Indicator Development for the Surveillance of Urban Emergencies (IDSUE)

IDSUE is an operational research initiative of Concern Worldwide, funded by the USAID Office of Foreign Disaster Assistance (OFDA). The project aims to develop and empirically test a set of emergency indicators for urban slums and informal settlements. The broader objectives will be to identify key metrics and thresholds to fill the knowledge gap which inhibits humanitarian actors from effectively responding to emerging crises in urban areas. Operational since 2011, several rounds of data from 2012 to 2013 have been taken to better understand the contribution and effects of shocks and stresses in Nairobi and Kisumu.

In almost all aspects, the situation for the urban poor has deteriorated over the past year. Evidence in all domain areas supports this view, and is elaborated on through this document. Nominal incomes have decreased. Many food security indicators show increasing insecurity. Two-thirds of people feel unsafe or scared in their community. More households are reporting having experienced a shock. More households are removing their children from school due to school fees. *(See Table: Key Indicators).*

KEY FACTS

- More households are reporting severe food insecurity over time in all areas; severely food insecure by Household Food Insecurity Access Scale (HFIAS) increased from 36% in August 2012 to 43% in November 2013; moderate to severely food insecure by Household Hunger Scale (HHS) increased from 20% to 33% during the same period.
- Dietary Diversity[1] is declining over time. Households averaged 5.78 food groups in August 2012 and now average 5.46 food groups.
- The number of school drop outs is increasing (20% in Aug 2012 to 25% in Nov 2013) as households resort to removing children from school due to rising school fees and other related costs.
- Close to 50% of households depend on casual labor as a source of livelihood; and 64% of their income is spent on food. The proportion of income spent on food is highest in lower income households, especially female-headed households and is increasing with time in Nairobi (Mukuru and Viwandani).
- Female-headed households earn significantly less than male-headed households particularly in lowest income areas where females earned 62% of male income.
- The proportion of households accessing the recommended SPHERE standard of 15 liters of water/person/day is 54% in Nairobi and 77% in Kisumu.
- There is a notable increase in the number of households experiencing various shocks particularly in Nairobi (13% to 21% between August 2012 and November 2013).

[1] ***FAO, 2006:*** *A household that consumes less than 4 out of the 12 food groups has lowest dietary diversity; between 4 to 5 food groups has medium dietary diversity while 6 or more food groups has highest dietary diversity*

Table 1: *Number of households sampled from August 2012 to November 2013.*

	Nairobi			Kisumu		
Round (Date)	**Korogocho**	**Viwandani**	**Mukuru**	**Obunga**	**Nyalenda**	**Total**
Five (8/2012)	428	459	455	380	407	2129
Six (2/2013)	553	623	630	314	477	2597
Seven (4/2013)	546	578	582	418	585	2709
Eight (11/2013)	584	581	-	-	-	1165

Round 8 was carried out in an effort to understand the impact of a newly introduced 16% value added tax (VAT) and focused on two study sites in Nairobi; Korogocho and Viwandani.

MAIN FINDINGS

Livelihoods

Informal urban livelihoods are mostly in the informal sector. Casual labor (48%) is the largest source of income, with highest prevalence in the poorest slums. Monthly salaries (28%) are found most in higher income areas of Mukuru and Viwandani while small businesses (13%), hawking (8%) and remittances (1%) are mostly practiced in low income areas.

Average household income in Kisumu declined by 33% from August 2012 to April 2013. Average household income in Nairobi did not change significantly over time. In Nairobi, the lowest incomes are in Korogocho while the highest in Mukuru. **Average of 62% of income is spent on food in Nairobi and 67% in Kisumu.** The proportion of income spent on food is increasing over time in Mukuru (56-60%), Obunga (62-66%) and Nyalenda (68-77%). This key indicator highlights the limited ability of urban households to cope with rising food prices or other shocks (Table 2).

Gender: 69% of breadwinners (highest earner in the HH) are male in all rounds of data collection. Women earn significantly less than their male counterparts in all study areas. The lowest-income areas, Korogocho and Nyalenda, have a narrower gender gap in income, females in both areas earned about 62% of male income.

Table 2: *Household income, % earned by breadwinner, and food expenditure.*

Site	Round	Average Monthly HH income (KES)	Median Monthly HH income (KES)	Breadwinner income as % of HH income	Food expenditure as % of HH income
Korogocho	R5	7232	6500	92	77
	R6	8061	7200	93	67
	R7	7932	7200	92	74
	R8	7897	7000	94	71
Mukuru	R5	11702	10000	91	56
	R6	11951	10800	91	58
	R7	12492	11000	92	60
Viwandani	R5	9794	9500	93	60
	R6	11786	10000	90	49
	R7	10333	10000	90	58
	R8	12541	12000	93	57
Nyalenda	R5	13767	10000	95	68
	R6	10246	8000	93	57
	R7	8954	7792	93	77
Obunga	R5	12964	10500	93	62
	R6	11090	8400	90	72
	R7	9108	8000	90	66

Food Security and Nutrition

More households are reporting severe food insecurity over time in all areas, especially in the lowest income area of Korogocho, where severe food insecurity (according to HFIAS) increased from 45% in August 2012 to 64% in November 2013.

Dietary diversity is also declining over time, especially in Korogocho where the average number of food groups consumed per week (out of a possible 12) declined from 6.74 in August 2012 to 5.03 in November 2013.

A correlation between income and food insecurity was evident throughout all areas of study. We found that, overall, households in the lower income quintile reported less meals/day for children, lower dietary diversity, and more food insecurity.

Child Nutrition: Global acute malnutrition (GAM), which includes cases of severe (SAM) and moderate (MAM) malnutrition in children between 6 and 59 months old, is evident in all the areas of study. Especially in Obunga (Feb. 2013: 4.62%) and Nyalenda (Feb 2013: 2.53%). Further, the number of children at risk for malnutrition is increasing over time in the low-income areas of Korogocho and Nyalenda (See table 3).

Although the proportion (%) of GAM and children at risk for malnutrition seems low, it is important to take into account the absolute numbers of children living with malnutrition in these high-population areas (Figure 1). Household hunger appears to be an indicator of childhood malnutrition in our areas. We found that households reporting moderate and severe hunger also reported more cases of GAM and children at risk for malnutrition (Figure 2). The absolute numbers of children living in hungry households is also important to note (Figure 3).

Table 3: *Proportion (%) of children, between 6 and 59 months old, at risk or with severe (SAM) and moderate (MAM) acute malnutrition*

	Severe (SAM)				Moderate (MAM)				At Risk			
Area	**R5**	**R6**	**R7**	**R8**	**R5**	**R6**	**R7**	**R8**	**R5**	**R6**	**R7**	**R8**
Korogocho	0.56	0.55	1.08	0.52	1.68	1.94	1.36	1.29	8.94	9.14	15.72	11.08
Mukuru	0.00	0.28	0.30	-	0.76	0.85	0.91	-	11.74	11.33	6.06	-
Viwandani	1.07	0.43	0.38	0.00	1.60	0.86	0.76	1.89	15.51	11.16	15.97	12.58
Nyalenda	0.32	0.30	0.23	-	1.95	0.00	2.30	-	9.42	9.97	10.14	-
Obunga	2.48	0.81	0.92	-	3.31	0.41	3.69	-	20.11	6.91	6.77	-

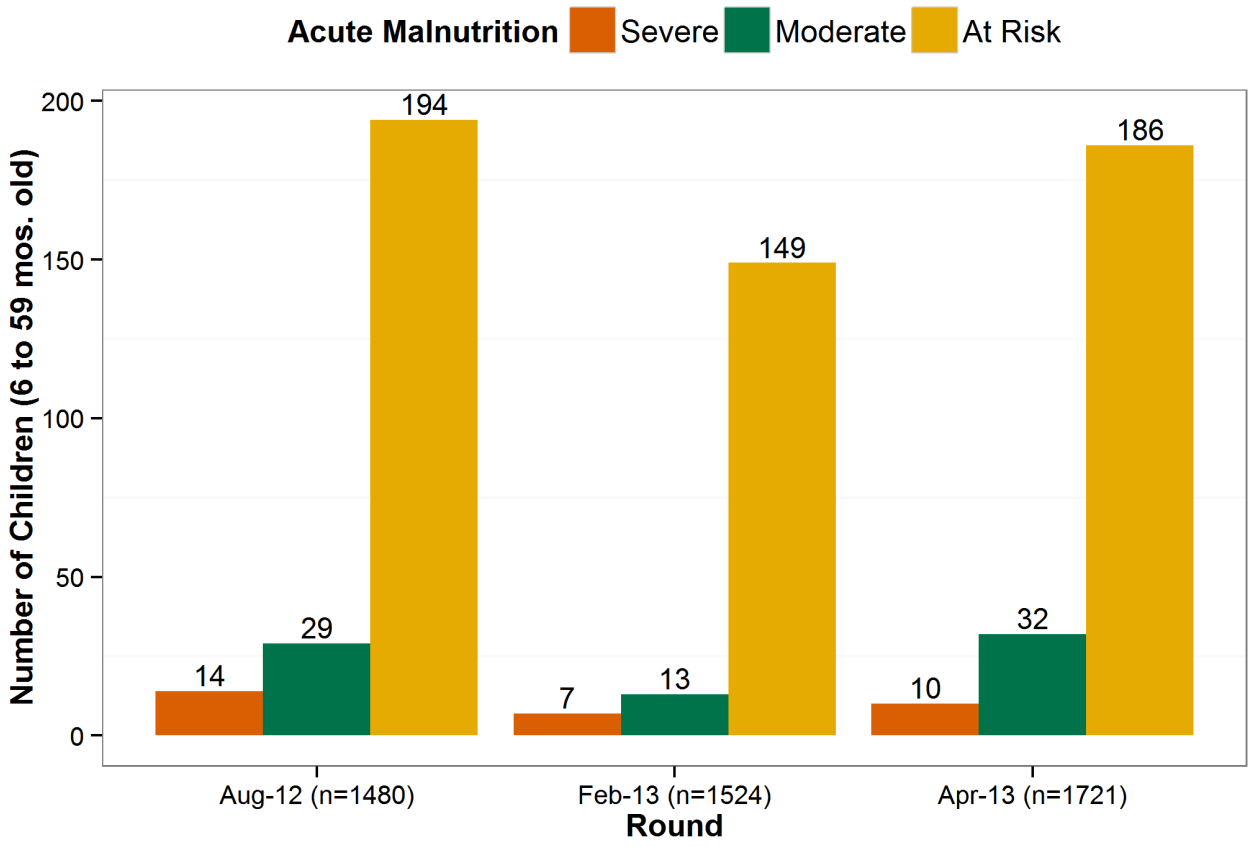

Figure 1. Number of children (6-59 months) at risk or with SAM and MAM.

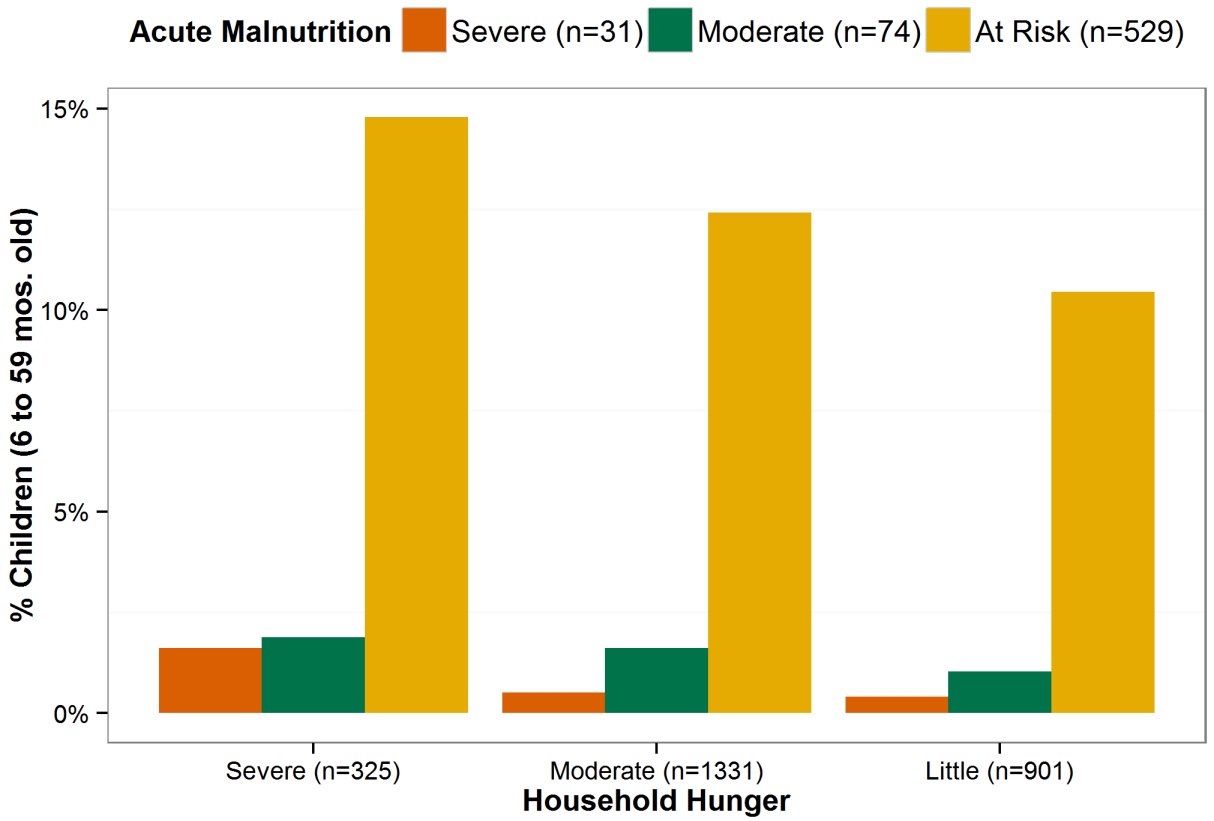

Figure 2. How does household hunger relate to child malnutrition?

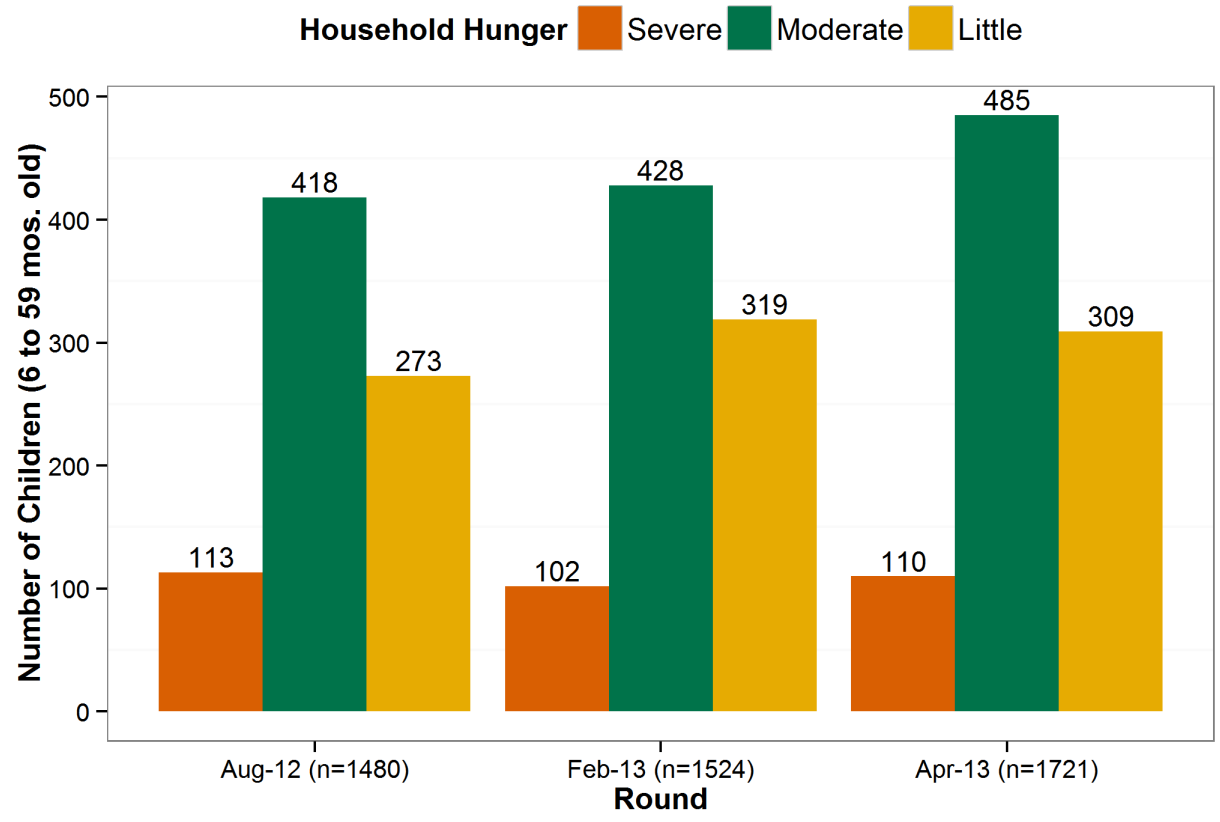

Figure 3. Number of children (6-59 months) living in households reporting hunger.

Water, Sanitation and Hygiene (WASH)

Close to 50% of households in the Nairobi study areas (Korogocho, Mukuru, and Viwandani) do not meet the minimum Sphere standard of 15-litres of water per person per day. The number of households that do meet this standard is declining in Nyalenda (Kisumu), Mukuru (Nairobi), and Viwandani (Nairobi). In fact, households in Viwandani that met this Sphere standard declined from 61% in August 2012 to 51% at the end of 2013.

Time taken to reach water source for all sites (3.28 minutes) are within the Sphere standards of a maximum 500 meters (approximately 6 minutes walking) and has remained unchanged over time.

Health and Health seeking behavior

There are potentially more health risks/illnesses in Kisumu as compared to Nairobi. 61% of all HH who reported being sick in the last 2 weeks are from the two Kisumu sites. These two areas also reported the largest proportion of HH with more than one person who was ill.

More people are seeking treatment in pharmacies/chemists than any other health institution. 88% of HHs sought treatment for reported illnesses, and out of these, 40% sought treatment in pharmacies/chemists. In Kisumu (Nyalenda and Obunga) more people (31% and 35% respectively) sought treatment in public hospitals. This is perhaps due to access and availability of care. Nyalenda and Obunga are close to public hospitals (Nyanza Provincial general hospital and the Kisumu sub-county hospital) hence more people would easily access them as opposed to HH's in Korogocho, Mukuru and Viwandani.

Personal Security

Perceptions of insecurity are increasing over time. More households are reporting fire, mugging, eviction and burglary in Nairobi over time. Security threats are constant in all areas. In Korogocho (Nairobi) for example, burglary increased from 15% to 21% between August 2012 and November 2013 while evictions increased from 4% to 18% and fires increased from 4% to 10% over the same period. In Viwandani, mugging increased from 42% to 54% while burglary increased from 32% to 36%.

While Korogocho (70.8%) and Mukuru (63%) mainly experienced mugging, Nyalenda (10%) and Obunga (7%) experienced mostly floods.

Perceptions of insecurity outside the home were highest in Korogocho, where 52% of respondents expressed feeling scared walking in the community. There is also a notable rise in the use of avoidance measures due to insecurity. In Mukuru for instance, 16% of households reported using avoidance measures in August 2012. This proportion increased to 20% in April 2013. In Nyalenda, Kisumu, the proportion increased from 13% to 18% during the same period.

Overall, the security situation seems to be deteriorating over time in Mukuru and Korogocho based on the number of those who felt scared in the community and those reporting mugging and burglary.

Coping strategies

There is an increase in the number of households pulling children out of school due to high school fees and other school related costs. On average 22% of households removed their children from school. In Korogocho, where the largest proportion of drop-outs was recorded, this proportion increased from 17% to 22% between August 2012 and November 2013.

In all areas, 46% of households had purchased food on credit. This proportion did not change much over time.

On average, 23% of households have taken a loan to buy food or other essential goods, with the majority being in Nyalenda (26%) and Obunga (31%). This has not changed significantly over time.

The number of coping strategies used did not change considerably over different rounds of data collection. Households on average used at least 2 out of the 11 coping strategies that they were asked. Viwandani area used the least number of strategies on average (1 coping strategy).

More...

Averages mask reality. In urban areas, due to high population density, averages often overlook the extent of how large the absolute numbers are. This is observed in the SAM and MAM calcuations. While 1.5-2% are lower rates than those found in rural areas, the absolute figures (due to the higher populations) are much higher.

We also see that lower income sections are faring much worse. For example, within the lowest income quintile, food consumption expenditure as a percentage of monthly household income is more than 100% (as compared to the average range of 60-70%).

Table of Key Indicators

The following table lists those indicators which have shown to be the most sensitive or also illustrate the level of deprivation faced by the household. This draft list of indicators provides guidance to a framework from which to develop thresholds and action triggers.

KEY INDICATORS

		Nairobi				Kisumu		
		Aug-12	Feb-13	Apr-13	Nov-13*	Aug-12	Feb-13	Apr-13
LIVELIHOODS	Median Monthly Household income (KSH)	9576	10599	10253	10219	13366	10668	9031
	Food expenditure as a percent of income (%)	64	58	64	65	64	64	72
	Percent of HHs who depend on casual labor as a source of livelihood	53	46	49	48	38	38	42
	Percent of female bread winners	26	27	29	34	36	36	39
	Proportion of female headed households (%)	21	26	25	31	42	26	18
FOOD SECURITY AND NUTRITION	Proportion of HHs classified as severely food insecure by HFIAS (%)	47	49	45	43	51	51	49
	Dietary Diversity (Average number of food groups consumed in 4-week recall period)	6	6	6	5	5	4	5
	Proportion of HHs classified as moderate and severely food insecure by HHS (%)	29	34	28	33	35	36	31
	Number of meals taken by children per day	3	3	3	3	3	3	3
	Percent of children (6-59 months) reporting Severe Acute Malnutrition (SAM)	0.7	0.5	0.7	0.5	1.4	0.6	0.7
	Percent of children (6-59 months) reporting Moderate Acute Malnutrition (MAM)	1.9	2.0	1.6	1.5	3.3	0.6	3.3
	Percent of children (6-59 months) at risk of Acute Malnutrition	7.1	7.0	7.6	11.83	11.0	5.1	6.0
WASH	Average quantity of water used per person per day (liters)	18	19	16	19	31	29	22
	Proportion (%) of HHs accessing 15 liters/ person/day of water (SPHERE minimum standard)	53	59	50	60	81	76	74
	Percent who wash their hands before eating	34	32	32	41	81	59	53
HEALTH	Prevalence of illness in the last 2 weeks	43	43	43	42	59	68	57
PERSONAL SECURITY	Percent who experienced at least 1 shock in the last 4 weeks[2]	9	11	16	17	18	20	28
	Proportion who felt unsafe/scared in the community in the last 4 weeks	67	62	62	64	71	65	72
	Percent of those who have used avoidance measures due to insecurity	58	55	57	59	69	55	60
	Percent of those who rated security as bad and very bad	45	43	40	44	51	53	61
COPING	Proportion (%) who had to remove their children from school due to lack of school fees	14	13	18	17	40	34	38

** Round 8 (Nov. 2013) includes only Korogocho and Viwandani.*

[2] ***Shocks include:*** *Fire, floods, mugging, burglary, eviction, property destruction, rape*

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