the estimation of income (but not in the estimation of consumption). The figures of Table 2 seem to bear this out. The estimate of dissaving reported is higher in the rural sector where such kinds of income are more important, than for the urban.

Studies that have cross-checked sample survey with national income figures indicate that the fit between the two was fairly close in 1963-64 (after Bergan's<sup>1</sup> adjustments) but has diverged subsequently (as shown by Azfar<sup>2</sup> for 1966-67, and by Khandker<sup>3</sup> for 1966-67 and 1968-69). The trouble here of course is that there is no test of how much of the disparity may arise from upward biases in national income statistics.

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<sup>1</sup>Asbjorn Bergan, Personal Income Distribution & Personal Savings In Pakistan: 1963-64 (PDR Summer 1967, No. 2, Vol. VII, p. 169)

<sup>2</sup>Javed Azfar "The Distribution of Income in Pakistan 1966-67," Pakistan E & S Review Spring 1973, pp. 45-46.

<sup>3</sup>R.H. Khandker, "Distribution of Income and Wealth in Pakistan," Pakistan E & S Review Spring 1973, pp. 1-36.

TABLE 2: SAVING BY TOTAL HOUSEHOLD MONTHLY INCOME CLASS:  
WEST PAKISTAN, 1970-71

Total household monthly income	<u>Rural</u>			<u>Urban</u>		
	% household	Average monthly household income	Saving	% household	Average monthly household income	Saving
<u>ALL GROUPS</u>	<u>100.0</u>	<u>208.88</u>	<u>- 3.53</u>	<u>100.0</u>	<u>316.56</u>	<u>- 2.65</u>
Less than 50	0.5	41.62	-33.31	0.2	37.86	-44.35
50-99	10.6	80.99	-11.58	3.7	84.39	-10.63
100-149	25.9	124.66	-12.59	12.9	125.21	- 7.90
150-199	21.9	173.47	- 6.68	18.6	171.43	- 7.55
200-249	14.9	221.35	- 6.86	16.0	220.58	- 6.08
250-299	10.4	272.41	+ 6.88	12.5	268.68	- 4.96
300-399	9.7	336.65	+12.46	15.6	340.67	- 1.86
400-499	3.0	440.74	+ 7.43	8.2	438.76	+ 4.66
500-749	2.2	585.74	+44.57	7.3	588.38	+19.03
750-999	0.5	847.29	+ 3.19	2.1	850.75	+35.23
1000-1499	0.2	1,139.57	+166.58	1.7	1,160.16	+91.51
1500-1999	0.2	1,628.00	+31.72	0.6	1,724.30	+122.23
2000 and above	-	-	-	0.6	2,997.00	+479.48

Sources: Statistical Division, Ministry of Finance, Planning and Development, Government of Pakistan Household, Income and Expenditure Survey 1970-71, Table 19<sup>1</sup>.

<sup>1</sup>There seems to be a disparity between the figures of income and net saving provided in Tables 17 and 19 of the report though the general direction of saving in each income class is the same. The figures of Table 19 were chosen because they seemed much less confused than those in Table 17.

The internal inconsistency within the survey data themselves between the figures for consumption and income is the more persuasive evidence of underestimation in the latter.

Bergan and Azfar used income tax data to adjust for the underrepresentation of households with larger incomes in urban areas, and Azfar uses data on the distribution of land<sup>1</sup> to adjust for similar underrepresentation in rural areas. Neither however adjusts for biases in the reporting of income of those households actually covered. None of the studies done for Pakistan<sup>2</sup> questions the basic reliability of <sup>the</sup> income figures, or suggests the use of the consumption figures instead. All of them of course, except for Bergan,<sup>3</sup> were limited to the tabulated output from the surveys, and he did not use the data at his disposal to derive estimates of consumption inequality for the population.

The Pakistani labor force surveys are tabulated and issued in separate reports.<sup>4</sup> Unfortunately, the tabulations of unemployment in each occupational group are not provided by season. Figures are also not provided for each occupation of average annual employment in terms of days or hours per week. These are major shortcomings.

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<sup>1</sup>Javed Azfar, "The Distribution of Income in Pakistan 1966-67," p. 44.

<sup>2</sup>In addition to those referred to in the preceding footnotes, there is M. Ghaffar Chaudhry, "Rural Income Distribution in Pakistan," pp. 247-258.

<sup>3</sup>Ibid., may have had access to the primary data for the years before 1963-64.

<sup>4</sup>The reports are available for Jan-Sept. 1965, Jan-March and April-June 1966, 1966-67, 1967-68, 1968-69, 1969-70, 1970-71 and 1971-72.

## consumption

The tabulated output of the Indian/surveys, by contrast, is far better. Frequency distributions of the population are provided by consumption class.<sup>1</sup> Further, these distributions are provided after ranking by both per capita figures and household totals. Published reports are available on all rounds upto the 19th. In addition, draft reports are available on the consumer expenditure surveys done in the course of the 20th (1965-66), 22nd (1967-68), 23rd (1968-69) and 25th (1970-71) rounds. All these reports are based on the Central Sample alone.

State-wise estimates are available starting with the 13th round (1957-58) report, but the size of the Central Sample in that round was too small for state level estimates to be really reliable. As noted earlier, however, sample size was doubled in the next round (the 14th) for the urban sector, and in the 16th round for the rural sector, so that state-wise estimates published for these and subsequent rounds should be more reliable. None of the reports provide any further breakdowns at state-level, not even by occupation. This is a very major shortcoming since it is particularly important for policy purposes to have a profile by occupation class of the different population deciles. (Even at the all-India level, an occupational breakdown is provided in only one report, for the 19th round,<sup>2</sup> and even there by major occupational group so that for example, farmers and agricultural laborers fall into the same category.) Thus, the published reports, while they are good as far as they go, do not go very far. Further, there are problems of comparability with the published data because of changes made over the years (referred to earlier) in the

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<sup>1</sup>The reports on the surveys of rural labor households provide tabulations by income; see appendix.

<sup>2</sup>N.S.S. Report #189.

definition of consumption, and because of changes made over the years in the geographical definition of many states. It would be far preferable therefore to obtain access to the primary data where possible.

Very few studies have been done of trends in inequality at state level. There is the study by Bardhan of trends in poverty since 1960-61 in the different states based on the published reports of the N.S.S.<sup>1</sup> This and the study by Rajaraman for Punjab based on primary data from the 16th and 25th rounds,<sup>2</sup> are the only state-wise studies available.

Several studies have been done at the all-India level, however. Figures of income distribution have been constructed for the country on the basis of the published consumption distributions, with adjustments for saving and taxes. Since there are no reliable data on the distribution of saving by level of consumption, however, the adjustments have been more or less arbitrary. Further, any distribution for the country as a whole must also devise a procedure for pooling rural and urban distributions, since the tabulated results are presented separately for each. Thus, there are as many estimates of income inequality as authors.<sup>3</sup> Some of these authors, together with some others, have also estimated trends in

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<sup>1</sup> P.K. Bardhan, "On the Incidence of Poverty in Rural India of the Sixties," Economic and Political Weekly, Annual Number, February 1973.

<sup>2</sup> I. Rajaraman, "Poverty, Inequality."

<sup>3</sup> N.S. Iyengar & M. Mukherjee, "A Note on the Derivation of Income Distribution from a Given Distribution of Consumer Expenditure," (paper presented at the Second Econometric Conference, 1961). P. Ojha & V.V. Bhatt, "Pattern of Income Distribution in an Undeveloped Economy - A Case Study of India," American Economic Review, September 1964, pp. 711-720. M. Ahmed, "Size Distribution of Personal Income and Saving," (paper presented to the Third Indian Conference of Research on National Income, 1961). S. Swamy, "Structural Changes and the Distribution of Income by Size: The Case of India," Review of Income and Wealth, June 1967, pp. 155-174. K.R. Ranadive, "Distribution of Income: Trends Since Planning," (paper presented at the Seminar on Income Distribution held by the Indian Statistical Institute, New Delhi, Feb. 1971).

income inequality for India, with similarly divergent results.<sup>1</sup>

The all-India distribution of consumer expenditure put out by the NSS on which the above income inequality figures are based showed that inequalities in money terms had decreased over the period 1952 to 1960-61 for both the rural and urban sectors. (Actually, the Lorenz curves, as constructed in the report of the Mahalanobis Committee,<sup>2</sup> for the two years intersect, but the share of the poorest deciles went up over the period). The reduction in consumption inequality in nominal terms indicated by the NSS data has been observed to have continued beyond 1960-61.<sup>3</sup> However, for the 1952-1961 period, the Mahalanobis Committee came to the conclusion that inequalities had increased over the period in real terms.<sup>4</sup> As to the change beyond 1960-61 in real terms, Vaidyanathan found a reduction in equality, though not as great as the reduction in inequality of nominal consumption, for rural India over the period 1960-61 to 1967-68 (his

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<sup>1</sup>H. Ahmed and N. Bhattacharya, "Size Distribution of Per Capita Personal Income in India," Economic and Political Weekly, Special Number, August 1972, pp. 1581-1588.

P.D. Ojha and V.V. Bhatt, "Pattern of Income Distribution in India 1953-55 to 1961-64," (Seminar, ISI, 1971).

M. Mukherjee and G.S. Chatterjee, "Trends in Distribution of National Income 1950-51 to 1965-66," Economic and Political Weekly, July 15, 1967, pp. 1259-1268.

S. Swamy, "Distribution of Income in India," Economic and Political Weekly, Annual Number, February 1967, pp. 289-292.

<sup>2</sup>Planning Commission, Government of India, Report of the Committee on Distribution of Income and Levels of Living, Parts I and II (New Delhi: Planning Commission, Government of India, 1964).

<sup>3</sup>Vaidyanathan, "Some Aspects," p. 33. See also P.K. Bardhan and T.N. Srinivasan, "Income Distribution: Patterns, Trends and Policies," Economic and Political Weekly, April 24, 1971, pp. 877-881.

<sup>4</sup>Planning Commission, Government of India, Report of the Committee on Distribution of Income and Levels of Living, Part II, pp. 33-34.

conclusions are provided in terms of Gini coefficients rather than Lorenz curves so that it is not clear if these were unambiguous changes.)<sup>1</sup>

Vaidyanathan also found, *pari passu* with his finding of falling real inequalities, a rise in the proportion of rural population with per capita consumption below Rs. 20 per month;<sup>2</sup> this could only mean a fall in average per capita real consumption in terms of his price indices (which were decile-specific price indices constructed on the basis of data put out by the NSS on composition of consumption by broad commodity group and consumption class, and wholesale price data). This fact alone, of the fall in real per capita consumption indicated by the NSS data, need not necessarily indicate a downward bias in the data. As pointed out by Bardhan, even the official figures would show a fall in real per capita consumption over the period if an alternative price index to that constructed by Vaidyanathan, but based on the same wholesale price data, is used.<sup>3</sup> However, it is certainly true that the NSS estimate<sup>4</sup> of total consumption expenditure for 1967-68 fell short of official by 12%, and while the official estimates are not entirely reliable, there probably is a downward bias in the sample survey data. The question is whether the underestimation arises out of a uniform underestimation of consumption of all households, or out of an under-representation of the more affluent

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<sup>1</sup>Vaidyanathan, "Some Aspects," p. 33; using the same unpublished figures for 1967-68 as used by Bardhan.

<sup>2</sup>Ibid., p. 36.

<sup>3</sup>Bardhan, "On the Incidence," p. 245.

<sup>4</sup>Vaidyanathan, p. 38.

households. The latter is much the more probable,<sup>1</sup> and should be kept in mind by the data-user. Such under-representation seems to have increased over the years.

As for employment data, tabulated reports are available on all the employment surveys conducted between rounds 9 and 22 (the report on the 22nd report is still in draft form). None of these reports, however, provides any data at state level. The employment data collected in the course of the consumer expenditure surveys between rounds 19 and 24 remain largely untabulated. Only one report has been published, on the 19th round.<sup>2</sup> This report does provide figures of unemployment at state level, but not by occupation group. Figures are also not provided of average annual employment available to each occupation group at state level. The employment data collected in the course of the 25th round for the 'weaker sections' of the rural population have been well tabulated, however. The reports, which are still in draft form, provide tabulations separately for the four subrounds into which the survey year was divided, so that some idea may be obtained of the seasonal pattern of employment (though ideally the division by season of the data from the survey should be done differently for the different parts of the country according to the timing and duration of the crop season in each). For each subround, figures are provided at state level of average annual employment available to each of the two occupation groups covered in the special survey.

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<sup>1</sup>Dandekar and Rath in their study assumed the former and adjusted accordingly; the rejection of their figures is based largely on widespread disagreement with the assumption.

<sup>2</sup>N.S.S. Report 173.

In the Sri Lanka reports,<sup>1</sup> as in the Pakistani reports, frequently distributions of the sample population are provided by class of income alone. The consumption figures are not used for this purpose.

The income distributions are provided in terms of two kinds of recipient units: "income receivers," and spending units. The tabulations that have gained the widest currency and are quoted in summary government documents are those done in terms of income receivers. The conceptual problem with the use of such a recipient unit were dealt with earlier. Further, a distribution of income by income recipient can only provide one element of what goes into the final distribution of income among the population, the other element being the distribution of income recipients among households.

The alternative distribution by spending unit, however, has the drawback that the ranking is done, as in the Pakistani case, by total income of spending unit.<sup>2</sup> In view of this the tabulations in terms of income receivers, with all the attendant shortcomings, must be chosen as the more preferable.

The "standard" distribution is obtained for the two-month reference period, though parallel tabulations based on the figures for the year-long reference period are also provided.

Frequency distributions of income defined and classified in the above ways, are available by sector for 1963 and also by "zone" or region. These regional estimates were obtained by pooling the sectors, but not

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<sup>1</sup>None was available for the 1973 survey.

<sup>2</sup>As in the Pakistani case, household size increases with total income of spending unit. See Central Bank of Ceylon, Department of Economic Research, Survey of Ceylon's Consumer Finances 1963, Part I, Table 46, p. 70.

much was lost doing so because there does not seem to be much geographical overlap between the sectors. Thus zone I (Colombo and adjoining districts) is largely urban, zone II (the north central and south eastern districts) is largely rural, and zone IV is largely estate. Only zone III (the Tamil-speaking areas) is a mixture of urban and rural.

For each sector, each class of income receiver is broken down by occupation, though, as was noted earlier, the occupational classification used was not as fine as it might have been. Breakdowns are also available by ethnic group, age, sex, and education level.

Figures are also provided for spending units, by class of income, of total consumption and of its composition by commodity. Once again, as in the Pakistani case, the figures show an overall net dissaving (all-island) of -3.8% of income.<sup>1</sup> In this case, however, the figure would not entirely be the result of the underestimation of imputed income.<sup>2</sup> As was noted earlier, the consumption data would have an upward bias because of their coverage at a time of religious festivals. Finally, the reports provide tabulations on the employment figures (despite their own caveat on the reliability of these figures) cross-classified by sector, age, education, status, and ethnic group.

The distributions of income<sup>3</sup> put out by the survey reports indicate a substantial improvement in inequality by income receiver. The figures are given below. (See Table 3).

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<sup>1</sup>Central Bank of Ceylon, Part I, Table 89, p. 125.

<sup>2</sup>The Sri Lanka concept of income includes receipts from sales of assets. If these figures for dissaving were obtained on top of that they are indeed very indicative of a bias in either income or consumption figures or both.

<sup>3</sup>These would be the "standard" figures, from the 2-month period of reference.

TABLE 3: LORENZ CURVES OF INCOME DISTRIBUTION BY  
INCOME RECEIVER - SRI LANKA

42.

<u>DECILES</u>	<u>1953</u>	<u>1963</u>	<u>1973</u>
10th	42.49	39.24	29.98
9th	14.16	16.01	15.91
8th	10.39	11.46	12.65
7th	7.94	8.98	10.56
6th	6.31	6.82	8.75
5th	5.71	5.55	7.10
4th	4.37	4.51	5.70
3rd	3.56	3.56	4.38
2nd	3.56	2.70	3.17
1st	1.51	1.17	1.80

Source: Reports of the Survey of Ceylon's Consumption Finances 1953-1963. 1973 figures were obtained from Central Bank of Ceylon, Annual Report of the Monetary Board to the Minister of Finance for the Year 1973 (Colombo: Central Bank of Ceylon, 1974, p. 10).

The 1973 data show markedly greater equality than in the preceding years. There seem to be no studies on these distributions for Sri Lanka as for Pakistan, checking for under-representation of higher incomes against income-tax sources, etc. The process of income levelling indicated, however, could not be due to increasing underestimation of higher incomes alone. The Sri Lanka government has pursued policies that have led to changes in the wage structure in favor of low income earners<sup>1</sup>, and other egalitarian policies like a free rice subsidy to non-income-tax payers.

The greatest failing of the tabulated output in all three countries is that figures of inequality are provided only in nominal terms. The change over a period in real terms could be quite different from that in nominal terms if different classes of the population have faced different prices rises (as is most usually the case). The sample surveys themselves are the best source of data on prices, which are implicit in the item-wise figures of quantity and value recorded in the consumption sections of the questionnaires. The failure to tabulate these data is, therefore, their serious shortcoming, but more of this in the next section.

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<sup>1</sup>Central Bank of Ceylon, Annual Report, etc., p. 141

## SECTION II. PRICE DATA

In the consumption sections of the questionnaires used in all these countries, price data are implicit in the quantity and value figures recorded against every item. Sometimes quantity data are not recorded for certain items, for example, non-food items in the case of Sri Lanka, services in the case of India. In the case of the Pakistani questionnaire, quantity data are recorded against only a few key items in each commodity group. Even in the Pakistani case, however, the surveys are the most rich and detailed source available of data on consumer prices. In addition, the item-wise figures of value could be used to obtain weighting diagrams for the construction of price indices separately for different classes by income or consumption of the population. In this way, fractile specific price indices could be constructed so as to be able to assess changes in inequality over time in real rather than in money terms. Price indices could also be constructed cross-sectionally, for different regions with respect to one another, or for the rural sector with respect to the urban, so that cross-sectional comparisons too could be done in real rather than in nominal terms.

That these data from the surveys have not been tabulated is, therefore, the most serious shortcoming of the survey reports. In the case of India, price data from the surveys have been tabulated from time to time, though not systematically and usually for only a few items like food-grains. Further, the price data, where provided, have always been for the country taken as a whole, and never for the states taken separately.

There has been one very useful study, however, done by individuals within the sample survey organization with access to the primary data, on cross-sectional differentials in prices in one year, 1963-64 (the 18th round).<sup>1</sup> This study was for state-wise price variation within the rural sector alone. One other study of differential trends in price movements in West Bengal between 1952-53 and 1957-58<sup>2</sup> has been done and the study by Rajaraman referred to earlier provides fractile-specific price indices for rural Punjab for the decade of the sixties.

Since the primary schedules of the surveys cannot be assumed to be readily accessible to people outside the data organization, or available even if accessible, and since the tabulations ignore for the most part the wealth of price data contained therein, other sources of price data must be looked for.

A crude indicator of the direction of the price adjustment needed for trends in inequality is provided by wholesale price data which are usually available annually by broad commodity groupings if not by item. If food prices in general have risen more than non-food prices in general, it can be assumed that the poor have faced a higher price rise than the rich, and that the trend towards inequality/equality in nominal terms understates/overstates the real trend. Neither of the studies of trends in Pakistan<sup>3</sup> seems to have attempted such an exercise, even though the basic

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<sup>1</sup>N. Bhattacharya and G.S.Chatterjee, "Between States Variation in Consumer Prices and Per Capita Household Consumption in Rural India," Calcutta, 1970. (Mineographed).

<sup>2</sup>N.S. Iyengar and N. Bhattacharya, "On the Effects of Differentials in Consumer Price Index on Measures of Income Inequality," Sankhya, Series B, XXVII, Parts 1 and 2 (September, 1965), pp. 53-56.

<sup>3</sup>M. Ghaffar Chaudhry, "Rural Income Distribution in Pakistan in the Green Revolution Perspective," PDR Autumn 1973, pp. 247-253.

wholesale price data are available.<sup>1</sup> In India, wholesale prices are available but only at the national level. They have been used to construct fractile-specific price indices at the national level, for example, by Vaidyanathan and Radhakrishnan.<sup>2</sup> Weighting diagrams for these indices were taken from the NSS reports on the sample surveys, where the composition of consumption for each consumption class is given by broad commodity groups. The partial price data (for foodgrains alone) put out by the NSS have also been used, for example, by Mukherjee and Chatterjee<sup>3</sup> in their study of trends at the national level from 1950-51 to the mid-sixties. (All three studies found that the poor had faced a higher price rise than the rich). Of the two alternative sources, viz., wholesale prices and the tabulated NSS data, the wholesale price data are better because of both their wider coverage by item and their reliably annual availability. The data are not

published separately for each state, however, so that neither of the above sources can be used for state-level studies. In Sri Lanka, whole-  
and published  
sale prices are collected/regularly by the Central Bank.

Wholesale prices are, however, very crude approximations to consumer prices, but not too much published data on consumer prices exist. In Pakistan, there are no sources of consumer price data for rural areas

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<sup>1</sup>In the monthly statistical abstracts put out by the Central Statistical Office, the price figures are available separately for East and West Pakistan.

<sup>2</sup>As quoted in Bardhan "On the Incidence," p. 245, and Vaidyanathan "Some Aspects," p. 33.

<sup>3</sup>Mukherjee and Chatterjee, "Trends."

whatever.<sup>1</sup> For urban areas, retail price figures for selected items are available for major cities alone -- Karachi, Lahore, Peshawar, and Rawalpindi in West Pakistan, and Dacca, Chittagong, Khulna and Rajshahi in East Pakistan. A constructed price index is issued by the Pakistan Central Statistical Office<sup>2</sup> for clerical workers for the above urban centers, and another for industrial workers in the major industrial cities of Karachi and Lahore in the West, and Narayanganj, Sialkot and Chittagong in the East. This is the best that is available in the way of consumer price data. The advantages of processing the data from the sample surveys can thus be seen to be overwhelming; consumer price data would then be available for rural areas, for which there is none at the moment, and urban price data would be available with far better geographical coverage than what is presently available.

The situation for India is a little better. A consumer price index for agricultural laborers is put out by the Labor Bureau; what is more, this index is done separately for each state. The index is based on price data collected round the year from a fixed set of village markets. The field work is done by the NSS but as a separate operation quite distinct from the sample surveys. The coverage in terms of sample villages is by no means as good as that of the sample surveys<sup>3</sup> but in the absence of any

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<sup>1</sup>A Study of rural trends in real wages for East Pakistan describes the C.S.O. price data used as having been obtained from several locations in East Pakistan but does not specify that they were all locations in large urban centers. The reference is to Swadesh R. Bose, Trend of Real Income of the Rural Poor in East Pakistan, 1949-66 (PDR, Autumn 1968), Appendix B.

<sup>2</sup>The series is being continued for those centers in the eastern wing by the Bangladesh Bureau of Statistics.

<sup>3</sup>Thus, price data for the index are collected every year from a fixed set of villages at the rate of one price quotation for each item per village (taken every month from a fixed market). The villages were selected during the sixteenth round at the rate of one per stratum; by contrast, the sample survey of the 16 round had an average of 9 villages per stratum per subsample, and there were two subsamples. Further, the size of the sample in surveys after the 16th has been much bigger.

tabulated figures from the latter, it does provide a valuable index of price movements for the rural poor in each state. Nothing comparable is available for the rural affluent. If the actual prices that enter into the agricultural laborers' index were published, they could be used in conjunction with the consumption patterns by broad commodity group for each consumption class tabulated and published in the reports on the sample surveys to obtain fractile-specific price indices for each state. But the actual item-wise price quotations (published in the Statistical Abstract of the CSO) are at the national level and not for each state taken individually. For urban areas, there are two indices, one for the working class for about 20 industrial towns, and another for the "middle" class (covering white-collar employees) for major urban centers.

In Sri Lanka, no price data is available on rural areas whatever; there is just the Colombo Consumer Price Index, for the city of Colombo and for no particular class within it. In Sri Lanka there is the additional problem that there has been a rationing system for some of the most important consumption goods like rice, wheat and sugar with an open market and controlled price for each rationed item. The Colombo index is acknowledged<sup>1</sup> to pay inadequate attention to this problem. The quantity and value data from the sample surveys/would immediately yield a weighted average of the two prices for each household.

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<sup>1</sup>Central Bank of Ceylon, Annual Report of the Monetary Board to the Minister of Finance for the Year 1973 (Colombo: Central Bank of Ceylon, 1974) p. 201.

To conclude, while enough published data exist with which to be able to tell in the very broadest terms whether a trend in inequality in nominal terms over or under-estimates the "true" trend, very little more can be done with presently available published data. The one exception is in India; here, a reliable price index is available by state for agricultural laborers, who generally comprise the poorest sections of the rural population, so that real trends in poverty if not in inequality can be carefully assessed (to the extent that/ comparable figures in nominal terms are available/in at state-level published form to start with).

The primary data from the sample surveys themselves are the best source of the price data needed, but unfortunately, they have for the most part remained untabulated.

SECTION III. ALTERNATIVE DIRECTIONS FOR DATA COLLECTION.

From the preceding two sections, the outlook for gathering adequate and reliable data from the sample surveys regularly conducted in these countries has not emerged as particularly good. Further, the outlook will not improve substantially unless there is a complete overhaul of the kinds of tabulations done on the data collected; frequency distributions of the sample population must be provided by class of consumption even where income data are collected, the ranking for these must be done in terms of per capita rather than total household figures, consumption totals themselves must be adjusted so as to be comparable over the years in terms of what they include and exclude, better provision must be made than presently exists for breaking down the sample by region and occupation, and lastly, the price data implicit in the data collected must be fully exploited. Beyond that, there is a need to overhaul the surveys themselves, especially if income distributions are needed in addition to consumption distributions. The kinds of changes needed here however such as the need for simultaneous coverage of all sample households run so strongly counter to requirements of administrative convenience that it is unlikely that they will be ever brought about; such survey arrangements introduce too strong an element of seasonality into the work of an investigator, whereas with non-simultaneous coverage a smaller force of investigators can be kept fully employed the year round. Again, in order to collect reliable income data, survey timings must be adjusted for different sectors/groups of the population so as to fall at the end of accounting periods appropriate to each. In the case of India for example, survey timings would have to be different for different parts of the country even within the agricultural sector because of

variation in the number and duration of crop seasons. All these factors make for administrative difficulties in the design and execution of the surveys, but they need to be taken into account if reliable income data are to be collected.

For any outside organization that wishes to conduct its own sample survey in these countries, the prospects are reasonably good. A reliable frame for sample selection exists in all four countries, and there is a more than adequate pool of educated manpower upon whom to draw for doing the field work. However, sample surveys are very large and labor intensive operations and are particularly costly when the manpower that has been assembled and trained is to be disbanded after one survey. This is why, as will be seen in the Appendix, there are no comprehensive surveys done by organizations other than the official statistical machinery of these countries.

Sample surveys are unavoidable if estimates of inequality are needed but there are alternatives available if what is needed is not a comprehensive measure of relative distribution so much as the incidence of absolute deprivation within the population as a whole or sub-groups of it. Sample surveys themselves of course are an excellent source of the latter kinds of information, but alternatives must be sought in view of the extreme difficulty involved in conducting them on the one hand, and in getting the needed information out of those conducted on the other. An alternative that appears particularly promising is a method used by the United Nations Relief Operation in Dacca (UNROD). Two surveys were done

by UNROD in 1972, the first in June, and a follow up in December on the same families. These surveys incidentally, are the only source of any kind available on what happened in income distribution terms in Bangladesh in the turbulent months following its independence. The two surveys indicated an improvement over the period, counter to the widespread belief that there has been a continual decline in that country since 1971.

The surveys were aimed essentially at measuring the incidence of acute malnutrition, and the method used provided a very quick and simple way of doing so. Basically it involves the use of anthropometric measurements, and the comparison of these to locally established norms. In the case of children, to which group the UNROD surveys were confined, the measures can further be simplified to the Quaker Arm Circumference method (the QUAC stick) developed by the Quaker Service Committee in Nigeria: the method substitutes the measurement of arm circumference for weight. Thus, arm circumference measurements are taken along with measurements of height and the ratio of the two, compared to a locally established norm provides an index of nutritional sufficiency. The advantages of conducting a survey along these lines are many. Unlike the sample surveys of income and consumption, the investigators do not have to undergo a long period of training; the measurements can be done very quickly, and do not require the use of heavy or expensive equipment. Most of all there are no problems of recall lapse; the respondent does not have to do anything and merely has to submit to a few very simple measurements. It is not clear if the QUAC stick itself can be used on adults, though even a survey confined to the children in each household, as in the case of the UNROD studies, can provide good indices of the relative position of different occupation groups or regions vis-a-vis one another.

The accuracy of the QUAC stick is not something that can be pronounced on in lay terms. As was said in the introduction, the direction in which its inaccuracies or unreliability may lie is not clear. Regardless of this particular measure, however, further investigations into the use of anthropometric measurements and into their use as indices of poverty are absolutely necessary. Ultimately, the redressing of the most extreme aspects of absolute deprivation is the most urgent need of an income redistribution program, and surveys that determine the incidence and location of nutritional deprivation quickly and reasonably accurately are an indispensable prerequisite for the formulation of such programs of action.

BANGLADESH

I. Other Surveys of Income and/or Consumption

1. The Survey of Rural Credit and Unemployment in East Pakistan 1956.

This survey was conducted by the Dacca University Socio-economic Research Board. Four rural subdivisions - a subdivision is an administrative sub-unit of a district - were selected as representative of the whole of the rural sector of what was then East Pakistan. Incidental data were collected on the consumption level of the households surveyed.

A total sample of 3,000 households was selected through a two-stage procedure from each of the four subdivisions. . . . The selection of households from the primary sampling units was done in clusters of three; the clusters were selected randomly. The households were surveyed simultaneously in March of 1956. The reference period for the gathering of consumption data was the week preceding the date<sup>of</sup> survey. These data however, were not gathered in the more conventional terms of money consumption, but in terms of a system of points. These were assigned on the basis of the number of principal meals taken, whether milk was consumed (regardless of quantity), and so forth. Included for consideration in the assigning of points were the condition of the house or hut lived in, and the condition and quantity of durable household assets owned, like furniture and utensils, and of clothing worn by the head of the household. These points were then cumulated and the household assigned to one of four levels of living. In the published report<sup>1</sup> the

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<sup>1</sup>Dacca University Socio-economic Research Board Report on the Survey of Rural Credit and Unemployment in East Pakistan, 1956 (Dacca Univ.) March 1956.

distribution of the sample by these four levels of living is provided, both overall and for each subdivision taken separately. The report also provides breakdowns for each subdivision by level of living and occupation.

The survey also collected data on land holdings and the report provides figures of the average size of land holding by level of living separately for each subdivision. Breakdowns are also provided by age and sex. The survey provides the only source of figures for Bangladesh of the distribution of the population by consumption level. Unfortunately, the point system used was very crude. Also, the geographical coverage of the survey was somewhat limited:

2. The Dacca Survey of the Determinants of Primary Non-Enrolment 1971.

This survey conducted by Taherul Islam in the district of Dacca alone, was aimed at establishing the extent and causes of non-enrolment in school of children of primary school-going age. Data were gathered on income as a possible explanatory variable. The survey was conducted in two purposively selected predominantly rural areas of Dacca, Araihasar and Nawabganj, and a 10% sample selected through a two-stage cluster sampling procedure. The reference period was the calendar year 1970, which would have corresponded to three complete crop seasons. (The timing of the survey with respect to this period is not clear).

Estimates of household income were more than incidental to the survey; even so, they do not seem to have been arrived at very carefully.

The questionnaire makes no provision for the recording of disbursements especially for farming activity, and there is no specific provision for the recording of income obtained in kind. The report on the survey acknowledges that the income data might be less than accurate,<sup>1</sup> but claims that they were sufficient for the purposes of the survey. Income was found, not surprisingly, to be the variable most significantly explanatory of non-enrolment in school of primary school-age children. The report on the survey also provides the distribution for each area of sample households by class of per capita household income (this is the only report to do a ranking by the per capita rather than the total figure).

3. The Agro-economic Survey of the Barisal Irrigation Project 1973.

This IBRD survey was confined to farm families alone in the project area which covered about 625 villages. The overall sampling fraction was as high as 10%, selected through a two-stage procedure from each of five strata formed according to land use. The survey was designed to gather information on farming operations in the course of which data were gathered on farm income of those households sampled. There was no provision for the collection of data on non-farm income, whether from livestock or / , free collection, wage labor, or non-agricultural enterprises. Thus from an income distribution viewpoint, the survey was somewhat limited, both geographically and otherwise. Even the data collected on farm income would not be very reliable. Survey was carried out between February and April, the latter half of

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<sup>1</sup>Taherul Islam, Social Justice and the Education System of Bangladesh (Dacca: Bureau of Economic Research, University of Dacca) April 1973, p. 10.

the rabi (boro) season. The questionnaire specified no particular period of reference, but since receipts for each of the aus, aman, and boro seasons were separately recorded, the reference period was probably defined to cover the three seasons preceding the season of survey (which would correspond to the calendar year 1972). The reliability of recall with such a long period of reference so far removed from the date of survey would be very questionable. The questionnaire had detailed provision for the recording of non-labor costs of production, but none for the recording of hired-labor costs. These would have to be pieced together from estimates gathered in another part of the questionnaire on the average number of man, woman and child days hired (presumably averages for the year), and from some rather inadequate wage data gathered (together with data on marketing, credit and transport facilities) for each sample village.

The report on the survey has not yet been published.

4. The Rajshahi University Survey of Employment, Income and Expenditure of Rural Households in East Pakistan 1965-66.

Not much information, published or unpublished, was available on this survey. It was conducted by the Rajshahi University Committee for the Economic Evaluation of the Rural Works Program in East Pakistan. Sample selection was done from five different areas, selected on the basis of important crops. From each of these a random sample of households was selected. The total sample, at 234 households, was somewhat small. However, repeated weekly visits were made to the households

over the survey period which ran from August 1965 to July 1966. The data collected on income, consumption and employment should therefore be very reliable. The results of the survey do not seem to have been published as a report.

5. A study was done in 1970 by Wellisz, Griffin and Imam investigating the functional relationship between income, family size and saving in rural and urban Pakistan. No further information was available on the study, or on whether the results have been tabulated and published.
6. A study was done by the Bureau of Economic Research, Dacca University in 1956-57 of consumption and income in both rural and urban areas of East Pakistan. The results of the study were published in 1965.<sup>1</sup> The published source was not available so that very little can be said here about the survey.

## II Nutrition Surveys

### 1. The Nutrition Survey of East Pakistan 1962-1964

This survey was conducted over the whole of what was then East Pakistan, jointly by the Government of Pakistan, the U.S. National Institute of Health, and the Dacca University Department of Biochemistry. The survey was conducted separately for rural and urban areas. In each, clusters of 1000 persons were selected through a multi-stage procedure; 17 such clusters were chosen in the rural sector, one in each district and 5 in the urban sector. A dietary evaluation was done on a minimum of 100 households in each cluster, selected randomly. Dietitians were assigned to weigh food consumed by each household during a 24-hour

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<sup>1</sup> Nural Islam, Studies in Consumer Demand, Vols. I and II (Dacca: Oxford University Press, 1965).

period, and to convert these to nutrient values. The report on the survey provides figures for each location of the percent of households with nutrient intakes below the minimum necessary, by type of nutrient;<sup>1</sup> minimal requirements were calculated from FAO and ICNMD guidelines. Unfortunately, these minimum requirements were specified for U.S. conditions so that their use in a country like Bangladesh would tend to overstate the extent of deficiency.

The dietary evaluation was only one part of the survey, which consisted also of a clinical evaluation that was proposed to cover every individual in the selected clusters. Since the clinical survey was done on a volunteer basis, however, its coverage did not extend to every individual as proposed. All volunteers were examined briefly for nutritional lesions; a subsample selected randomly was given a detailed clinical and biochemical examination. These tests provided another source of figures on nutritional deficiency, though the report does not provide these figures separately for each location. As an example of what was said above about the inappropriateness of minimum requirements based on U.S. conditions, the clinical survey found not a single case of rickets, where the dietary survey found that a large percentage of households had severe deficiency of calcium intake.

Anthropometric measurements were also taken in the course of the clinical survey. The report provides the distribution of the population by "standard weight" for the region as a whole, separately for males,

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<sup>1</sup>U.S. Department of Health, Education and Welfare, Pakistan: Nutrition Survey of East Pakistan, 1962-1964, (Washington: Public Health Service, May 1966) Appendix Table II-5, p. 217.

females and children.<sup>1</sup>

Thus, the report is a comprehensive source on the incidence of nutritional deprivation in Bangladesh during the years surveyed. The figures might have been somewhat more representative if the sample had not been selected in clusters. Nevertheless, they are most valuable, particularly as a benchmark against which to compare the results of any future surveys that might be done on nutritional deprivation using anthropometric or other techniques.

Income data were also gathered in the course of the dietary survey, though these data would not be at all reliable because of the randomly timed visit spread out over a survey period as long as two years. The report did not provide a facsimile of the questionnaire used for the collection of these data (though it did provide facsimiles of the clinical forms used).

### III Other Relevant Data

#### 1. Wages

Data on government wages and salaries would always be available, for present years from the Bangladesh Bureau of Statistics, and for past years from the Pakistan Central Statistical Office.

Manufacturing wages are covered by two sources. Data on both wages and employment were collected every year by the Ministry of Health, Labor and Social Welfare,<sup>2</sup> and there is a Census of Manufacturing Industries that has been conducted since 1954 though not every year. Coverage in both cases extends primarily to 2 (j) factories under the

<sup>1</sup>Ibid., Appendix Table I-17 and I-18, pp. 200-202.

<sup>2</sup>Of the erstwhile Government of Pakistan.

Payment of Wages Act, i.e., those employing 20 or more workers and using power, though in recent years it has been extended to 5 (1) factories, i.e., those employing 10 or more workers. Of the two, the Census seems to be the more reliable source.<sup>1</sup>

As always, wages in the unorganized sector pose the problem. The Barisal project mentioned earlier collected data on agricultural wages from each of the villages surveyed. One quotation each for male and female labor were recorded. These would not be very adequate however as they would pertain only to the latter half of the rabi season which was the time at which the survey was conducted. Further, the data would pertain only to the Barisal project area. The Rajshahi survey also appears to have collected data on agricultural wages; these would be far better than the Barisal data because of the year-round coverage, but here too, the geographical coverage was not wide enough for the data to be adequately representative of the country as a whole. Data on agricultural wages have been collected by the East Pakistan Directorate of Agriculture since 1948 and published in the supplement to the Dacca Gazette. One rate is reported for each district for each month, obtained as an unweighted average of rates obtaining <sup>in</sup> the subdivisions of the district. These data were used by Swadesh Bose in his study of trends in real wages,<sup>2</sup> who points out however that from the evidence of the Rajshahi survey for example, the wage data collected

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<sup>1</sup> Azizur Rehman Khan, "What has been Happening to Real Wages in Pakistan?" Pakistan Development Review, Autumn 1967, Vol. VII, No. 3, p. 321.

<sup>2</sup> Swadesh R. Bose, "Trend of Real Income of the Rural Poor in East Pakistan, 1949-66" PDR, Autumn 1968, pp. 452-487.

by the Directorate for the 1960s seem to be overestimates.<sup>1</sup> No corresponding sources of data on non-agricultural wages in the unorganized sector could be traced.

## 2. Employment

Wage data are not of much use unless accompanied by data on the incidence of employment at each wage level. For the organized manufacturing sector once again, there is no problem. Both the systematic yearly source of wage data and the Census of Manufacturing Industries collect employment data alongside the data on wages.

Such employment data are not available for agricultural labor alongside the wage data collected. The Rajshahi survey, however, collected data on the number of days in the year that an agricultural laborer gets wage employment<sup>2</sup> in the areas covered by the survey. In the absence of other data, these were used by Bose to get estimates for East Pakistan as a whole of yearly earnings per laborer.

Employment data are also available from the labor force surveys that have been conducted as a part of the Quarterly Survey since 1963-64.<sup>3</sup> Tabulations on all surveys after 1968-69 were done in 1973 so that they are not available for Bangladesh. The only tabulated reports available

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<sup>1</sup>Ibid., p. 463.

<sup>2</sup>The Barisal Survey is a potential source of information on average annual employment, though the reliability of the data might be questionable because of survey timing with respect to the period of reference, and the length of the period of reference.

<sup>3</sup>See Section I of this paper, part 4 (c).

for Bangladesh therefore would be for the surveys done in 1966-67 and 1967-68 and for the half-year surveys done in 1965 and 1966.<sup>1</sup> The reports on the labor force surveys do not break down the employed by occupation in sufficient detail, so that no figures can be obtained for example of the total number of agricultural laborers.<sup>2</sup> The reports also do not provide figures of average annual days of employment available to those occupation groups that are identified. The total number of agricultural laborers, however, can be obtained from the 1951 and 1961 Censuses of population separately for the East and West and by sex.<sup>3</sup> Further, a breakdown is available into those with land, and those without. The 1971 Census was not conducted in that year because of the political disturbances; it is not clear if it has subsequently been conducted. Even if it has, it was probably done on an abbreviated basis like the Pakistani Census of 1972, and is unlikely to have collected information on the occupation of the enumerated.

### 3. Distribution of Land

For the distribution of agricultural land, estimates are available from the Agricultural Census of 1960, and for 1963-64, 1964-65 and 1967-68 from sample surveys conducted in those years as part of a series entitled the Master Survey of Agriculture.<sup>4</sup> The samples for these

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<sup>1</sup>It is not clear if the survey done in 1963-64 was tabulated. Even if it was, the results would not be comparable with subsequent surveys because of changes made after the 1963-64 survey in both sample design and questionnaire.

<sup>2</sup>See Section I, part 4 (b).

<sup>3</sup>There was a change in concepts used with respect to employment between the 1951 and 1961 Censuses. An account of the change is available in Lee L. Bean, David M. Farooq and Musibur Rahman Khan, "The Labor Force of Pakistan: A Note on the 1961 Census," PDR, pp. 587-591.

<sup>4</sup>Results for all years are available in the latest report: Government of the People's Republic of Bangladesh, Master Survey of Agriculture in Bangladesh, Seventh Round, Second Phase (Dacca: Bangladesh Bureau of Statistics, June 1972).

surveys were selected through a two-stage procedure from all rural households having some sort of cultivated land. The sample for the latest survey consisted of more than 5000 households (a sampling fraction of about 1/1300). Earlier surveys were somewhat smaller, with total samples of about 4000 households.

Data on the distribution of landholdings are also available from the above-mentioned Survey of Rural Credit and Unemployment of 1956, the Dacca Survey of the Determinants of Primary Non-Enrolment 1971, and the Rajshahi University Survey of 1965-66. Data on landholdings were also collected in the Barisal project survey, and should be available in <sup>the</sup> tabulated report when it is published.

#### 4. Distribution of Taxable Incomes.

A study on the distribution of taxable incomes has been done for Pakistan for the period 1948/49 to 1960/61.<sup>1</sup> The source of income tax statistics for Bangladesh for the pre-liberation period is the Central Board of Revenue, Ministry of Finance, Government of Pakistan.<sup>2</sup>

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<sup>1</sup>Khadija Haq, "A Measurement of Inequality in Urban Personal Income Distribution in Pakistan," PDR, Vol IV, No. 4, Winter 1964.

<sup>2</sup>A relevant publication here is the following: Government of Pakistan, Ministry of Finance, Central Board of Revenue, All-Pakistan Income-Tax Reports and Returns (Karachi: Government of Pakistan, 1971).

PAKISTAN

There do not seem to have been any surveys of income and consumption done in West Pakistan other than the yearly official surveys conducted by the CSO. (In the case of West Pakistan of course, unlike the case of Bangladesh, reports on these surveys are available for all years for which they have been conducted). No nutrition surveys seem to have been conducted either, comparable to the large comprehensive survey done in East Pakistan.

Some farm management surveys seem to have been conducted in West Pakistan over the years. No information was available on the number conducted nor on their coverage. The surveys might possibly be a source of data on the distribution of farm incomes among farming households.

III Other Relevant Data1. Wages

Data on government wages and salaries, and on the organized manufacturing sector would be available from the same sources as for Bangladesh.

There seems to have been no systematic collection of data on agricultural wages in West Pakistan as in the East.<sup>1</sup> The only source of any nature appears to be a report by Darling<sup>2</sup> in which some first-hand information for the early fifties was collected on daily wages in various parts of the country.

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<sup>1</sup>A. R. Khan, "Real Wages," p. 317

<sup>2</sup>M. Darling, Report on Labor Conditions in Agriculture in Pakistan (Karachi: Ministry of Labor, Government of Pakistan, 1955).

## 2. Employment

Employment data for the organized manufacturing sector once again are available as for Bangladesh along with wage data.

Tabulations on the labor force surveys are available for West Pakistan for all the years in which they were conducted, unlike the case of Bangladesh. Unfortunately, as was seen earlier, these tabulations do not exploit the data collected to the fullest possible extent. The Censuses of population conducted in 1951 and 1961 are a source, as for East Pakistan, of the occupational breakdown of the economically active population.

The Census scheduled for 1971 was conducted in September 1972; the abbreviated schedule had no provision for the collection of information on occupation, whether land was held, and so forth.

## 3. Distribution of Land

The only source for Pakistan of data on the distribution of landholdings appears to be the Agricultural Census of 1960. A similar Census was conducted in 1971-72; the report on it is not yet available.

The farm management surveys mentioned earlier might be a possible source of data on the distribution of landholdings, depending on the coverage of the surveys.

## 4. Distribution of Taxable Income

The source of data here, as for pre-liberation Bangladesh, is the Central Board of Revenue, Ministry of Finance, Government of Pakistan. Another relevant source here is a study by White of the concentration of incomes among the richest industrial families, based on data on assetholdings.<sup>1</sup>

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<sup>1</sup>Lawrence J. White, Industrial Concentration and Economic Power in Pakistan (Princeton, N.J.: Princeton University Press, 1974), Chapter 7.

INDIAI. Other Surveys of Income and/or Consumption1. Surveys conducted by the National Council of Applied Economic Research

None of the surveys conducted by the NCAER had a sample size large enough to permit state level estimates. All-India estimates may be obtained from the Urban Income and Saving Survey done with reference to 1959-60, the Rural Household Survey done with reference to the calendar year 1962, the Consumer Expenditure Survey (which also collected income data) done with reference to 1964-65, the Survey of Income, Saving and Investment for middle-class households done with reference to 1967-68, and the Survey of Additional Incomes in Agriculturally Progressive areas. The report on the last survey is not yet available in published form.

2. Farm Management Studies

These studies have been done since 1954-55; the agency responsible is the Directorate of Economics and Statistics in the Ministry of Food and Agriculture. About twenty-four studies have been done in all, each one for a different area (with one or two exceptions where studies were repeated in the same area). Each study covers one district in a state (a small number of the earlier studies covered two contiguous districts). The sample size in each district since 1966-67 has been 15 randomly selected villages, with ten holdings randomly selected in each village. Prior to 1966-67, the sample consisted of 10 villages, with 10 holdings in each. The survey period for each study is three years; in the course of the survey period, detailed records are kept on the operation of the farm business. The data collected on income

are restricted to the income obtained from farm operations alone. Within this and the geographical limitation, the studies are reliable sources of data. Published reports are available on all the studies, with a time lag of two to three years. The reports are available for each year of the three-year survey period, together with a consolidated report on all three years taken together.

### 3. Socio-economic Village Surveys of the Agro-Economic Research Centres

There are nine Agro-Economic Research Centres in the country. These Centres have done a large number of village surveys dating from 1959-60 on a variety of subjects, some of which collect data on income or asset distribution. There is no uniformity to the surveys in terms of the kinds of data collected nor in the periodicity with which they are conducted. The data available from these surveys are probably very reliable, but they would be limited in their usefulness because of the extremely limited geographical coverage. A list of studies is available at the Directorate of Economics and Statistics in the Ministry of Agriculture, which is the coordinating body.

### 4. Study of Incomes, Savings and Investments in Agriculturally Progressive Areas

The Directorate of Economics and Statistics has coordinated a set of fifteen studies done at the Agro-Economic Research Centres of the impact of the increase in incomes in agriculturally progressive areas on savings, investments, consumption. Each study was confined to a district, from each of which ten villages were randomly selected. From each selected village, 14 households were selected, 10 of which were cultivating households, and 4 agricultural labor households. The survey period ran for two years, from 1969-70 to 1971-72. In each of these years, investigators made three to four

visits to each sample household. The data gathered should therefore be very reliable. (The sample for agricultural laborers is too small, but that for cultivators is fairly adequate). As in the case of the farm management studies, however, geographical coverage is somewhat limited, although not as limited as in the case of the village studies. Reports are not available based on data collected in the first year of the investigation.

5. The Income and Consumption Survey of Working Class Households in Industrial Centres 1971-72.

This was a survey done to update the weighting diagram used in the consumer price index for the working class. Very little information was available on the survey other than that income data were gathered along with data on consumption.

6. N.S.S. Surveys of Non-registered Manufacturing and Trade

The N.S.S. has conducted surveys in rounds 1, 3-10, 14 and 23 of small-scale household manufacturing; the surveys in rounds 7 and 23 also covered non-household manufacturing falling in the 'non-registered' sector (employing less than 20 workers, or less than 10 if mechanised). Detailed data were collected in the course of these surveys on income earned from manufacturing, with reference to the month preceding the date of survey. No data were collected on household income that might have been obtained from sources other than manufacturing. The published reports which are available for rounds 7-10, 14 and 23, provide figures for average earning by type of enterprise at the all-India level; no state-level figures are provided. Another survey on small-scale manufacturing is being conducted in the 29th round. In addition, the N.S.S. has conducted similar surveys of non-registered household trading enterprises in rounds 3-10, 15 and 24;

reports are available for the surveys done in rounds 7-10, 15 and 24. The consumer expenditure survey of the 20th round had a special section on the household distributive trade; the data were tabulated and issued in a separate report.

### 7. The Agricultural and Rural Labor Surveys

Two agricultural labor surveys have been conducted, by the Labor Bureau in 1950-51, and by the N.S.S. as a part of the 11th and 12th rounds in 1956-57. Reports have been published on both. The surveys collected data on wages and employment (see below), and also on consumption and income. The income data collected covered all the income earned by the households sampled, not just earnings from wage labor. The reference period for wage income was the month preceding the date of survey, and for non-wage income it was the period July 1955 to June 1956 (which would correspond to the agricultural year for most of the country). The questionnaire used suffered from the usual lack of provision for the detailed listing of imputed income; the data would probably not be very reliable therefore. Figures are not available from the published reports of the distribution within the agricultural labor category for each state, though the report on the second survey provides average annual income separately for each state by category of labor (casual, attached, owning and not owning land).

A rural labor survey was conducted by the N.S.S. in the course of the 18th round (1963-64). The income data collected in this survey should be very reliable (within the limitations of a single-visit sample design). The questionnaire used had a comprehensive listing of all possible sources of income produced and consumed within the household. Reference periods were differently specified for different sources of income; for seasonal income,

he period was the preceding agricultural year (as for the second agricultural labor survey), and for perennial sources like livestock, poultry and other household enterprises, it was the month preceding the date of survey. The reference period for wage income was the week preceding the date of survey. The report on the survey does not unfortunately provide any income distributions at state level. A similar labor survey is now being conducted as a part of the 29th round (1974-75).

### II. Nutrition Surveys

A review of nutrition surveys conducted in India is available in Davidson R. Gwatkin, "Health and Nutrition in India" (Delhi: Ford Foundation; mimeo) January 1974.

### III. Other Relevant Data

#### I. Wages

Wages and salaries of employees of all government enterprises are available from the Central Statistical Organisation.

For the registered manufacturing sector, data are available from the Annual Survey of Industries. It is conducted in two parts, a Census that covers all mechanised establishments employing 50 or more workers and all non-mechanised establishments employing 100 or more, and a Sample Survey that covers the remainder. The Sample Survey is conducted by the N.S.S., and the results are published state-wise in N.S.S. reports.

Wage data are available in the reports on the small-scale manufacturing surveys conducted in rounds 7-10, 14 and 23, but not separately for each state. Data were also gathered in the course of the consumer expenditure survey of rounds 19 to 24 on wages paid; these data have been tabulated only for the 19th round, and are available in the report on the survey by type of enterprise, though not at state level.<sup>1</sup>

Wage data for agricultural laborers are available for each state separately by type of operation for 1950-51 and 1956-57 from the published reports on the first and second Agricultural Labour Surveys conducted by the Labour Bureau. Since 1962-63, data on agricultural wages have been routinely collected by the Ministry of Food and Agriculture for each month of the year, from one location in each district of a state; the coverage is thus not very good. The 19th round N.S.S. consumer expenditure survey referred to earlier on the other hand, is a reliable source of data on wages paid in household agricultural enterprises for the year 1964-65. Published reports on the round do not provide the data by state, however. For the year 1970-71, a reliable source is provided by the special rural survey conducted by the N.S.S. in the course of the 25th round; further, the reports on the survey (which are still in draft form) provide the wage figures separately for each state. Wage data are also collected in the farm management studies, and published in the reports on the studies. These data would be very reliable, but limited in geographical coverage.

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<sup>1</sup>N.S.S. Report #189.

## 2. Employment

Employment figures for the registered manufacturing sector are available for each state from the Annual Survey of Industries. For the non-registered sector, figures for wage employment may be obtained from the reports on the N.S.S. surveys, though only at the all-India level. (Another possible source of all-India figures are the reports on the employment surveys conducted between rounds 9 and 22).

For agricultural laborers, figures of average annual employment are available separately for each state for 1950-51 and 1956-57 from the published reports on the two Agricultural Labour Surveys, and for 1970-71 from the reports on the 25th round special survey.

## 3. Distribution of Land

There have been four surveys of land holding conducted by the N.S.S. They were conducted in the course of the 8th (1954-55), 16th (1960-61), 17th (1961-62), and 26th (1971-72) rounds. Published reports are available on the first three of these. The tabulated figures are available at state-level for the 16th and 17th rounds. All the consumer expenditure surveys collect information on land cultivated along with the identification particulars for each household. These data are not very accurate and have never been tabulated but they provide a potential second-best source of data on the distribution of land where data from the landholding surveys might not be available. The 1961 Census of population collected data on landholdings but these figures would not be as reliable as those collected in a sample survey. An agricultural census was held in the country for the first time in 1971-72; the census (the report on which has not yet been published) would be a source of figures on the distribution of operational holdings. The 26th round

survey provides an alternative source for the same year.

#### 4. Distribution of Taxable Incomes

Data would be available from the Central Board of Direct Taxes, Ministry of Finance, Government of India.

A study has recently been done, using wealth tax data, of the distribution of urban wealth.<sup>1</sup>

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<sup>1</sup>V.M. Jakhade and S.L. Shetty, "Distribution of Urban Household Wealth" Economic and Political Weekly, April 27 and May 4.

SRI LANKAI. Other Surveys of Income and/or Consumption1. The Socio-Economic Survey of Ceylon 1969-70

This survey collected information on household income and consumption and was carried out by the Department of Census and Statistics on what appears to have been a one-shot basis. The survey covered the whole island, urban, rural, and estate. The design of the survey, the questionnaire used, etc. were not accessible directly. The description given below was obtained from a study<sup>1</sup> of nutritional sufficiency based on unpublished (as of August 1973) tabulations provided by the Department.

Sample selection was done along lines very similar to those used in the recurring surveys of consumer finance, though the total sample at nearly 9,700 households was larger. Unlike those surveys, however, the survey period was a year, beginning in November 1969: the year was divided into four three-monthly rounds. The reference period used for the collection of income data seems to have been as short as a month: the resulting income data therefore would not be very useful. The consumption data gathered, on the other hand, should be quite reliable.

The definition of the household, the receiving and spending unit, was different once again from that used in the recurring surveys; single-member households were excluded from the scope of the survey entirely, and servants were included as members of the household. In addition to income and consumption data (where the food component of the latter was collected

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<sup>1</sup>L.N. Perera, W.S.M. Fernando, B.V. de Mel and T.T. Poleman, "The Effect of Income on Food Habits in Ceylon: The Findings of the Socio-Economic Survey of Ceylon 1969/70" Marga Vol. 2, No. 1 1973, pp. 81-106.

as in the case of the recurring surveys with seven-day recall), information was collected on the demographic characteristics of the population, fertility and morbidity, employment and unemployment, educational levels and housing conditions. A preliminary report on the first two rounds was released in October 1971: it is not clear if the final report based on all four rounds has been issued.

The unpublished tabulations on all four rounds were used in the study by Perera, et al referred to earlier; they seem unfortunately to have been done along the same lines as the tabulations done on the recurring surveys, by class of household income. Frequency distributions of the population by consumption class do not seem to have been constructed. It may be possible however to obtain prices from the final report if the detailed tabulations of quantity data by food item used in the Perera study are published along with value data for the items.

## 2. The Survey of Rural Credit and Indebtedness 1969

The main purpose of this survey conducted by the Central Bank was to obtain information on rural indebtedness, and secondarily on unemployment. Incidental data were collected on income and consumption, but not as much care would have been taken with these figures as in the case of a survey whose primary purpose is the collection of such data. The survey covered the rural sector alone; the size of the sample, at more than 26,000 households in nearly 160 villages, was very large. It was conducted in the fourth quarter of 1969. The reference period for all data, including income and consumption, was the year preceding the date of enquiry; for households surveyed in the first month of the quarter, the period would have coincided neatly with the

two agricultural seasons. The report<sup>1</sup> on the survey provides no tabulations on the income and consumption data collected.

### 3. The Techno-Economic Survey of the Uda Walawe Project Area 1973-74

This survey is confined to a very small area and to farm families within it, but the data gathered on income, consumption, employment, and educational and health facilities should be very reliable. They will be gathered on the basis of repeated weekly visits to a set of sample households for a period of one year, starting October 1973.

### 4. The Survey of the Mahaweli Development Area 1974

Once again, the survey is very limited geographically, but it is well timed for the collection of income data - in March and April of 1974. Other data on demographic variables, education, employment, housing, land utilization, and transport facilities will also be available.

## II. Nutrition Surveys

### 1. Medical Research Institute Dietary Surveys

The Department of Nutrition of the Medical Research Institute of Ceylon has been doing rural dietary surveys since the early fifties. A different set of villages is selected each year, usually three or less, and data collected on food intake and its nutritional value for about forty households in each, selected so as to be representative of the "lower income groups." No further details are available on the surveys. The small size of

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<sup>1</sup>Department of Economic Research, Central Bank of Ceylon, Report on the Survey of Rural Credit and Indebtedness 1969 (Colombo: December 1971).

the sample makes the surveys somewhat limited in their usefulness.

## 2. Cooperative Study of Labour Utilisation in an Animal Protein Production System: Zero-grazing Dairying in the Mid-Country

One part of this experimental study (done sometime in 1973) of the employment potential of alternative systems of agricultural organization was a detailed nutrition study of the workers under investigation, and of their families. One important aim of the nutrition study was to assess the distribution of food within the family; this is probably the only survey to have addressed the problem in any of the four countries. Another part of the experimental study was an estimation of energy requirements of rural laborers by monitoring vital values; these data were collected for many reasons, one of them being the determination of accurate minimum food requirements for Sri Lanka conditions. The figures should provide an interesting check on, for example, the requirements as specified by the Indian Council of Medical Research for conditions that climatically and otherwise are fairly similar. The study was done collaboratively by several institutions, among them the Medical Research Institute and the UNDP; the report on the study<sup>1</sup> has not yet been published.

### III. Other Relevant Data

#### 1. Wages

As usual, wage and salary data for government employees and employees of the public sector are available; the source is the Central Bank.

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<sup>1</sup>Further details on the study may be obtained from the following publication: Food and Agriculture Organisation, Report to the Government of Sri Lanka on Income and Food Consumption, based on the work of T. Poleman (Rome: UNDP Report No. TA 3198, 1973).

For non-government wages, the Labour Department provides data on those sectors and activities covered by the wage boards, which legislate minimum wages. The precise jurisdiction of these wage boards is not clear, but it is fairly certain that in practice it would exclude small-scale self-employed trade and manufacturing, and non-plantation agriculture.

## 2. Employment

There are many sources of employment data for Sri Lanka. Aside from the not very reliable data collected in the surveys of consumer finance, employment figures were gathered, as mentioned above, in the Socio-Economic Survey of 1969-70. Employment figures were also collected in the Rural Credit and Indebtedness Survey, described briefly above, and in the Survey of Labour Force Participation Rates conducted by the Central Bank in the third quarter of 1973, but the data from both of these would suffer from having been collected at one particular part of the year; the Socio-Economic Survey on the other hand had a year-long survey period. Definitions used in these surveys of unemployment, and criteria of inclusion and exclusion in the labour force are not uniform so that the figures from the different surveys might not be directly comparable. Employment data are also available from the Uda Walawe and Mahaweli surveys.

## 3. Distribution of Land

There does not seem to have been any systematic collection of data on land holdings over the years. Data on the distribution of paddy-producing land were gathered in the course of an all-island survey of the cost of production of paddy done by the Central Bank in the Maha Season of 1966-67.

The report<sup>1</sup> on the survey provide these figures by parcel, where a parcel differs from a holding in that one or more parcels would constitute a holding; the distribution by holding would be more or less equal according to the relationship between size of holding and number of parcels per holding. Since rice is the major non-plantation crop in Sri Lanka, the fact that the distribution pertains to paddy land alone is not as much of a shortcoming as might initially be supposed. Estimates of the incidence of rural landlessness cannot be obtained from the survey.

The 1969 survey on rural credit and indebtedness gathered incidental data on assets, among them land. The report on the survey does not tabulate these figures, however. Because of the wide coverage of the survey, the primary data if available would provide a most reliable basis on which to estimate the distribution of rural land-holdings and the incidence of rural landlessness. A corresponding survey of rural credit and indebtedness seems to have been done by the Department of Census and Statistics in 1957; it is certain that data on land-holdings and other assets would have been collected in the course of that survey. No further information was available, however, on the number of households sampled, and so forth.

Land-holding data would also be available from the Uda-Walawe and Mahaweli surveys; in the case of the former, which is confined to farm families alone, estimates of landlessness would not be available.

#### 4. Distribution of Taxable Incomes

These data would be available from the Ceylon Government Treasury.

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<sup>1</sup>Department of Economic Research, Central Bank of Ceylon, Survey of Cost of Production of Paddy, (Colombo 1969).