Dimensions
Multidimensional Poverty Peer Network (MPPN) | www.mppn.org

June 2018

Special Issue

OPHI 10TH ANNIVERSARY

OPHI IMPACT
Amartya Sen
Michael Spence
Anthony Shorrocks

CHILEAN EXPERIENCE
Michelle Bachelet

INTERVIEWS
James Foster
Frances Stewart
María Emma Santos
## Contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Editorial</td>
<td>3</td>
</tr>
<tr>
<td><strong>OPHI’s Impact: A Ten-Year Retrospective</strong></td>
<td>7</td>
</tr>
<tr>
<td>Opinions from Amartya Sen, Michael Spence, and Anthony Shorrocks</td>
<td></td>
</tr>
<tr>
<td><strong>The Chilean Experience</strong></td>
<td>11</td>
</tr>
<tr>
<td>Multidimensional Poverty Measurement and Indicators of Local Environment and Social Networks by former President Michelle Bachelet</td>
<td></td>
</tr>
<tr>
<td><strong>Interview with James Foster:</strong></td>
<td>15</td>
</tr>
<tr>
<td>‘Multidimensional poverty measurement has followed an interesting path’</td>
<td></td>
</tr>
<tr>
<td><strong>Interview with Frances Stewart:</strong></td>
<td>21</td>
</tr>
<tr>
<td>‘OPHI is making a huge contribution’</td>
<td></td>
</tr>
<tr>
<td><strong>Interview with María Emma Santos:</strong></td>
<td>27</td>
</tr>
<tr>
<td>‘We reintroduced the question of how poverty should be measured on a global scale back into the global debate’</td>
<td></td>
</tr>
<tr>
<td><strong>Data of the Month:</strong></td>
<td>32</td>
</tr>
<tr>
<td>MPPN Map and Courses</td>
<td></td>
</tr>
<tr>
<td><strong>Acknowledgements</strong></td>
<td>35</td>
</tr>
</tbody>
</table>
When we started OPHI a little over ten years ago, we jotted down our ideas and expectations on a paper napkin one morning in a London bakery. Our goal was to do poverty research that shaped action – with a committed and diverse team, working alongside those with different powers, be they protagonists of poverty or policy actors.

We did not think we'd really achieve it, but it shaped our dreams. So we sought to do research while scanning the horizons for ways to be useful in public action, building on Amartya Sen’s work and example.

We began as a small group of technical people, mainly women economists, so our challenge was ambitious. After work with James Foster took shape, and connected us to colleagues in Mexico, OPHI focused on offering measures to those in charge of creating and implementing public policy.

Ten years have gone by. Currently, the Multidimensional Poverty Index (MPI) is used to measure poverty worldwide by the United Nations Development Programme, and countries from different parts of the world have established or are creating official tailor-made National MPIs. These have taken on a life of their own, and in some countries are playing a pivotal role in the design and coordination of public policy, SDG reporting, and so on.

In 2013, the Multidimensional Poverty Peer Network (MPPN) was launched to provide a high-level South-South space for ministers as well as statisticians to share experiences and join forces to face the challenges of poverty reduction. This magazine is one its instruments.

When we are asked what OPHI is, we think of a group of talented and energetic people, full of marvellous (at times a tad crazy) ideas that are pursued with great enthusiasm and dedication. We are grateful to all those who collaborated with OPHI in so many ways through the years.

Your joy and competence, friendship, humour and commitment, generosity and skill, are recognised and warmly remembered. It’s been a fun decade, and we feel another trip to the bakery – with the whole team – coming on.
What is OPHI

Established in 2007, the Oxford Poverty and Human Development Initiative (OPHI) is an economic research and policy centre within the Oxford Department of International Development at the University of Oxford.

OPHI is led by Sabina Alkire with the aim of advancing a more systematic methodological and economic framework for reducing multidimensional poverty that is grounded in people’s experiences and values. OPHI works towards this by

- Developing multidimensional measures of poverty and wellbeing;
- Impacting policy at the national and global level;
- Undertaking research on poverty in all its forms and dimensions;
- Building capacity through academic and technical courses on multidimensional poverty.

OPHI’s work is grounded in Amartya Sen’s capability approach. OPHI works to implement this approach by creating practical tools that inform poverty reduction policies.
OPHI Launch

A series of public lectures and workshops marked the launch of OPHI in 2007, including Nobel Laureate Amartya Sen’s public lecture on “What Theory of Justice?” held in the Sheldonian Theatre, and workshops on the Missing Dimensions of Poverty and Multidimensional Poverty Comparisons.

Participants at OPHI’s launch in Oxford, May 29–June 1.

Amartya Sen’s lecture chaired by Vice-Chancellor John Hood, Oxford

International Workshop Dimensions and Indicators of Human Development in China
Missing Dimensions

From the beginning, OPHI identified that one significant bottleneck for poverty research was a need for more and better data. So we focused from the start on five ‘Missing Dimensions’ of poverty that poor people hold to be important in their experiences of poverty:

1. Work and Livelihoods: having decent and safe work
2. Empowerment: being able to shape actions and exert agency in different areas of life
3. Safety from violence against person and property
4. Freedom from Shame, Humiliation and Isolation: being socially connected and having meaningful relationships
5. Psychological Well-being: enjoying happiness, evaluative life satisfaction in different domains, and enjoying autonomy, competence, relatedness and meaning.

To collect better data on these ‘Missing Dimensions’, OPHI designed five short, 8–10 minute questionnaire modules to be integrated into national household surveys. These were piloted in ten countries, and nationally representative surveys were fielded in Chile and Chad, with detailed data for women and men in the same household.
OPHI’s Impact: A Ten-Year Retrospective
Opinions from Amartya Sen, Michael Spence, and Anthony Shorrocks

Amartya Sen

OPHI has been, of course, a great success, and it’s wonderful that on the tenth anniversary of this institution we can look back and see how much has been achieved here.

There’s something extraordinary in the way that OPHI has operated with a very makeshift budget, a very difficult institutional position, where it had to fight for its position and to get support for teaching as well as research, while continuing to help think about problems of deprivation and poverty across the world. This would not have been possible without Sabina Alkire’s leadership.

So I must say that I feel very delighted that we are at the point when we can congratulate OPHI on its really well-established achievement. It’s a fabulous occasion to wish it further progress and great health, and continued illuminating contributions to the world.

The heart of public action lies in a clear-headed understanding of what the problems are, which is what OPHI has explored with the work of Sabina but also James Foster, John Hammock and others. They are really exemplary in terms of what can be done based on a very little, but organised, institutional resource base. It gives hope to everyone in the world that if you are really dedicated you can do a lot. OPHI is a true inspiration in this respect. I’m delighted to be able to congratulate OPHI for what it has done and what it is continuing to do.

Article is based on an interview with Amartya Sen.

Amartya Sen received the 1998 Nobel Prize in Economics for his contributions to welfare economics.

Thomas W. Lamont University Professor, and Professor of Economics and Philosophy at Harvard University.

Member of OPHI’s Advisory Committee.
Much has changed in the years since OPHI was founded. And OPHI has been a central voice and player in many of these developments. First, measuring economic and social progress (or its absence) using multiple measures that capture different aspects of the human condition is now widely accepted if not universally endorsed. Second, an earlier view that prosperity was based on tangible assets and wealth has been supplanted by a more accurate framework that places human development and the parallel building of effective institutions at the centre of poverty reduction and economic and social progress.

On the ground, as knowledge of the core elements and dynamics of growth and development widened, startling forward progress in poverty reduction and the expansion of opportunity has occurred. China, India, and Asia have grown to be systemically important and the future centre of the global economy as well as the principal sources of global growth in the present period.

Of course, there is much left to do. And there are challenging trends in the distributional aspects of growth patterns in the past 15 years, in developing and developed economies, trends that have led to centrifugal economic, political, and social forces gaining ground.

By almost any standard, the most significant development in OPHI’s first decade has been the dramatic explosion in both opportunities and challenges associated with digital technologies and their impacts on connectivity, the availability of critical services, the structure of economies and employment, and even the growth options for earlier stage developing countries.

Finally, all growth and development patterns require major adjustment to make them collectively sustainable. This is of central importance to the world’s poor who are the most vulnerable to climate change, water scarcity, and a host of other potential failures. In OPHI’s multidimensional framework, indices that capture elements of sustainability have assumed an increasingly prominent place in the initiative.

Michael Spence received the 2001 Nobel Prize in Economics for his analyses of markets with asymmetric information.
Senior fellow at the Hoover Institution and Philip H. Knight Professor and Dean, Emeritus, at the Graduate School of Business, Stanford University.
Professor of Economics at the New York University Leonard N. Stern School of Business.

2008
First Gross National Happiness Index of Bhutan released

2009
OPHI Workshop ‘Robustness Methods for Multidimensional Welfare Analysis’ Oxford
OPHI Workshop ‘Multidimensional Measures in Six Contexts’ Oxford
The way that poverty is assessed has changed profoundly during the past ten years. A decade ago, the merits of the capability approach pioneered by Amartya Sen were widely recognised, but in practice poverty was invariably judged in terms of material resources versus household needs.

Evaluating poverty in terms of capabilities still poses enormous challenges, but nowadays it is universally acknowledged that there are important dimensions to poverty other than income or resources – especially, but not exclusively, health – which need to be absorbed from the outset, rather than simply added as an afterthought.

OPHI has been a driving force in this transformation, not only leading the way with its own research, but also persuading agencies, institutions and even governments to proceed along the same route. It has been aided significantly by the increase in the quantity and coverage of data that is now available and easily accessible.

Looking towards the future, data resources and availability will remain central to improvements in the way that poverty is understood and assessed. More attention to the type of data collected will also be needed in order to make rapid progress. Most crucially in my view, radically new policies need to be devised that recognise our deeper understanding of the problem of poverty and that harness the technological developments of the past half century. These have improved the lives of so many people on the planet, but have left so many others behind, as the work of OPHI documents.

“I want to commend [OPHI] … for being an example of leadership in the academic world to reach out to practitioners, to policymakers, in order to allow us to understand that we’re not studying the same people from two parallel universes.”

Achim Steiner,
Administrator of the United Nations Development Programme (UNDP)
Sir Anthony Atkinson, In Memoriam

Sir Tony Atkinson, a giant of intellect and humanity in equal measure, is deeply missed. He actively advised OPHI in both practical and substantive matters from its start with intellectually incisive and humanly insightful suggestions. We continue to remember him daily with respect, admiration and fondness.

Professor Atkinson, who passed away on January 1, 2017, embodied the characteristics OPHI seeks to emulate. He masterfully combined theoretical, empirical and policy work. And he used these tools to address issues of social justice, poverty and the design of public policy throughout his career.

His influence on OPHI was broad. At the OPHI launch conference in 2007, he and François Bourguignon addressed the topic, *Directions for Research in Multidimensional Welfare Economics*; he participated in OPHI’s 2008 workshop on ‘Weighting in Multidimensional Poverty Measures’; he commented on papers delivered at the 2009 workshop on ‘Robustness Methods for Multidimensional Welfare Analysis’. His seminal 2003 paper on counting approaches came to be a fundamental reference point for OPHI’s 2015 book extending such approaches using the Alkire-Foster methodology. He advised us on topics ranging from article submission to our institutional structure to future areas for research and engagement.

In November 2016, the Commission on Global Poverty, which he chaired, released its report addressing two issues: the interpretation of extreme poverty as measured by $1.90 a day per person poverty line and how the World Bank should track and publish complementary poverty measures – both monetary and non-monetary. OPHI had the privilege of organising the Oxford launch of the report in November 2016 at the Oxford Martin School.
The Chilean Experience:
Multidimensional poverty measurement and indicators of local environment and social networks

by Michelle Bachelet, former President of Chile

In the last decade, several countries in Latin America and across the world have begun a process of modernizing the indicators and instruments used for poverty measurement, complementing traditional income-based measurement with multidimensional poverty measures.

Chile has joined this process, fulfilling the government’s campaign promises. In January 2015, two new and substantive innovations in official national poverty measurement were introduced: a revision and update of the income poverty measure (which had not been modified in 25 years) and the introduction of a new multidimensional poverty measure based on the methodology proposed by Alkire and Foster.

These relevant changes were the product of an extensive consultation process, consensus-building, and technical validation that included academics, representatives of civil society organizations, international organizations, and the public sector.
During this process, the government of Chile had the valuable support of the Oxford Poverty and Human Development Initiative (OPHI). Through a technical assistance program initiated in 2014, the needed capacities and skills were transferred to the national technical teams who worked on the development, evaluation, and validation of the multidimensional poverty measure. In addition to this work, OPHI’s input and, in particular, the visit and activities carried out in the country by Professors Sabina Alkire and James Foster and their team have been key to stimulating political and academic debate around poverty in Chile.

Continuing this effort, the government, through the Ministry of Social Development, committed itself to further refining the multidimensional poverty measure. The main challenge identified was how to incorporate deprivations related to the local environment and the social networks that households rely on. A lack of access to support networks and poor environmental conditions are forms of social exclusion that reinforce deprivations experienced in other dimensions, such as education, health, housing, employment, and social security.

In August of 2016, with Professor James Foster in attendance, we launched the extended multidimensional poverty measure, which includes five dimensions (education, health, employment and social security, housing and local environment, and networks and social cohesion) and a total of 15 indicators, which were measured for the first time with data from the Casen 2015 Survey.1

This expanded measure not only strengthens the assessment of poverty in Chile, it also signals the need to evaluate the results of public policies in terms of a holistic vision of development and the wellbeing of people. It also becomes a valuable tool for identifying population groups and regions that, regardless of their income, remain excluded from accessing the opportunities and wellbeing enjoyed by the rest of the country.

The design of the National Urban Development Policy, which complements the efforts of different ministries and public services through the Interministerial City, Housing and Territory Commission (COMICIVYT for its acronym in Spanish), is an example of the realization of this vision. This broader understanding of development can also be observed.

Note 1: The first results of this expanded multidimensional poverty measure are available on the website of the Social Observatory of the Ministry of Social Development (observatorio.ministeriodesarrollosocial.gob.cl)

Colombia launches its national MPI

OPHI Working Paper 43 ‘Understandings and Misunderstandings of Multidimensional Poverty Measurement’

OPHI Working Paper 46 ‘Multidimensional Poverty and its Discontents’
in the inclusion of children and young people who are not attending school into this new multidimensional poverty analysis. This helps to generate comprehensive policy responses aimed at promoting school attendance, preventing dropouts, and offering support for those not in school to reintegrate into formal education.

Including these deprivations not only implies broadening the way we look at the phenomenon of poverty, but also updating its assessment and measurement in line with the expectations and demands of Chile’s citizens and with the commitments made by Chile to the international community. This is particularly critical for the implementation of the United Nations’ Agenda 2030 for Sustainable Development, whose primary objective is ‘to end poverty in all its forms around the world’.

Having a multidimensional poverty measure, securing its continuity over time, and promoting its use as a tool for assessment and public policy design is fundamental for countries such as Chile, where we have opted for sustainable growth based on the principles of justice and equity.

OPHI’s input and, in particular, the visit and activities carried out in the country by Professors Sabina Alkire and James Foster and their team have been key to stimulating political and academic debate around poverty in Chile.

‘In Bhutan, the national MPI is (also) used as a policy tool and used as a basis to allocate resources across sectors, our districts and our villages effectively. We have used it to identify people’s needs for infrastructure and social services in the remotest areas.’

Dasho Tshering Tobgay, Prime Minister of Bhutan

ESRC-DFID grant ‘Enriching Methodologies of Measurement & Policy Analysis’ begins

Alkire-Foster Method: OPHI’s Multidimensional Measurement

The Alkire-Foster (AF) method is a way of measuring multidimensional poverty developed by OPHI’s Sabina Alkire and James Foster. It involves counting the various weighted deprivations that people experience at the same time, such as a lack of education, poor health, lack of employment, or inadequate living standards. People’s deprivation profiles are used to identify who is poor and to construct an information-rich multidimensional poverty index (MPI).

Identifying who is poor

In the AF method people are identified as multidimensionally poor if the weighted sum of their deprivations is greater than or equal to a poverty cutoff – such as 20%, 30% or 50% of all weighted deprivations.

It is a flexible approach that can be tailored to a variety of situations by selecting different dimensions (e.g. education), indicators of poverty within each dimension (e.g. how many years of schooling a person has), and poverty cutoffs (e.g. a person with fewer than five years of schooling is considered deprived).

The headline AF measure is the MPI. This measure reflects both the incidence of poverty (the percentage of the population who are poor) and the intensity of poverty (the percentage of deprivations suffered by the poor, on average). The information-rich MPI is normally broken down by indicator. The MPI is calculated by multiplying the incidence (H) by the intensity (A): MPI = H x A.

Why is the Alkire-Foster (AF) method useful?

The AF method provides a headline measure of poverty that is information-rich. Its results can be broken down and analysed to inform policy in powerful ways. Measures developed using the AF measure can do the following:

• **Report Intuitive Statistics** like the percentage of people who are poor and the intensity of poverty among the poor.

• **Disaggregate results by population group**, such as by geographic area, ethnicity, age cohort, gender, disability status or other subgroups of a population, to show the level and composition of poverty across groups.

• **Breakdown results by dimension or indicator** to show which deprivations contribute most to poverty within groups, producing high-impact policy responses.

• **Monitor trends over time** to see the pace of progress and whether any group is being left behind.

• **Complement other metrics**, such as measures of monetary poverty.
James Foster:

‘Multidimensional poverty measurement has followed an interesting path’

James Foster is a co-creator of the Foster-Greer-Thorbecke class of measures, one of the most commonly used methodologies for estimating income poverty. He is also the co-author of the Alkire-Foster methodology, a method for measuring multidimensional poverty that has been adopted by the United Nations Development Programme as well as a number of countries.

How did you get involved in multidimensional poverty measures?

My recent interest in measuring multidimensional poverty traces back to work on chronic poverty, or income poverty experienced over many periods of time. My approach began by counting the number of periods in which a person is poor: If the number is high enough, then the person is considered to be chronically poor.

I presented a paper at Manchester and Sabina Alkire, who was in the audience, said to me afterwards: “You know, this is relevant to multidimensional poverty”. I had failed to see the connection, and, in fact, replied “I don’t think so”. But she was quite insistent and invited me to come to Oxford to discuss it. This I did in December 2006, and, after about five hours, she had convinced me that it was very much applicable. In fact, it became the core of our new multidimensional approach (i.e. if you are deprived in enough dimensions you are considered poor, analogous to how I had identified the chronically poor). I had never made the connection nor had I even invested time in considering multidimensional poverty, since I thought it would be too difficult to bring all the dimensions together. It turned out that the counting approach in deprivation space provided the key. It just needed the guidance of someone who had thought a great deal about multidimensional poverty – Sabina Alkire – to make it come to fruition.
The acceptance of multidimensional poverty measurement has taken different paths, with countries adopting these measures while strong debate was still taking place within academia and some international organizations. Why do you think this happened?

Academics and others who deal with poverty measurement, using, say, an income-based approach, have one emphasis: How defensible are their measurement choices within the context of the broader literature? Their notion of what is defensible includes what is able to be justified ‘scientifically’ or ‘objectively’. Multidimensional poverty measurement is not well fitted for this kind of abstract academic discussion because of its normative approach that goes beyond purely scientific and objective considerations.

We try to be explicit as to how the normative context intervenes in the choice of dimensions, in the cutoffs, in the values that are given to each dimensional deprivation, and the ultimate poverty cutoff (which is very much analogous to an ordinary poverty line). These normative aspects can be seen as problematic by those who would like a scientific justification for filling in the essential details.

Yet the whole point of the technology [the Alkire-Foster method] is to translate the underlying values of a group of people, such as a country, into a measurement tool that allows them to monitor their own level of poverty, ultimately reducing poverty as they have defined it. Thus, the fit for country-specific applications
is extremely good. You have the possibility of a committee coming together within a country and working diligently to combine the best academic work and the best notions of what it is that people in the country value, what the most important policy issues are, how much of an achievement is needed before someone’s status is no longer seen as deprived, etc.

These are local matters for a country (or perhaps a city or region) to determine, so it was natural that people saw almost immediately that this tool could be used effectively at the country level. They understood its potential for wrapping an entire development plan around a single measure, which can monitor the poor’s progress in all the dimensions simultaneously. The approach is tailor-made for policy and targeting needs. Countries recognised this pretty quickly though it obviously helped that OPHI was so active in engaging countries that were curious about multidimensional poverty.

Yet the whole point of the technology, the Alkire-Foster method, is to translate the underlying values of a group of people, such as a country, into a measurement tool that allows them to monitor their own level of poverty, ultimately reducing poverty as they have defined it.

I think that is the explanation: On one side, academics and people who cover global poverty hope to fill in the details in a way that is viewed as academically sound and scientifically based, as opposed to countries who are more concerned that their measure should reflect the underlying values within the country – which is what national poverty measurement should be about.
What do you think the future is for multidimensional poverty measurement? Will it become a more popular approach than income-based approaches? Will it coexist with income poverty measurement?

Multidimensional poverty measurement has followed an interesting path. First, you have one big example in Mexico that combines income with other dimensions to obtain an overall multidimensional poverty index. If you look at OPHI’s global MPI, it measures deprivations directly across countries in as health, education and living standards indicators. Then you have a whole array of national indices (as in Colombia or Chile) that are purely outside of the income-based poverty approach – which initially I was surprised to see happen.

However, it is not an unexpected development because people are comfortable looking at income-based poverty and they are also comfortable looking at multidimensional poverty as an idea apart from income. Theoretically, a natural joining of the two could happen, either by merging the two approaches (a person is poor if they are either income or multidimensionally poor) or by intersecting the two, leading to something like what we have in Mexico (a person is poor if they are both income and multidimensionally poor). But at present they are mainly kept separate for very good data reasons.

On the academic side or the international organization side, I would expect that interest in the multidimensional sphere would create theoretical questions along the same lines as we have seen in income-based approaches. For example, if you are a country with a multidimensional poverty measure, how do you most efficiently lower poverty? Or put differently, suppose you have certain tools and a certain budget: How do you maximise the decrease in poverty? That kind of optimal policy exercise is something that I would expect to see more often as academics and international organizations study the issue more thoroughly. I think that people are beginning to see that multidimensional poverty can be usefully analysed in many of the same ways as income poverty, although results may be affected by the presence of multiple dimensions. ■

‘In 2004, the General Law of Social Development was approved to raise the standard of what a dignified life should be.... Poverty was no longer defined as a condition related exclusively to insufficient income and started to be seen as a multidimensional phenomenon, incorporating social rights, such as food, access to health and social security services, education, as well as basic services and quality of housing. The importance of this new approach is clear: the only way to end poverty in a comprehensive way is for each person to fully exercise all those rights.’

Enrique Peña Nieto, President of Mexico

Distinguished Public Lecture by Amartya Sen ‘Discovery of Women’, Oxford

Special Issue published on ‘A Multidimensional Approach: Poverty Measurement & Beyond’, Social Indicators Research

Common Uses of the Alkire-Foster (AF) Method

- **Poverty measures**: The AF method is used to create national, regional and international measures of poverty or wellbeing by incorporating dimensions and indicators that are tailored to specific contexts.

- **Targeting of social programs**: The AF method is used to target people who are deprived in multiple ways, to identify the poorest and inform programs to leave no one behind.

- **Monitoring and evaluation**: The MPI can be used to monitor the effectiveness of programmes over time.

- **Resource allocation**: The MPI and its indicator composition can be used to guide decisions on public expenditures – for example, within the national budget.

- **Tracking progress in the SDGs**: The MPI is being used to monitor SDG 1.2, which seeks to halve poverty in all its forms and dimensions.

- **Coordinating multisectoral policies**: Because it provides a common goal, the MPI is being used to plan and implement integrated interventions across different ministries such as education, health, and employment and housing.
The global Multidimensional Poverty Index (global MPI) is an internationally comparable measure of acute poverty covering over 100 developing countries. It complements traditional monetary poverty measures by capturing the severe deprivations that each person faces at the same time with respect to education, health and living standards.

The global MPI assesses poverty at the individual level. If someone is deprived in a third or more of ten (weighted) indicators, the global index identifies them as ‘MPI poor’, and the extent – or intensity – of their poverty is measured by the number of deprivations they are experiencing.

The global MPI can be used to create a comprehensive picture of people living in poverty and permits seamless comparisons across countries and regions as well as within countries by ethnic group, urban/rural areas, age group and subnational regions.

This makes it an invaluable analytical tool for identifying the poorest among the poor, revealing poverty patterns within countries and over time, and enabling policymakers to design policies and target resources more effectively.

The global MPI was developed by OPHI with the United Nations Development Programme (UNDP) for inclusion in UNDP’s flagship Human Development Report (HDR) in 2010. It has been published in the HDR and by OPHI ever since.

---

**Three Dimensions of Poverty**

- **Health**
  - Nutrition
  - Child Mortality

- **Education**
  - Years of Schooling
  - School Attendance

- **Living Standard**
  - Cooking Fuel
  - Improved Sanitation
  - Safe Drinking Water
  - Electricity
  - Flooring
  - Assets

---

**Ten Indicators**

2014

**Mahbub-ul-Haq Memorial Lecture**

‘Poverty, Inequality, and Growth’ by Sabina Alkire

Islamabad, Pakistan

**OPHI Working Paper 67**

‘Social Isolation: A Conceptual and Measurement Proposal’
Frances Stewart: ‘OPHI is making a huge contribution’

Frances Stewart is Professor Emeritus of Development Economics at the Oxford Department of International Development (ODID). She was Director of ODID from 1993-2003 and Director of the Centre for Research on Inequality, Human Security and Ethnicity (CRISE) at the department between 2003 and 2010. Professor Stewart is a member of OPHI’s Advisory Committee.

How do you think the international context has changed regarding multidimensional poverty since the launch of OPHI ten years ago?
There has been a huge acceptance of the value of the concept of multidimensional poverty, and that is very important. Even the international financial institutions, which favour monetary poverty, now recognise it as an additional indicator. We also know that the UNDP has accepted it as a way of measuring poverty and that many countries are increasingly using it. So, in terms of attitudes toward non-financial poverty and the index itself, I think there has been huge progress.

What about the other elements of the changing context? Well, clearly one of the contexts is that poverty has been reduced quite substantially over these years. That is an important part of the context, and, possibly partly as the result of that and partly for many other reasons, there is much more emphasis now on inequality. There is also increasing emphasis, of course, on the environment. So, there is some movement away from the emphasis on poverty, which was present when OPHI started, and some movement in new directions.

What is your opinion of OPHI’s work over this period and its contribution to the changes you mentioned?
In terms of the change in the acceptance of the MPI, OPHI has been amazingly influential. OPHI single-handedly got the concept accepted; not only the concept, but the Alkire-Foster methodology is now very widely accepted as an established methodology. And, clearly there is much greater use of the MPI, which is often due to OPHI itself going around the world helping countries measure MPIs. You can see the acceptance in the SDGs, where multidimensional poverty is now recognised as important, along with monetary poverty. At the country level particularly, almost all of the credit must go to OPHI for the acceptance of the Alkire-Foster methodology. In short, OPHI has made and is making a huge contribution.
Where do you see the multidimensional agenda going next and where do you see OPHI in the future?

I think more policy work is needed. It would be great for OPHI to get a better sense of how different types of policies contribute to reducing MPI. For example, how do the many types of cash transfers, or micro-credits, or spending on primary health care, and so on, contribute to reducing multidimensional poverty? Many of these questions have been studied in relation to monetary poverty, but very little has been done in relation to the MPI. I think OPHI could make a big contribution there and in looking at the critical needs for policy changes in order to reduce multidimensional poverty. Why has MPI fallen generally, and why has it fallen more in some contexts than in others? What are the specific policies which accounted for this? To what extent is the macro-environment or distributional issues responsible?

I think there is a lot of work that could be done there – careful empirical work to understand the contributions to changes in MPI in terms of policy and other contexts. That is one issue for future work. It would also be very good if OPHI could get more national statistical offices measuring MPIs. It shouldn’t be down to OPHI to go around trying to measure it; measurement should be integrated into national statistical offices’ work. This may be happening in a few places, but it needs to occur in a much more general way. Just as almost every statistical office now has a mandatory poverty measure, every statistical office should have an MPI measure. That is an institutional change that OPHI should be pushing.

Another need is to gain even more acceptance of the MPI in official measures so that when the World Bank produces structural adjustment programs or the International Monetary Fund (IMF) lays down mandatory policies for countries to gain IMF assistance, it is not only data on, and reductions in, monetary poverty that is demanded but also reductions in MPI. Indeed, it would be good if MPI displaced monetary poverty entirely. That would be a big and very ambitious achievement.

Then, I think it is necessary and desirable for OPHI to move on to new issues. One of them is inequality.

In terms of the change in the acceptance of the MPI, OPHI has been amazingly influential. OPHI single-handedly got the concept accepted; not only the concept, but the Alkire-Foster methodology is now very widely accepted as an established methodology.
I hear there has been one preliminary paper on it, maybe more, and I know several people have been working on this issue and there is a lot of controversy about what is the best way of doing it. Measurement of multidimensional inequality is a big issue on which it would be good to get the same sort of wide acceptance for a multidimensional measure that we have achieved for the MPI. In other words, to gain similar acceptance for what we might call an MII, or a multidimensional inequality index.

This would be a very important and challenging issue. It is one thing to get the multidimensionality of inequality accepted, and another to get agreement about the elements of non-monetary aspects of inequality and how to measure them properly. How do we define and measure inequality in education or health, for example? And how do we best put them into a single index?

Another priority, in my view, is that OPHI needs to focus even more on the environment. Environmental issues are going to be increasingly important and will dominate much of the development debate. A big issue is going to be how to incorporate aspects of the environment into OPHI’s measures.

There will be difficulties since some environmental indicators are best measured at the national level or community level and not at the individual level. So if we examine individual poverty, there may not be much difference among individuals – they all suffer from the same air pollution – but we can differentiate across communities within a country or across countries on some indicators. On some indicators, we may have to take even broader measures at a regional or global level, for example for climate change and the impact of climate change, and how this affects poverty. Living in an uncertain environment is also an aspect of poverty, which is something that is likely to be best measured largely at the country as well as the individual level.
**OPHI’s Impact**

During its first ten years, OPHI has made remarkable progress in developing and promoting rigorous multidimensional methods for measuring poverty that can lead to real improvements in the lives of the poor.

- In 2007, Director Sabina Alkire and James Foster developed the Alkire-Foster method, an innovative way to measure multidimensional poverty. It is used by governments and organizations to design effective poverty-reduction programs around the world.

- In 2009, Mexico became the first country to launch an official national multidimensional poverty measure using an adaptation of the Alkire-Foster (AF) method. In 2010 and 2011, Bhutan and Colombia followed with their own official national Multidimensional Poverty Indices (MPIs), as have Chile, Ecuador, El Salvador, Costa Rica, Pakistan, Armenia, Honduras, Panama, Dominican Republic, Mozambique, Nepal, among others. Additional countries are in the preliminary stages of adopting an AF-based poverty measure.

- Since 2010, the OPHI-designed global MPI has been published and updated in the United Nations Development Programme’s (UNDP) Human Development Reports, the result of a collaboration between OPHI and the Human Development Report Office of the UNDP.

- Because poverty reduction requires policy champions as well as statisticians, the Multidimensional Poverty Peer Network (MPPN) was launched in June 2013 in Oxford, with President Juan Manuel Santos of Colombia and Professor Amartya Sen addressing ministers and senior delegates from 16 governments. Currently, over 50 countries and many international organizations participate in the MPPN.

- In its role as Secretariat of the MPPN, OPHI and its government partners organised annual Side Events on Multidimensional Poverty at the UN General Assembly. The MPPN countries proactively articulated the value of the Sustainable Development Goals’ (SDGs) opening poverty targets: Target 1.1 focused on monetary poverty, and Target 1.2 focused on poverty in all its dimensions.

- Beginning in 2012, again as Secretariat of the MPPN, OPHI and its government partners have arranged side events at the UN Statistical Commission meetings, in which senior national statisticians showcase how a national MPI and the global MPI complement monetary poverty measures.

- OPHI teaches an annual two-week intensive summer school in multidimensional poverty measurement. These courses have been held all over the world, including India, Peru, Jordan, Netherlands, Indonesia, USA, UK, Morocco and China. About 800 alumni have been trained since 2008. OPHI has also delivered trainings in Chile, Nicaragua and Colombia (in Spanish), Mozambique (in Portuguese), Senegal (in French and English), Rwanda, and South Africa, among others.

- In 2012, the Women’s Empowerment in Agriculture Index (WEAI) was launched. The WEAI, which uses the Alkire-Foster method and intra-household gendered data on empowerment, is being employed to support the US government’s food security programs. The baseline report, published in 2014, analysed WEAI for 13 countries.

- OPHI won the Economic and Social Research Council Celebrating Impact Prize ‘Outstanding International Impact’ award in June 2014 for its innovative method for measuring multidimensional poverty, which is helping governments to design more effective national poverty-reduction programs.

- Oxford University Press published Multidimensional Poverty Measurement and Analysis in 2015, a book written by OPHI researchers. The book provides a systematic academic overview of theoretical and empirical aspects of multidimensional poverty measurement methodologies. It has been published online, with all chapters being freely downloadable.

- OPHI has published over 110 Working Papers.

- In 2016 OPHI worked with a private sector association in Costa Rica, Horizonte Positivo, to develop a new Business MPI, to be used by businesses to measure the multidimensional poverty of its employees and their families.
The Multidimensional Poverty Peer Network (MPPN) is a growing global community of more than 70 countries and organizations that focuses on multidimensional poverty. Created in 2013, the network was established to provide support to policymakers who are implementing a Multidimensional Poverty Index (MPI) or are exploring the possibility of developing multidimensional measures of poverty.

The MPPN aims to eradicate poverty through the use of measurements that consider the different types of deprivations experienced simultaneously by people living in poverty. The MPPN also works to promote public policies that have better technical design, greater focus and more effectiveness in reducing poverty in all of its dimensions.

The MPPN has held annual meetings in Berlin (2014), Cartagena (2015), Acapulco (2016), and Beijing (2017), and will hold its next meeting in South Africa in 2018.
ESRC-DFID grant ‘Engaging International Institutions in Multidimensional Poverty’ begins

Armenia, Ecuador, Honduras & Pakistan launch their national MPIs

Maria Emma Santos:  
‘We reintroduced the question of how poverty should be measured on a global scale back into the global debate’

Maria Emma Santos is the co-author, along with Sabina Alkire, of the global Multidimensional Poverty Index (MPI), published by UNDP and OPHI since 2010. She is a researcher of the National Scientific and Technological Research Council of Argentina (CONICET), based at the Institute of Economic and Social Research of the South (IIES), Department of Economics, National University of the South (UNS), Argentina, and a research associate at OPHI at the University of Oxford.

The Multidimensional Poverty Index (MPI) marked a turning point in OPHI’s contribution to the debate on the measurement of global poverty. Could you tell us how this index came about? The index was developed between 2009 and 2010. The year 2010 was approaching, marking 20 years since the publication of the first Human Development Report. Jeni Klugman, director of the United Nations Development Programme’s (UNDP) Human Development Report Office at the time, wanted the anniversary edition to be really special, for it to not only recognise the significant work carried out and progress made by the Human Development Report since 1990, but also for it to outline the new challenges faced, 20 years after the first report, with respect to the development of countries and the international agenda. I think that, essentially, she wanted it to become a kind of reference.

Klugman was in close contact with Sabina Alkire, director of OPHI. Sabina made many suggestions for the report so that it would offer new and better kinds of measurements with respect to both poverty and human development in general. OPHI was using the methodology proposed by Alkire and James.
Foster, which at the time Sabina wished to implement ‘on a large scale’. She wanted us to develop a multidimensional poverty index that, using the Alkire-Foster Method, would have the necessary content in terms of indicators to monitor progress in the reduction of multidimensional poverty in developing countries.

The challenge was a significant one: build and estimate a multidimensional poverty index that would be internationally comparable across 100 countries. That’s how we started working on it. It was a process that involved a huge amount of work and close interaction with the UNDP and many months and rounds of debates with experts. We had the normative guidance of the capability approach and the international development agenda set by the Millennium Development Goals (MDGs), but we were also held back by the limitations of data sources. We had to make many decisions, such as whether to include income or favour the inclusion of nutrition – in other words, to use the Living Standards Measurement Study (LSMS) or the Demographic and Health Surveys (DHS) and Multiple Indicator Cluster Survey (MICS) – and many other similar dilemmas. Can we include empowerment? What thresholds should we use? What weighting? It was a simultaneously fascinating and exhausting process. Sabina was very clear about where we were going with this. And I think we achieved our mission. We reintroduced the question of how poverty should be measured on a global scale back into the global debate. We stirred up the debate, in a good way, because it is always good to reconsider the question of what we want to measure and how we should measure it.

What do you think are the main strengths of the index and what are its limitations?

I think that its main strength is its definition: measuring acute poverty in a direct way. It measures simultaneous deprivations, deprivations that form the core of poverty. A home considered poor by the MPI is undoubtedly...
poor. It is undeniable: at a minimum it has deprivations in all indicators related to living standards, which are mainly linked to housing (dirt floor, no access to treated drinking water, no improved sanitation facilities, lack of access to electricity, unclean energy used for cooking, and a lack of minimal durable goods). It could also be a home that has experienced infant mortality and where the children or women are malnourished. Or it could be a home that is totally deprived in education. Or it could be a combination of these factors. These homes suffer from acute poverty. They should be at the top of our list of priorities, no matter what.

As well as this direct identification (not indirect, as poverty by income is), the MPI lets us know what deprivations are experienced by the poor, and this is extremely useful from a policy point of view. It is a very important guide that provides information that can be used for clarification. This doesn’t mean that monetary poverty isn’t important. Income is important. We all like to have a minimum level of income because it gives us the ability to choose. But we also want a decent home and a minimum level of education and health. Often, access to a minimum level of income does not guarantee these functions for many reasons. From the point of view of those whose task it is to reduce poverty, knowing that the principal deprivations of the poor concern their home, education, or health, or concern all at the same time or some combination of these, is extremely important for informing policy.

I think the MPI has two limitations. On the one hand, the MPI measures intensity (how many simultaneous deprivations are experienced by the poor), but, given the nature of the indicators, they do not allow us to say much beforehand about the depth of each deprivation. This is more a problem with the kind of variables involved than a problem with the MPI per se.
We know that it is worse to have to go and fetch water from the tap at the end of the street than to have a tap in your house, but it is difficult to say how much worse it is. In any case, there are ways, and in fact OPHI uses them, to tell this story too. Different thresholds can be used and can identify the destitute, something that Sabina has worked on with Suman Seth.

The other limitation is that, although it is multidimensional, the MPI cannot take everything important into account. This is partly due to the available data: there are many relevant indicators for which there is no internationally comparable information available. However, I don’t think that this would be feasible either. One index of 20 indicators would end up undermining the MPI. The MPI monitors acute poverty. If we want to evaluate poverty with more demanding standards, then we can use the national MPI or a regional MPI, such as those we have developed for Latin America with colleagues from the Economic Commission for Latin America and the Caribbean (ECLAC).

The MPI recently turned seven years old. How do you see its future as a measure of international comparison for poverty?
I think it has a big future. The 2030 Agenda is extremely demanding. It is wonderful that it exists. It is a magnificent ‘goal’, but monitoring it will not be easy because there are many objectives and aims, and therefore many indicators, which in some cases are more demanding than those in the MDGs. The MPI summarises a lot of information in one number, and it can also then ‘unpack’ this information with its indicators.

Furthermore, the MPI is ‘cross-sectional’ to many SDGs, not just the first one, and in this sense it is a multipurpose indicator. I think that seven years after its first edition, the MPI has become a reference that is an ideal counterpart to international monetary measurements of poverty.

“I want to express the support of Honduras to the initiative of using the global MPI as a tier 1 indicator to be included in the Sustainable Development Goals and to measure, at the National level, poverty reduction in all its dimensions.”

Juan Orlando Hernández, President of Honduras

Mozambique, Nepal, Panama, and the Dominican Republic launch their national MPIs

Distinguished Public Lecture ‘Democracy and Social Decisions’ by Amartya Sen, Oxford

OPHI: Next Steps

In upcoming years, OPHI hopes to work on

**Child Poverty:** Supporting countries in developing child MPIs that capture the unique attributes of child poverty.

**New Dimensions:** Exploring rigorous ways to incorporate new dimensions, such as violence, social isolation, empowerment or environment, into MPIs.

**Impact Evaluation:** Exploring how the Alkire-Foster method can better evaluate which policies have been effective in enabling the poor to escape multiple deprivations.

**Global MPI:** OPHI will continue to be at the forefront of rigorous international multidimensional poverty analyses that consider interlinkages across indicators and inform multisectoral and integrated policies. This may include a **Women’s MPI** that compares the kinds and levels of deprivations women aged 15-49 experience across countries.

**Business MPI:** OPHI will advise businesses who seek to identify if any employees are living in multidimensional poverty according to national definitions and assist businesses in tackling this issue.
Data of the Month

MPPN Countries
Participants are Ministers and Senior Officials from:

1. Afghanistan
2. Angola
3. Antigua and Barbuda
4. Argentina
5. Bangladesh
6. Bhutan
7. Bolivia
8. Botswana
9. Brazil
10. Burkina Faso
11. Chad
12. Chile
13. China
14. Colombia
15. Costa Rica
16. Cuba
17. Djibouti
18. Dominican Republic
19. Ecuador
20. Egypt
21. El Salvador
22. eSwatini
23. Grenada
24. Guatemala
25. Honduras
26. India
27. Iraq
28. Jamaica
29. Malaysia
30. Mexico
31. Mongolia
32. Morocco
33. Mozambique
34. Nepal
35. Nigeria
36. Pakistan
37. Panama
38. Paraguay
39. Peru
40. Philippines
41. Rwanda
42. Saint Lucia
43. Saint Vincent and the Grenadines
44. Senegal
45. Seychelles
46. South Africa
47. Sudan
48. Tajikistan
49. Tanzania
50. Tunisia
51. Turkey
52. Uganda
53. Uruguay
54. Vietnam

Costa Rica launches the first Business-MPI
UNGA High Level Side Event ‘Using the Multidimensional Poverty Index to Track Progress in the SDGs’, New York
Arab Multidimensional Poverty Report 2017 launches at UNGA, New York
MPPN Partner Institutions

1. African Development Bank
2. Commonwealth of Nations
3. Economic Commission for Latin America and the Caribbean (ECLAC)
4. Federal Ministry for Economic Cooperation and Development, Government of Germany
5. Inter-American Development Bank (IDB)
6. Islamic Development Bank
7. Organization of American States (OAS)
8. Organisation for Economic Cooperation and Development (OECD)
9. Organisation of Eastern Caribbean States (OECS)
10. Oxford Poverty and Human Development Initiative (OPHI)
11. Swedish International Development Cooperation Agency (Sida)
12. Southern Africa Development Community (SADC)
13. Statistical, Economic and Social Research and Training Centre for Islamic Countries (SESRIC)
14. United Nations Development Programme (UNDP)
15. United Nations Economic and Social Commission for Western Asia (ESCWA)
17. World Bank

MPPN 5th Annual Meeting, Beijing, China

‘Social Isolation and its Relationship to Multidimensional Poverty’
Oxford Development Studies

WIDER 21st Annual Lecture
‘How Are People Poor? Measuring Global Progress Towards Zero Poverty and the SDGs’ by Sabina Alkire
Helsinki, Finland
Teaching

Around 800 people from all over the world have been trained by OPHI through the annual Summer School, and regional and country trainings. The Summer School gives a conceptual and technical introduction to current literature and techniques of measuring multidimensional poverty with a focus on the Alkire-Foster method.

<table>
<thead>
<tr>
<th>Type</th>
<th>Year</th>
<th>Location</th>
<th>Number of students</th>
</tr>
</thead>
<tbody>
<tr>
<td>Summer School</td>
<td>2008</td>
<td>India</td>
<td>33</td>
</tr>
<tr>
<td>Summer School</td>
<td>2009</td>
<td>Peru</td>
<td>38</td>
</tr>
<tr>
<td>Summer School</td>
<td>2010</td>
<td>Jordan</td>
<td>36</td>
</tr>
<tr>
<td>Summer School</td>
<td>2010</td>
<td>Chile</td>
<td>40</td>
</tr>
<tr>
<td>Summer School</td>
<td>2011</td>
<td>Netherlands</td>
<td>42</td>
</tr>
<tr>
<td>Summer School</td>
<td>2012</td>
<td>Indonesia</td>
<td>48</td>
</tr>
<tr>
<td>Summer School</td>
<td>2013</td>
<td>United States of America</td>
<td>56</td>
</tr>
<tr>
<td>Summer School</td>
<td>2013</td>
<td>Nicaragua</td>
<td>57</td>
</tr>
<tr>
<td>Summer School</td>
<td>2014</td>
<td>United Kingdom</td>
<td>68</td>
</tr>
<tr>
<td>Summer School</td>
<td>2015</td>
<td>United States of America</td>
<td>71</td>
</tr>
<tr>
<td>Regional Training</td>
<td>2015</td>
<td>Senegal</td>
<td>56</td>
</tr>
<tr>
<td>Summer School</td>
<td>2016</td>
<td>China</td>
<td>76</td>
</tr>
<tr>
<td>Regional Training</td>
<td>2017</td>
<td>Colombia</td>
<td>42</td>
</tr>
<tr>
<td>Summer School</td>
<td>2017</td>
<td>Morocco</td>
<td>80</td>
</tr>
</tbody>
</table>
Support

OPHI and its activities are entirely funded by grants and donations from governments, international agencies, foundations, and private donors. To all of them, a BIG thank you for making our work possible!

- Asian Development Bank
- Australian Aid (AusAID)
- Canadian International Development Agency (CIDA)
- Economic and Social Research Council (ESRC)/(DFID) Joint Scheme
- European Union
- German Federal Ministry for Economic Cooperation and Development (BMZ)
- Horizonte Positivo, Costa Rica
- Human Development Report Office (HDRO/UNDP)
- Inter-American Development Bank
- International Development Research Council (IDRC) of Canada
- International Food Policy Research Institute (IFPRI)
- Islamic Development Bank
- John Fell Oxford University Press (OUP) Research Fund
- National Governments
- Organization of American States (OAS)
- Praus
- Robertson Foundation
- Statistical, Economic and Social Research and Training Centre for Islamic Countries (SESRIC)
- Swedish International Development Cooperation Agency (Sida)
- UK Department of International Development (DFID)
- United Nations Development Programme (UNDP)
- UNDP National and Regional Offices
- United Nations International Children’s Emergency Fund (UNICEF)
- UNICEF National and Regional Offices
- University of Göttingen, Germany
- William F. And Doris W. Oliver Foundation
- World Bank
- and anonymous and private donors.

‘We are pioneers at a global level in the implementation of the Multidimensional Poverty Index, a tool that has allowed us to formulate and follow-up more effectively on our public policies against poverty. We no longer act with isolated programs. We are attacking this problem in all its dimensions.’

Juan Manuel Santos,
President of Colombia, 2016 Nobel Peace Prize.
A special thanks to Professor Sen

OPHI remains deeply grateful to Professor Sen for his example, his intellectual work and his friendship.

A MARThya sen's writings on the capability approach and on poverty measurement, and his recognition of how poor people's lives are battered and diminished in many and various ways, have been guiding inspirations for OPHI's work on multidimensional poverty.

His advice to OPHI has been and continues to be indispensable. Among his many contributions, Professor Sen, an OPHI Advisor since its inception, delivered the first of four OPHI-sponsored lectures in the Sheldonian Theatre during OPHI’s inaugural conference. The second, co-sponsored by the Faculty of Philosophy, presented central ideas from his 2009 book The Idea of Justice. Sen's third Sheldonian lecture, on gender, was given at the launch of the Multidimensional Poverty Peer Network, while his 2017 lecture shared key arguments from his latest book, Collective Choice and Social Welfare.
The People of OPHI

During these years, OPHI people have given the best of themselves trying to make this world a place with no poverty. Thank you for your hard work, cheer and truly creative and profound contributions!

Acknowledgements


Adam Swallow, Cameron Thibos, Claire Battye, Claire Walkey, Elizabeth Bruton, Elizabeth Fouksman, Emma Feeny, Iván Guzmán de Alba, James Brown, Kay Jenkinson, Marlen Llanes, Matthew Robson, Miroslawa Alunowska, Natalie Cresswell, Raggie Johansen, Sophie Song, and Victoria Thornton (no pictures available).
Our gratitude to our collaborators:

Global MPI collaborators:
Alejandro Ratazzi, Babak Somekh, Debasmita Padhi, Enrique Hennings, Juan Pablo Ocampo Sheen, María Auxiliadora López, Marta Barazzetta, Mauro Caselli, Michelle Rao, Rosa Vidarte, Salvatore Morelli, Shabana Singh, Shuyang Ren, Uma Pradhan, Yessenia Loayza, Ying Zhang, and Zheng Zhi.

Special thanks to our Advisory Committee:

And to our Research Associates:
Andy Sumner, Gonzalo Hernández Licona, Martin Evans, Pali Lehohla, and Séverine Deneulin.

Thanks to our management committee:
Christopher Adam, Frances Stewart, and John Hammock. Barbara Harriss-White was also a member from 2010 to 2018, and Ian Goldin from 2010 to 2016.

Photo credits:
Greg Smolonski/Photovibe, Maarit Kivilo, Mark Toumenoksa, Personal Collections, Rachael Pearson, Rob Judges, OPHI.
Dimensions

www.mppn.org
www.ophi.org.uk