

## **Kagera Health and Development Survey**

### **Consumption Expenditure Data**

#### **Consumption Components**

Table 1 summarizes the 12 consumption components that are available from the 1991-94 and 2004 questionnaires and indicates the sections from which they are derived. The components are, by and large, matched: the 1991-94 components correspond to comparable 2004 components. However, more careful fine-tuning of the matching exercise will be discussed later in this note. This fine-tuning will relate to more careful consideration of (i) differences in recall periods and (ii) differences in level of aggregation.

#### **Consumptions Components and Subcomponents in 2004: *exphh2004.dta***

The file *exphh2004.do* extracts the 12 consumption components from the 2004 questionnaire and writes them to the file *exphh2004.dta*. For 7 out of the 12 components the subcomponents of each component are also specified. The component in this case is simply the sum of all subcomponents. The subcomponents are matched to the item numbers on the 2004 household questionnaire. E.g. *exp\_food1* is the component of purchased seasonal food and contains 40 subcomponents (*exp\_food11* to *exp\_food140*), corresponding to the 40 food items specified in Section 16C-1 of the 2004 household questionnaire which ranges from cooking bananas (1) to other foods (40).

#### **Consumptions Components and Subcomponents in 1991-1994: *exphh91\_94.dta***

The file *exphh91\_94.do* extracts the 12 consumption components from the 1991-94 questionnaires and writes them to *exphh91\_94.dta*. Because the item codes in the 1991-94 questionnaire do not match those of the 2004 questionnaire, this file also converts all 1991-94 item codes to 2004 codes. Items for which a match between 1991-94 and 2004 may be doubtful are flagged (in variable notes in the data set), but not yet dropped at this point. This is done so that users of the data may have the flexibility to include or exclude them later on.

Our own preferred consumption aggregate will drop 3 (out of 27) matches in *exp\_food3* later on when appending the 1991-94 and 2004 data. A further 9 (out of 24) matches in *exp\_nfd2* are flagged as potentially problematic, but are included in our preferred consumption aggregate.

#### **Comparable Consumption Expenditure Aggregate for 1991 & 2004: *exphhpanel.dta***

The file *exphhpanel.do* creates a comparable consumption expenditure aggregate in per capita terms (in real 2004 prices) for the wave 1 and wave 5 rounds of the KHDS panel. Since some components are not measure comparably between these waves, these

components are excluded. Thus, the files includes comparable per capita consumption for food, non-food and total consumption expenditures (food and non-food).

### *Constructing a comparable measure between waves*

The comparability in the components of consumption expenditure between waves may be questions for two reasons:

- 1.) Recall period. The recall periods of purchased and home-produced food were reduced from 12 to 6 months for waves 2-4, one could question comparability of waves 2-4 with waves 1 and 5.<sup>1</sup> This is particularly relevant for seasonal food items as interviews were conducted at different times of the year. To avoid this problem, the comparable consumption expenditure aggregate only includes wave 1 and 5. All seasonal consumption in waves 1 and 5 was reported with 12 month recall.
- 2.) Definition of components.
  - a. A list of fruits and vegetables were aggregated in 2004, but were recorded separately in 1991-94. Tabulation of the expenditure patterns in these two categories show that there seems an excessive decline in the fruits and vegetable expenditures, probably an artefact of the aggregation (see Table 2). Because of this, we also exclude the “others” category in exp\_food3 from the comparable consumption expenditure aggregate because it is unclear to what extent other vegetables and fruits have been captured here (e.g. because it is not often clear that people would consider items as avocados as fruits, as vegetables or place them in the others category).
  - b. Some items in exp\_nfd2 are flagged as potentially having matching problems, although in our comparable consumption expenditure aggregate we do include them. These are expenditures exp\_nfd2p – exp\_nfd2x (expenditures on jewelry, haircuts, umbrellas and bags, newspapers, petrol and oil, stationery, candles and the like, batteries and soap and the like). The problem here is that while they were recorded at individual level in 1991-94, they were recorded at household level in 2004. Tabulation of the expenditure patterns does not however suggest that there are serious problems with this (Table 2).
  - c. Remittances sent out of the household were collecting differently between waves 1-4 and wave 5. The 2004 remittances out section first probed for remittances to all individuals on the Network Roster (Section 18A) and then constructed a list of all other individuals who received remittances from any of the household members, probing for the amount per receiver (Section 18C). The 1991-94 questionnaire collected detailed information, per household member, for up to 3 receivers and then, also per household member, an aggregate of all other receivers (Section 19B). This variable is flagged, but included in the comparable consumption expenditure aggregate.

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<sup>1</sup> Note that this is a reference to the *wave* questionnaire and not the *passage* (calendar timing of the questionnaire). A wave 1 questionnaire may have been conducted in passage 1, 2 or 3.

The wave 1 and wave 5 means are tabulated in Table 2.

Table 3 gives an overview of the number subcomponents available per consumption component. It also indicates how many subcomponents are flagged and how many are excluded from the comparable consumption expenditure aggregate.

Table 4 expands on Table 3 by listing the variable names of all subcomponents per component, indicating whether or not they are flagged as potential mismatches and/or excluded from the preferred consumption aggregate.

### *Deflation*

All components of the consumption aggregate, except home produced seasonal foods (exp\_food3), were deflated using information from the KHDS price questionnaires conducted during each visit of the cluster, complemented with other spatial information for households that were not found residing in the original cluster (see description price questionnaire for more details).

Exp\_food3 is the only consumption component that allows unit prices to be calculated. Therefore we prefer to calculate 2004 unit prices (value per time consumed) and apply these unit prices to the 1991 quantities to obtain 1991 values in 2004 TZS. Prices are the median 2004 prices per item in the survey and are not dependent on location so no spatial correction is needed here.<sup>2</sup>

### *Funeral and Health Expenses on Deceased*

Our comparable consumption expenditure aggregate also drops expenses on funerals and medical expenditures on household members who later died. Note that we do include health expenditures on other members, but specify it as separate component so that researchers who do not wish to include this can exclude it easily.

### *Per Capita Expenditures*

Expenditures are calculated per capita, no other attempts were made to control for household demographics (such as use of adult equivalence scale or economies of scale in household size).

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<sup>2</sup> An alternative deflation could also be applied to seasonal purchased goods (exp\_food1). This alternative deflation is done in the following way. As we do not have quantities for the seasonal purchased goods, we cannot follow the same procedure as for exp\_food3. Instead we could calculate the median price in wave 1 and wave 5 per item. By dividing the latter by the former we get an estimate of the average price increase per item. We would then multiply all wave 1 values by this price increase. The problem with this approach is that not all wave 1 questionnaires are from the first *passage*. For observations from passages 2 and 3 this may be problematic.

**Table 1: Aggregated Variables for Household Consumption**

	<i>Variable name</i>	<i>KHDS 1991-1994</i>	<i>KHDS 2004</i>
<b><i>Food Consumption</i></b>			
a. Purchased seasonal food	exp_food1	Section 17C1	Section 16C1
b. Purchased non-seasonal food	exp_food2	Section 17C2	Section 16C2
c. Valuation of home produced seasonal food	exp_food3	Section 18B Q1&2	Section 8 Q5&6
d. Valuation of home produced non-seasonal food	exp_food4	Section 17B	Section 16B
		Section 14B Q6	Section 13B Q8, Section 12A Q8
		Section 12A Q12	
<b><i>Non-Food Consumption</i></b>			
a. Education	exp_nfd1	Section 5 Q18, 25, 28	Section 5 Q16, Q20, Q23
b. Misc non-food expenditures	exp_nfd2	Section 18A	Section 8 Q1-3, Q7-10
		Section 18B Q3-12	Section 15B Q2-7, Q13-16
		Section 16B Q10-14, 17, 22	Section 15C <sup>a</sup>
c. Health, household members	exp_nfd3	Section 18A Q9&10	Section 8 Q4
d. Health, recently deceased household members	exp_nfd4	Section 20A	Section 15B Q18
e. Funeral	exp_nfd5	Section 20A	Section 15B Q17
f. Utilities	exp_nfd6	Section 15B Q13, Q24, Q27	Section 14B Q6, Q11, Q13
g. Wages-in-kind	exp_nfd7	Section 7B	Section 7B Q11
		Section 7F	Section 7F Q9
h. Remittances <sup>b</sup>	exp_nfd8	Section 19B	Section 18A Q10
			Section 18C Q6

Note: All values are annualized

a. S15CQ2 (items 1-7) at the household level in 2004, previously at the individual level

b. 2004 first probed for remittances to all individuals on the Network Roster (Section 18A) and then constructed a list of all other individuals who received remittances from any of the household members, probing for the amount per receiver (Section 18C). 1991-94 collected detailed information, per household member, for up to 3 receivers and then, also per household member, an aggregate of all other receivers (Section 19B).

**Table 2: Expenditure means for consumption subcomponents  
with potentially problematic matches between waves 1 & 5**

<b>variable name</b>	<b>variable description</b>	<b>mean wave 1</b>	<b>mean wave 5</b>	<b>brief description of problem</b>
exp_food317	fruits	6321	2314	different level of aggregation
exp_food319	vegetables	2826	1123	different level of aggregation
exp_food321	others	146	169	different level of aggregation
exp_nfd2p	jewelry	104	52	household vs. individual level
exp_nfd2q	haircuts	214	1709	household vs. individual level
exp_nfd2r	umbrellas and bags	234	304	household vs. individual level
exp_nfd2s	newspapers	360	924	household vs. individual level
exp_nfd2t	petrol and oil	1091	1688	household vs. individual level
exp_nfd2u	stationery	423	543	household vs. individual level
exp_nfd2v	candles, etc.	3791	6851	household vs. individual level
exp_nfd2w	batteries etc.	1442	2783	household vs. individual level
exp_nfd2x	soap etc.	5248	5970	household vs. individual level
exp_nfd8	remittances out	4441	6225	different ways of probing

**Table 3: Consumption Components and Subcomponents**

<b>name</b>	<b>Description**</b>	<b>No. of subcomponents in exphh2004.dta and exphh91_94.dta files</b>	<b>No. of subcomponents dropped in preferred consumption aggregate</b>	<b>No. of subcomponents flagged but not dropped in preferred consumption aggregate</b>
exp_food1	Purchased Food, By Rainy/Dry Season	40	0	0
exp_food2	Purchased Food, Non-seasonal	20	0	0
exp_food3	Home Produced Food, By Rainy/Dry Season	27	3	0
exp_food4	Home Produced Food, Non-seasonal	2	0	0
exp_nfd1	Education	3	0	0
exp_nfd2	Other Nonfood	24	0	9
exp_nfd3	Health Household Member	0	0	0
exp_nfd4*	Health Deceased	0	0	0
exp_nfd5*	Funeral	0	0	0
exp_nfd6	Utilities	6	0	0
exp_nfd7	Wage-In-Kind	0	0	0
exp_nfd8	Remittances	0	0	0

\* dropped in comparable consumption expenditure aggregate. \*\* all components are annualized.

**Table 4: KHDS Consumption Components and Subcomponents**

variable name of component or subcomponent		2004 code	1991-1994 code	flagged for potential matching problem	excluded in preferred consumption aggregate
<b>exp_food1</b>	<b>Purchased Seasonal Food</b>				
exp_food11	Cooking Banana	1	8		
exp_food12	Sweet Banana	2	9		
exp_food13	Other Banana	3	10		
exp_food14	Raw Cassava	4	11		
exp_food15	Dry Cassava	5	12		
exp_food16	Other Cassava	6	13		
exp_food17	Yams	7	14		
exp_food18	Irish Potato	8	18		
exp_food19	Maize	9	19		
exp_food110	Millet	10	20		
exp_food111	Rice	11	24		
exp_food112	Beans	12	28		
exp_food113	Groundnut	13	29		
exp_food114	Sunflower seed/oilseed	14	30		
exp_food115	Mamba nuts	15	31		
exp_food116	Palm Oil	16	32		
exp_food117	Butter	17	34		
exp_food118	Margarine	18	35		
exp_food119	Avocado	19	36		
exp_food120	Mangoes	20	37		
exp_food121	Pawpaw	21	38		
exp_food122	Citrus Fruits	22	39		
exp_food123	Pineapple	23	40		
exp_food124	Other Fruits	24	41		
exp_food125	Passion Juice	25	42		
exp_food126	Sugar et al	26	44		
exp_food127	Tomatoes	27	46		
exp_food128	Onions, leeks, green onions	28	47		
exp_food129	Eggplant and bitter tomatoes	29	48		
exp_food130	watermelon/pumpkin	30	49		
exp_food131	Cabbage	31	50		
exp_food132	Other Vegetables	32	51		
exp_food133	Spices	33	53		
exp_food134	Fish	34	54		
exp_food135	Edible insects	35	60		
exp_food136	Eggs (all birds)	36	61		
exp_food137	Local/home brew	37	64		
exp_food138	Milk	38	67		
exp_food139	Milk Products	39	69		
exp_food140	Other Foods	40	72		
<b>Exp_food2</b>	<b>Purchased Non-seasonal Food</b>				

variable name of component or subcomponent		2004 code	1991-1994 code	flagged for potential matching problem	excluded in preferred consumption aggregate
exp_food21	Wheat Flour	1	25		
exp_food22	Macaroni	2	26		
exp_food23	Biscuits	3	27		
exp_food24	Other Oil	4	33		
exp_food25	Jams	5	45		
exp_food26	Salt	6	52		
exp_food27	Poultry	7	55		
exp_food28	Beef	8	56		
exp_food29	Mutton	9	57		
exp_food210	Pork	10	58		
exp_food211	Baby Food	11	62		
exp_food212	Sodas	12	63		
exp_food213	Other Alcohol	13	65		
exp_food214	Yeast	14	66		
exp_food215	Milk Powder	15	68		
exp_food216	Tin Meat	16	70		
exp_food217	Other Prepared Food	17	71		
exp_food218	Other Food	18	72		
<b>exp_food3</b>	<b>Home Produced Seasonal Food</b>				
exp_food31	Cooking Banana	1	8		
exp_food32	Sweet Banana	2	9		
exp_food33	Other Banana	3	10		
exp_food34	Cassava	4	11		
exp_food35	Yams	5	14		
exp_food36	Irish Potato	6	18		
exp_food37	Maize	7	19		
exp_food38	Millet	8	20		
exp_food39	Rice	9	24		
exp_food310	Tea, Coffee	10	3		
exp_food311	Beans	11	28		
exp_food312	Groundnut	12	29		
exp_food314	Sunflower Seed/oilseeds	14	30		
exp_food315	Mamnuts	15	31		
exp_food316	Palm Oil	16	32		
exp_food317	Fruits: Avocado, Mangoes, Pawpaw, Citrus Fruits, Pineapple, Other Fruits	17	36, 37, 38, 39, 40, 41	yes	yes
exp_food318	Sugar	18	44		
exp_food319	Vegetables: Tomatoes, Onions, Eggplant, Cabbage, Other Vegetables	19	46, 47, 48, 50, 51	yes	yes
exp_food320	Spices	20	53		
exp_food321	Other Food	21	72	yes	yes
exp_food322	Eggs	22	61		
exp_food323	Milk	23	67		
exp_food324	Milk Products	24	69		
exp_food325	Fish	25	54		



variable name of component or subcomponent		2004 code	1991-1994 code	flagged for potential matching problem	excluded in preferred consumption aggregate
exp_food326	Game Bird	26	59		
exp_food327	Edible Insects	27	60		
<b>exp_food4</b>	<b>Home Produced Non-seasonal Food</b>				
exp_food41	own consumption from business				
exp_food42	own consumption from livestock				
<b>exp_nfd1</b>	<b>Education</b>				
exp_nfd1a	schooling own				
exp_nfd1b	schooling assistance org				
exp_nfd1c	schooling assistance others				
<b>exp_nfd2</b>	<b>Miscellaneous non-food expenditures</b>				
exp_nfd2a	kanga/kitenge				
exp_nfd2b	fabrics				
exp_nfd2c	clothing-shoes				
exp_nfd2d	tobacco				
exp_nfd2e	games & gambling				
exp_nfd2f	entertainment				
exp_nfd2g	perfume et al				
exp_nfd2h	house repair				
exp_nfd2i	bike-car repair				
exp_nfd2j	utensil repair				
exp_nfd2k	utensil purchase				
exp_nfd2l	linen				
exp_nfd2m	domestic workers				
exp_nfd2n	religion/charity				
exp_nfd2o	jewelry			yes	no
exp_nfd2p	toys			yes	no
exp_nfd2q	haircuts			yes	no
exp_nfd2r	Umbrella & bags			yes	no
exp_nfd2s	Newspapers			yes	no
exp_nfd2t	Petrol & oil			yes	no
exp_nfd2u	Stationery			yes	no
exp_nfd2v	candles etc.			yes	no
exp_nfd2w	Batteries			yes	no
exp_nfd2x	soap etc.			yes	no
<b>exp_nfd3</b>	<b>Health expenses, household members</b>				
<b>exp_nfd4</b>	<b>Health expenses, recently deceased household members</b>			yes	yes
<b>exp_nfd5</b>	<b>Funeral expenses</b>			yes	yes

variable name of component or subcomponent		2004 code	1991-1994 code	flagged for potential matching problem	excluded in preferred consumption aggregate
<b>exp_nfd6</b>	<b>Utilities</b>				
exp_nfd6a	water				
exp_nfd6b	electricity				
exp_nfd6c	firewood				
exp_nfd6d	charcoal				
exp_nfd6e	kerosene/oil				
exp_nfd6f	other eng				
<b>exp_nfd7</b>	<b>Wages-in-kind</b>				
<b>exp_nfd8</b>	<b>Remittances</b>				