

Multidimensional Poverty Index 2011

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The Multidimensional Poverty Index or MPI is an international poverty measure developed by the Oxford Poverty and Human Development Initiative (OPHI) for the United Nations Development Programme's flagship Human Development Report. The innovative index reflects the multiple deprivations that a poor person faces with respect to education, health and living standards. This brief summarises the method and key findings for 2011 and shows how the MPI can be used.

What's New?

- In 2011, the MPI has been calculated for 5 new countries and updated for 20 countries
- The MPI has been calculated for sub-national regions across 66 countries
- Changes of MPI over time have been analysed for 10 countries and their regions
- The MPI is robust to a range of plausible weights and poverty cutoffs

MPI - Brief Overview

The MPI is an index of acute multidimensional poverty. It assesses the nature and intensity of poverty at the individual level, creating a vivid picture of people living in poverty within and across countries, regions and the world.

The MPI has three dimensions: health, education, and living standards. These are measured using 10 indicators (see the box 'Inside the MPI'). It assesses multidimensional poverty for people across 109 countries (up from 104 in 2010). The first international measure of its kind, it offers an essential complement

to income poverty because it measures deprivations directly.

The MPI can be used as an analytical tool to identify multidimensionally poor people, show aspects in which they are deprived and help to reveal the interconnections among deprivations. It can also identify the poorest among the poor, reveal poverty patterns within countries by province or social group, and track changes over time. This can enable policy makers to target resources and design policies more effectively.

Key Findings

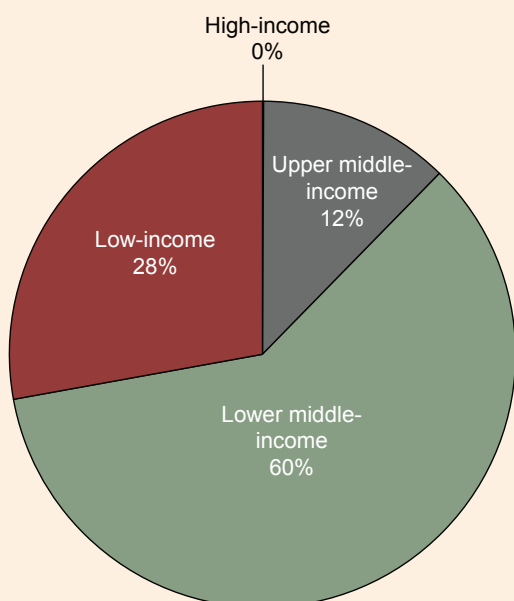
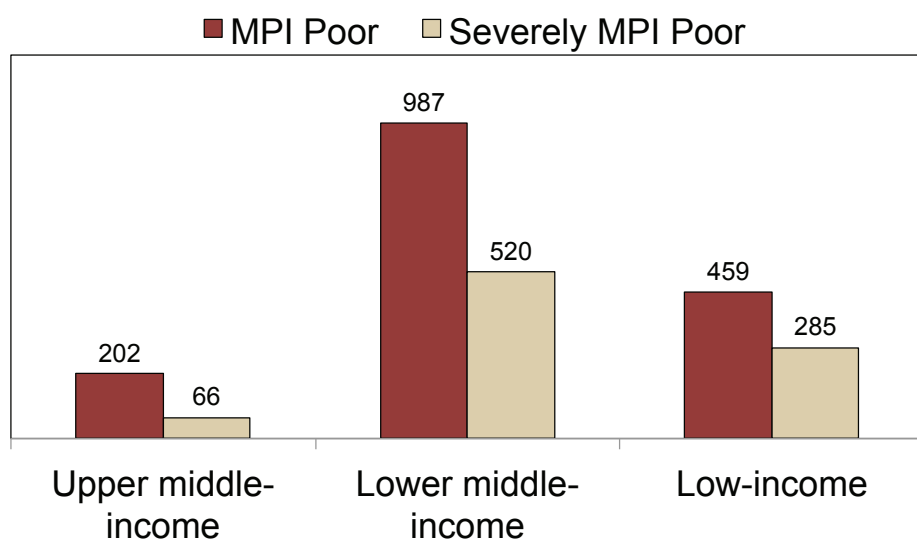


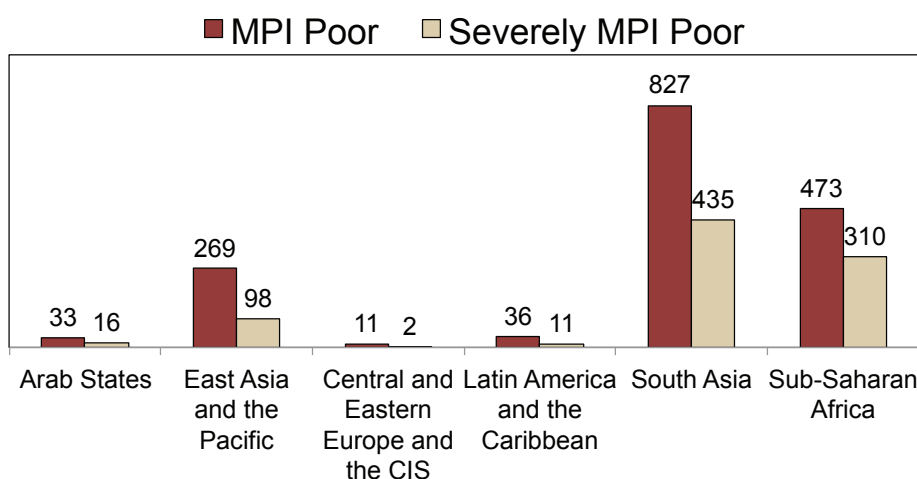
Figure 1. MPI poor people by income category

- Most poor people live in middle-income countries. Over twice as many poor people live in middle-income countries (1,189 million) as in low-income countries (459 million).
- The 38 countries of Sub-Saharan Africa together have the highest MPI poverty rates of any world region, yet the poorest 26 regions of South Asia have a higher combined MPI and more MPI poor people than Sub-Saharan Africa.
- Income classifications hide wide disparities in MPI poverty. In low-income countries, the percentage of poor people ranges from 5% in Kyrgyzstan to 92% in Niger. In middle-income countries it ranges from 0% in Belarus to 77% in Angola.
- Multidimensional poverty within countries varies greatly. Nepal is poorer according to the MPI than Cambodia, but Cambodia's poorest region is poorer than the poorest region of Nepal.
- Poverty reduction over time varies by dimension. Bangladesh reduced poverty across all dimensions; Kenya reduced its MPI mainly through improvements in living standards; and Bolivia made great strides in improving school attendance and sanitation but less progress in decreasing undernutrition.

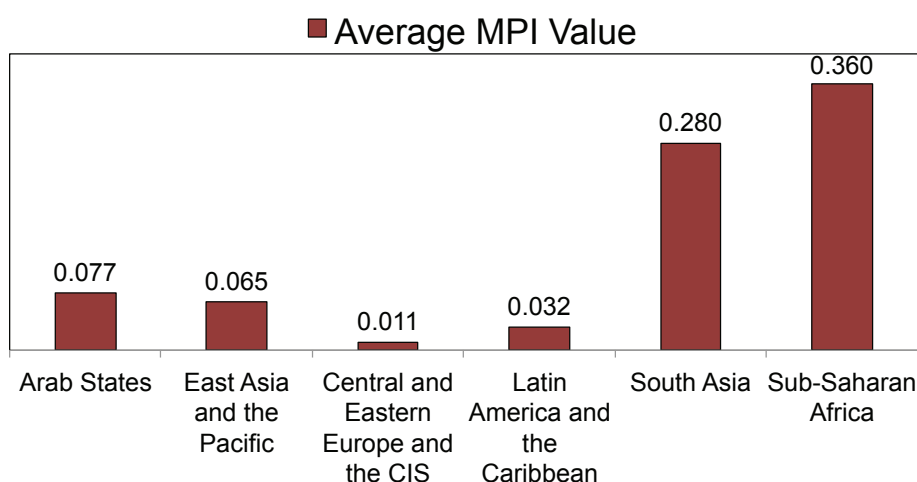
Figure 2. Total number (in millions) of MPI poor people and 'severely' MPI poor people by income category and world region, along with average MPI by region. People in severe poverty are deprived in more than half of the dimensions.



Population estimates calculated using 2008 population data (UN Population Division, 2011)



Population estimates calculated using 2008 population data (UN Population Division, 2011)



The graph above shows the average MPI for each region

MPI 2011 Findings

The MPI looks at poverty through a 'high-resolution' lens. By directly measuring the nature and magnitude of overlapping deprivations at the household level, the MPI provides information that can help to inform better policies to reduce acute poverty. The MPI is the first international measure to reflect the intensity of poverty – the number of deprivations that each person faces at the same time. It can be broken down by population group (such as ethnicity), geographical area and indicator. It can also be used to track changes to poverty over time. It was developed by OPHI and the UNDP's Human Development Report Office for inclusion in the flagship *Human Development Report*.

The MPI 2011 studied multidimensional poverty in 109 developing nations using the most recent publicly available household survey data. The MPI covers 5.3 billion people – or 79% of the global population, and 93% of people in developing countries (Alkire *et al* 2011b). The 2011 MPI data comes from the years 2000–2010.

About 1.65 billion people in the countries covered – 31% of their entire population – live in multidimensional poverty according to the MPI. This exceeds the number of people in those countries estimated to live on US \$1.25 a day or less using the most recent estimates of the World Bank's measure of 'extreme' income poverty. It is less than the total number of people living on less than US \$2 a day.

Most MPI poor people live in middle-income countries. Some 1,189 million MPI poor people live in middle-income countries, while 459 million MPI poor people live in low-income countries.

Just over half of the world's MPI poor people live in South Asia (50 per cent or 827 million people) and just under a third in Sub-Saharan Africa (29 per cent or 473 million).

Sub-Saharan Africa has the highest MPI poverty of any world region. However the poorest 26 sub-national regions of South Asia (home to 519 million MPI poor people), have higher MPI poverty than Sub-Saharan Africa's 38 countries (which 473 million MPI poor people call home). By this analysis, we find that there is a 'second Sub-Saharan Africa'

located within South Asia, because these 26 sub-national regions and 38 countries have comparable and tragic rates of multidimensional poverty.

Some 35% of MPI poor people – 586 million – live in 36 countries that have been classified as ‘fragile states’ (OECD classification, 2011). This is more than the 459 million that live in low-income countries. Their average MPI is 0.309, larger than the average MPI of South Asia (see Figure 2). Among the 25 fragile countries with comparable MPI and income poverty figures, the number of MPI poor is about 1.5 times larger than the number of \$1.25 a day poor.

A FOCUS ON THE ‘SEVERELY’ POOR

The MPI measures acute poverty – people suffering deprivation in a third or more of the dimensions. This year’s analysis has also been carried out for the poorest of the poor (or ‘severely’ poor) – people who are deprived in half or more of the dimensions.

Most ‘severely’ poor people also live in lower middle-income countries and South Asia, followed by Africa. Middle-income countries are home to more severely poor people than low-income countries: 586 million vs. 285 million correspondingly. This shows that poor people in middle-income countries are not barely poor – there are many among them who are among the most deprived in the world; people who have simply been bypassed as their nation’s comparative wealth increased.

South Asia is home to 435 million severely poor people, whereas Sub-Saharan Africa is home to 310 million severely poor people. But there are differences. The percentage of people living in severe poverty is higher among Sub-Saharan African countries. About two-thirds of poor people living in Sub-Saharan Africa experience severe poverty, compared with half of poor people in South Asia (see Figure 2).

ZOOMING IN – SUB-NATIONAL POVERTY IN 66 COUNTRIES

A key advantage of the MPI is that it is able to ‘zoom in’ and explore the incidence, intensity and character of poverty by states, provinces or other geographical regions. Analysis of poverty at the sub-national level has been carried out for 683 regions across 66 countries to date.

National averages hide intense

disparities and pockets of poverty. Overall 41% of people in the Republic of Congo are MPI poor. But in the Likouala region, 74% of people are poor, whereas in Brazzaville, the capital region, 27% of people are poor. In Kenya’s regions, the percentage of MPI poor people ranges from 4% to 86%; in Timor-Leste, from 29% to 86%; and in Colombia from 1% to 15%.

Great disparities exist between middle-income countries. Nigeria (a middle-income country) is Africa’s largest oil

producer, but its North East region has higher poverty than the poorest region of Liberia, a low-income country still recovering from a prolonged civil war. The North East of Nigeria also has over five times more MPI poor people than the whole of Liberia.

In Namibia, an upper middle-income country, 40 per cent of Namibians are MPI poor – more than in Kyrgyzstan (a low-income country) or Philippines (a lower middle-income country).

Inside the MPI: 3 dimensions and 10 indicators

Education (each indicator is weighted equally at 1/6)

Years of Schooling: deprived if no household member has completed five years of schooling

School Attendance: deprived if any school-aged child is not attending school in years 1 to 8

Health (each indicator is weighted equally at 1/6)

Child Mortality: deprived if any child has died in the family

Nutrition: deprived if any adult or child for whom there is nutritional information is malnourished

Living standards (each indicator is weighted equally at 1/18)

Electricity: deprived if the household has no electricity

Drinking Water: deprived if the household lacks access to clean drinking water or clean water is more than a 30-minute walk from home roundtrip.

Sanitation: deprived if they do not have adequate sanitation or their toilet is shared

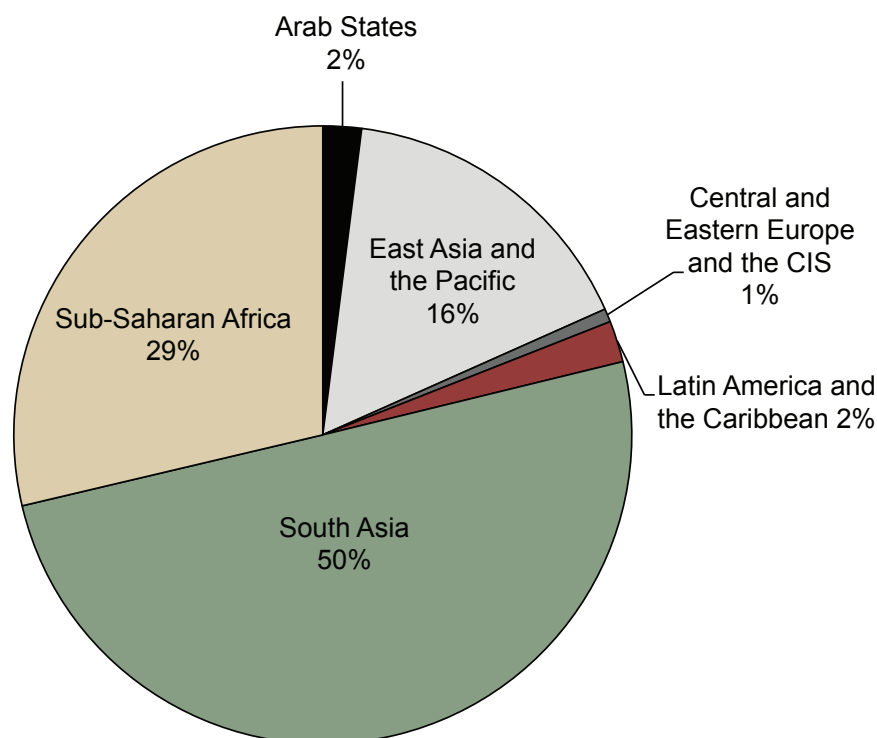
Flooring: deprived if the household has a dirt, sand or dung floor

Cooking Fuel: deprived if the household cooks with wood, charcoal or dung

Assets: deprived if the household does not own more than one of: radio, TV, telephone, bike, motorbike, or refrigerator and does not own a car or tractor

Who is poor? A person is identified as multidimensionally poor if he or she is deprived in one third or more of the dimensions.

Figure 3. Distribution of people living in MPI poverty across global regions



Multidimensional Poverty Index

Disparities in regional poverty are also large in Namibia. The regions of Kunene, Kavango and Ohangwena in Namibia are much poorer, for example, than the poorest region of Philippines (Armm).

These types of comparisons across sub-national regions are difficult to achieve through internationally comparable income poverty measures.

REDUCING MPI OVER TIME

Multidimensional poverty can change rapidly over time. Trends in the MPI over time show different pathways to MPI poverty reduction – in terms of spatial poverty reduction, the character of poverty reduction and the dimensions in which poverty was reduced.

Regional disparities in poverty

reduction can be considerable. Bolivia shows progress at a national level and in all regions. In Colombia, the picture is more mixed. The Litoral Pacifico region showed the greatest reduction in the percentage of MPI poor people – from 27% to 14%. In contrast, the percentage of MPI poor people in Orinoquia and Amazonia increased slightly – from 3% to 7%.

Changes to incidence and (or) intensity of poverty can drive overall MPI poverty reductions. Figure 4 shows differing pathways to poverty reduction for the regions of Ghana, Nigeria and Ethiopia (the size of the bubbles represents the size of the population in each region). Most regions of Ghana experienced high reductions in both the incidence and intensity of poverty.

In Ethiopia, while in Addis Ababa, the capital, reductions were driven by lifting people out of poverty (incidence), the poorest regions saw a reduction mainly in the intensity of poverty. In Nigeria, meanwhile, the only region that showed clear improvement, the South South, reduced just the incidence of poverty. Capturing reductions in the number of people who are poor as well as in the intensity of poverty is a key innovation of the MPI. A poverty reduction policy oriented towards the poorest of the poor would reduce both the incidence and intensity of poverty and improve equity.

Poverty reduction is often very uneven between dimensions. Figure 5 shows that Bangladesh made balanced improvements in most dimensions, while Kenya's improvements were mainly in living standards. Bolivia shows substantial improvements in school attendance and sanitation but less progress in decreasing undernutrition.

CAPTURING DEPRIVATIONS DIRECTLY

The MPI captures deprivations directly – in health and educational outcomes and key services such as water, sanitation and electricity. In some countries, these resources are provided free or at low cost; in others, it is very hard even for working people with an income to obtain them.

People living in MPI poverty may not be income poor. In some countries, the difference between MPI poverty and income poverty is particularly marked. Only 40 per cent of Ethiopia's people are income poor (living on less than US \$1.25 a day), whereas 89 per cent are poor by the MPI. Less than one fifth of Yemen's people are income poor, whereas more than half are poor by the MPI. Conversely, in Mongolia, 22 per cent are income poor, compared to 6 per cent MPI poor.

Income classifications hide wide disparities in MPI poverty. In low-income countries, the percentage of people living in MPI poverty ranges from 5 per cent in Kyrgyzstan to 92 per cent in Niger. In lower middle-income countries, this varies from 1 per cent in Georgia to 77 per cent in Angola of people who are MPI poor, and in upper middle-income countries from 0 per cent in Belarus to 40 per cent in Namibia.

Figure 4. Changes in incidence and intensity of MPI poverty at the sub-national level in Nigeria, Ghana and Ethiopia. The regions at the bottom left of the graph show the most positive reductions (in both incidence and intensity), while the regions at the top right show the least change in both areas (or, in some cases, increases).

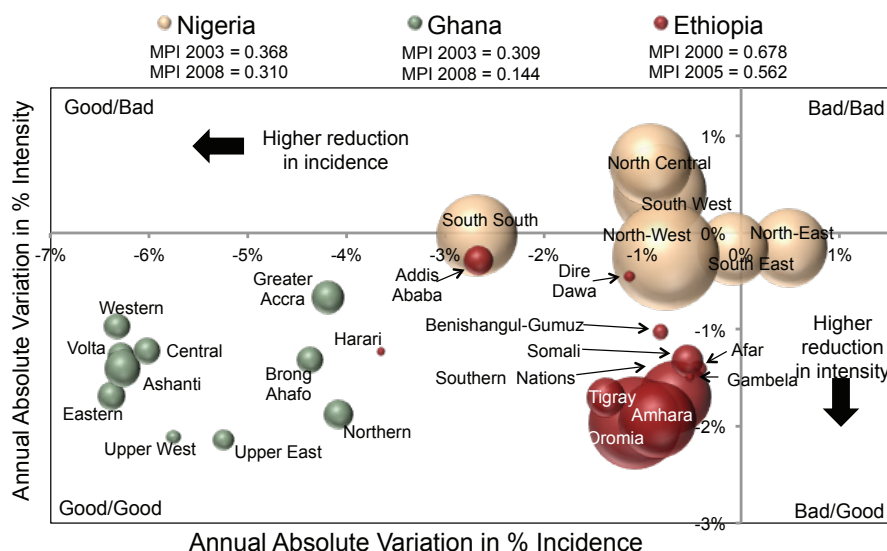


Figure 5. Changes by indicator in Bolivia, Kenya, Bangladesh and Madagascar

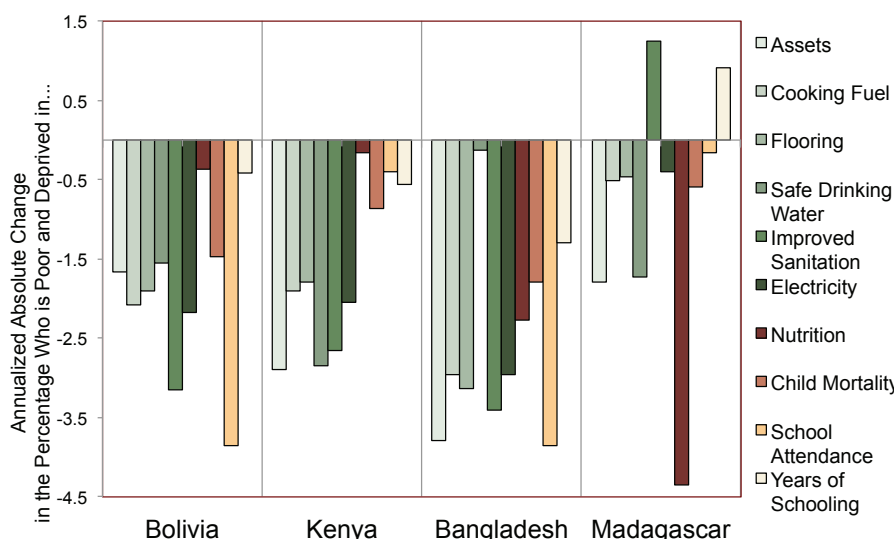
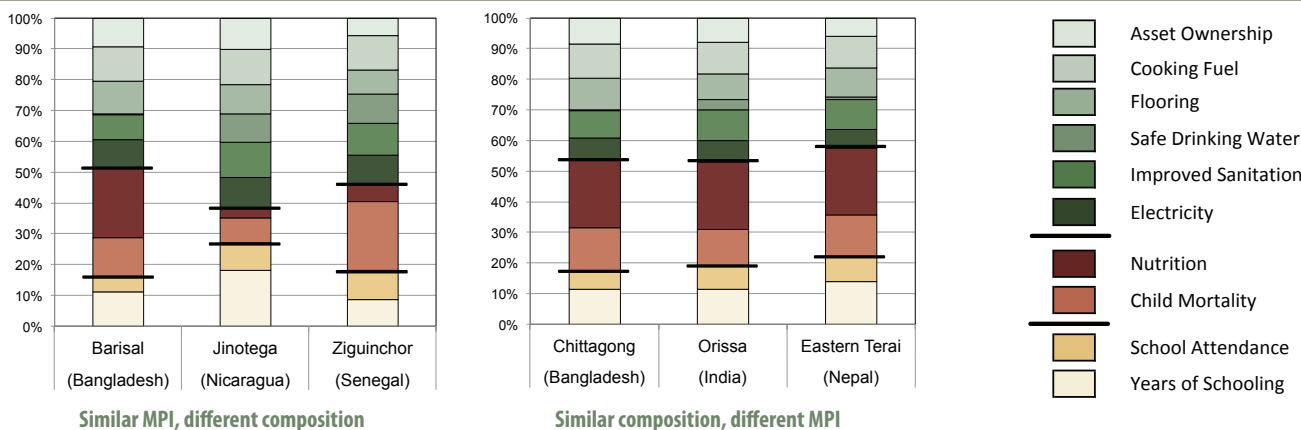


Figure 6. The MPI reveals different patterns of deprivation



PATTERNS OF DEPRIVATION WITHIN THE MPI

Similar MPIs can be unfolded to see the composition of poverty (Figure 6). Barisal in Bangladesh, Jinotega in Nicaragua and Ziguinchor in Senegal have a similar MPI, yet the character of poverty is very different. In Ziguinchor, child mortality contributes the most to the region’s MPI, in Barisal nutrition contributes most, while in Jinotega, the entire health dimension has a very low contribution.

Different MPI can show similar compositions of poverty (Figure 6). The three regions of South Asia shown have similar patterns of deprivation by dimension, but rather different overall MPI levels (Chittagong has lower MPI poverty than the other two regions).

By identifying patterns of deprivation, the MPI can help us to understand the interconnections among deprivations, identify poverty traps and strengthen the impact of policies to reduce poverty in specific aspects, such as the MDGs.

The full results and detailed information on the index can be found in: Alkire *et al* (2011). *Sub-national Disparities in Multidimensional Poverty Across Developing Countries*, see www.ophi.org.uk.

ILLUMINATING LIVES – WHO IS POOR ACCORDING TO THE MPI?

Who are the people the MPI identifies as poor? To answer this question we spoke with people who were poor according to the MPI in their country. We learned about their lives – their hopes and strengths, and their challenges. Naturally their lives are far richer than any measure can capture.

Consider Adil, 32, who lives with his

wife, Farha, two daughters and son in a poor hamlet in the Indian state of West Bengal. He is a daily wage-labourer, and the family live in a mud hut with no electricity. The hamlet is served by one hand pump for water, shared among many households. Like 80 per cent of people in the village of Madhaipur, the family are Muslim.

Adil’s family owns no agricultural land. He and his neighbours depend on local farmers (who own land) for wage opportunities. Such employment is seasonal and depends on personal and social relations that individuals are able to maintain.

Five years ago, Adil left for Mumbai as a contractual labourer with the help of middlemen, called dalals, who put labourers in touch with potential employers and take a small fee from both. ‘Initially, it was tough, as I did not know anybody, and was completely dependent



Figure 7. Bubble chart showing the relationship between the percentage of MPI poor people, average intensity of MPI poverty and income. Low income countries are spread across the chart, from Kyrgyzstan to Niger. Countries with greatest MPI poverty (highest incidence and greatest intensity) are located in the top right.

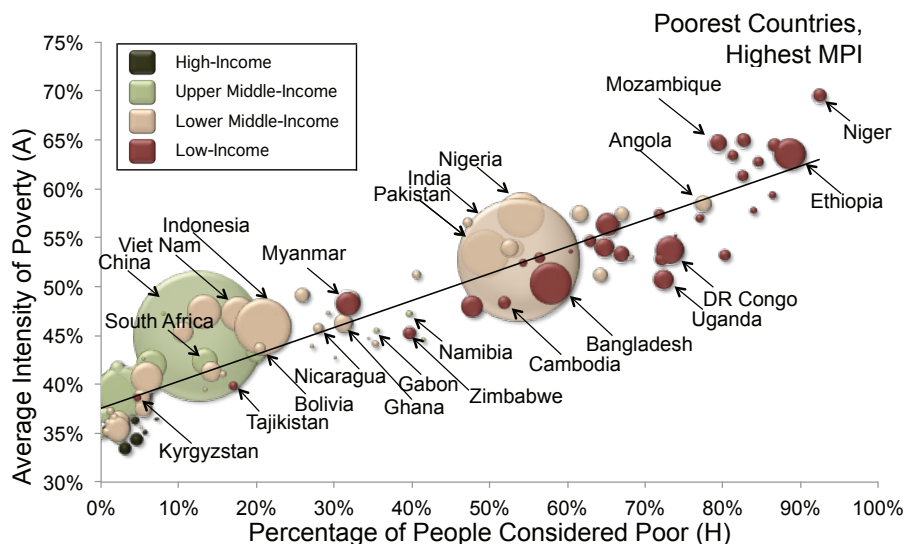
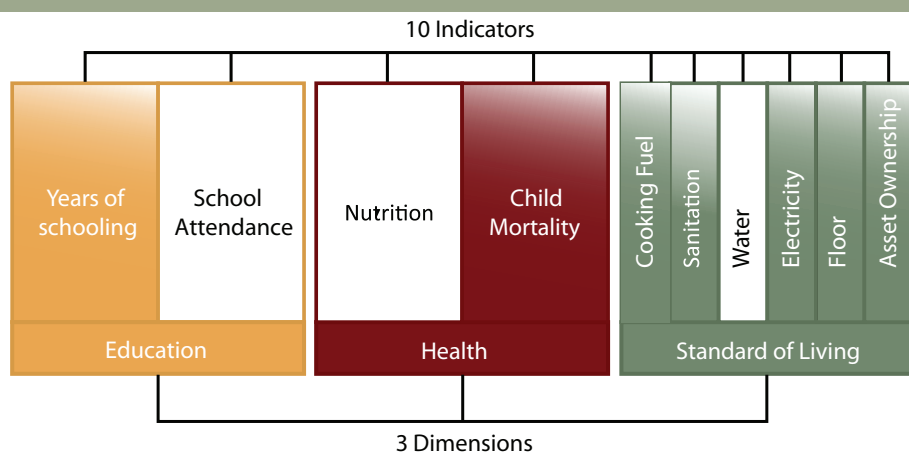


Figure 8. Adil's poverty profile



on the dalal. I now realise he swindled me of several hundred rupees,' he says.

After he left for Mumbai, tragedy struck the family twice, when within a span of three years, they lost two children. 'They were too weak and could not cope with the fever that afflicted them,' he says. He suspects they were weak because they rarely had enough to eat those days.

As Adil began sending money home, the family realized that there were enormous economic benefits in him working in Mumbai: 'We now have three meals a day, instead of the one or two that we could barely manage before I left.' He soon found his own way in Mumbai, making contacts and finding work on his own as a mason, restaurant worker and truck driver.

Although he does not have the security that the contractual labour provided, he says 'at least I have the freedom to choose



the kind of things I would like to work on. Of course, it is also true that this is no freedom at all. I have to leave home. I have to do menial, unskilled, low-paying jobs which offer no security, because if I do not work, my family will starve.'

Today, Adil earns at least INR 5,000 (after all expenses) for each trip that he makes to Mumbai. Adil regrets that he has to spend so many days – nearly a third of each year – away from Farha and the children. He still grieves that he could not be by his wife's side when two of his children died. But he hopes his struggles will not be in vain. 'I really wish my family and I could live together.'

He is grateful that he is able to use the opportunity provided by the government to educate his children. With that education, he hopes they will find work and will not face the difficulties he faces daily. 'One should be able to work and earn their living. We don't want free food or anyone's benevolence. We want employment. They should be able to work hard. I don't want my children to laze around, nor do I want them to beg or steal. Hard work promotes honesty, and honesty brings honour. I would like them and the future generations to lead honourable lives.'

The figure above shows Adil's poverty profile according to the MPI. The shaded boxes show the indicators in which he is deprived, telling us important details about the nature of the poverty that he faces. Adil is deprived in 61 per cent of the weighted dimensions – this is a high intensity of poverty.

The MPI looks at the poverty of each person in this way. It builds from the person right up to international level to create a vivid picture of poverty. As such the index can then be broken

down by dimension and group to clearly show how the composition of multidimensional poverty changes in incidence and intensity for different regions, countries, states, ethnic groups and more. It also shows the joint distribution of deprivations, capturing how many deprivations poor people are deprived in at the same time.

CONSTRUCTING THE MPI

The MPI reflects deprivations in education, health and living standards for people across 109 countries (indicators and the criteria for someone to be considered deprived in each indicator are presented in the box 'Inside the MPI'). Although deeply constrained by data, the MPI reveals a different pattern of poverty than income poverty, as it illuminates deprivations directly.

Each poor person is identified and an aggregate measure constructed using a methodology proposed by Alkire and Foster (2011) (see box 'The Alkire Foster Method'). In the global MPI, each dimension is equally weighted; each indicator within a dimension is also equally weighted. The method allows for adaptations to this weighting structure.

The MPI goes beyond other poverty measures to reveal the combination of deprivations that batter a person at the same time. A person is identified as multidimensionally poor if and only if he or she is deprived in some combination of indicators whose weighted sum exceeds one third of all deprivations.

The indicators are based on participatory exercises with poor people, emerging international consensus and the availability of suitable data. Most are linked to Millennium Development Goals. The estimates mainly use the most recent data available from the Demographic and Health Survey, the Multiple Indicators Cluster Survey, and the World Health Survey. Surveys are 2000-2010; 82 countries have data from 2005 or later. For details on the years of survey please see www.ophi.org.uk/policy/multidimensional-poverty-index/mpi-data-methodology/.

The MPI is the product of two numbers: the incidence or headcount (H) – the percentage of people who are poor, and the average intensity of deprivation (A) – which reflects the proportion of dimensions in which each person is, on average, deprived. Alkire and Foster

show that this measure is very easy to calculate and interpret, is intuitive yet robust, and satisfies many desirable properties. Better data are needed at the international level to be able to expand the measure to include other important dimensions, such as informal work, empowerment and safety from violence, and others, in the future.

The MPI has been included in the UNDP's *Human Development Report* since 2010, building on the previous Human Poverty Index.

THE MPI AS A TOOL FOR POLICY MAKERS

The MPI is a multi-faceted tool for measuring poverty which has been designed as a tool to help eradicate poverty.

To empower poor people to move out of poverty it is important to look holistically at key components of poverty – nutrition, years of schooling, adequate sanitation, clean water, etc. Many of these aspects have been measured in goals such as in the MDGs. The MPI goes beyond these to show which combination of deprivations a person experiences together.

The MPI starts by noting which deprivations batter a person simultaneously, and from this identifies whether each person is multidimensionally poor. It then aggregates the deprivations that each poor person suffers into a single measure that can be analysed to explore how deprivations interconnect – nationally or by region or population subgroup (ethnicity).

The key novelty of the MPI is that it is built upon the 'intensity' of poverty each person faces. This can be used to identify the poorest of the poor – people who experience multiple unmet MDGs. OPHI's country briefings show which proportion of poor people are deprived in different levels of intensity from 33% up to 90-100%. And of course the identity of these groups – by region for example – can be analysed.

The MPI can help policy makers to identify the poorest households and groups and the different deprivations that they face. It also helps to target attention to the poorest of the poor.

The MPI goes beyond other international measures of poverty to:

The Alkire Foster Method

The MPI was created using a technique developed by Sabina Alkire, OPHI Director, and James Foster, OPHI Research Associate and Professor of Economics and International Affairs at George Washington University. The so-called 'Alkire Foster method' measures outcomes at the individual level (person or household) against multiple criteria (dimensions and indicators).

The method is flexible and can be used with different dimensions, indicators, weights and cutoffs to create measures specific to different societies and situations. For example, the method can be applied to measure poverty or wellbeing, target services or conditional cash transfers and for the monitoring and evaluation of programmes.

The method can show the incidence, intensity and depth of poverty, as well as inequality among the poor, depending on the type of data available to create the measure. The MPI is calculated using this method.

- Identify the poorest people and aspects in which they are deprived simultaneously. Such information is vital to allocate resources where they are likely to be most effective.
- Identify which deprivations constitute poverty and which deprivations are most common among different groups, so that policies can be designed to address their particular needs.
- Reflect the results of effective policy interventions quickly. The MPI can be quicker to reflect the effects of changes in policies than income alone.
- Integrate many different aspects of poverty related to the MDGs into a single measure, reflecting interconnections among deprivations and helping to identify poverty traps.

The question "what does it mean to live in poverty?" has often been answered by lack of income. But the traditional focus on income has given way to an understanding that poverty is multidimensional. Recent high profile initiatives, such as the Stiglitz-Sen-Fitoussi Commission, have called for broader measures that take account of other vitally important aspects of life.

The human development approach has long argued that although income is important, it needs to be complemented by more direct measures (Anand and Sen 1997). The MPI complements income poverty measures because it directly measures the combination of deprivations that each household experiences at the same time.

BEYOND THE GLOBAL MPI – NATIONAL ADAPTATION

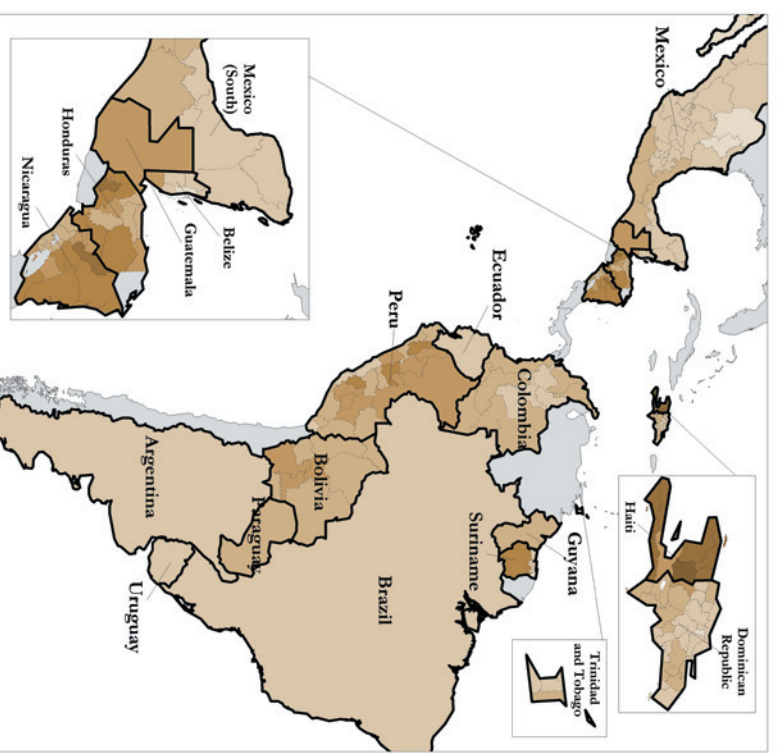
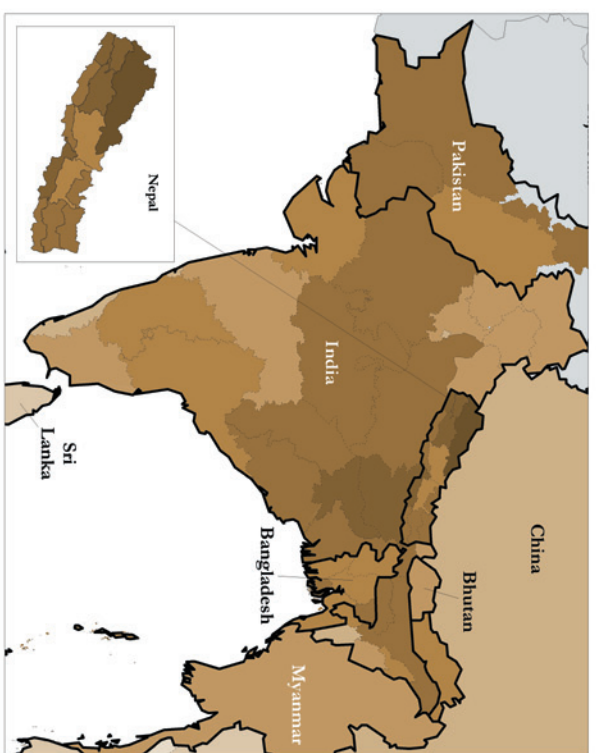
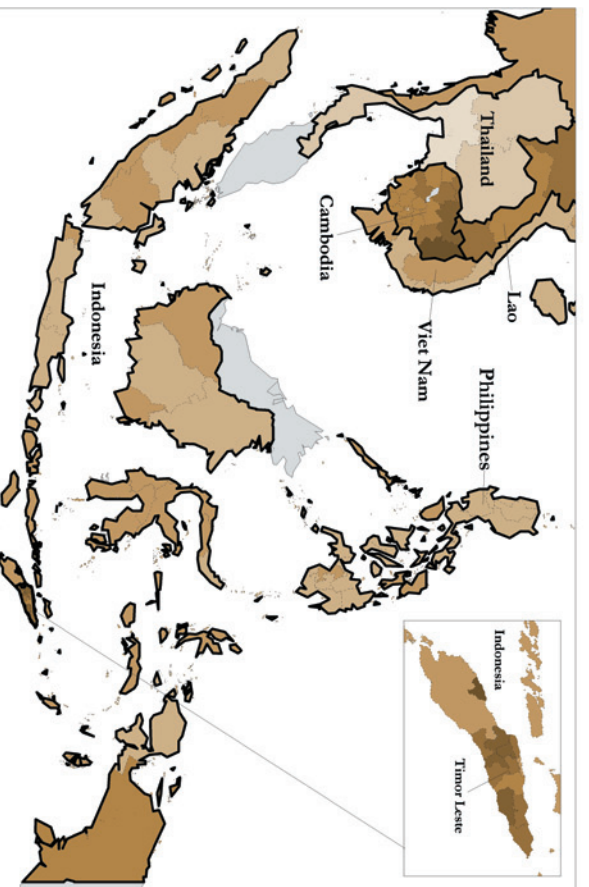
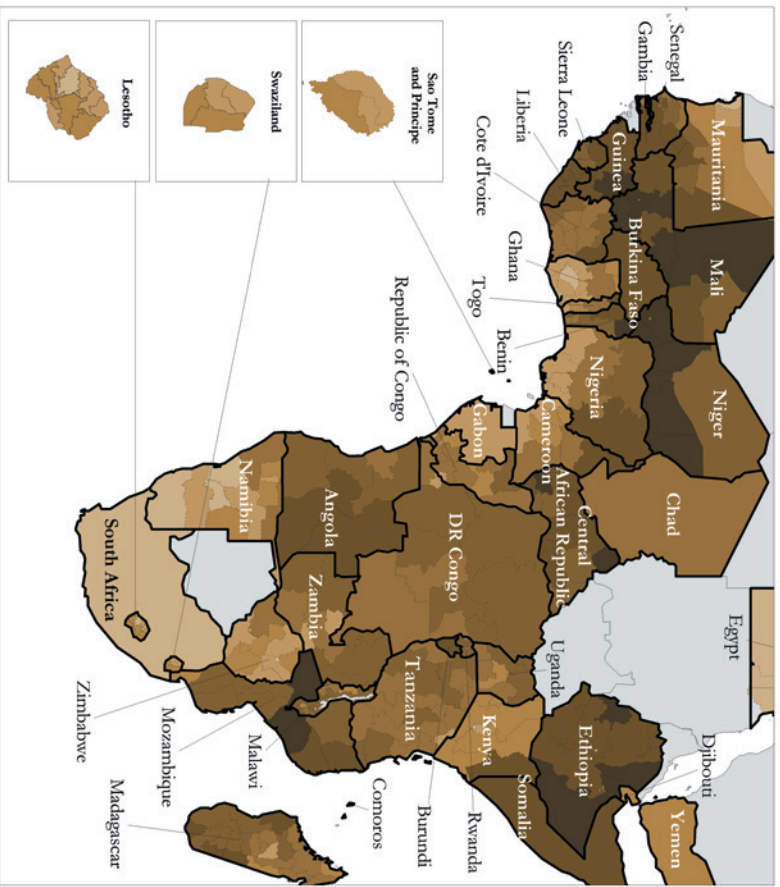
The Governments of Mexico and Colombia have pioneered nationally adapted multidimensional poverty measures

using the Alkire Foster methodology which underpins the global MPI. The Government of Mexico used a form of the Alkire Foster method to create their 2009 national multidimensional poverty measure. The Government of Colombia adapted it to create their 2011 MPI-Colombia – a national poverty measure, tied to an ambitious multidimensional poverty reduction plan.

National adaptation provides fertile grounds for developing national measures that reflect the goals and priorities of governments. In this way they run parallel to national income poverty measures. OPHI works actively with numerous governments and other institutions to develop innovative measures customised to local needs and realities.

REFERENCES

- Alkire, S. and Foster, J. 2011. Counting and Multidimensional Poverty Measurement. *Journal of Public Economics*.
- Alkire, S. and M.E. Santos. 2010. Acute Multidimensional Poverty: A New Index for Developing Countries. *OPHI Working Paper 38*.
- Alkire, S. J.M. Roche, M.E. Santos, S. Seth. 2011a. Multidimensional Poverty Index 011: Brief Methodological Note. OPHI Website
- Alkire, S. J.M. Roche, and S. Seth. 2011b. Sub-national Disparities in Multidimensional Poverty Across Developing Countries. OPHI Website: www.ophi.org.uk.
- Anand, S. and Sen, A. 1997. Concepts of Human Development and Poverty: A Multidimensional Perspective. *Human Development Papers*. New York: UNDP.
- UNDP. 2010. *What Will it Take to Achieve the Millennium Development Goals?* New York.



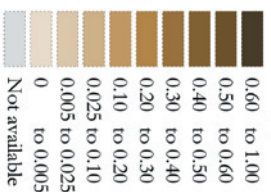
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Multidimensional Poverty Index
 MPI Value (0-1)



Multidimensional Poverty Index (MPI) at the Sub-national Level

This thematic map reports the MPI at the lowest level of disaggregation permitted by the data. The figures were available at the sub-national level for 683 regions of 66 countries, and only at the national level for the remaining 43 countries. The poverty estimates correspond to the most recent available figures.

The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by OPHI or the University of Oxford. This map is intended for illustrative purposes only.