The Multidimensionality of Child Poverty in Western Darfur: Are disabled children poorer?

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WORK IN PROGRESS, comments welcome

Introduction

✓ Research on disability and poverty in CAFS is limited and narrow

✓ Few studies offer a complex analysis of multidimensional poverty

✓ More research needed to:

- understand circumstances of disabled people and other vulnerable groups

- better tailor policies and programmes

✓ Policy makers acknowledge the importance of looking at the evidence

Objective

- Objective of the donor and NGO: Why Children do not go to school?

- Other objectives of the research:

- Estimating prevalence of disability

- Identifying needs & opportunities of vulnerable children

- Understand difficulties, social barriers, prejudice
  and stigmatization of persons with disabilities

- Defining guidelines to design policies

- Operationalizing the Capability Approach of A. Sen and M. Nussbaum

- Conceiving a comprehensive methodology that can be replicated

Sudan Background

Western Darfur, 2008

✓Low economic and health indicators (2009)

- GNI per capita: 1,220 USD

- HDI: 0.379 154 out of 169 countries

- Poverty headcount ratio: NA

- Life expectancy at birth: 58,5 years

- Infant mortality rate: 69.3 (per 1000)

- Under 5 mortality rate: 108 (per 1000)

- Maternal mortality ratio: 750 (per 100,000)

✓ Poor access to health care, education, safe drinking water and income

✓Conflict since 2003

- Numerous Security Council resolutions to enforce stability in the region since 2004 with little improvement for the security of the civil population

- The population has been subjected to forced displacement and armed conflict, with children being most at risk of violence in similar armed conflict situations despite the small force of African Union and United Nations (UNAMID) peacekeepers in the region to protect civilians

Methodology (i): screening for disability

Screening for disability (including mental distress):

- Various frameworks used to elaborate the tools (ICF, CA, HSCL-25)
- A need to include a culture sensitive perspective
- Reliability test in Darfur survey disability screening 35 items (Cronbach alpha 0.93)

4 other modules questionnaire:
- Household characteristics (demographic and socioeconomic background of members; 32Q)
- Health situation (3Q access to health, quality of services, expenditure..)
- Education situation (66Q: access to education, barriers, quality education)
- Employment situation (19Q.: activities, unemployment)
- Income (5Q.: earnings, donations, loans)

Methodology (ii): Study design

- HH survey using the capability approach as a framework

- Fieldwork was conducted between October 2008 and March 2009

- We interview all 11,089 HH (50,261 individuals) in all villages of Um Kher and 16 villages in other districts as a pilot

- Interview on disability in 10% of HH randomly selected

- IN these HH, Face-to-face interviews were conducted with 1126 children (5-18) on various dimensions of poverty (education, health, nutrition, employment, livelihoods, social participation, care, love and mistreatment).

Methodology (iii): Alkire-Foster multidimensional poverty index

Dual cutoff approach:

1. On single dimension (d) of poverty (k cutoffs)
2. Across dimensions of poverty (one cutoff)

Methodology incorporates two key features:
1. it allows us to preserve information at the single dimension level and,
2. it provides flexibility through the choice of the second cutoff

Good for definition of policy:
- By increasing the cutoff we can zoom in to analyze a smaller group with a more multiplicity of deprivations,
- alternatively we can consider a wider proportion of the population by decreasing the cutoff

Measures :
- proportion of population identified as poor in the data
- Breadth of poverty: <u>average deprivation share across the poor</u> Mo, i.e. the average proportion of the d dimensions that those identified as poor are deprived in
- Intensity of poverty: <u>Adjusted head-count ratio H,</u> total number of all the dimensions on which poor people are deprived, divided into its maximum possible value

Methodology (iv): Selecting dimensions and cutoffs

Table 1: Dimensions of Children's Deprivation

| Dimensions	Questions	Deprived if...
1) Health access	Can you get medical care? Where would you go in case of accident, injury or health problem?	No access to doctor, clinic, pharmacy or NGO
2) Nutrition	How often do you get enough to eat?	Frequently or always not enough food
3) Access to clean water	Do you have access to a safe drinking water source? If yes, how?	Well or surface water
4) Education	What kind of Education did you receive or are you receiving	No education
5) Child/youth labor	How many hours per day do you work (including chores)?	More than 2 hours (under 12 years old) or more than 4 hours (12 years or over)
6) Material Wealth-Income	Income per person per day calculated from total household income	Less than $1.25
7) Land	What is the size of Household Land (in mokhammas)?	Less than 3 Mokhammas
8) Animals	Does the household own animals? How many?	No cows, donkeys, camels or horses and less than 5 sheep or goat
9) Housing	Number of people per Tukul in the household calculated?	More than three people per Tukul
10) Social Participation	Are you invited to participate in community events such as ceremonies?	No
11) Care	Who takes care of you? Who do you go to if you need support or help?	Neither question answered with mother of father
12) Love	Who do you love? Who do you feel loves you?	Neither question answered with mother or father
13) Mistreatment	Has anyone ever mistreated you?	Yes
14) Psychological well-being	Based on 8 questions (see appendix A for details)	Severe or very severe

proportion of children deprived in each dimension by age group
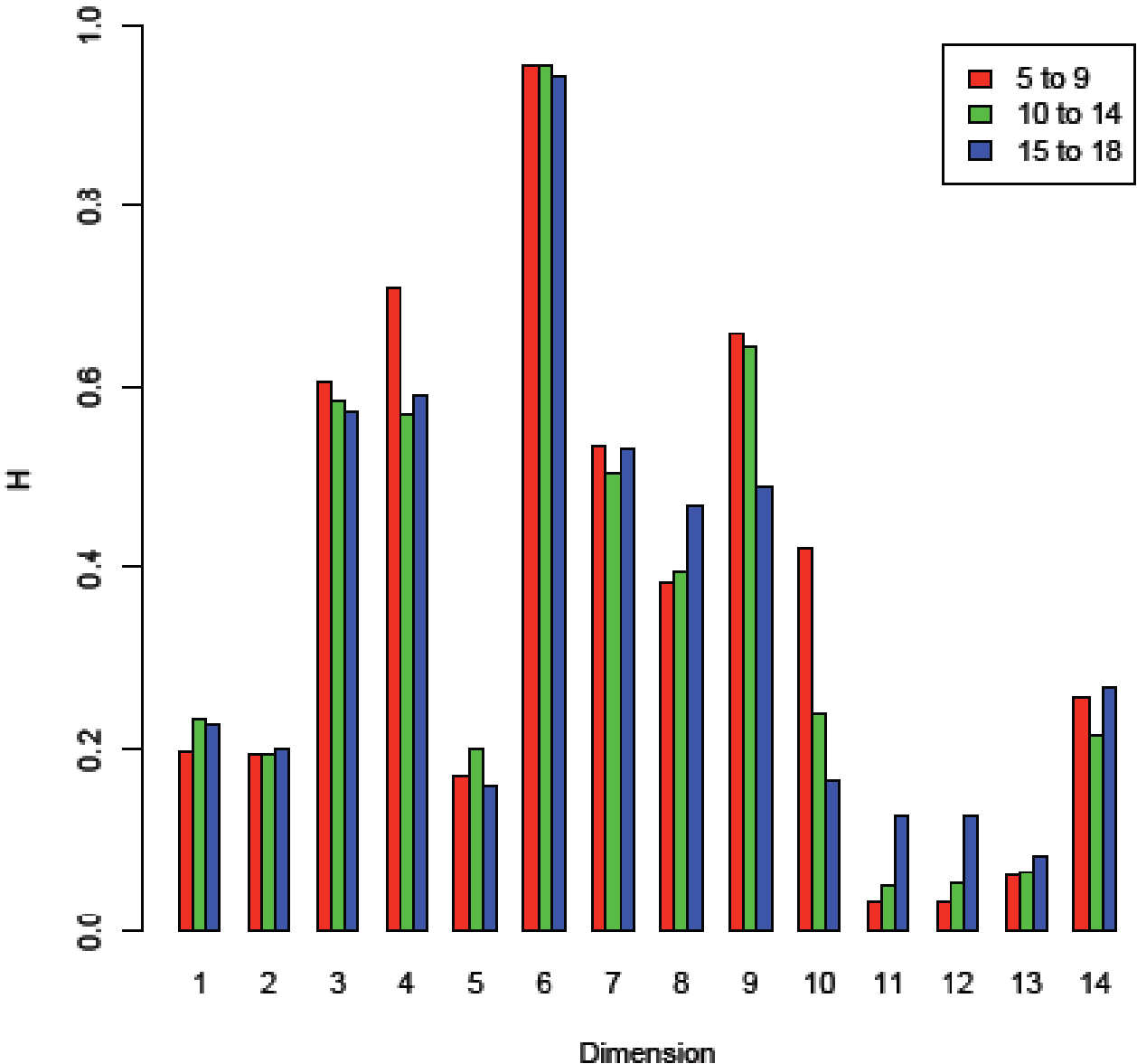
proportion of children deprived in each dimension by gender
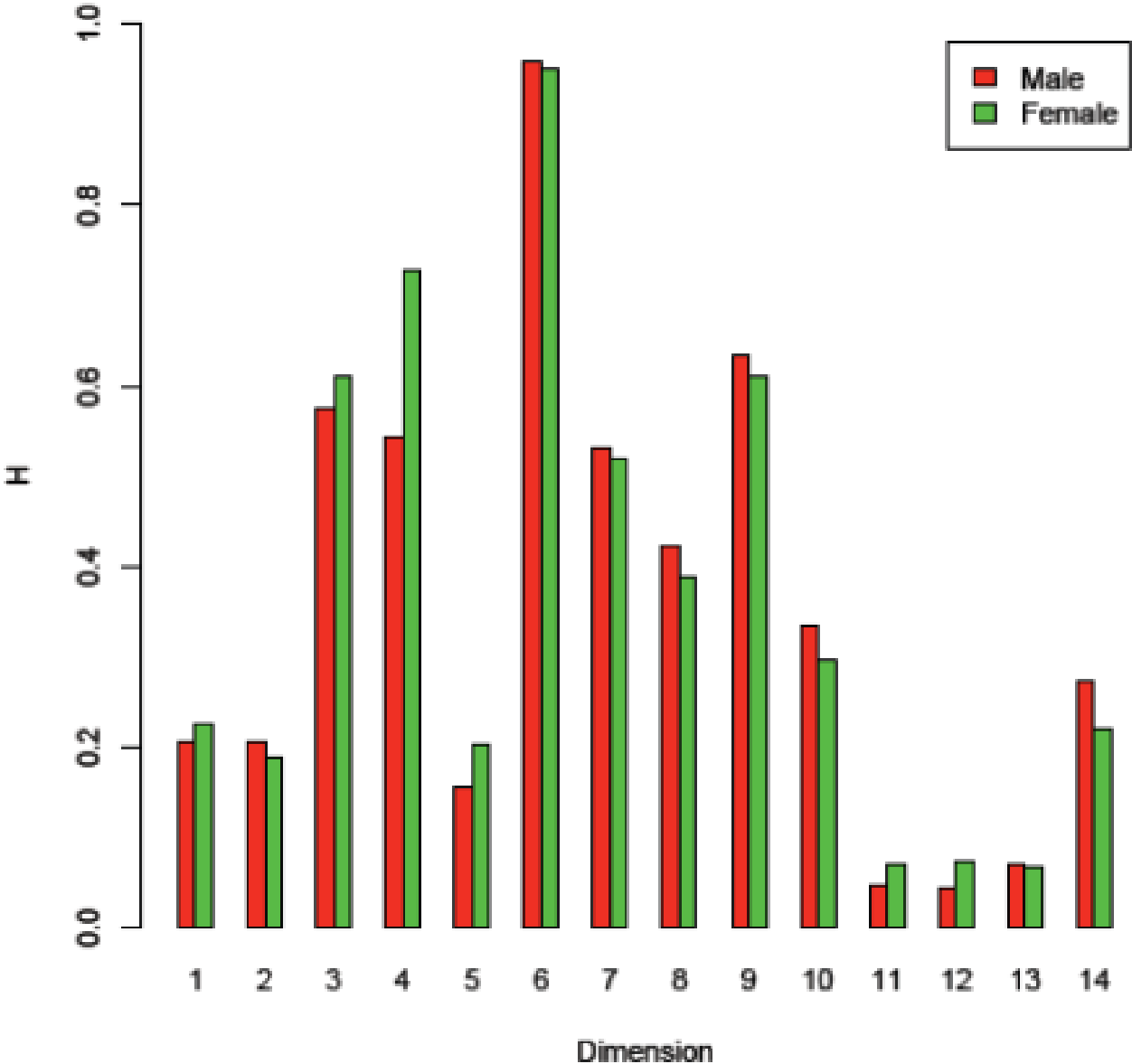
proportion of children deprived in each dimension by disability status
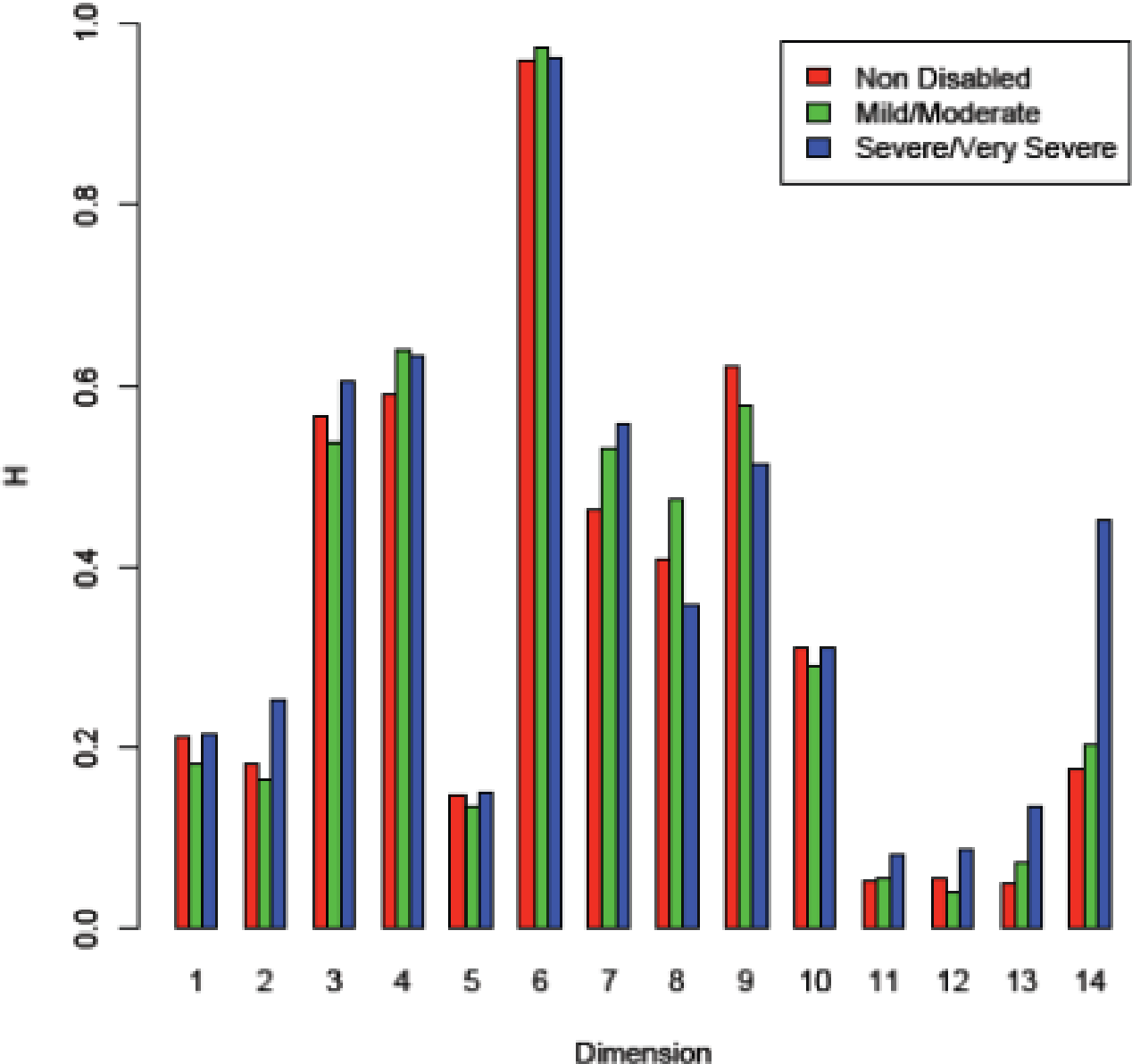
proportion of children deprived in each dimension by age, sex and disability severity

Dimensions	5 to 9				10 to 14				15 to 18			
	None/Mild/Moderate		Severe/Very Severe		None/Mild/Moderate		Severe/Very Severe		None/Mild/Moderate		Severe/Very Severe	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
Health Access	0.161	0.191	0.258	0.190	0.250	0.223	0.160	0.204	0.197	0.238	0.130	0.333
Nutrition	0.176	0.181	0.179	0.254	0.211	0.131	0.255	0.320	0.208	0.190	0.217	0.313
Water	0.529	0.600	0.701	0.508	0.578	0.554	0.588	0.580	0.444	0.583	0.565	0.677
Education	0.578	0.782	0.657	0.774	0.416	0.615	0.420	0.680	0.333	0.705	0.381	0.750
Child/youth labor	0.131	0.167	0.149	0.190	0.164	0.160	0.137	0.160	0.069	0.107	0.087	0.125
Material Wealth	0.973	0.944	0.985	0.984	0.969	0.977	0.922	1.000	0.986	0.952	0.870	0.938
Land	0.462	0.477	0.657	0.619	0.477	0.480	0.431	0.500	0.583	0.476	0.435	0.625
Animals	0.425	0.394	0.299	0.286	0.461	0.389	0.333	0.360	0.542	0.452	0.652	0.438
Housing	0.647	0.625	0.522	0.540	0.641	0.634	0.588	0.480	0.556	0.417	0.304	0.531
Social Participation	0.454	0.404	0.323	0.435	0.244	0.203	0.280	0.229	0.125	0.110	0.261	0.250
Care	0.027	0.037	0.030	0.111	0.094	0.029	0.059	0.082	0.069	0.155	0.130	0.125
Love	0.023	0.033	0.045	0.127	0.071	0.040	0.039	0.104	0.069	0.155	0.130	0.125
Mistreatment	0.055	0.038	0.106	0.190	0.064	0.046	0.157	0.083	0.083	0.083	0.217	0.063
Psycological Wellbeing	0.190	0.190	0.493	0.476	0.195	0.114	0.471	0.400	0.278	0.190	0.478	0.344

Out of 14 dimensions, girls are more deprived than boys in 7 dimensions, but children with severe disability are more deprived in 10 dimensions, 5 for girls and 5 for boys

Multidimensional poverty measures for children in Darfur by disability severity

	H			A			M_0		
Cutoff	Non Disabled	Moderate Disability	Severe Disability	Non Disabled	Moderate Disability	Severe Disability	Non Disabled	Moderate Disability	Severe Disability
1	1.000	1.000	1.000	0.342	0.350	0.378	0.342	0.350	0.378
2	0.983	0.996	0.989	0.346	0.351	0.381	0.340	0.349	0.377
3	0.923	0.970	0.955	0.360	0.356	0.389	0.332	0.346	0.372
4	0.790	0.810	0.851	0.384	0.384	0.411	0.303	0.311	0.350
5	0.568	0.574	0.662	0.422	0.425	0.447	0.240	0.244	0.296
6	0.304	0.316	0.431	0.479	0.480	0.494	0.146	0.152	0.213
7	0.146	0.135	0.245	0.534	0.549	0.544	0.078	0.074	0.134
8	0.052	0.063	0.119	0.594	0.605	0.592	0.031	0.038	0.070
9	0.015	0.025	0.033	0.651	0.655	0.643	0.010	0.017	0.022
10	0.002	0.004	0.000	0.714	0.714	NA	0.001	0.003	0.000
11	0.000	0.000	0.000	NA	NA	NA	0.000	0.000	0.000
12	0.000	0.000	0.000	NA	NA	NA	0.000	0.000	0.000
13	0.000	0.000	0.000	NA	NA	NA	0.000	0.000	0.000
14	0.000	0.000	0.000	NA	NA	NA	0.000	0.000	0.000

Difference in poverty intensity increases for higher values of the cutoff: among the most deprived children, the severely disabled are more worse off than the non disabled children.

Multidimensional poverty measures for children in Darfur by disability type

	H					A					M_0				
Cutoff	Locomotor	Sensory	Learning	Behavioural and Mental	Multiple	Locomotor	Sensory	Learning	Behavioural and Mental	Multiple	Locomotor	Sensory	Learning	Behavioural and Mental	Multiple
1	1.000	1.000	1.000	1.000	1.000	0.369	0.355	0.330	0.373	0.381	0.369	0.355	0.330	0.373	0.381
2	0.967	1.000	0.991	0.994	0.993	0.379	0.355	0.332	0.374	0.383	0.367	0.355	0.329	0.372	0.381
3	0.967	0.946	0.954	0.971	0.961	0.379	0.367	0.340	0.380	0.392	0.367	0.347	0.324	0.369	0.376
4	0.767	0.811	0.787	0.869	0.837	0.422	0.393	0.366	0.399	0.418	0.324	0.319	0.288	0.347	0.350
5	0.633	0.595	0.546	0.623	0.673	0.451	0.432	0.402	0.444	0.450	0.286	0.257	0.220	0.277	0.303
6	0.333	0.324	0.250	0.417	0.451	0.536	0.494	0.455	0.487	0.496	0.179	0.160	0.114	0.203	0.224
7	0.267	0.189	0.074	0.217	0.242	0.563	0.541	0.518	0.541	0.554	0.150	0.102	0.038	0.118	0.134
8	0.167	0.108	0.019	0.091	0.131	0.600	0.571	0.571	0.598	0.600	0.100	0.062	0.011	0.055	0.078
9	0.067	0.000	0.000	0.034	0.046	0.643	NA	NA	0.643	0.653	0.043	0.000	0.000	0.022	0.030
10	0.000	0.000	0.000	0.000	0.007	NA	NA	NA	NA	0.714	0.000	0.000	0.000	0.000	0.005
11	0.000	0.000	0.000	0.000	0.000	NA	NA	NA	NA	NA	0.000	0.000	0.000	0.000	0.000
12	0.000	0.000	0.000	0.000	0.000	NA	NA	NA	NA	NA	0.000	0.000	0.000	0.000	0.000
13	0.000	0.000	0.000	0.000	0.000	NA	NA	NA	NA	NA	0.000	0.000	0.000	0.000	0.000
14	0.000	0.000	0.000	0.000	0.000	NA	NA	NA	NA	NA	0.000	0.000	0.000	0.000	0.000

Children with multiple or associated disability are the most deprived, and that those with learning difficulties are the least deprived, whatever value of k we consider.

Main limitation of the study

Comparisons are made across different dimensions without any weight of dimension (needs to be asked to respondents)

Further analysis may be requested to have the comparison on single domain

The choice of the dimensions and of the cutoffs remains subjective (sensitivity analysis)

Conclusion

- Poverty levels in Darfur are strikingly high, with virtually all children, girls and boys, disabled and non-disabled, and of all age groups being deprived in at least one of the fourteenth dimensions identified.

- Disabled children, particularly disabled girls, to experience highest level, breadth and intensity of poverty.

- Similar results in another conflict zone: Afghanistan (Trani et al., forthcoming)

- Children with disability are particularly vulnerable in disaster situations and often excluded from mainstream humanitarian programs.

- Working with local communities might be a way to access the most vulnerable groups, particularly children, by associating them to the delivery of services in out of reach areas.

- Further research is needed into the identification of mechanisms and processes to build adapted policies to alleviate poverty.

Thank you!

Any Question?

Methodology

Dual Cutoff Approach

Developed by Alkire and Foster (2008)

Two Different forms of cutoff

1. On single dimensions (k cutoffs)
2. Across dimensions (one cutoff)

Common Approaches of the frameworks for measuring poverty

1. **Identification** (who is poor?)

2. **Aggregation** (data are combined into an overall indicator of multidimensional poverty)

Considerably less attention has been given to the identification step, which is an important component of a poverty methodology

0. **Selecting/choosing dimensions/domains**

Identification step

three main approaches to identify the poor

1. **unidimensional** approach: the multiple indicators of wellbeing are combined into a single aggregate variable. A person is then identified as poor when the variable falls below a certain cutoff level

2. **union** approach, which regards someone who is deprived in a single dimension as poor in the multidimensional sense

3. **intersection** method, which requires a person to be deprived in all dimensions before being identified as poor

Identification step in the Dual-cutoff approach

Identifying a poor person using a two-step method

1.Using the single dimension cutoff to distinguish a deprived individual (in a single dimension)

2.Using the across-dimension cutoff to determine whether that individual is poor or not

Identification step in the Dual-cutoff approach

Data as a $n_x k$ matrix with generic element y_{ij}, k cutoffs must be determined

- If the variables are dichotomic, the choice of a threshold is natural

- If the variables are ordinal or cardinal, the choice is subjective

Identification step in the Dual-cutoff approach

An individual is identified as "poor" if he is deprived in more than k dimensions.

k is another cutoff that must be (subjectively) chosen

Aggregation step in the Dual-cutoff approach

Matrix G^0 having generic entry

$$g^0_{ij} = 1 \text{ if } y_{ij} < c_j$$

$$g^0_{ij} = 0 \text{ otherwise}$$

Aggregation step in the Dual-cutoff approach

$$M_0 = \sum_{i=1}^{n} \sum_{j=1}^{k} g_{ij}^{0*} / nk$$

$g_{ij}^{0*} = g_{ij}^{0}$ If the individual is poor

$g_{ij}^{0*} = 0$ If the individual is not poor

Two aggregation presented

M_0 index - proportion of deprivations experienced by poor people

Headcount ratio H - proportion of poor people *(more intuitive but it does not satisfy some appealing properties)*