Improving Estimates of Population and of Access to Water with Citizen Surveys: Evidence from East Africa. Roy Carr-Hill UCL Institute

AGENDA

Problem of undercounting

Which groups are missing from household surveys

Counting those who are missing

Access to Water

Benefits of citizen-led assessments

Complementarity between citizen-led & household surveys

Conclusions / Recommendations

Save the Children

UCL
Institute of Education

How Undercounting has grown

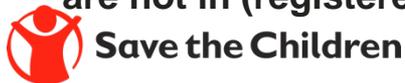**Buettner & Garland (2008)** *UN Pop. Division*, **said children are systematically under-counted**

- Most low & middle income countries now have well organised censuses of population but lack infrastructure for inter-censal updating

- This is mainly because birth registration is at a low level in many countries

  - e.g., estimated at 14% in Zambia.

  - The International Institute for Vital Statistics & Registration, founded in 1976 to rectify that situation, reduced its activities substantially in the 1990s & closed down altogether in 2006 for lack of donor funding.

- But the populations have not stopped grow

How Undercounting has grown

- Rangeland pastoralists estimated by Thornton et al (2003) to continue to increase (although compare Randall, 2015)

- Urban population of developing regions doubled from 1900 to 2014 (from 1.49 to 2.97 billion) &, although estimated proportion living in slums dropped from 46.2% to 29.7%, numbers increased from 689 to 881 million (WCR, 2016)

- Donors preferred to expand large scale (10,000-15,000) household surveys & UNDP to base estimates of deprivation for the MDGs (& now SDGs) on them

  - DHS started 1984, has carried out 275 standard surveys by 2016; UNICEF started MICS in 1997 carried out an average of 60 surveys in each of 5 waves

- **BUT, household surveys do not include people who are not in (registered) households!**

Save the Children

▲UCL
Institute of Education

Population Groups Missing from Sampling Frames of Household Surveys

- The issue is NOT that household surveys under-represent those who are not in households BUT that household surveys, with rare exceptions, typically ***omit by design***:

  1. those not in households because they are homeless (whatever the definition);

  2. those who are in institutions, including hospitals, military, prisons & refugee camps;

  3. mobile, nomadic, pastoralist & traveller populations.

- ALL these groups – except official military are poor

Save the Children
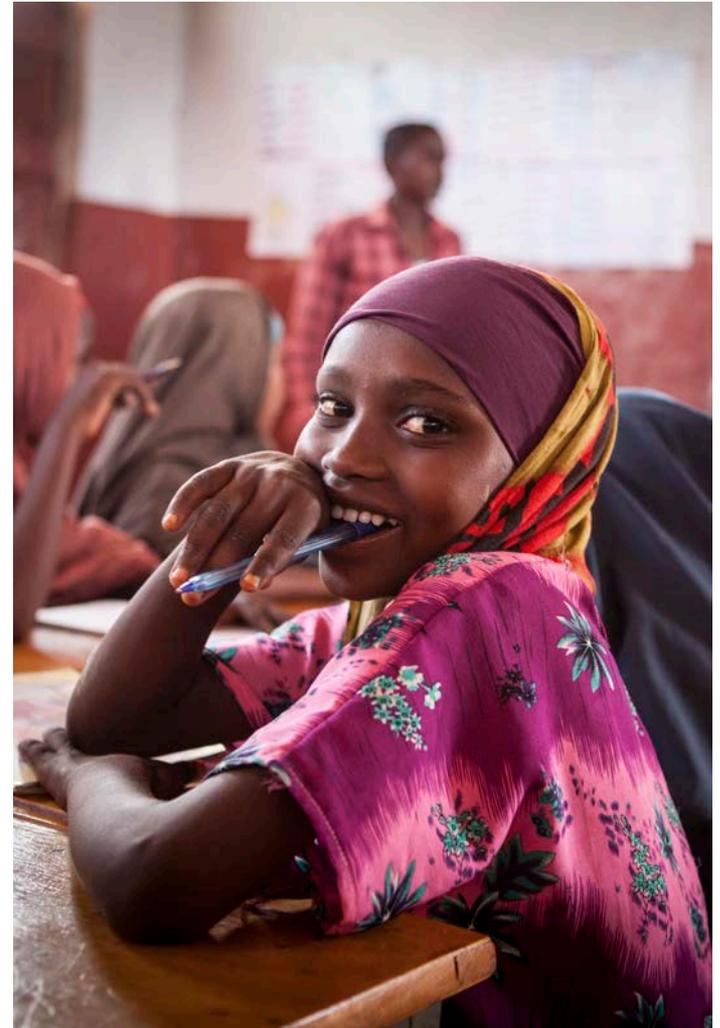
UCL Institute of Education

Population Groups Missing from Sampling Frames of Household Surveys

- In addition, *in practice*, because they are difficult to reach, household surveys typically under-represent:

  1. those in fragile, disjointed, or multiple occupancy households (because of difficulties of identifying them)

  2. those in urban slums (because of the difficulties of identifying & interviewing);

  3. may omit certain insecure areas of a country;

  4. older women in Sahelian countries;

  5. servants (slaves) in rich households.

- Except for older women all these groups include children; taken together the 7 groups, excluding military, constitute a very good ostensive definition of the poorest of the poor

Save the Children

UCL Institute of Education

Counting the Institutional Countable Groups Missing from Sampling Frames

- Hospitals: about 20 million worldwide based on reports to WHO, of which about 9 million in developing countries, most of them poor & none of them included in household surveys; possibly one third (3 million) <18yo

- Military: about 10 million worldwide, most will be in developed countries &, in official forces of developing countries, none (or very few) will be <18 yrs; & none (or very few) would be poor

- Prisons: again about 10 million, with about half in US, Russia & China; & only a few under 18

Save the Children

UCL
Institute of Education

Counting the Main Groups Missing in Millions: Refugees/ IDPs

- UNHCR compiles data on refugees & Internally Displaced Persons. But after relative stability from the end of WWII, illegal refugees have grown rapidly in last 10-15 years; so a rough guesstimate is double their figures! On this basis:

  – Refugees: 20.8 million; IDPs & Stateless 21.2m

  – According to UNHCR reports, about half of refugees are less than 18yrs: so 10.4; IDPs & Stateless 10.6m less than 18yrs

  – 6-14 yrs refugees 5.2m; IDPs & Stateless 5.3m.

    - (Note 6-14yrs taken as typical age range of primary school)

Save the Children

UCL
Institute of Education

Counting the Main Groups Missing in Millions: Nomads & Pastoralists

- **No consistent source of direct data on nomads / pastoralists**. The only possible indirect source is the count & projected estimates of rangeland animals by Thornton et al (2003) converted into numbers of people, based on nutritional estimates of animals needed. On this basis:

  – All (Adults & Children): 290 million; about 1/3 <18yrs: 96 million

  – Estimated proportion of missing from household sampling frames of 25% based on a large-scale (6,500 'families') survey of pastoralists in Somalia

  – All (adults & children) 72.5m; <18yrs: 24m

  – 6-14 yrs: 36.2m

Save the Children

UCL
Institute of Education

Counting the Main Groups Missing in Millions: Urban Slums

- UN Habitat estimates numbers in urban slums defined as not having one or more of: access to improved water & sanitation, durable & not over-crowded dwelling, security of tenure

- In low & middle income countries, population (Adults & Children) in urban areas 2,634 million; <18yrs: 878m; & 6-14 yrs 439m

- Estimated proportion missing from sampling frames in urban areas based on a comparison of UWEZO citizen-led surveys (in Nairobi, Kampala & Dar-es-Salaam) with contemporaneous Demographic & Household Surveys is 20%.

- 20% All, 527m; <18yrs,176m; 6-14 yrs, 88m

Save the Children

UCL Institute of Education

Estimates of Access to Piped Water

	DHS	UWEZO
Nairobi		
Dar-es-Salaam		
Kampala		

Save the Children

Estimates of Access to Piped Water

	DHS	UWEZO	DIFF
Nairobi	86.5	70.2	16.3
National Kenya	56.3	24.7	41.6
Dar-es-Salaam	66.9	30.2	36.7
National Total	35.1	28.0	7.1
Kampala	79.2	68.3	8.9
National Total	25.0	14.4	10.6

We take a low average of 40% in urban areas that gives 1,054 million without water in urban areas

As a rough approximation, we take 75% of all the other areas in Low and Middle Income countries (population, 6,248-2,634 million = 3,614 million) as being without water, then there are 2,711 million without access to piped water outside urban areas.

UNICEF estimates that 2,100 million or 28% of the world's population are without safe drinking water

A total of 3,765 million or 50% of the world population

How do UWEZO surveys 'Resolve' the Difficulty of Finding 'Missing People'?

- UWEZO & other Citizen-Led Assessment (C-L-A) surveys are, of course household surveys; so why do they find more (not all!) poverty, as measured by access to water?

- Possible Answers are:
  - C-L-A enumerators are local: this means they know their area including where the current water-holes of pastoralist groups are;
  - C-L-A surveys generally have two person citizen teams, whilst DHS, LSMS, MICS have only one; so easier for local C-L teams to work in slums

Complementarity not Competition between Citizen-led & Household Surveys

- There is not really a competition between citizen-led surveys & international (or national) standardised household surveys, more complementarity.

- Given their limited training & 'volunteer' status, citizen enumerators could never be expected to administer a DHS/MICS style comprehensive survey.

- Instead, preferable for reporting on headline poverty SDG-type goals to move progressively towards citizen-led surveys where they can use two locally knowledgeable enumerators; this is particularly important for including out-of-household children.

- But exploration of the causal factors leading to deprivation & details of, for example, health care, living conditions, malnutrition, etc. should be examined through traditional household surveys.

- This combined complementary approach would have the advantage of cutting survey costs.

Conclusions & Recommendations

- **Conclusions**

  - 700 million missing from sampling frames of household surveys; 74 million 6-11 yrs

  - NER is 80 not 90

  - Numbers people without access to safe drinking water is 3,765 milllion not 2,100 million

- **Recommendations**

  - Urgent that UN review population figures, with implications for all quantitative poverty related indicators in SDGs

  - C-L-A could measure not only SDG4 indicators but also access aspects of SDG 2 (hunger), 3 (health), 6 (access to water) & 11 (shelter)

  - UWEZO figures should be accepted for headline indicators; detailed surveys for examination of causality, service use etc.

  - **ALWAYS question who has been excluded from data you're collecting or using**

- **Reference**

  - Carr-Hill, R (2017) 'Improving Population & Poverty Estimates with Citizen Surveys: Evidence from East Africa', *World Development*, Volume 93, Pages 1-460 (May 2017)

- **Contact**

  - r.carr-hill@ucl.ac.uk
  - s.hine@savethechildren.org.uk