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Building Forward Better and Leaving No One Behind

Towards Risk and Resilience-sensitive Approaches to
Multidimensional Poverty Metrics and Policymaking

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This brief is an invitation for poverty reduction practitioners and policymakers to revisit multidimensional poverty metrics, such as the Multidimensional Poverty Index (MPI) from a risk and resilience lens. We show that the COVID-19 crisis has in many ways pushed the boundaries of multidimensional poverty measurements, including through the development of ad hoc Multidimensional Vulnerability Indices (MVIs) to better guide the immediate response to the crisis. However, as shocks are likely to become the “new normal” and considering the potentialities of the Multidimensional Poverty Index (MPI) and its adoption by a growing number of countries, we suggest that in addition to measuring acute deprivations in health, education and living standards, the most used dimensions of the MPI, a new generation of national MPIs could further capture people’s exposure to shock and deprivation in terms of resilience capacities. Since today’s vulnerability may well result in tomorrow’s deepened poverty, this would help turn MPIs into more inclusive and powerful policy tools. This would allow governments to better anticipate who and where shocks and crises might hit hardest and the areas where action is required to prevent reversals in poverty and human development outcomes.

According to recent estimates, the combined effects of the COVID-19 crisis and repercussions of the war in Ukraine, including growing inflationary pressures, are likely to push an additional 75 to 95 million people into extreme (income) poverty in 2022, compared to pre-pandemic projections.²

The COVID-19 crisis alone might have reversed ten years of progress in reducing multidimensional poverty.³ Moreover, as UNDP’s new *Special Report on Human Security* also reveals, six out of seven people worldwide are plagued by feelings of insecurity.⁴

Against the spectrum of future shocks, including pandemics, disasters and extreme weather events or recurring conflicts, such alarming data are an obvious signal that a greater emphasis should be placed on risk and resilience-sensitive approaches to multidimensional poverty metrics and poverty reduction policymaking. This goes along with the understanding that vulnerability today may well result in more or deepened poverty tomorrow unless people⁵ are given the means and capabilities to *positively*⁶ cope, adapt and swiftly recover in the event of shocks and commensurate efforts are made to reduce their exposure to shocks.

The COVID-19 crisis has triggered a significant shift in focus from *multidimensional poverty to multidimensional vulnerability* in the metrics used to identify impacted populations and policy response needs. As further evidenced in this brief, while some countries have leveraged their national Multidimensional Poverty Index (MPI), many have sought to capture a broader set of people's deprivations and vulnerabilities through the development and use of Multidimensional Vulnerability Indices (MVIs) to secure better and more inclusive responses.⁷

In view of the potentialities of the MPI and the growing number of MPI adopters and applications across the globe, we argue, however, that rather than investing in the production of MVIs on an *ad-hoc* basis in the wake of shocks, and with these being likely to become the "new normal", there is a case for making the design of future national MPIs *structurally more "risk and resilience-sensitive"* to better guide policy action and reduce poverty and inequality in a sustainable manner.

A. From poverty to vulnerability: The COVID-19 crisis has pushed the boundaries of multidimensional poverty metrics

The COVID-19 crisis has clearly highlighted the criticality of multidimensional approaches and the potentialities of a tool like the MPI to identify and locate people and communities most susceptible to the health and socio-economic impacts of the crisis.⁸ In **Colombia**,⁹ for instance, contamination-sensitive MPI data (e.g. overcrowding) were overlaid with administrative records, which enabled generating a *contagion vulnerability index* at the municipal/block level using demographic variables and comorbidities all set up in a geovisor. This made it possible to visualize the level of individual exposure to the virus in different layers, MPI levels as well as the availability of health care institutions and hotels in municipal centres throughout the country. It was also beneficial in targeting health programmes.

Remarkably, in a country where job informality affects more than 45 percent of the population in urban areas and 60 percent in rural areas, the MPI, which includes an indicator of informality, also helped the government respond with new social assistance programmes (such as the Solidarity Income) for those that there were previously uncovered. In **El Salvador**,¹⁰ a UNDP study explored MPI data on deprivation in terms of overcrowding, access to drinking water, access to sanitation, access to health services, access to social security and underemployment to inform the sanitary and economic responses. This showed that at least 85.5 percent of households were facing deprivations in one or more of these areas¹¹ and that 41.8 percent of the multidimensionally poor (that is 28.8 percent of households) were deprived in four areas.

Yet, in many more countries, the tendency has been to build upon MPI data and/or MPI methodology to develop more comprehensive Multidimensional Vulnerability Indices (MVIs) to deepen the analysis of the health risk and capture the broader range of overlapping socio-economic deprivations endured by poor and vulnerable people.

Thus, with the support of UNDP and OPHI, the Government of **Honduras** devised an MVI which, in addition to COVID-19 risk, health, food security and household characteristics (all included in the national MPI), incorporated a broader set of indicators (e.g. capacity to liquidate assets, access to financial services, employment sector, formal/informal employment status and access to social security) to capture households' ability to weather the socio-economic impact of the crisis. In most cases, the indicators relating to employment and access to financial services contributed the most to the MVI. The MVI helped the government target new safety net programmes (electronic vouchers for food, medicines and biosafety equipment) to the most vulnerable – mostly independent workers and self-employed persons (74 percent).¹²

In the **Maldives**, following the launch of the national MPI in 2020, a national MVI was also developed with the support of OPHI, UNICEF and the World Bank, which combined key MPI indicators of exposure to the virus (e.g. overcrowding, access to water and sanitation, chronic health conditions) as well as other relevant indicators, such as access to formal employment and access to the internet.¹³ In **South Africa**, the South African Multidimensional Poverty Index (SAMPI) was used as a first basis to rapidly profile vulnerable districts and municipalities and assess support needs. However, the Statistical Office also produced a South African COVID-19 Vulnerability Index (SACVI) to further identify

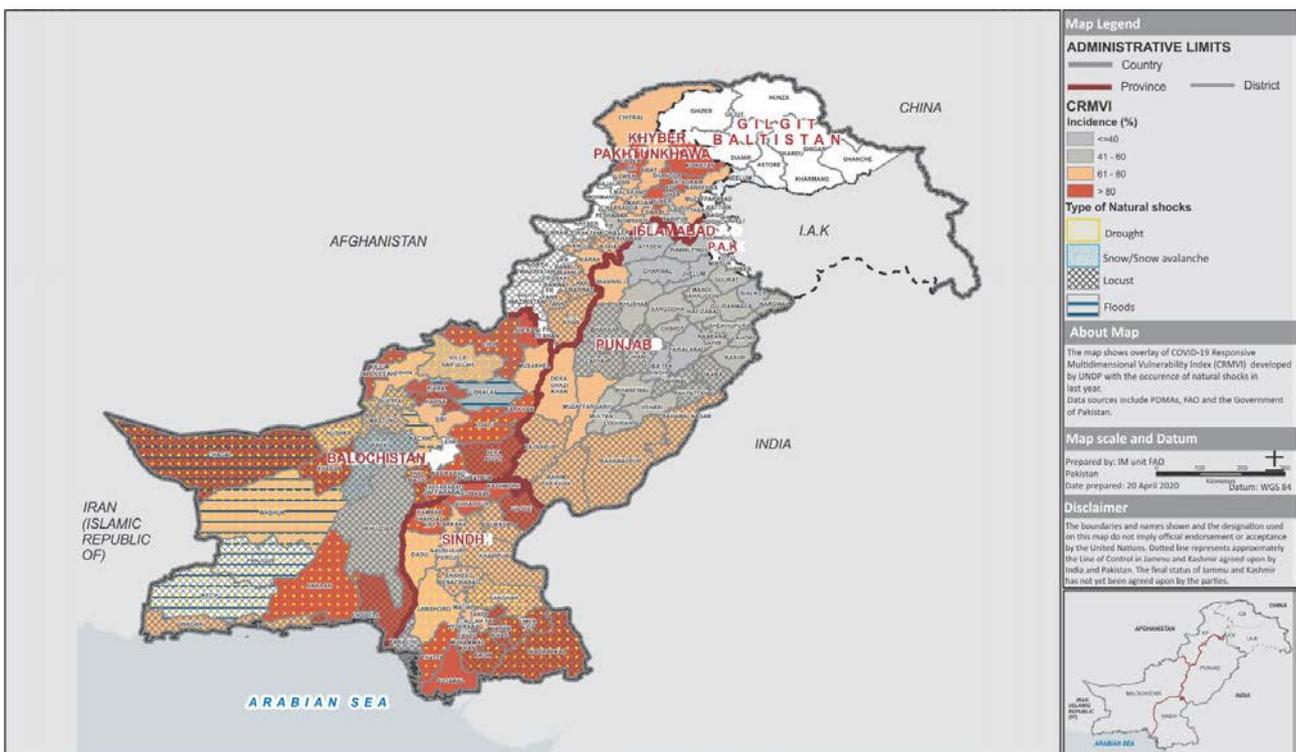
susceptibilities to COVID-19 infections, looking at parameters such as labour force activity, access to media, household services, multi-generational status, age and chronic illness.¹⁴ In **Bhutan**, an MVI specific to tourism and related sectors was also developed with support of OPHI and UNDP (MVI-T), which included eight core indicators of impact/vulnerability, namely income loss, coping strategy, loss of livelihood, food security, limited savings, indebtedness, vulnerable household members, and dependency upon tourism. Over 80 percent of the respondents were found to be deprived in at least three vulnerability indicators simultaneously.¹⁵ The MVI helped target interventions for vulnerable people, particularly women working in entertainment and unemployed tour guides. In **Iraq**,¹⁶ the Ministry of Planning, with the support of UNICEF, the World Bank and OPHI also developed an MVI that not only captured deprivations related to disruption of social services (health, education), but also accounted for deprivations related to informality, child labour, forced displacement, loss of government assistance as well as exposure to violence and insecurity.

As part of the **Nepal** 2021 National MPI update, OPHI, UNDP and UNICEF supported the development of an MVI that leveraged the sensitive COVID-19 MPI indicators of undernutrition, unsafe drinking water and unclean cooking fuel. This produced a “health vulnerability gradient” while additional indicators not included in the MPI, such as overcrowding and lack of access to the internet. Of particular interest for this brief, the report showed

that pre-COVID-19 deprivations in these areas were significantly higher for the *multidimensionally poor* (i.e. 17.4 percent of the population as per the MPI) than for the general population. Yet, prior to the pandemic, 63.5 percent of the population were found to be deprived of either nutrition, water or clean cooking fuel; nearly half of the population (47 percent) were deprived of the internet; and 38.2 percent were without access to a handwashing facility.¹⁷ This suggests that whilst policies may prioritize those who were already most deprived, it is important not to lose sight of the health and poverty risks facing larger strands of the population.

Using the MPI methodology, UNDP also supported the development of a COVID-19 Multidimensional Vulnerability Index (CRMVI) in **Pakistan**¹⁸ to shed further light on geographical and sectoral vulnerabilities¹⁹ throughout the country and to guide the development of the UN socio-economic response framework. Interestingly, the national MPI and CRMVI data were compared across urban and rural areas, showing higher CRMVI values in urban areas, despite lower MPIs, due to higher risks of contagion and loss of employment and incomes. Another interesting dimension of this work was the effort made to map out the multidimensional vulnerability levels to the incidence of natural shocks at the district level, showing that most vulnerable districts had also experienced one or more recent natural shocks, making people even more at risk for further impoverishment and food insecurity (**Figure 1**).

Figure 1: Multidimensional Vulnerability to COVID-19 exposure to natural shocks in Pakistan



There are different ways to look at these dynamics. On the one hand, they highlight the relevance and potentialities of the MPI as a flexible tool to rapidly inform policy responses in the face of a shock like COVID-19. On the other hand, they suggest that the approach to future MPIs could be revisited to better account (ex-ante) for the critical deprivations that make people vulnerable to shocks and attendant risks of impoverishment and marginalization.

B. Building forward better: What about making MPIs structurally more risk and resilience-sensitive?

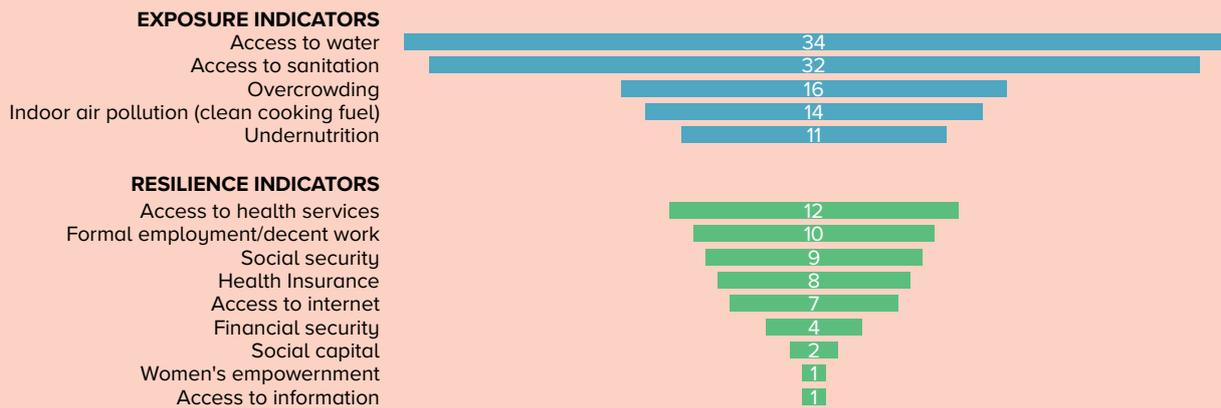
In a context where systemic shocks—not least those stemming from climate and environmental emergencies or recurrent conflicts—are likely to become the new normal,²⁰ compounding the set of idiosyncratic risks that confront people over the life course (illness, unemployment, death, etc.), the issue indeed arises as to whether the above shift in focus from poverty to vulnerability could be further institutionalized in future MPIs.

Box 1. What do national MPIs tell us about people’s exposure and resilience to a systemic shock like COVID-19?

To shed light on this issue, we tentatively mapped out the indicators currently used for national MPIs in 34 countries around the globe (for details,

see Table 1 in the Annex). We clustered existing national MPI indicators into two groups.

Figure 1: Number of national MPIs with COVID-19 relevant Exposure and Resilience Indicators



Source: Authors, based on the review of 34 official publicly available official National MPI reports, see the Annex

The first group (*exposure indicators*) captures households’ deprivations in terms of access to water and sanitation, overcrowding, exposure to indoor air pollution and health/nutrition status, consistent with the COVID-19 infection risk analysis spearheaded by the OPHI, using the global MPI (2020).²¹ As shown in **Figure 1**, national MPIs reasonably capture people’s exposure to a pandemic like COVID-19, particularly through water and sanitation access indicators. The second group (*resilience indicators*) covers the range of MPI indicators that more specifically capture people’s deprivations in their ability to (positively)²² cope and recover from the health and socio-economic consequences of COVID-19.²³ In addition to access to health services, these include access to formal employment and social protection, access to the internet, access to financial services and social capital.²⁴ As can be seen, 12 countries currently factor in deprivations related to access to health services, of which four

developed MPIs in the wake of COVID-19 (Maldives and Palestine (2020) and Namibia and Paraguay (2021)). Most strikingly, only ten countries factor in people’s access to decent/formal employment²⁵ and only nine countries (mostly in Latin America) have prioritized access to social protection/security in the design of their MPIs.²⁶ Only seven countries (i.e. Costa Rica, Dominican Republic, Maldives, Namibia, Panama, Sierra Leone and Thailand) factor in people’s access to ICTs/internet in their MPI, and only two countries (Chile and the Dominican Republic) consider social capital. Only four countries (India, Rwanda, Sierra Leone and Thailand) consider people’s access to financial services/financial security. In Latin America, **the Dominican Republic MPI stands out as the most “resilience-sensitive”, with five indicators of resilience deprivations included in the Index.**²⁷

Many factors drive the informational and structure of national MPIs, including data availability and methodological constraints, national priorities and political will. Moreover, MPI parameters should not be changed too often to allow for consistent tracking of poverty over time.

Yet, we argue that there is a case – and scope – for making the future generation of MPIs structurally “more risk and resilience sensitive”, with the understanding that vulnerability and the lack of resilience capacities today may well result in more or deepened poverty tomorrow. This could help turn MPIs into more powerful tools to inform and guide policies while enhancing the focus on prevention.

The MPI indeed offers the flexibility to add new dimensions and indicators to reflect emerging challenges and policy priorities.²⁸ In practice, shifting to more risk and resilience-sensitive MPIs means that alongside the traditional, chronic-poverty deprivations commonly included in MPIs (education, health, living standards), the stakeholders of future MPIs should consider:

a. Giving greater policy prominence to structural deprivations in access to key services and other means that can help people cope and recover from shocks (resilience deprivations)

In particular, people’s deprivations in critical areas, such as access to information, decent work/formal employment, social protection and health services, digital connectivity and literacy, financial and insurance services as well as social capital, would require more systematic attention in the data and policy processes underpinning future MPIs. Conversely, our review of existing national MPIs, viz the vulnerabilities generated by COVID-19 shows that with a few exceptions (mostly in Latin America), these structural resilience deprivations are only captured to a limited extent (**see Box 1 above and the Annex for more details**).

As we have learned from the COVID-19 crisis, these deprivations can impose significant setbacks in people’s income, education, health, nutrition and other core dimensions of human development and well-being that might be well above gains in normal times. *This, as such, strengthens the case for expanded multidimensional poverty models.* Furthermore, these deprivations also increase poverty risks amongst many segments of the population that are not necessarily amongst the worst-off (resulting in the emergence of the so-called “new poor”), *which makes this case even more compelling and aligned with the “leaving no one behind” principle.*

As an indication, OPHI researchers estimated that, due to COVID-19, global multidimensional poverty levels might have reversed by eight to ten years across alternative scenarios regarding the impact of the crisis on nutrition and education.²⁹ For nutrition only, the setback could range from three to six years. According to the World Bank, COVID-19 could have brought down the effective years of basic schooling that students achieve during their lifetime from 7.9 years to between 7.0 and 7.6 years.³⁰ “Learning poverty” (being unable to read and understand a simple text by age ten) could have worsened from 53 percent prior to the pandemic to 70 percent, possibly leading to 10 percent loss in lifetime earnings for this generation of children.³¹ For its part, UNICEF estimates that the crisis could take up to eight years to recover and return to pre-COVID-19 child poverty levels.³²

Of special relevance from the viewpoint of this brief, some microsimulations conducted by the OPHI in Afghanistan and the Dominican Republic using resilience-relevant data included in the MPI also provide interesting insights on how the ‘new’ deprivations generated/exposed by the COVID-19 crisis may affect multidimensional poverty outcomes and where policy action is most needed to prevent reversals. In **Afghanistan**,³³ where 75 percent of the population lives in households where all working members are in vulnerable employment characterized by informal work arrangements and insecure tenure, it was found, for instance, that persisting deprivations in work conditions (i.e. unemployment and underemployment as per the MPI) for this segment of the population could increase multidimensional poverty incidence from 51.7 percent to 67.3 percent. In the **Dominican Republic**,³⁴ results suggest that increased deprivations in terms of people’s access to health care could bring the multidimensional poverty headcount from 18.5 percent (baseline situation) up to 25.5 percent (worst case scenario). Furthermore, potential shortfalls in access to “sufficient and appropriate technology/internet” could increase the incidence of school non-attendance amongst children/youth aged 5 to 20 years old from 9 percent (baseline situation) up to 17.9 percent (in case of a severe shortfall) resulting in an overall increase in multidimensional poverty incidence from 18.5 percent to 20.4 percent.

These findings should be gauged against the fact that 40 percent of the world’s population has no access to national health services or health insurance.³⁵ As of 2020, 53.1 percent – as many as 4.1 billion people – were found to be wholly unprotected, with this share reaching 82.6 percent in Africa.³⁶ The ability to access

and make effective use of ICTs (mobile phones/smartphones, access to the internet, email services, social media) and digital connectivity is making a tremendous difference in terms of people's access to information, work and education. Yet, an estimated 37 percent of the world's population – or 2.9 billion people – have still never used the internet,³⁷ 234 million fewer women than men use mobile internet,³⁸ 50 percent of children and young people worldwide have no access to the internet anywhere and two-thirds do not have access in their homes.³⁹ There is also ample evidence that in the aftermath of shocks, people who can access cash transfers, credit, insurance and savings tend to fare better in terms of income, livelihoods and health than those who do not. During COVID-19, mobile money and other digital financial services have proven instrumental in facilitating people's access to support from institutions or relatives, thus sustaining their livelihoods. Yet, 1.7 billion adults do not have an account at a financial institution or through a mobile money provider, and 56 percent of these are women.⁴⁰

Critically, specific population groups are likely to be more “resilience-poor” than others and may face unique deprivations in their ability to deal with shocks, making it critical to approach deprivations at individual and intra-household levels.⁴¹ COVID-19 has especially exposed the specific vulnerabilities faced by women, the elderly, people with disabilities, forcibly displaced populations and other groups. Because shocks are typically highly gendered, a new generation of risk and resilience-sensitive MPIs would undoubtedly need to better capture potential imbalances between men and women's deprivations at large, whilst accounting for the specific deprivations facing women in terms of time use (time poverty), unpaid domestic work, lack of control over financial resources and exposure to gender-based violence, which leaves them disempowered in the face of shocks. Worth noting here is that the **Palestine MPI** includes a dedicated indicator of women's empowerment, i.e. “*Control of women's income or women's participation in the labor market*”.⁴²

b. Giving more prominence to the broader set of (covariate) risks that may confront people and the communities in which they live

Alongside efforts to better feature resilience poverty (Section (a)), this could further help boost capacities to respond and target the most vulnerable when hazards materialize, while strengthening the focus on risk reduction and prevention in poverty reduction strategies.

As evidenced by the policy use of the MPI in the context of COVID-19, most MPIs are already good predictors of people's vulnerabilities to pandemics and other health hazards. However, a wider range of risks could be considered. For example, there have been proposals to incorporate environmental and natural resources (ENR) in multidimensional poverty assessments.⁴³ While this may be technically more complex,⁴⁴ it is worth noting that a few MPI countries have already made important strides in this direction. For instance, environmental risks have been explicitly factored in the MPIs of **Chile, the Dominican Republic, El Salvador and Panama**.

It is also interesting that a pilot Rural MPI (R-MPI) was recently proposed by the FAO and OPHI,⁴⁵ which clearly aim to capture the “*peculiarity of the exposure to potential shocks and associated risk management*” that characterize people living in rural areas who depend on agriculture for their livelihoods. Quite uniquely, the Index considers the likelihood of experiencing climate shocks (e.g. droughts, floods or heat waves) through *linking* geo-spatial data to the MPI.

Security risks have also been considered in some cases. For instance, the MPIs in **Chile, the Dominican Republic and El Salvador** include indicators, such as safety, incidence of crime and felonies and restrictions due to security. The case for risk- (and resilience) sensitive MPIs is especially strong for fragile and conflict-affected countries. Remarkably, alongside a dedicated dimension on working conditions, the national MPI in **Afghanistan** includes a stand-alone “shock dimension”, which captures people's exposure to production, income and security shocks (see **Table 1**)

Table 1. Afghanistan MPI structure and “shock dimension”

MPI Dimensions	Indicators -----Household is deprived of	Weight
Health	(Food security, assisted delivery)	1/5
Education	(School attendance, female schooling, male schooling)	1/5
Living Standards	(Access to water, sanitation, electricity, cooking fuel, housing asset ownership)	1/5
Work	(Dependency, unemployment, underemployment, youth NEET)	1/5
Shock	Production They have experienced one or more of the following shocks, with a strong negative effect on household members: i) reduced drinking or agricultural water, ii) unusually high crop pests or disease, iii) severe loss of opium production, iv) unusually high livestock disease, v) reduced availability of grazing area or reduced availability of Kuchi migration routes.	1/20
	Income They have experienced one or more of the following shocks, with a strong negative effect on household members: i) increased food prices, ii) a reduction in household income or iii) a decrease in farm food prices.	1/20
	Security One or more of the following situations apply: i) they have suffered violence or theft, ii) they live in a district rated as very insecure, iii) they are displaced or iv) they respond that the government’s first priority should be to disarm local militia or to increase local security.	1/10

Afghanistan Multidimensional Poverty Index, 2019.

As experimented on in the case of Colombia and Pakistan (see Section A), an alternative option (in cases where MPI disaggregation at the subnational level is feasible) is to overlay existing data on multidimensional poverty incidence with geo-referenced health risk, climate, environmental or

security/violence data. From the perspective of this brief, however, a major caveat is that the approach somehow fails to internalize the exposure and poverty risks facing people who are not necessarily amongst the most deprived as per the *non-risk sensitive* MPI.

Leaving no one behind: To what extent would this make a difference when measuring poverty?

To give more visibility to risk/exposure and resilience indicators, MPI stakeholders might also consider clustering these indicators under a stand-alone dimension (such as the shock dimension in the Afghanistan MPI) while possibly giving a higher weight to some of them, depending on national/local circumstances and priorities.⁴⁶

Using a “leaving no one behind” lens, an interesting question is whether this indeed makes a difference in measuring multidimensional poverty. *This should certainly be an agenda for further research.*⁴⁷

However, for countries with both a national MPI and an MVI, and where the MVI includes all the dimensions/indicators of the national MPI,⁴⁸ a comparison of the national MPI poverty headcount

with the MVI vulnerability headcount could provide a *rough element* of response. For instance, in the context of COVID-19, OPHI and UNICEF⁴⁹ developed an MVI for Bhutan, which retained all the dimensions and related indicators already included in Bhutan’s official MPI (health, education and living conditions). However, a fourth dimension, vulnerability, was added to the Index. This consisted of four indicators, namely, unemployment or job at risk, connectivity for education, dependency ratio (number of dependent members (i.e., not working) per working age people), and intergenerational households.⁵⁰ It is important to note that different datasets were used for computing the MVI and the MPI⁵¹; as a result, the MVI and MPI headcount ratios may not be strictly comparable. However, multidimensional vulnerability was found to

affect 18.3 percent of the population, which is *more than 3 times* the proportion of MPI poor (5.8 percent),⁵² suggesting that vulnerability/resilience-sensitive MPIs could make a significant difference in multidimensional poverty measurement.

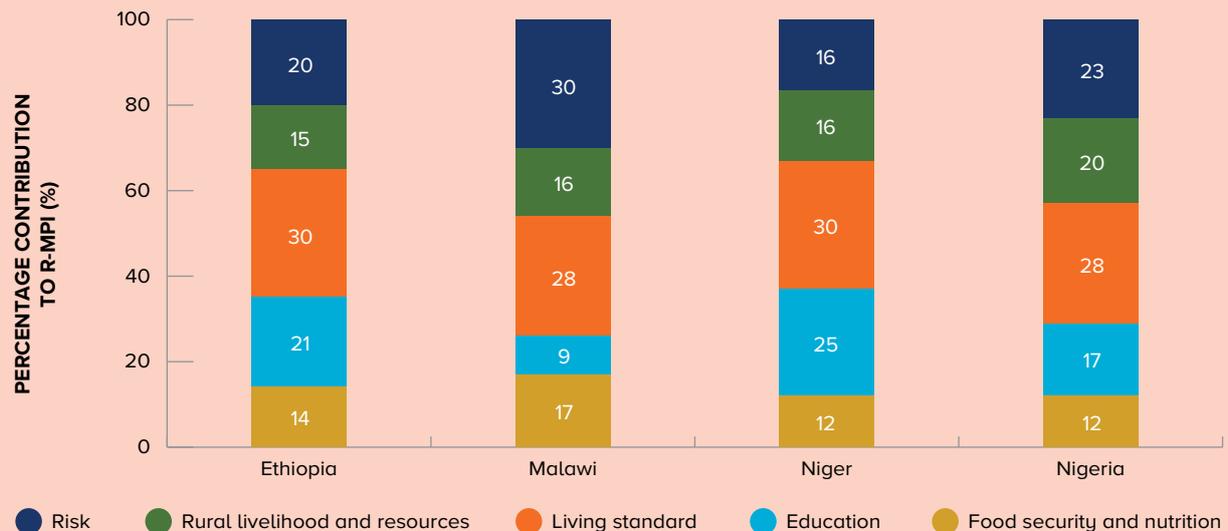
Interestingly also from the viewpoint of this brief, within the vulnerability dimension of the Bhutan MVI, the lack of connectivity for education was found to be the most prevalent deprivation indicator and a major contributor to overall vulnerability.

Box 2 Does a risk and resilience- sensitive MPI make a difference in measuring poverty? Evidence from the Rural-MPI report:

The R-MPI was calculated for four countries, using the same dimensional weights of 20 percent: Ethiopia, Malawi, Niger and Nigeria. R-MPI estimates varied between 0.249 (Nigeria), 0.426 (Ethiopia), 0.448 (Malawi) and 0.532 (Niger). Interestingly, while the deprivations in the living standard dimension contribute between 28-30 percent to the R-MPI, **the contribution of the risk and resilience dimensions (i.e. the combined risk dimension and rural livelihood and resources**

dimension) ranged from 32 percent in Niger to 46 percent in Malawi. The risk dimension alone contributed from 16 percent in Niger up to 30 percent to overall poverty. Under the risk dimension, the “risk exposure and coping strategies” indicator and the “risk of climate shocks” indicator displayed high levels of headcount ratios in mostly all the countries. In Nigeria also, deprivations in terms of exposure to climate shocks were found to account for around 17 percent of overall poverty.

Figure 2:



Source: FAO-OPHI 2022

Of particular interest for this brief, the study compared the incidence of multidimensional poverty estimated with the R-MPI and with a proxy global MPI (PG-MPI) comprising only the first three dimensions of the R-MPI (food security and nutrition, education and living standards). The R-MPI and the PG-MPI yielded similar results in Ethiopia and Niger; however, **in Malawi and Nigeria, the shares of poor people based on the R-MPI (86.1 percent and 54.5 percent, respectively) were found to be much higher than the shares of poor people computed using the PG-MPI (72.7 percent and 47.5 percent, respectively).** Furthermore, the study also included a sensitivity analysis that estimated the importance of each indicator to the overall R-MPI by excluding it from

the measure. The results are striking for some countries with regards to the indicators of the risk dimension. In **Nigeria**, for instance, if the indicator of “risk to climate shocks” were to be excluded, **the R-MPI would be 22 percent lower.** The R-MPI would also be lower, but to a smaller extent in Niger and Ethiopia (by 6 percent and 2 percent respectively), yet 3 percent higher in Malawi. **In Niger, the exclusion of the indicator on risk exposure and coping strategies would decrease the R-MPI by 13.7 percent.** Conversely, the R-MPI results for Nigeria, for instance, would be 33 percent *higher* if the indicator of “risk exposure and coping strategies” were to be excluded – presumably due to the higher weights attached to the remaining two risk indicators.

The pilot Rural MPI (R-MPI) study (referred to earlier) provides further insights into this issue. Thus, in addition to the three dimensions of the global MPI, which are health (with a focus on food security and nutrition), education and living standards, the R-MPI includes two additional separate dimensions of “rural livelihoods and resources” and “risk”.⁵³ The former consists of five indicators, covering “agricultural assets”, “low pay rate”, “social protection”, “child labour” and “extension services”. The “risk” dimension includes three indicators covering “credit denial”, “risk exposure and coping strategies” (i.e. the lack of institutional support in the case of adverse events), as well as the “risk of climate shocks”. Both dimensions and related indicators are geared towards capturing the

exposure to risk and the lack of adequate coping mechanisms. Taken together, they provide a good illustration of what a Risk and Resilience-sensitive MPI could look like.

The R-MPI was calculated for four countries Ethiopia, Malawi, Niger and Nigeria. As detailed in **Box 2 above**, overall results point to the significant contribution of risk and resilience deprivations to multidimensional poverty in rural areas across all four countries. A set of comparisons and tests were also run, showing that in some countries, the exclusion of risk and resilience indicators may lead to a significant underestimation of multidimensional poverty.

Conclusion

While capturing acute deprivations in health, education and living standards as per the standard/most used dimensions of the MPI remains important, this brief suggests that there is a need and scope for more risk and resilience sensitive (“future-proof”) multidimensional poverty models that acknowledge the strong nexus between disaster risk reduction, resilience-building, human development, poverty and inequality outcomes.

UNDP’s human development reports (HDRs) have repeatedly stressed the importance of building resilience capacities for poverty reduction and human development (UNDP, 2014⁵⁴; UNDP 2018⁵⁵). The HDR 2019,⁵⁶ in particular, called upon policymakers and development partners to give more upfront attention to closing gaps in capabilities, including social protection, effective access to and use of ICTs and “*resilience to unknown new shocks*”, arguing that “*only closing gaps in basic capabilities and needs will not be enough to meet people’s aspirations in the 21st century*”. The COVID-19 crisis has clearly given a new sense of urgency to this call.

Efforts, including investments in data, research and advocacy, to make exposure to shocks and resilience deprivations more visible in MPI metrics (rather than possibly developing separate MVIs⁵⁷) could help turn MPIs into more inclusive and

powerful policy tools to guide poverty reduction efforts in the post-COVID context. Such efforts would allow policymakers to better anticipate *who and where* shocks may hit hardest and the areas where short-term and long-term policy action is required to prevent reversals in poverty and human development outcomes. Recent research has also highlighted the power of multidimensional poverty indicators to predict chronic income poverty. The introduction of context-specific risk and resilience indicators in national MPIs could certainly help further “unpack” the relationships and dynamics between multidimensional and income poverty and thereby help policymakers tackle both forms of poverty in a more integrated manner.⁵⁸

Generally, a new generation of risk and resilience-sensitive MPIs could help to more directly demonstrate and track the poverty-reduction effects of greater (or lesser) investments in disaster risk reduction and people’s resilience. These could also be instrumental for tracking progress on SDG 1.5, whose goal includes: “By 2030, build the resilience of the poor and those in vulnerable situations, and reduce their exposure and vulnerability to climate-related extreme events and other economic, social and environmental shocks and disasters”. This is another holistic target that fully acknowledges the criticality of resilience-building for eradicating poverty in a sustainable manner.

Annex – COVID-19 and national MPIs

PARAMETERS	MPI deprivation indicators	Use at global, regional and national level
EXPOSURE TO COVID-19		
WATER AND SANITATION	Access to improved water (34)	Global, regional – All countries
	Access to improved sanitation (hand washing) (32)	All countries (except Nigeria)
OVERCROWDING	Overcrowding (16)	Global, Regional (LAC, Arab States) Armenia, Chile, Colombia, Costa Rica, Dominican Republic, Ecuador, El Salvador, Ghana, Honduras, Maldives, Palestine, Paraguay, Rwanda, Seychelles, Sierra Leone, Viet Nam¹
AIR POLLUTION	No clean cooking fuel (14)	Global, Regional (LAC, Arab states) Afghanistan, Angola, Bhutan, Costa Rica, Dominican Republic, Ghana, Honduras, Mexico, Namibia, Nepal, Pakistan, Paraguay, Rwanda, Sierra Leone
NUTRITION	Undernutrition (11)	Global, Regional (Arab States) Angola, Chile, Ghana, India, Malawi, Maldives, Namibia, Nepal, Nigeria, Sierra Leone, Thailand
	Obesity (1)	Maldives
HEALTH STATUS	Illness (1)	Palestine²
RESILIENCE TO COVID-19 IMPACTS		
(Health impacts)		
HEALTH SERVICES	Access to health services (12)	Armenia, Chile, Colombia, Dominican Republic, India, Maldives, Mexico, Namibia, Pakistan, Palestine³ Panama, Paraguay, Sri Lanka
	Quality of health Services (1)	Armenia
(Socio-economic impacts)		
SOCIAL PROTECTION	Health Insurance (8)	Chile, Colombia⁴, Costa Rica, Dominican Republic, Ghana, Palestine, Philippines, Rwanda
	Social Security (9)	Regional (LAC) Chile, Colombia, Costa Rica, Dominican Republic, Ecuador, El Salvador, Honduras, Mexico, Paraguay⁵
	Decent/Formal employment (10)	Armenia, Colombia⁶, Costa Rica, Dominican Republic, El Salvador, Malawi, Nigeria, Palestine, Panama, Seychelles⁷

1 Per person housing area.

2 All household members aged 30+ suffer from a diagnosed chronic disease.

3 Deprived if any eligible women in the household faces problems in seeking medical advice or treatment.

4 Percentage of household members over the age of five who are insured by the Social Security Health System.

5 Lack of contribution to a pension fund; lack of access to retirement or pension.

6 Percentage of household members from the economically active population (EAP) employed and affiliated to a pension fund. (This indicator is used as a proxy for whether people are formally or informally employed).

7 Access to employment benefits (sick leave, etc.) and quality of work (irregular employment, no contract, casual work.)

PARAMETERS	MPI deprivation indicators	Use at global, regional and national level
DIGITAL CONNECTIVITY	Access to the internet (7)	Costa Rica, Dominican Republic, Maldives, Namibia, Panama, Sierra Leone, Thailand
FINANCIAL SECURITY	Bank account; savings; ability to pay home rent, basic services and tuition; pension (4)	India, Rwanda, Sierra Leone, Thailand
SOCIAL NETWORKS/ SOCIAL CAPITAL	Social Networks (2)	Chile, Dominican Republic
WOMEN'S EMPOWERMENT	Control over use of income and earnings/having a separate bank account; no work because of restrictions imposed by male family members (1)	Palestine⁸
ACCESS TO INFORMATION	Access to information (1)	Viet Nam
EXPOSURE/ VULNERABILITY TO NON-HEALTH SHOCKS	<i>Exposure to environmental hazards</i>	Dominican Republic, El Salvador, Panama
	<i>Vulnerability to food prices and other agricultural production shocks/income shocks</i>	Afghanistan
	<i>Exposure to violence/crime</i>	Afghanistan, Chile, Dominican Republic, El Salvador, Palestine, Seychelles⁹

Source: <https://mppn.org/applications/national-measures/>

⁸ Women in the household do not have a separate bank account nor do they control her use of income or earnings OR no woman in the household does work (or looks for work) because of her husband/father/brother's restrictions.

⁹ Exposure to interpersonal and state violence: Any household member attacked or forcibly assaulted with or without a weapon last year OR, any child or women hit or attacked by another family member during the past year OR injuries, death or torture in household from state/settler violence during the past year.

Endnotes

- 1 Nathalie Milbach Bouche is Senior Strategic Advisor, Inclusive Growth, UNDP, email: nathalie.bouche@undp.org; Ricardo Isea Silva is former Research and Policy Analyst, Inclusive Growth, UNDP, email: ricardo.iseasilva@un.org. **Acknowledgments:** The authors would like to thank Eduardo Ortiz-Juarez, Economist at UNDP's Bureau for Policy and Programme Support and lecturer in Development Economics at King's College London and Jacob Assa, Economist at UNDP's Regional Bureau for Africa for their review and insightful comments to this Brief. The authors are also grateful to Christian Oldiges, George Gray Molina, Mansour Ndiaye, Ben Slay, Elena-Damilova-Cross, Frances Guy, Rita Sciarra, and Mihail Peteah for their valuable early feedback on the approach and content of the Brief.
- 2 See World Bank (2022). "Pandemic, prices, and poverty", World Bank Blog, April 2022.
- 3 Alkire, S., Nogales, R., Quinn, N. N., and Suppa, N. (2021). "Global multidimensional poverty and COVID-19: A decade of progress at risk?" OPHI Research in Progress 61a, University of Oxford (based on aggregate results for 70 countries).
- 4 UNDP (2022). *2022 Special Report on Human Security*. New York.
- 5 In the event of shocks, the lack of resilience capacities ("resilience poverty"), including capacities to protect livelihoods and preserve human capital, can put large segments of the population at high risk of falling into poverty while pushing those already poor deeper into poverty.
- 6 As opposed to negative coping strategies, such as taking kids out of school, reducing essential food consumption, or fire-selling productive assets. In this regard also, we excluded indicators of asset ownership: while the accumulation of assets can help smooth consumption and prevent households from potential long term impacts of shocks, the fire selling of assets to mitigate the immediate effects of a shock is as such a negative coping strategy.
- 7 Whilst the focus of this brief is on better capturing poverty and vulnerability at the micro-individual level, it should be noted that important complementary efforts are being made to capture structural economic, social and environmental vulnerabilities at country level through "macro-MVIs". The main purpose here is to improve access to and allocation of concessional resources among countries, and particularly for small island developing states (SIDS). See, for instance, Assa, J. and Meddeb, R. (2021) "Towards a Multidimensional Vulnerability Index", Discussion Paper, February 2021, UNDP. For a review of on-going efforts, see UN Office of the High Representative for the Least Developed Countries, Landlocked Developing Countries and the Small Island Developing States (UN-OHRLS) (2021), "Possible development and uses of multidimensional vulnerability indices: Analysis and recommendations", December 2021.
- 8 The approach was spearheaded by the OPHI, based on the global MPI. See Alkire, S., Dirksen, J., Nogales, R., and Oldiges, C. (2020). "Multidimensional poverty and COVID-19 risk factors: A rapid overview of interlinked deprivations across 5.7 billion people", OPHI Briefing 53, Oxford Poverty and Human Development Initiative, University of Oxford. This study considered people's deprivations in terms of access to clean drinking water, undernutrition, and lack of clean cooking fuel (as a proxy for indoor air pollution) to identify those at immediate risk of infection. It was estimated that globally 3.6 billion people, or 62.6% of the 5.7 billion people living in the 101 countries covered by the 2019 global MPI were affected by at least one COVID-19 risk factor, whilst 472 million people were at high risk (deprived of all three COVID-19 risk factors at the same time). Among the multidimensionally poor (1.3 billion people), 355 million people were found to be at high risk.
- 9 See Juan Daniel Oviedo's intervention in the MPPN conference call for the Americas on 7 April 2020: "Using the MPI as a tool for crafting government responses to the Covid-19 pandemic".
- 10 Barraza, R., Barrientos, R., Díaz, X., Pleitez, R., & Tablas, V. (2020). "COVID-19 and vulnerability: a multidimensional poverty perspective in El Salvador". UNDP LAC C19 PDS No. 12.
- 11 Worth noting here is that, according to MPI data (2018), the lack of access to social security affects 65.8% of the population, while underemployment and job instability affect 61.9% of the population.
- 12 Evans, M., and Pinilla-Roncancio, M. (2020). "Honduras uses a Multidimensional Vulnerability Index for policy targeting." December 2020.
- 13 See National Bureau of Statistics of Maldives (2021) "Multidimensional Vulnerability Index (MVI)".
- 14 Maluleke, Risenga. (2022). "The South African COVID-19 Vulnerability Index". Interestingly, the structure of the SACVI was reviewed at some point to help prioritize the vaccine rollout in the country through allocating higher weights to indicators (overcrowding, multi-generational households, being over 60 years old or 18 years old with co-morbidities) that were directly linked to a high risk of fatality.
- 15 UNDP (2020) "Rapid COVID-19 socio-economic impact assessment reveals deep, widespread and cross-cutting impact on tourism sector", UNDP Blog, May 2020.
- 16 World Bank and the UNICEF (2020). "Assessment of COVID-19 impact on poverty and vulnerability in Iraq", July 2020.
- 17 National Planning Commission (2021) "Nepal Multidimensional Poverty Index: Analysis towards action", August 2021.
- 18 UNDP (2020). "COVID-19 Pakistan: Socio-economic framework". May 2020.
- 19 As related to limited skills, a lack of savings and dependence on daily wages; reduced economic activities; limited income generation opportunities; concentration in the informal sector and lack of access to social protection; food shortages and food insecurity; the lack of a legal identity.
- 20 As an indication, in the 20-year period between 2000 and 2019, the Emergency Events Database (EM-DAT) of the Centre for Research on the Epidemiology of Disasters (CRED) recorded 7,348 disaster events (367 events per year on average), which claimed a total of approximately 1.2 million lives and affected more than 4.03 billion people, particularly the poorer segments of the population (see CRED and UNDRR (2020), "The human costs of disasters: An overview of the last 20 years 2000-2019". Climate change is expected to accelerate these trends both in frequency and intensity (see Intergovernmental Panel on Climate Change (IPCC) (2021). "Climate change 2021: The physical science basis". Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change. Cambridge University Press (in press).
- 21 See Alkire, S., Dirksen, J., Nogales, R., and Oldiges, C. (2020). "Multidimensional poverty and COVID-19 risk factors: A rapid overview of interlinked deprivations across 5.7 billion people", OPHI Briefing 53, Oxford Poverty and Human Development Initiative, University of Oxford.
- 22 See Endnote 6.
- 23 However, it should be noted that the boundaries between some exposure and resilience indicators are not always clear-cut. For instance, informal work can be considered as an indicator of exposure, assuming that informal workers are those who might be least able to stop working (with the risk of being infected at the workplace).
- 24 For many people, social networks may indeed serve as an important (if not the only) safety net for the supply of food, shelter, money (including through remittances), new forms of employment and emotional and informational support, as evidenced during the COVID-19 crisis. See for instance, Claudia V. Montaña, Crisithian Parra, Gustavo Setrini, Mónica Ríos (2021). "Social capital in Paraguay: An asset for combatting vulnerability during the COVID-19 pandemic?" UNDP Global Policy Network Brief.
- 25 Armenia, Colombia, Costa Rica, the Dominican Republic, El Salvador, Malawi, Nigeria, Panama, Palestine, Seychelles.
- 26 Chile, Colombia, Costa Rica, the Dominican Republic, Ecuador, El Salvador, Honduras, Mexico, Paraguay.
- 27 Interestingly also resilience deprivations, particularly those related to access to health services, have been more systematically reflected in the MVIs produced/adopted in the wake of COVID-19, such as in Maldives, Namibia, Palestine, and Paraguay.
- 28 OPHI and UNDP (2019). "How to build a national Multidimensional Poverty Index (MPI): Using the MPI to inform the SDGs". July 2019.
- 29 Alkire, S., Nogales, R., Quinn, N. N., and Suppa, N. (2021). "Global multidimensional poverty and COVID-19: A decade of progress at risk?" OPHI Research in Progress 61a, University of Oxford. (Based on aggregate results for 70 countries).
- 30 Azevedo, Joao Pedro; Hasan, Amer; Goldemberg, Diana; Iqbal, Syedah Aroob; Geven, Koen. 2020. "Simulating the potential impacts of COVID-19 school closures on schooling and learning outcomes: A set of global estimates". Policy Research Working Paper No. 9284. World Bank, Washington, DC.
- 31 World Bank (29 October 2021). "Pandemic threatens to drive unprecedented number of children into learning poverty [Press release].

- 32 UNICEF (2021). "Preventing a lost decade urgent action to reverse the devastating impact of COVID-19 on children and young people". December 2021.
- 33 Khan Gardiwal, Atal. (2018). "The socioeconomic impact of COVID-19 in Afghanistan: Microsimulation of effects on multidimensional poverty". National Statistics and Information Authority Afghanistan.
- 34 Vicepresidencia de la República Dominicana, OPHI, and Sistema Único de Beneficiarios (SIUBEN) (2020) "COVID-19 and multidimensional poverty in the Dominican Republic, a simulation of the effect of the pandemic on multidimensional poverty". July 2020.
- 35 ILO (2020), "COVID-19: Social protection systems failing vulnerable groups", March 2020. <https://untermportal.un.org/unterm/download/country>
- 36 ILO (2021) "World Social Protection Report 2020–22: Social protection at the crossroads In pursuit of a better future". International Labour Office – Geneva: ILO, 2021.
- 37 International Telecommunication Union (ITU) (30 November 2021). "2.9 billion people still offline: New data from ITU suggest 'COVID connectivity boost' – but world's poorest being left far behind" [Press release].
- 38 GSM Association (2021) "Connected Women The Mobile Gender Gap Report 2021".
- 39 ITU and UNICEF (2020). "How many children and young people have internet access at home? Estimating digital connectivity during the COVID-19 pandemic". December 2020.
- 40 The Global Findex database 2017.
- 41 While MPIs can be disaggregated by population sub-groups to show the composition of multidimensional deprivations within and among these groups (rural/urban; age, gender groups), a woman, child, young or old person will be considered as multidimensionally poor if he/she lives in a household that is identified as "MPI poor", or in the context of this brief, "resilience poor". This means that specific deprivations facing specific members, and likewise the inequalities, including gender inequalities at play within households, are largely ignored. However, there are some challenges and trade-offs associated with the inclusion of deprivation indicators that are specific to certain groups in MPIs, which are inherently designed with the purpose of representing the whole population. To overcome these challenges, MPIs have recently been developed to reflect on the deprivations facing specific groups, with further disaggregation by age, sex (i.e. Child-MPIs, Youth-MPIs). Conversely, group-specific measurements may also underestimate the incidence and overlap of multiple identities and/or deprivations.
- 42 Deprived if any woman in the household does not have a separate bank account or does not control her use of income or earnings OR if any woman in household does not work (or look for work) because of husband/father/brother's restrictions. See MPPN (2020). "Multidimensional Poverty Profile in Palestine". June 2020.
- 43 Thiry, G., Alkire, S. and Schleicher, J. (2018). "Incorporating environmental and natural resources within analyses of multidimensional poverty". OPHI Research in Progress 50a, University of Oxford.
- 44 OPHI and UNDP (2019) underscores the need for data to be (1) georeferenced in ways that can be merged with the relevant aspects of the household's activities, (2) available at a sufficiently high resolution, (3) relevant to most if not all of the population, (4) reflect deprivations that were actually experienced in the same period as the poverty data and (5) accurate at the household level or at the level at which they are merged with the household data. See OPHI and UNDP (2019). "How to build a national Multidimensional Poverty Index (MPI): Using the MPI to inform the SDGs". July 2019.
- 45 FAO and OPHI (2022). "Measuring rural poverty with a multidimensional approach: The Rural Multidimensional Poverty Index". FAO Statistical Development Series, No. 19. Food and Agriculture Organization of the United Nations (FAO) and Oxford Poverty and Human Development Initiative (OPHI).
- 46 MPIs are commonly calculated based on nested weights, with equal weights across selected dimensions of poverty and across indicators under each of these dimensions.
- 47 Moving forward, we plan to conduct simulations to illustrate, based on real MPI microdata, how the inclusion (or exclusion) of additional risk and resilience indicators (not necessarily specific to COVID-19) and/or different weighting schemes for risk and resilience indicators could affect the incidence and intensity of multidimensional poverty compared to the use of more standard MPI metrics..
- 48 Ideally using the same data source.
- 49 Alkire, S., Moreno, H. (2021). "A locally-disaggregated Multidimensional Vulnerability Index (MVI) for Bhutan". Published by GNHC & UNICEF Bhutan Country Office.
- 50 Namely, the population living in bordering areas, given the increasing circulation of the virus in this neighbourhood.
- 51 The Population and Housing Census of Bhutan (PHCB, 2017) for the MVI and the Bhutan Living Standard Survey (BLSS, 2017) for the MPI.
- 52 See [Bhutan's National MPI](#).
- 53 As regards the weighting, it is worth noting that all dimensions have been weighted equally (20%) and across all dimensions nested indicator-weights are applied.
- 54 UNDP (2014). Human Development Report 2014: "Sustaining human progress - Reducing vulnerabilities and building resilience". New York.
- 55 UNDP (2018). 2018 Statistical Update: "Human development indices and indicators". New York.
- 56 UNDP (2019). Human Development Report 2019: "Beyond income, beyond averages, beyond today: Inequalities in human development in the 21st century". New York.
- 57 As for instance envisaged in Ghana, see "Using Multidimensional poverty data to leave no one behind", Side Event at the 53rd UN Statistical Commission (UNSC), Tuesday 15th February 2022, MPPN.
- 58 Bolch, K., Lopez-Calva, L. F., & Ortiz-Juarez, E. (2022). "When life gives you lemons": Using cross-sectional surveys to identify chronic poverty in the absence of panel data. Review of Income and Wealth.