

## ANNEX 2

### Core Welfare Indicators Definitions

The indicators have been derived from the 2006 Nigeria CWIQ survey and are based on a sample of 75,675 households.

**Margin of Error:** expresses the error attributed to sampling. It is expressed as an absolute percentage and indicates the range of a 95% confidence interval for the estimate.

**Dependency Ratio:** is the ratio between the number of household members age 15 to 64 and the number of members age 0-14 and over age 64.

#### Household Economic Situation

**Compared To One Year Ago:** worse is defined for households that replied much worse now or a little worse now; better is defined for households that replied a little better now or much better now.

#### Neighborhood Crime/Security

**Situation Compared To One Year Ago:** worse is defined for households that replied much worse now or a little worse now; better is defined for households that replied a little better now or much better now.

**Difficulty Meeting Food Needs:** is defined for households that reported difficulty meeting food needs often or always.

**Difficulty Paying School Fee:** is defined for households that reported difficulty paying school fees often or always.

**Difficulty Paying House Rent:** is defined for households that reported difficulty paying house rent often or always.

**Difficulty Paying Utility Bills:** is defined for households that reported difficulty paying utility bills often or always.

**Difficulty Paying Health Care Costs:** is defined for households that reported difficulty paying health care costs often or always.

**Households Self Classified As Poor:** are households that responded yes to the question do you consider your household to be poor.

**Secure Housing Tenure:** is defined for households that have documentation to verify their occupancy status.

**Access To Water:** is defined for households with a water source less than 30 minutes away.

**Safe Water Source:** is defined for households using treated piped water, bore hole/hand pump or protected well.

**Year Round Water Source:** is defined for households with no seasonal interruptions to their water supply.

**Safe Sanitation:** is defined for households using a flush toilet, covered pit latrine or ventilated improved pit latrine.

**Improved Waste Disposal:** is defined for households that have waste collected or use a government bin.

**Non-Wood Used For Cooking:** is defined for households that use kerosene, oil, gas or electricity for cooking.

**Activity In The Main Job:** is the main economic activity at the person's main job.

**Unemployed:** is defined for youths age 15 to 24 and for all persons 15 and

above. It includes persons who did not work in the seven day period preceding the survey and who looked for work in the four week period preceding the survey. The inactive population, primarily students and retired persons, are not included.

**Underemployed:** is defined for age 15 and above. It includes employed persons who sought to increase earnings in the seven day period preceding the survey.

**Adult Literacy Rates:** are defined for persons over age 14.

**Youth Literacy Rates:** are defined for persons age 15 to 24.

English literacy rates are for persons able to read and write in English. Any language rates are for persons able to read and write in English or any other language.

#### **Primary School:**

- Access is defined for children of primary school age (6-11) living in households with a primary school less than 30 minutes away.
- Enrollment (gross) is defined as the number of children of all ages currently in primary school (grades P1 to P6) divided by the number of children of primary school age (6-11).
- Enrollment (net) is defined as the number of children of primary school age (6-11) currently in primary school (grades P1 to P6) divided by the number of children of primary school age (6-11).
- Satisfaction is defined for children of primary school age currently in primary school who cited no problems.

- The primary school completion rate is the ratio between the number of persons who completed primary school in the year before the survey and the number of children of primary school age (6-11).

#### **Secondary school:**

- Access is defined for children of secondary school age (12-17) living in households with a secondary school less than 30 minutes away.
- Enrollment (gross) is defined as the number of children of all ages currently in secondary school (grades S1 to S6) divided by the number of children of secondary school age (12-17).
- Enrollment (net) is defined as the number of children of secondary school age (12-17) currently in secondary school (grades S1 to S6) divided by the number of children of secondary school age (12-17).
- Satisfaction is defined for all children currently in secondary school who cited no problems.
- The secondary school completion rate is the ratio between the number of persons who completed secondary school in the year before the survey and the number of children of primary school age (12-17).

**Health Access:** is defined for persons living in households with a health facility less than 30 minutes away.

**Health Need:** is defined for persons who were sick or injured in the four week period preceding the survey.

**Health Use:** is defined for persons who consulted a health practitioner in the four

week period preceding the survey. Note that need is not taken into account.

**Health Satisfaction:** is defined for persons who consulted a health practitioner in the four week period preceding the survey and who cited no problems.

**Consulted Traditional Healer** is defined as the percentage of persons consulting a health practitioner in the four week period preceding the survey who consulted a traditional healer.

**Pre-Natal Care:** is the percentage of women age 12-49 who had a live birth in the 12 months preceding the survey and who received pre-natal care during the pregnancy.

**Anti-Malaria Measures:** are defined for households that take any measures to prevent malaria.

**Physical Or Mental Challenge:** is defined for persons with a physical or mental challenge that prevents them from performing normal activities such as employment or schooling.

**Orphanhood:** is defined for children under age 18.

**Fostering:** is defined for children under age 18 not living in the same household as their parents.

**Exclusive Breastfeeding:** is the percentage of children age 6 to 59 months who were exclusively breastfed for 6 months or more.

**Delivery By Health Professionals:** is defined for children born in the 5 years preceding the survey delivered by a doctor, nurse or midwife.

**Measles Immunization:** is the percentage of children age 12-59 months who have had a measles vaccination.

**Fully Vaccinated** is the percentage of children age 12-59 months who have had the measles, BCG, DPT1-3, OPV0-3, yellow fever, MMR and Vitamin A vaccinations.

**Not Vaccinated:** is the percentage of children age 12-59 months who have had none of the measles, BCG, DPT1-3, OPV0-3, yellow fever, MMR and Vitamin A immunizations.

**Incidence Of Diarrhea:** is the percentage of children under 5 who had diarrhea in the two weeks before the survey.

**Ors/Ort/Home Solution:** is the percentage of children who had diarrhea in the two weeks before the survey who received ORS or ORT or home solution of salt and sugar.

## TECHNICAL APPENDIX

### Sample Design for National Core Welfare Indicator Questionnaire (CWIQ) Survey (2005)

#### Preamble:

The sample design employed for National Core Welfare Indicator Questionnaire Survey 2005 is a 2-stage cluster sample design in which Enumeration Areas (EAs) or Primary Sampling Units (PSUs) constitute the 1<sup>st</sup> stage sample while the Housing Units (HUs) from EAs make up the 2<sup>nd</sup> stage sample or the ultimate sampling units.

#### Sampling Frame:

The enumeration Areas (EAs) as demarcated by the National Population Commission (NPopC) for the 1991 population census served as the sampling frame for the National Core Welfare Indicator Questionnaire (CWIQ) survey 2005. Although the frame was however deficient in two main areas, viz;

- (i) No measure of size was readily available for the EAs which served as the primary sampling units (psus) and
- (ii) The EAs were not stratified into urban and rural during the census exercises in 1991.

Nevertheless, the solution provided for the first problem was to take the PSU's with equal probability while the envisaged solution for the second deficient was the promise by the national Population Commission (NPopC) to supply the information at a later date.

#### Sample Size:

Sample sizes must meet some minimal requirement in order to obtain reliable estimate. Hence, for National CWIQ survey 2005, the sample size varies from state to state depending on the number of Local Government Areas (LGAs) in each state. Ten (10) Enumeration Areas (EAs) were selected in each LGA making a total of 7,740 EAs to be canvassed for throughout the federation from the 774 LGAs including Federal Capital Territory (FCT) Abuja. (See Appendix 1)

#### Selection Procedure:

The 7,740 EAs were selected directly from the population of EAs in the National Population Commission (NPopC) with equal probability of selection. Prior to selection, all the contiguous EAs were arranged serpentinely in each Local Government Area (LGA) of the state. This arrangement ensured that there was no overlapping between the LGAs and the EAs within the LGAs. With the frame so constructed, the EAs were cumulatively numbered to get the EA population. Therefore, 10 random starts (RS) were taken for each LGA and systematic selection approach were adopted in selection 10 EAs in each LGA.

A listing/updating exercise was carried out in each EA from where 10 housing units (HUs) were selected systematically to form the 2<sup>nd</sup> stage Sample or Ultimate interviewed using the Core Welfare Indicator questionnaire.

**Estimation Procedure:**

Estimate will be provided at LGA level.

$$\begin{aligned}\hat{Y}_l &= \frac{N}{n} \sum_{j=1}^n \frac{H}{h} \sum_{k=1}^h X_{ljk} \\ &= \frac{N}{n} \frac{H}{h} \sum_{j=1}^n \sum_{k=1}^h X_{ljk} \\ &= W_{ljk} \sum_{j=1}^n \sum_{k=1}^h X_{ljk}\end{aligned}$$

Where  $\hat{Y}_l$  is the local government estimate

N is the total number of EAs in the l<sup>th</sup> LGA in the state

n is the number of selected EAs in the l<sup>th</sup> LGA

H is the total number of Housing Units (HUs) listed from selected j<sup>th</sup> EA in l<sup>th</sup> LGA

h is the number of selected Housing Units (HUs) from j<sup>th</sup> EA in the l<sup>th</sup> LGA

$X_{ljk}$  is the value of the element of HU in the kth housing unit of jth EA in the 1th LGA.

$W_{ljk}$  is the weight

**National Estimate:**

$$\hat{Y}_N = \sum_{s=1}^{37} \hat{Y}_s$$

Where  $\hat{Y}_N$  is the National Estimate and  $\hat{Y}_s$  is the State Estimate.

**Variance Estimate:**

Jackknife method which is the CWIQ software for Error Estimate was used. This required forming replicate from the full sample by randomly eliminating one sample cluster [enumeration area (EA)] at a time from a state which is the reporting domain. Then a pseudo-estimate is formed from the retained EAs, which are re-weighted to adjust for the eliminated units. Thus, for a particular state containing k EAs, k replicated estimates are formed by eliminating one of these, at a time, and increasing the weight of the remaining (k-1) EAs by a factor of k/(k-1). This process is repeated for each EA.

For a given state or reporting domain, the estimate of the variance of a rate, r, is given by

$$Var(r) = (Se)^2 = \frac{1}{k(k-1)} \sum_{i=1}^k (r_i - r)^2 \text{ where } (Se) \text{ is the standard error, } k \text{ is the number of EAs in}$$

the state or reporting domain.

r is the weighted estimate calculated from the entire sample of EAs in the state or reporting domain.

$r_{(i)}$  is equal to  $k r_{(i)}$ , where  $r_{(i)}$  is the re-weighted estimate calculated from the reduced sample of  $k-1$  EAs.

To obtain an estimate of the variance at a higher level, say, at the national level, the process is repeated over all states, with  $k$  redefined to refer to the total number of EAs (as opposed to the number in the state).