

Determining per capita calorie requirements for poverty analysis of the Malawi Integrated Household Survey, 1997-98

As was noted in another paper in this series on deriving a household welfare indicator for the poverty analysis of the IHS (*working paper 3*), a poverty line is needed for absolute poverty analyses. The poverty line – that level of welfare which distinguishes poor households from non-poor households – is expressed in the same unit as that of the household welfare indicator.

The poverty line has an objective character insofar as it is anchored to the costs for a household in meeting the recommended daily calorie requirements (RDR) of its members, plus a certain level of basic non-food expenditure. This paper describes how the per capita calorie requirements for each household in the IHS has been derived in order to determine the food component of the poverty line.

Caloric information

Basic demographic information on each individual in each household sampled in the IHS was paired with a standard table on the daily per capita calorie requirements of individuals in Eastern, Central, and Southern Africa prepared by CTA/ECSA. The caloric information used came from the World Health Organization as reported on a 1987 poster by the CTA/ECSA group entitled "Food consumption table for energy and eight important nutrients in foods commonly eaten in east Africa".

Group	Age	Calories
Infant	< 1	820
Infant	1-2	1150
Infant	2-3	1350
Infant	3-5	1550
Boys	5-7	1850
Boys	7-10	2100
Boys	10-12	2200
Boys	12-14	2400
Boys	14-16	2650
Boys	16-18	2850
Girls	5-7	1750
Girls	7-10	1800
Girls	10-12	1950
Girls	12-14	2100
Girls	14-16	2150
Girls	16-18	2150

Group	Age	Workload	Calories
Men	18-30	Light	2600
Men	18-30	Moderate	3000
Men	18-30	Heavy	3550
Men	30-60	Light	2500
Men	30-60	Moderate	2900
Men	30-60	Heavy	3400
Men	>60	Light	2100
Men	>60	Moderate	2450
Men	>60	Heavy	2850
Women	18-30	Light	2000
Women	18-30	Moderate	2100
Women	18-30	Heavy	2350
Women	30-60	Light	2050
Women	30-60	Moderate	2150
Women	30-60	Heavy	2400
Women	>60	Light	1850
Women	>60	Moderate	1950
Women	>60	Heavy	2150
Last trimester pregnant (add to adult requirement)		-	285
Lactation (add to adult requirement)		-	500

Calculation of per capita calorie RDR for IHS households – standard

The data file containing information on the demographic characteristics of all individuals in the

IHS was opened using the SPSS statistical software program. A new variable was created in the data file which considered the age and sex characteristics of each individual and assigned to that variable the calorie requirement noted in the above table. For adults the moderate activity level calorie RDR was used in all cases.

No information exists in the IHS on the pregnancy condition of women of childbearing age. Consequently the additional calories required by pregnant women in their last trimester of pregnancy could not be applied. However, the lactation requirement was included by making the assumption that all infants under one year of age are breastfeeding. The additional 500 calories required by their mothers was assigned to these infants. As the calorie requirements for all individuals in a household will be aggregated, this method will work in accounting for the additional calories required by the breastfeeding mother in the household.

The next step involved summing up the RDR for each individual in a household to derive a total calorie RDR for the household. To calculate the per capita RDR, the total household calorie RDR then simply was divided by the household size, the number of people in the household.

The following table of per capita recommended daily calorie requirements results from the analysis of the 10,698 households of the IHS which provided good demographic data:

	Malawi	Southern rural	Central rural	Northern rural	Urban
Mean	2194.0	2181.5	2176.1	2210.8	2266.9
Median	2159.1	2158.3	2140.0	2162.5	2230.0
<i>valid hhs</i>	<i>10698</i>	<i>4389</i>	<i>3661</i>	<i>1230</i>	<i>1418</i>
<i>weighted by household size</i>					

Calculation of per capita calorie RDR for IHS households – seasonally adjusted for rural adults

A second per capita calorie RDR calculation was made which took into account the heavy workload of adults in rural areas during the cropping season. All adults residing in the rural areas are assumed to be engaged in a "high" level of activity for three months in a year. Hence the RDR for rural adults is computed as a weighted average of (0.75 moderate RDR + 0.25 heavy RDR) from the above table. The RDR for all other individuals remain as above.

The following table results:

	Malawi	Southern rural	Central rural	Northern rural	Urban
Mean	2233.1	2225.6	2221.0	2259.0	2266.9
Median	2203.1	2206.7	2184.4	2210.9	2230.0
<i>valid hhs</i>	<i>10698</i>	<i>4389</i>	<i>3661</i>	<i>1230</i>	<i>1418</i>
<i>weighted by household size</i>					

The higher calorie requirements which result from the seasonal adjustment for rural adults will result in a higher poverty line and a higher poverty head count in rural areas than if the standard RDR calculation was used. A consensus should be reached among those interested in the poverty line of the IHS as to which calorie requirements to use to derive the poverty line.