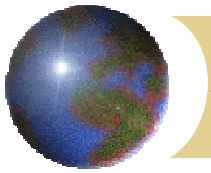


USE OF CENSUS DATA IN POVERTY MAPPING IN SRI LANKA

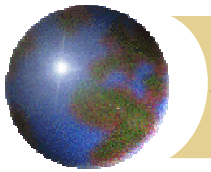
BY

A.G.W.Nanayakkara



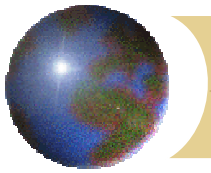
Poverty in Sri Lanka

- ❁ Reducing poverty is a difficult and complex challenge to many developing countries like Sri Lanka
- ❁ A number of Poverty Alleviation and Social Welfare programs have been implemented in Sri Lanka from time to time
- ❁ Although most of Health and Education indicators shows that the people have benefited immensely from free education and free health, **POVERTY STILL REMAINS**



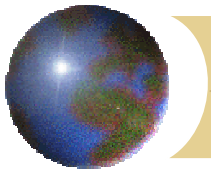
POVERTY IN SRI LANKA

- ❖ Properly targeting the destitute poor is the most difficult part in any Poverty Alleviation program
- ❖ To target the poor effectively it not sufficient to measure poverty only at larger Administrative Areas such as Province or District
- ❖ It is essential to go down to smaller Administrative areas, so that poverty pockets could be identified properly and target the poor more effectively



POVERTY IN SRI LANKA

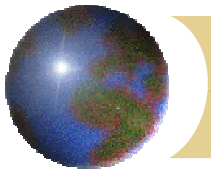
- If the spatial distribution of these identified areas could be shown a map it will be extremely useful to planners and policy makers
- Measurement of Poverty in Sri Lanka is being done based on the Household Income Expenditure Surveys
- However sample in these surveys is too small to provide estimates for smaller administrative areas



SL Official Poverty Line

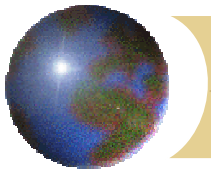
(OPL)

- ❖ Sri Lanka did not have a proper Official Poverty Line up to now, though different criteria were being used by DCS as well as other researchers to measure poverty
- ❖ Using the latest Household Income and Expenditure Survey Sri Lanka has now developed acceptable methodology to construct consistent poverty trends across time and space



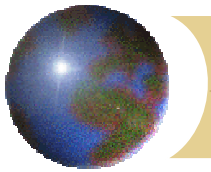
OPL – Definitions and Methodology chosen

- Absolute Poverty Line approach is chosen so that changes in poverty over time or across regions can be easily checked with reference to explicitly fixed Poverty Line at a specific welfare level
- OPL is fixed at a welfare level of a person who meets a certain minimal nutritional intake(2030 Kcal) in 2002



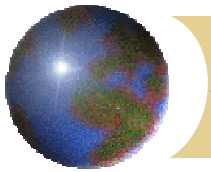
OPL – Definitions and Methodology chosen

- More precisely, the OPL of 2002 is defined as the per capita expenditure for a person to be able to meet the nutritional anchor of 2030 Kcal in 2002
- For the other survey years, the poverty lines are obtained by updating the OPL of 2002 with Colombo Consumer Price Index(CCPI) for Inflation



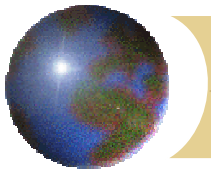
OPL – Definitions and Methodology chosen

- The OPL is fixed at a level real consumption expenditure rather than the nutritional anchor, because the welfare of an individual depends not only on his/her nutritional intake but also on consumption of items other than food, such as clothing, shelter, education and health services.
- A poverty line fixed in terms of real consumption will capture the same welfare level across the survey years obtained from such goods



OPL – Definitions and Methodology chosen

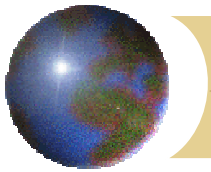
- ❖ The welfare level of a person is measured by the person's per-capita expenditure adjusted for inflation to accommodate for changes in cost of living of the same bundle of goods
- ❖ The OPL is updated by the CPI in order to make it comparable to other official figures, especially GDP and private consumption in the National Accounts



OPL – Cost of Basic Needs

Method

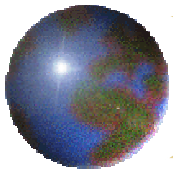
- The objective of a poverty line is to capture the basic needs necessary to meet minimum living standards
- The Cost of Basic Needs(CBN) method addresses this objective through defining a consumption bundle – incorporating food and non-food items – that is adequate to meet the nutritional requirements and estimates the cost of purchasing that consumption bundle



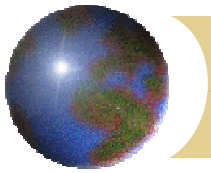
OPL – Cost of Basic Needs

Method

- **The non-food component could be estimated from the expenditure composition of the households whose food expenditures are close to what is required to achieve the nutritional anchor**
- **The standard approach in CBN method is to first find a food consumption bundle of the population likely to be poor and then estimate the cost of consuming this bundle using the prices faced by the reference group**
- **The food expenditure thus derived constitutes the food poverty line**

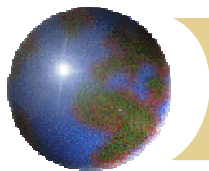


- **The methodology adopted in deriving the Official Poverty Line (OPL), is explained in my paper from page 5 to 8. The table in page 14 gives the Nominal Poverty Lines, Head Count Ratios and the percentages of poor Households**
- **The map in the last page gives the poverty situation in Sri Lanka at District level for 1990/91, 1995/96 and 2002**
- **However it is not sufficient to limit the measurements of poverty only to larger Administrative units like Provinces or Districts**



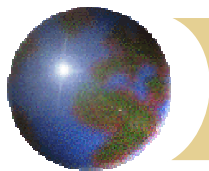
How to adjust for price differences over time and across Districts

- ❖ In applying the poverty line, one has to ensure that the line represents the same standard of living across time and accounts for variations in cost of living in different areas
- ❖ The National Poverty Line is defined at the 2002 national prices



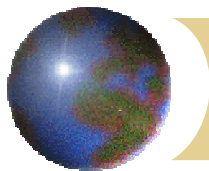
*Official Poverty Line[Real total food and non-food consumption expenditure per person per month(Rs.)]
-By Districts- 1990-91, 1995-96 and 2002*

District	PL- 90-91	PL- 95-96	PL-2002	District	PL 90-91	PL 95-96	PL 2002
Colombo	518	908	1537	K'gala	456	791	1352
Gampaha	489	875	1508	Puttalam	461	841	1423
Kalutara	494	866	1523	A'pura	456	816	1380
Kandy	485	850	1451	P'naruwa	475	783	1366
Matale	466	816	1395	Badulla	485	850	1409
N'Eliya	494	841	1437	M'gala	480	791	1366
Galle	489	833	1466	R'pura	494	833	1451
Matara	470	816	1395	Kegalle	466	858	1437
H'tota	470	791	1338	National	475	833	1423



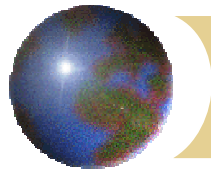
Poverty Headcount Rate(Percentage of Population below poverty line by Districts)

District	PL 90-91	PL 95-96	PL 2002	District	PL 90-91	PL 95-96	PL- 2002
Colombo	16	12	6	K'gala	27	26	25
Gampaha	15	14	11	Puttalam	22	31	31
Kalutara	32	29	20	A'pura	24	27	20
Kandy	36	37	25	P'naruwa	24	20	24
Matale	29	42	30	Badulla	31	41	37
N'Eliya	20	32	23	M'gala	34	56	37
Galle	30	32	26	R'pura	31	46	34
Matara	29	35	27	Kegalle	31	36	32
H'tota	32	31	32	National	26.1	28.8	22.7



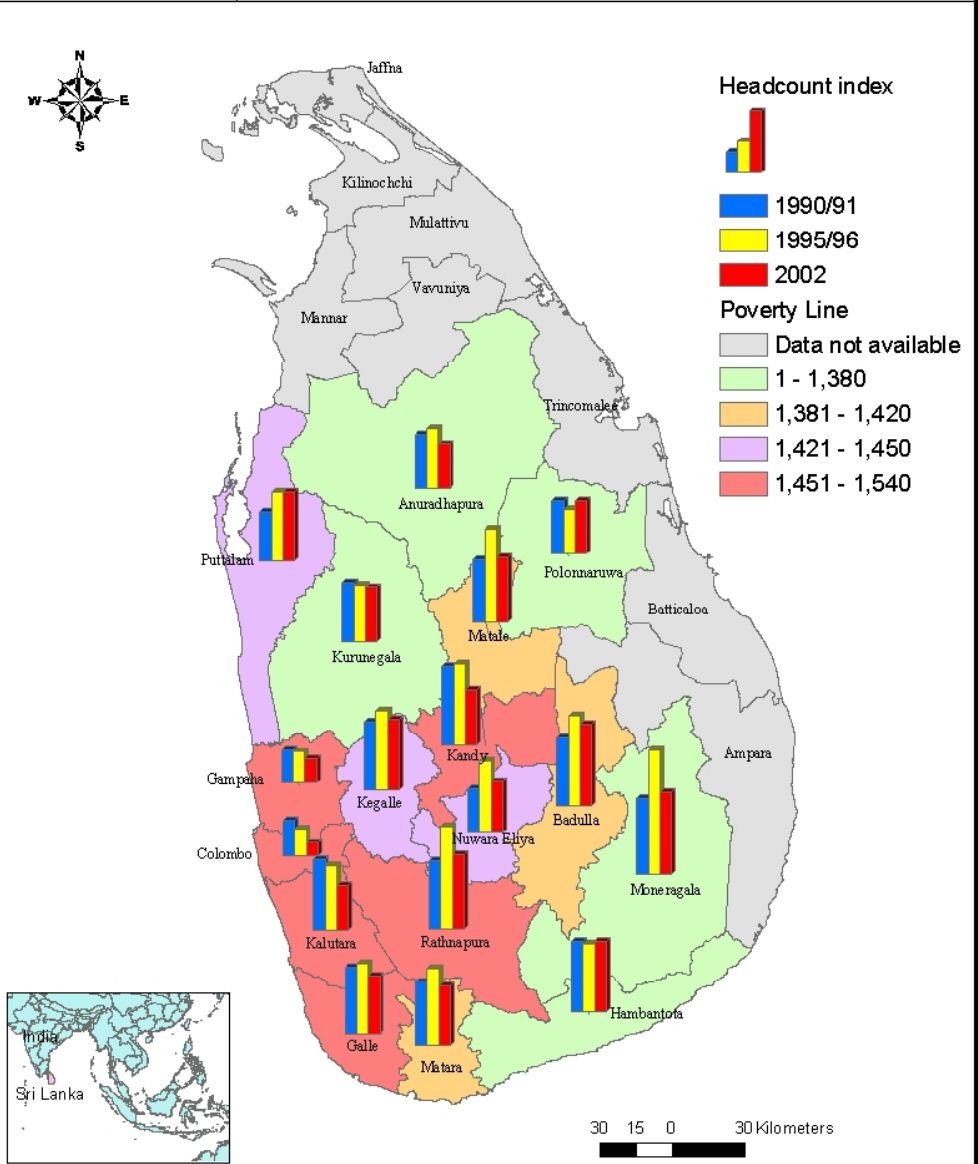
Percentage of Poor Households based on Official Poverty Line

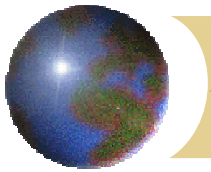
District	PL-90-91	PL-95-96	PL-2002	District	PL 90-91	PL 95-96	PL-2002
Colombo	13.1	8.8	5.0	K'gala	22.8	22.6	21.2
Gampaha	11.7	11.3	9.2	Puttalam	18.6	25.8	24.5
Kalutara	27.0	24.6	17.7	A'pura	20.1	21.9	17.2
Kandy	30.9	32.7	20.9	P'naruwa	21.2	17.1	20.1
Matale	24.3	36.8	24.5	Badulla	26.8	35.8	31.5
N'Eliya	15.6	25.9	18.2	M'gala	27.4	48.4	32.4
Galle	25.0	25.5	21.7	R'pura	26.4	40.0	30.1
Matara	23.3	29.5	23.2	Kegalle	27.3	31.7	27.5
H'tota	26.3	26.2	27.8	National	21.8	24.3	19.2



Dept. of
Census and
Statistics

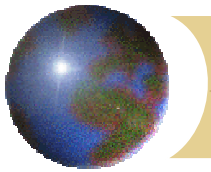
National Poverty Line and Poverty Headcount Ratio (%) by District - 2002



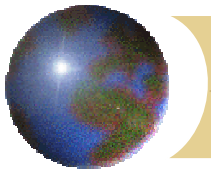


Poverty Mapping at Small Area Levels

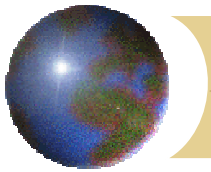
- ❖ **To plan Poverty Reduction Strategies it is necessary to go down to smaller Administrative levels**
- ❖ **To solve this problem we are now experimenting on the use of Census data to predict consumption levels down to such levels**
- ❖ **For this purpose it is necessary to identify the common variables that exist between the HIES the Population Census**



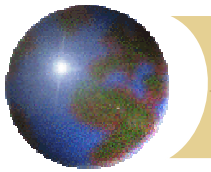
- **These variables will form the 'Bridge' that allow us to predict the consumption levels into the Population Census**
- **For Poverty Mapping exercise to be valid it is crucial that these linking variables are identically defined in the two data sets**
- **The objective is to obtain a statistically sound Poverty Index in a small geographical area**
- **As the HIES does not have sufficiently large sample of households to achieve this objective, we could impute consumption levels of Census Households**



- ⊕ To do this we have to make an assumption that the partial correlation between poverty predictor say for instance the education attainment of the Head of the Household and consumption is identical between the HIES and the Population Census**
- ⊕ Some of common variables in HIES and CENSUS are Household Size, Relationship to Head, Sex, Marital Status, Religion, Ethnic Group, Job Status, Occupation and Industry**



- ⊕ To adjust to location specific effects, it is possible to construct community level variables from the Census**
- ⊕ E.g. Average Housing Unit Information could be incorporated for this purpose :
Type of Wall, Type of Floor, Type of Roof, Type of Structure, Year of Construction, Number of Rooms, Availability of Toilet, Type of Toilet, Source of Drinking Water, Type of Lighting, Type of Cooking Fuel etc.**



- ✚ **Under the Assumption mentioned earlier, even if we do not observe the consumption of the census households it is possible to impute consumption using regression models as described in page 9 in my paper**
- ✚ **A brief description of the methodologies and procedures that are being tested are given from pages 9 to 13.**