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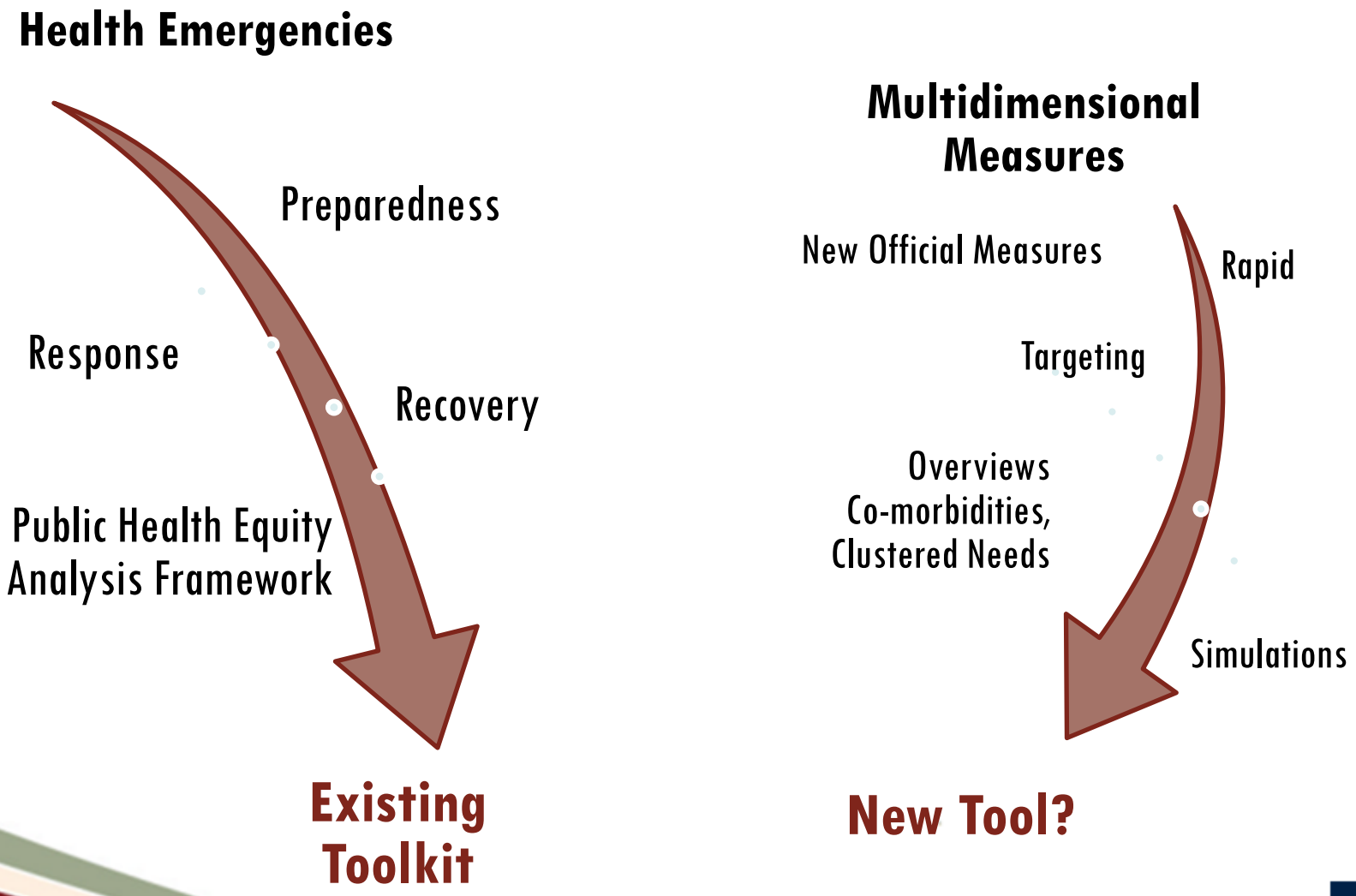
Using the Multidimensional Poverty Index (MPI) for preparedness, response and recovery to health emergencies, including COVID-19: An Overview

Sabina Alkire

Exploring a new synergy in the shadow of COVID-19



The Context: Health Emergencies

An **emergency** is a type of event or imminent threat that produces or has the potential to produce a range of consequences, and which requires coordinated action, usually urgent and often non-routine (WHO 2020b).

A **health emergency**: when the event or imminent threat directly relates to health,

Key **task** of public health research and policy is to anticipate and mitigate the detrimental impacts of health emergencies on individuals, households, societies, and economies.

Can Multidimensional measures add value?

Three points of contact:

Preparedness is the knowledge and capacities . . .to effectively **anticipate**, respond to and recover from the impacts of likely, imminent or current disasters (WHO, 2020). This comprises coordination . . . and can involve multisectoral preventive actions from the community . . .to the global level (WHO 2015, 2017).

Response is the provision of emergency services and public assistance during or **immediately after** a disaster in order to save lives, reduce health impacts, ensure public safety and meet the basic subsistence needs of the people affected (WHO, 2020).

Recovery the **restoring or improving** of livelihoods and health, as well as economic, physical, social, cultural and environmental assets, systems and activities, of a **disaster-affected** community or society, aligning with the principles of sustainable development and 'build back better', to avoid or reduce future disaster risk (WHO, 2020).

Can Multidimensional measures add value?

Identifying the Disadvantaged: the WHO Priority Public Health Conditions Equity Analysis Framework:

The WHO Priority Public Health Conditions Equity Analysis Framework points out five analyses that are needed to illuminate how some people are at risk of carrying the greatest burden of deprivations in a health emergency.

1) **Socioeconomic context and position**
2) **Differential exposure to risks**
3) **Differential vulnerability due to clustering of conditions/co-morbidities**
4) **Differential health outcomes – more exposed and vulnerable to risk factors**
5) **Differential consequences – on health and other dimensions**

Can Multidimensional measures add value

~ by incorporating relevant indicators

~ and showing patterns of overlap?

MPI and MVIs can be used: A Preview

Preparedness – to identify people with higher exposure / vulnerability; the poorest or those with particular deprivation bundles.

Response – to rapidly identify and target groups requiring special protection and support; show interlinkages across deprivations and risks for the same persons; inform policies.

Recovery – to track who has been most adversely affected, and how (by indicators) before, during, and after a health emergency; to inform inclusive and equitable recovery policies.

What's new?

~ A **Birdseye view** of multiple overlapping deprivations
~ **Disaggregation** to identify the poorest groups
~ **Indicator detail** to shape policy responses precisely
~ **Flexibility** – to add indicators or analyse alongside other datasets

Introducing Multidimensional Measures

The counting-based Multidimensional Measures presented here add value in a very specific way:

They show the joint distribution of deprivations.
(how deprivations overlap or cluster for each person)

In other words, they start with a Person/Household, and create a profile that identifies the multiple problems that are affecting that household.

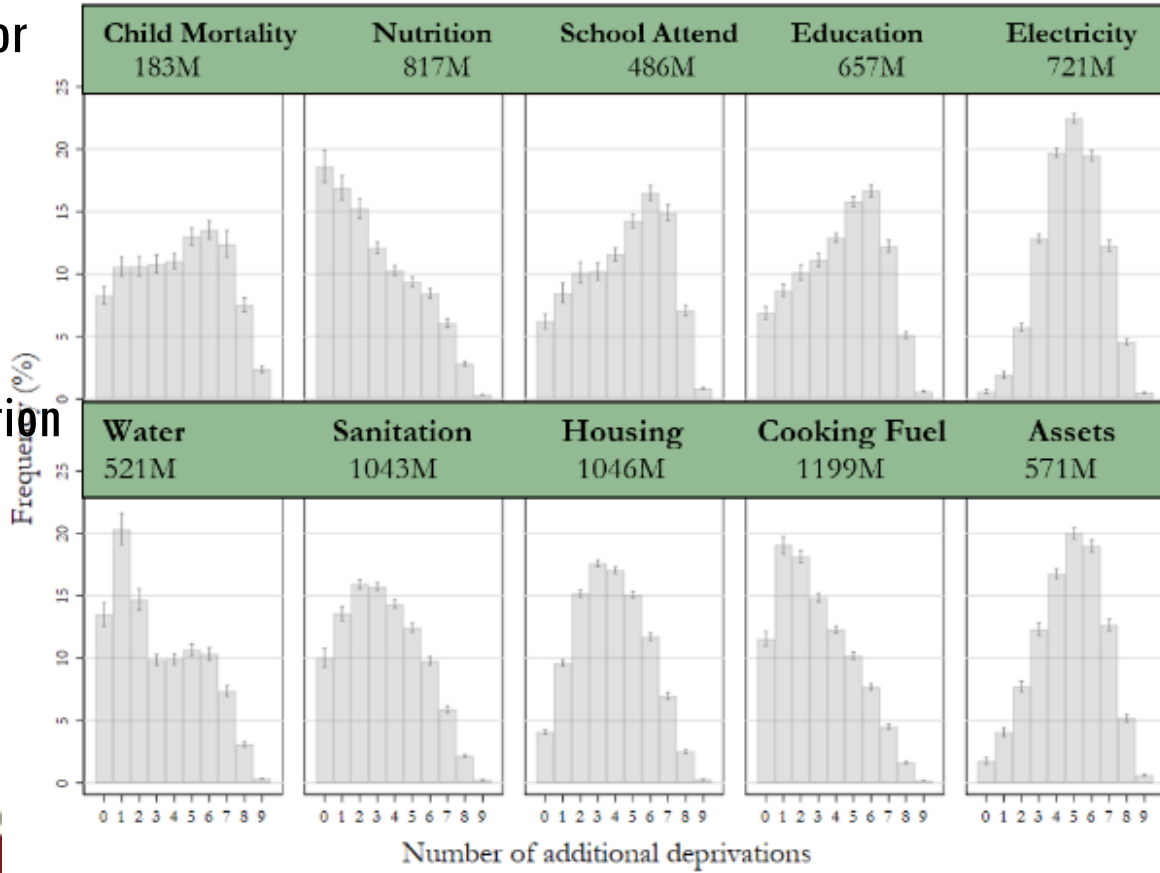
co-morbidities *risk factors* *deprivations* *vulnerabilities*

Poverty is Multidimensional
~ Yet the interlinkages are incredible ~

Across ten indicators of global MPI

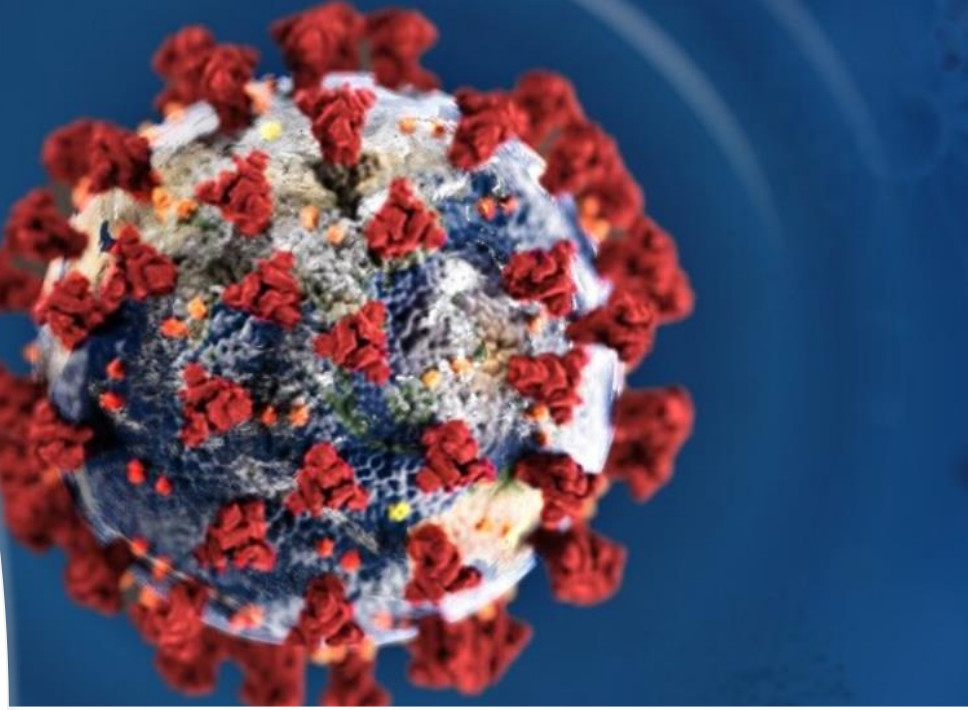
- Around 4 billion of the 5.7 billion people covered have at least one deprivation (72%). On average, they are deprived in 5-6 indicators simultaneously.

- between 81% and 99% of the poor people who are deprived that indicator experience one or more additional deprivations.
- E.g. 99% of those deprived in electricity have 1+ other deprivation



Core question: How to use MPI and MVI data during & after Covid-19+?

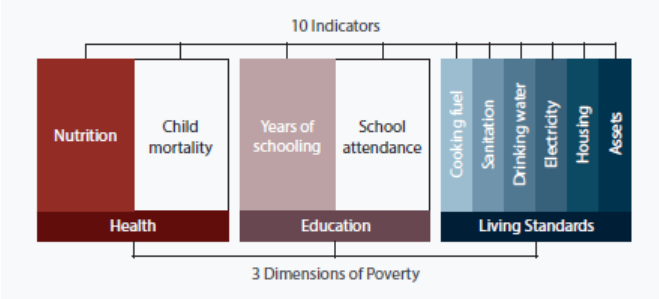
- For many, Covid-19 has been a shocking exposure to a new threat
- For the MPI poor, it is another addition to their already extensive deprivation load.
- How can MPI-MVI info on deprivations inform health emergency responses?



How to compute an MPI (MVI)
Multidimensional Poverty Index (Vulnerability)

1. Build a Deprivation Profile for each person or household across a set of indicators

Example: indicators of global MPI *(shaded boxes = deprived; white = not deprived)*



2. Sum up their weighted deprivations to create a deprivation score:

This deprivation score is $1/6 + 1/6 + 6(1/18) = \mathbf{2/3}$

3. People are poor if they are deprived in a critical mass (here: at least 1/3).

Here, $\mathbf{2/3} \geq \mathbf{1/3}$, so the person is identified as poor because their deprivation score is at least as high as the poverty cutoff of 1/3.

4. The MPI takes this formulae

$$\mathbf{MPI = H \times A}$$

H "Incidence"= Headcount ratio of those identified as poor

A "Intensity"= Average deprivation score among all poor people

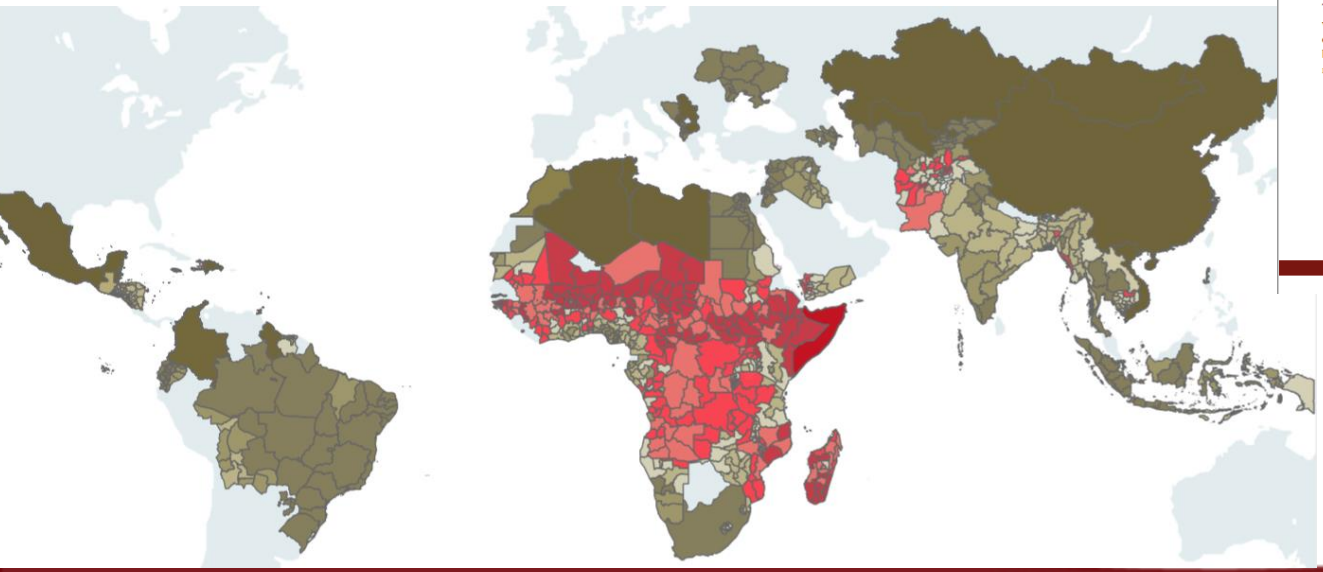
Alkire & Foster JPubE 2011; Alkire Foster Seth Santos Roche & Ballon 2015

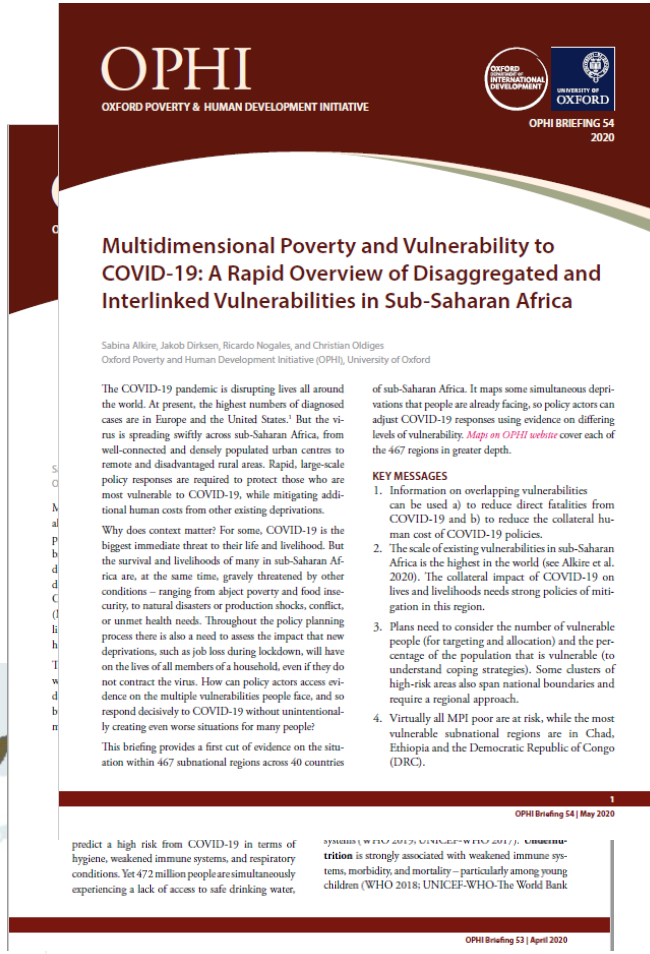
COVID-19 and the global MPI 2020

The global MPI 2020 covered 5.9 billion people in 107 countries, Disaggregated by age, rural/ urban, and over 1200 subnational regions.

1.3 billion people were MPI poor.

65 of 75 countries/5B people had reduced MPI





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2020

Multidimensional Poverty and Vulnerability to COVID-19: A Rapid Overview of Disaggregated and Interlinked Vulnerabilities in Sub-Saharan Africa

Sabina Alkire, Jakob Dirksen, Ricardo Nogales, and Christian Oldiges
Oxford Poverty and Human Development Initiative (OPHI), University of Oxford

The COVID-19 pandemic is disrupting lives all around the world. At present, the highest numbers of diagnosed cases are in Europe and the United States.[1] But the virus is spreading swiftly across sub-Saharan Africa, from well-connected and densely populated urban centres to remote and disadvantaged rural areas. Rapid, large-scale policy responses are required to protect those who are most vulnerable to COVID-19, while mitigating additional human costs from other existing deprivations.

Why does context matter? For some, COVID-19 is the biggest immediate threat to their life and livelihood. But the survival and livelihoods of many in sub-Saharan Africa are, at the same time, gravely threatened by other conditions – ranging from abject poverty and food insecurity, to natural disasters or production shocks, conflict, or unmet health needs. Throughout the policy planning process there is also a need to assess the impact that new deprivations, such as job loss during lockdown, will have on the lives of all members of a household, even if they do not contract the virus. How can policy actors access evidence on the multiple vulnerabilities people face, and so respond decisively to COVID-19 without unintentionally creating even worse situations for many people?

This briefing provides a first cut of evidence on the situation within 467 subnational regions across 40 countries of sub-Saharan Africa. It maps some simultaneous deprivations that people are already facing, so policy actors can adjust COVID-19 responses using evidence on differing levels of vulnerability. *Maps on OPHI website* cover each of the 467 regions in greater depth.

KEY MESSAGES

1. Information on overlapping vulnerabilities can be used a) to reduce direct fatalities from COVID-19 and b) to reduce the collateral human cost of COVID-19 policies.
2. The scale of existing vulnerabilities in sub-Saharan Africa is the highest in the world (see Alkire et al. 2020). The collateral impact of COVID-19 on lives and livelihoods needs strong policies of mitigation in this region.
3. Plans need to consider the number of vulnerable people (for targeting and allocation) and the percentage of the population that is vulnerable (to understand coping strategies). Some clusters of high-risk areas also span national boundaries and require a regional approach.
4. Virtually all MPI poor are at risk, while the most vulnerable subnational regions are in Chad, Ethiopia and the Democratic Republic of Congo (DRC).

predict a high risk from COVID-19 in terms of hygiene, weakened immune systems, and respiratory conditions. Yet 472 million people are simultaneously experiencing a lack of access to safe drinking water, **trition** is strongly associated with weakened immune systems, morbidity, and mortality – particularly among young children (WHO 2018; UNICEF-WHO-The World Bank

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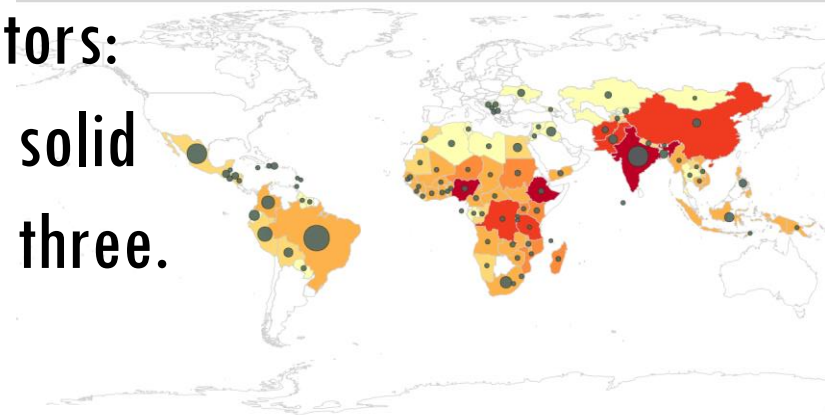
Some ways to use MPIs to inform responses:

1. Use existing MPIs with relevant indicators
   A. Disaggregate to see who was already poorest pre-emergency
   B. Explore combinations of subsets of indicators relevant to the emergency (Example: Global MPI)
   C. Add additional Indicators (Example: Global MPI)
2. Create MVIs in one of two ways
   A. Augment the indicators of existing MPIs with emergency-related variables (Ex: Honduras, Maldives)
   B. Construct new MVIs using variables relevant to the health emergency (Example: Iraq)
3. Simulate possible effects of health emergencies (Example: Afghanistan)
   A. Choose indicators that may have been effected by the pandemic (food security, schooling)
   B. Simulate additional deprivations in the microdataset at the individual or household level.
4. Merge / link MPIs or MVIs with other datasets (Example: Colombia)
   A. Institutions (health clinics)
   B. Other vulnerabilities (health records)

COVID-19 re-analysis of global MPI data

Rapid COVID-19 analyses of 3 risk factors: undernutrition, unsafe drinking water, and solid cooking fuel. 3.6B have one; 435M have all three.

Figure 2. Number of people who are MPI poor and are at high risk from COVID-19 (red) with number of COVID-19 deaths (dark green)



ure 3. High-risk persons (in millions) and their additional deprivations

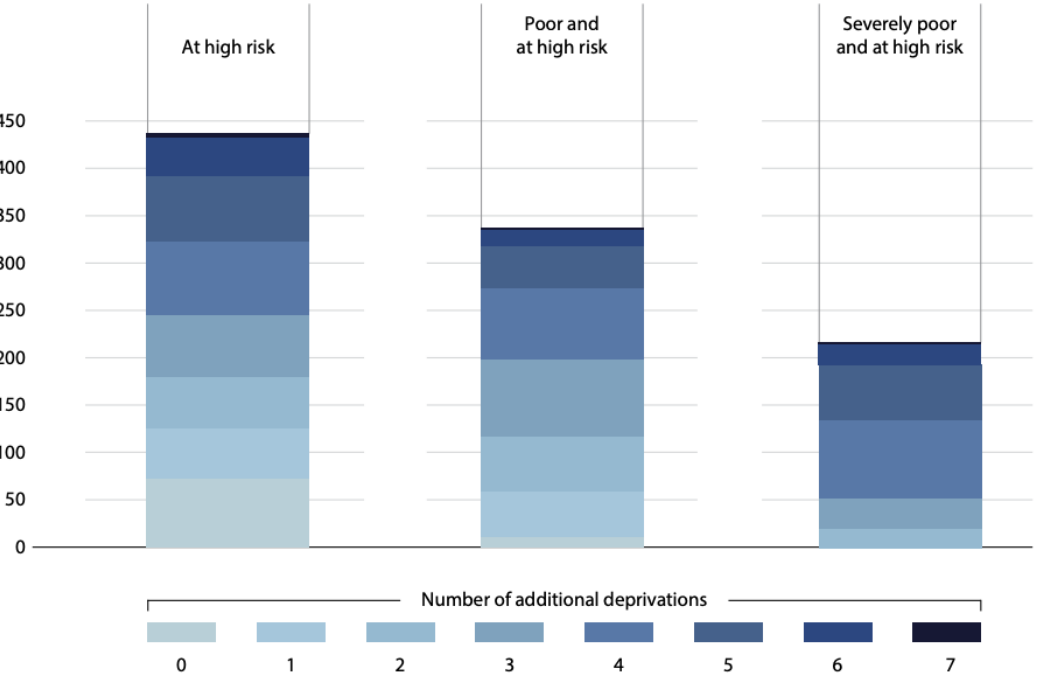
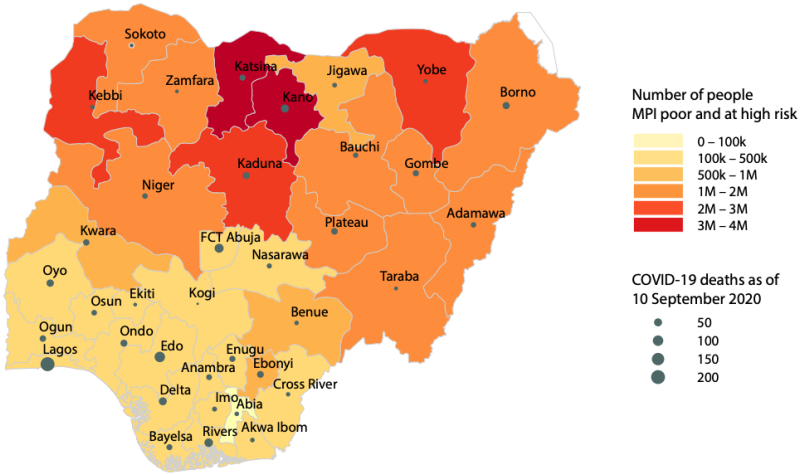


Figure 4. Nigerian states: Number of people who are MPI poor and are at high risk from COVID-19 with COVID-19 cases (confirmed infections)



The map is constructed by Christian Oldiges using MPI data computed by Alkire, Kanagaratnam, and Suppa (2020) based on Nigeria Demographic a Health Survey 2018.

The mapping style is inspired by Ayush Patel with underlying shape-file from the Demographic and Health Surveys Program (2020).

COVID-19 data is from the *Nigeria Center for Disease Control (NCDC)*, accessed on 10 September 2020.

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Analyse MPI alongside additional relevant variables

MPI poor are far more deprived in **handwashing** and **overcrowding** that the non-poor, slightly more deprived in **internet**. Usually the poor are somewhat more at risk of **domestic violence** – but in Bangladesh the non-poor are equally at risk.

	Additional Deprivation (%)			
	Handwashing	Overcrowding	Internet	Dom. Violence
	Bangladesh			
MPI poor	**35.0**	**48.0**	**84.5**	**58.6**
MPI non-poor	19.1	26.2	51.1	55.9
Total	23.2	31.7	59.6	56.9
	India			
MPI poor	**4.6**	**72.4**	**97.9**	**42.6**
MPI non-poor	2.6	49.9	85.5	30.0
Total	3.2	56.1	89.0	33.8
	Nepal			
MPI poor	**32.4**	**47.3**	**68.9**	**34.9**
MPI non-poor	13.0	24.9	37.4	23.2
Total	19.6	32.5	48.1	27.4
	Pakistan			
MPI poor	**42.1**	**89.9**	**97.1**	**40.7**
MPI non-poor	17.7	65.4	82.7	31.4
Total	27.0	74.8	88.3	35.1

with Dirksen, Nogales, and Oldiges 2020

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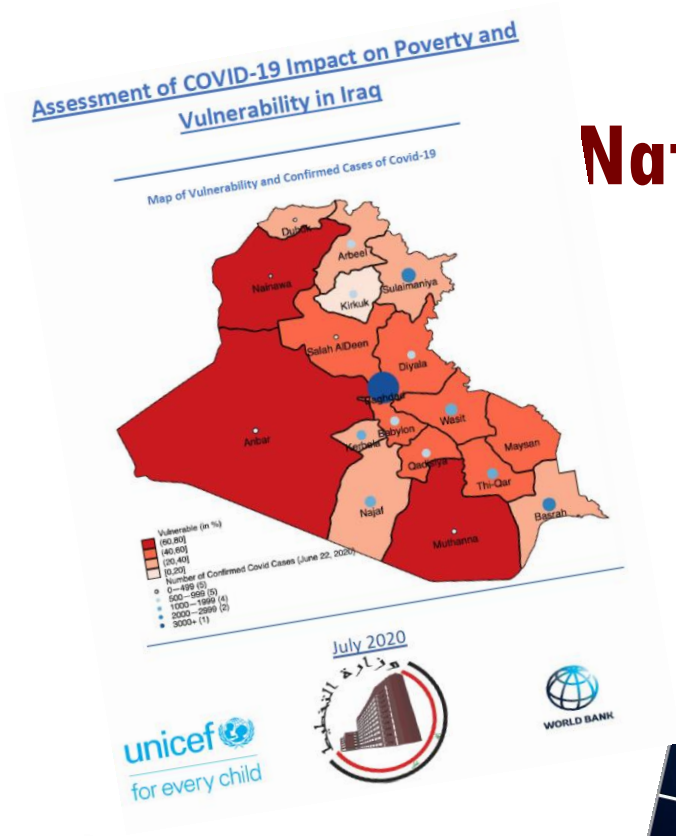
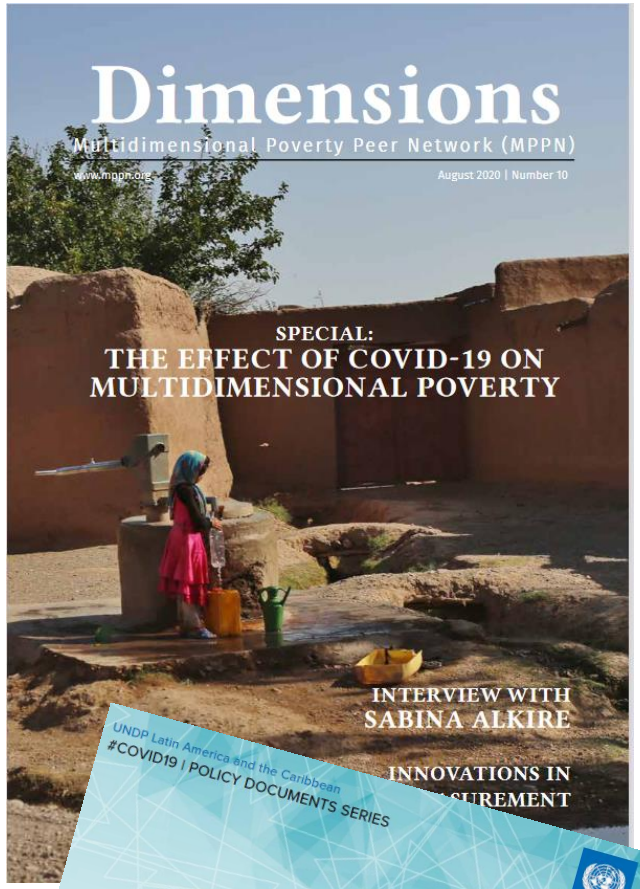
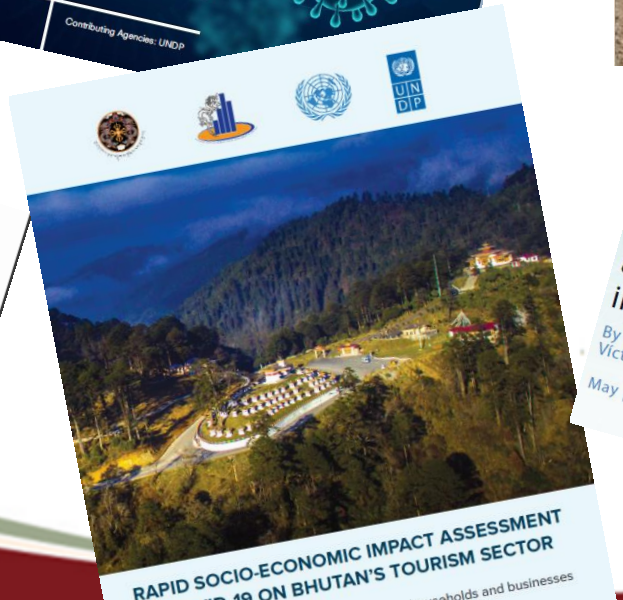
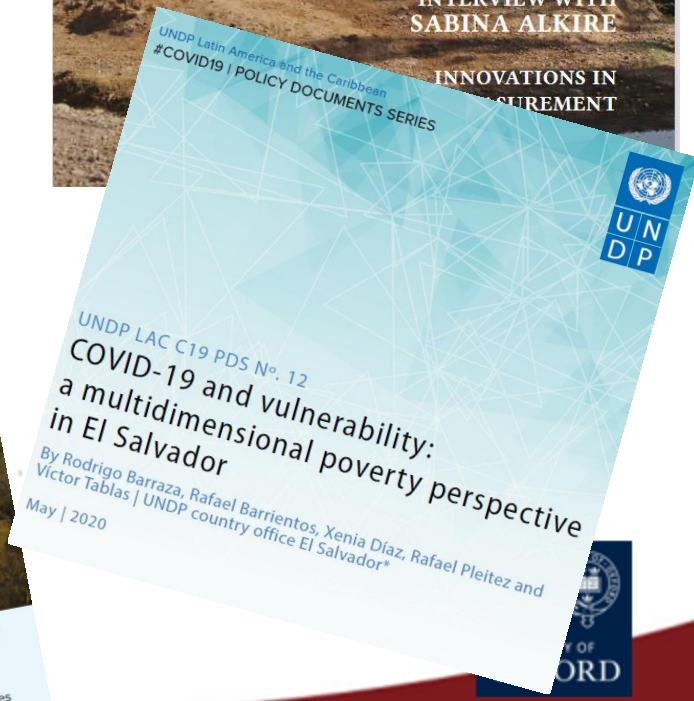
Covid-19 and National MPIs/MVIs









Beyond policy, what is needed: Voices of Determination

Poverty at a Crossroad:

Using Leadership and the MPI during COVID-19

Leadership Panel:

- H.E. Sebastian Piñera, President of **Chile**
- H.E. Imran Khan, Prime Minister of **Pakistan**
- H.E. Ashraf Ghani, President of **Afghanistan**
- H.E. Carlos Alvarado Quesada, President of **Costa Rica**
- H.E. Juan Orlando Hernández, President of **Honduras**
- H.E. KP Sharma Oli, Prime Minister of **Nepal**
- H.E. María Alejandra Muñoz, Vice President of **Ecuador**

Ministers from:
Bangladesh, Colombia, Indonesia, Maldives, Mongolia, Philippines, South Africa, Spain

And agencies:
Sida, SEGIB, UNICEF, SOPHIA

Event Co-Hosts:

- H.E. Karla Rubilar, Minister Social Development and Families, **Chile**
- H.E. Sania Nishtar, Minister of Poverty Alleviation, **Pakistan**
- Luis Felipe López-Calva, Assistant Administrator and Regional Director **UNDP**

‘We now have a one in a generation chance to build a fairer world that ends poverty, inequality and the climate crisis. Let’s not waste this chance.’

Sania Nishtar, Minister of Poverty Alleviation , Pakistan

Multidimensional Poverty Peer Network (MPPN) = 60 countries; Join us!

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Antigua and Barbuda


Argentina


Bangladesh


Bhutan


Bolivia


Botswana


Brazil


Burkina Faso


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China


Colombia


Costa Rica


Cuba


Djibouti


Dominican Republic


Ecuador


Egypt


El Salvador


eSwatini


Gambia


Grenada


Guatemala


Honduras


India


Indonesia


Iraq


Jamaica


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Morocco


Mozambique


Namibia


Nepal


Nigeria


Pakistan

Panama

Paraguay

Peru

Philippines

Rwanda

Saint Lucia

Saint Vincent and the Grenadines

Senegal

Seychelles

Sierra Leone

South Africa

Spain

Sudan

Tajikistan

Tanzania

Thailand

Tunisia

Turkey

Uganda

Uruguay

VietNam

Uses of the MPI in Covid-19 response globally

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