

GLOBAL SUSTAINABLE DEVELOPMENT REPORT

2016 EDITION



ENSURING THAT NO ONE IS LEFT BEHIND AND THE 2030 AGENDA

“4. As we embark on this great collective journey, we pledge that no one will be left behind. Recognizing that the dignity of the human person is fundamental, we wish to see the Goals and targets met for all nations and peoples and for all segments of society. And we will endeavour to reach the furthest behind first.” (emphasis added)

A/RES/70/1. Transforming our world: the 2030 Agenda for Sustainable Development. Resolution adopted by the General Assembly on 25 September 2015.

1.1 Introduction

This introductory chapter attempts to briefly frame the theme of 'ensuring that no one is left behind' in the context of the 2030 Agenda and the sustainable development goals (SDGs), from a science-policy perspective.

Ensuring that no one is left behind is at the core of the 2030 Agenda for Sustainable Development, and is a fundamental guiding principle for its implementation. The pledge that 'no one will be left behind' appears at the outset in the second paragraph of the preamble and in paragraph 4 of the 2030 Agenda. In those same paragraphs, the Agenda attributes to all countries and all stakeholders the responsibility to implement the agenda. It emphasizes that goals and targets should be met for all nations and peoples and for all segments of society; and highlights the endeavour to reach the furthest behind first. As such, the pledge to leave no one behind relates to the Agenda in its entirety.

Fifteen years from now, when the current and the next generations together assess the implementation of the 2030 Agenda, a key measure of success will be the extent to which it has allowed every single person to thrive, regardless of gender, race, age, religion, place of residence, or any other factor. The call to leave no one behind has been heeded – many organizations have already started to work on the implications of this principle for the delivery of the 2030 Agenda¹ and for their missions.²

'Ensuring that no one is left behind' encompasses multiple meanings. For some, it will mean focusing action on disadvantaged groups of society, for example, people living in poverty, women, indigenous people, youth, older people, persons with disabilities, migrants, or people in conflict and post-conflicts situations. Others will focus on reducing inequalities between countries, including focusing action on countries at the lowest stages of development or facing challenging circumstances. Still others would propose other views and definitions of who those left behind are. Views may also differ on how society can effectively provide opportunities to those left behind. By implication, how different people foresee the timing and sequencing of necessary actions to ensure that no one is left behind might also vary. This has direct implications for how the 2030 Agenda will be implemented.

At the conceptual and practical levels, four broad questions need to be addressed. First, who are those left behind? Second, why are they left behind? Third, what methods and mechanisms exist to reach and involve them? And fourth, what types of strategies and policies would be appropriate in order to leave no one behind? Empirical evidence from a broad range of scientific disciplines, in particular social sciences, can inform decision-making on these questions. It can also provide elements to assess how ambitious and challenging it will be to realize the commitment of leaving no one behind, by revealing to what extent strategies and policies that have been used in various SDG areas focused on this objective, and what their success has been in achieving it. Beyond the commitment to leave no one behind, the ambition to 'endeavour to reach the furthest behind first' is also a transformative aspect of the 2030 Agenda.³ Does this imply different implementation strategies than those commonly used in the past? Here also, scientific evidence can inform the debate.

The chapter examines the implications of 'ensuring that no one is left behind' for the implementation of the 2030 Agenda. It briefly discusses the connections between the commitment to leave no one behind and three related concepts that are prominent in the 2030 Agenda: poverty, inclusiveness and inequality. The chapter then reviews some of the concepts and methods used to identify those left behind, as well as some of the methods that are used to reach them in practice. Finally, the chapter highlights

examples of development strategies used in various areas of sustainable development and what empirical evidence can tell us about their effectiveness in leaving no one behind.

The chapter serves as an introduction to other chapters of the report and is not intended as a comprehensive overview of the literature on inclusiveness, equity, inequality, social inclusion, discrimination and other related topics, which would need considerable space.⁴ Similarly, the chapter does not attempt to answer the question of why some groups or countries are left behind. Obviously, answering this question is critical to devising appropriate policies and strategies. Lastly, detailed discussions of the policy implications of 'leaving no one behind' for specific areas of the SDGs are left for other chapters.

1.2 Leaving no one behind, poverty, inclusiveness and equality

The pledge to leave no one behind relates closely to three important dimensions of the 2030 Agenda: poverty, inclusiveness and inequality. Poverty in its various dimensions remains at the center of the New Agenda, as it used to be at the center of the Millennium Development Goals and was identified as one of the three overarching objectives of sustainable development.⁵ In the eyes of the lay person, poverty is an obvious way to identify those left behind. Poverty measures have also commonly been used to identify those left behind in development practice (see below).

The word 'inclusive' was used in the title of five of the Goals. It is also used in five of the targets, and 22 times in other parts of the 2030 Agenda. That emphasis suggests that, in the eyes of the negotiators who crafted the Agenda, it was a very important concept.⁶ Inclusiveness (social, economic, political and cultural) talks to the notion of empowerment and the principle of non-discrimination. It refers to the need to include everyone in societal processes, and conveys the notion that people should not only be allowed to thrive, but should have a voice and effective opportunities to shape the course of development. SDG 5, SDG 10, SDG 16, inter alia, have very strong connections to inclusiveness and empowerment. The cross-cutting commitment to disaggregate data to monitor the SDGs also reflects the notion of inclusiveness. One might argue that the prominence of this notion in the 2030 Agenda extends the concept of participation that was pioneered in Agenda 21.

The concept of equality – or inequality – is also prominent in the 2030 Agenda. It has a standalone goal, SDG 10, which aims to reduce inequalities within and among countries, and is also directly reflected in goals and targets across the Agenda, including in the goals for health, education, gender, and others.

Equality as a concept has traditionally been related to equality of outcomes and equality of opportunities. Inequality of outcomes can be found everywhere, as any variable with a distribution over a population (e.g., income or access to certain services) generates some form of inequality, which can be measured by different statistics. Inequality of opportunities refers to cases where different people or sections of society do not have the same opportunity to participate in society and to flourish. This can be the result of explicit and implicit barriers to certain sections of the population, such as discrimination in the law, in custom and in practice, which limit access to opportunities for certain groups in society. In addition, equality can also be seen in a political sense and related to empowerment. Equality in that sense relates to giving different people and sections of society equal voice and equal opportunities in political and social institutions, and more control over their lives.⁷

The different declinations of inequality are not mutually exclusive, as pointed out by many.⁸ All are relevant in relation to leaving no one behind. Different communities concerned with inequality and discrimination may put different emphasis on them. For example, in approaches focused on human rights, inequalities of outcomes in regard to specific rights will be a primary indicator for concern (e.g. the gender wage gap, school enrolment rates). Inequality of opportunities and discrimination would then be seen as the means through which unequal outcomes happen; and empowerment as one of the means to combat such discrimination and remedy inequalities of opportunities and outcomes. In the development literature, a strong tradition that underpinned development programmes worldwide focused on inequalities of outcomes and on increasing the number of “haves” or reducing the number of “have-nots”. For example, rural electrification programmes and programmes of universal access to drinking water and sanitation put emphasis on the number of connected households, in addition to affordability and quality of the services. Yet, development institutions are also interested in access to basic services as a necessary condition for achieving greater equality of opportunity. For example, access to quality education and clean drinking water is seen by development practitioners as a key to opportunities in terms of improved health and education outcomes, as well as higher productivity and income.⁹

1.3 Leaving on one behind in Sustainable Development Goals and targets

'Leaving no one behind' is not just an overarching imperative expressed in the 2030 Agenda. Many targets of the SDGs provide concrete objectives in direct relation with that aim; many targets also point to specific means through which it

can be achieved – providing concrete illustrations of how to ensure that no one is left behind.

Several targets relate to the international level, and aim to 'leave no country behind'. Those focus on groups of countries traditionally identified in the United Nations, such as developing countries, least developed countries (LDCs), landlocked developing countries (LLDCs) and small island developing states (SIDS). Such targets cover a broad range of topics, from economic growth in LDCs to industrialization and participation in global trade, to broadening and strengthening the participation of developing countries in the institutions of global governance (Table 1-1).

In turn, many SDG targets detail supporting measures to achieve these objectives. Those include: measures related to official development assistance and other financial means; commitments to increase or support investment in specific sectors, with focus on developing countries, for example agriculture, medicines and infrastructure; international cooperation and technical assistance; actions on trade; promoting the rule of law at the international level; enhancing cooperation on and access to science, technology and innovation. In addition, many other SDG targets refer to groups of countries in special situations as deserving special attention.

At the national level, targets explicitly aiming at 'leaving no one behind' are multiple. Many targets aim to reduce inequalities of outcome. This includes: ensuring universal and equal access to basic services; ensuring access to food for all, and end malnutrition; achieving and sustaining income growth of the bottom 40 per cent of the population at a rate higher than the national average; and doubling agricultural productivity of small-scale food producers. Targets that detail measures in support of these objectives include: putting in place social protection systems and policies; building the resilience of the poor and vulnerable; access to employment; and expanding infrastructure with a focus on affordable and equitable access for all.

Other targets focus on ending discrimination. This includes: empowering and promoting the social, economic and political inclusion of all; ending all forms of discrimination against women and girls; eliminating violence against women and girls; ending abuse, exploitation, trafficking and all forms of violence against and torture of children; recognizing unpaid care and domestic work; equal access to technical, vocational and tertiary education; and equal pay for work of equal value. Targets that detail measures in support of these include: eliminating discriminatory laws, policies and practices and promoting and enforcing appropriate legislation, policies and action in this regard; promoting the rule of law and ensure equal access to justice for all; protecting fundamental freedoms; eradicating forced labour, including the worst forms of child labour, and

Table 1-1: Examples of targets in the SDGs that relate to leaving no country behind

Aspirational targets	Means to ensure that no country is left behind
<ul style="list-style-type: none"> • Reduce inequality between countries (10) • GDP growth target for least developed countries (8.1) • Promote inclusive and sustainable industrialization with a focus on least developed countries (9.2) • Broaden and strengthen the participation of developing countries in the institutions of global governance (10.6, 16.8) • Promote access to and fair and equitable sharing of benefits arising from the utilization of genetic resources and associated traditional knowledge, as internationally agreed (2.5) • Increase the economic benefits to SIDS and LDCs from the sustainable use of marine resources (14.7) • Significantly increase the exports of developing countries (17.11) 	<ul style="list-style-type: none"> • Encourage official development assistance and financial flows, including foreign direct investment, to States where the need is greatest (10.b) • Provide adequate and predictable means for developing countries, in particular LDCs, to implement programmes and policies to end poverty in all its dimensions (1.a) • Increase investment in agriculture in developing countries (2.a) • Correct and prevent trade restrictions and distortions in world agricultural market (2.b) • Support the research and development of vaccines and medicines for ... diseases that primarily affect developing countries, provide access to affordable essential medicines and vaccines (3.b) • Scholarships for developing countries (4.b) • International cooperation for teacher training (4.c) • Facilitate sustainable and resilient infrastructure development in developing countries through enhanced financial, technological and technical support (9.a) • Increase Aid for Trade support for developing countries (8.a) • Implement the principle of special and differential treatment for developing countries (10.a) • Implementation of duty-free and quota-free market access for LDCs (17.12) • Promote the rule of law at the international level (16.3) • Enhance cooperation on and access to science, technology and innovation (17.6) • Promote the development, transfer, dissemination and diffusion of environmentally sound technologies to developing countries (17.7) • Support developing countries in strengthening the capacity of national statistical offices and data systems (17.18)

Source: Authors' elaboration.

Note: Target number in parenthesis.

Box 1-1: Gender equality, vulnerability and climate change in the science-policy briefs submitted for the GSDR 2016

Gender discrimination persistently affects every aspect of development in many countries. While the need for gender equality and women's empowerment is not an emerging issue, there appears to be a growing understanding within various scientific disciplines that in order to promote equality and improve women's rights, complex underlying social norms must be examined and challenged.

Research from numerous countries in Africa, Asia and Latin America shows that gender relations, roles and perceptions are rapidly shifting at the local level as a result of adaptation to impacts from environmental degradation and climate change. Yet too often, policies intended to address gender do not explicitly discuss men's activities and contributions (or the absence thereof), and focus only on participation by women, without examining the underlying social and cultural dimensions of gender that are critical for enabling women's equality and empowerment.^{10, 11}

To understand vulnerabilities and capacities and inform effective and responsive adaptation planning, assessments of climate change vulnerability and impacts should examine the ways in which gender intersects with other pertinent factors, such as ethnicity, economic assets and social status.¹² Indeed, equitable policy making in general must strive to identify those most vulnerable based on a range of socio-demographic variables including gender, class, education, access to assets.

Source: science-policy briefs submitted for the GSDR 2016.

human trafficking; protecting labour rights; and providing legal identity for all, including birth registration.

Lastly, many targets relate to opportunities, empowerment and enhancing capabilities. This is the case of targets related to universal primary and secondary education, literacy and numeracy; ensuring women's full and effective participation and equal opportunities for leadership at all levels of decision-making in political, economic and public life; ensuring responsive, inclusive, participatory and representative decision-making; universal access to sexual and reproductive health and reproductive rights; full and productive employment and decent work; and increase in skills for employment and entrepreneurship. Targets that detail measures in support of these include: ensuring equal access to economic resources; provision of public services and infrastructure; enhancing access to markets and financial services for households and SMEs; policies that support productive activities, decent job creation, entrepreneurship, creativity and innovation; fiscal, wage policies aiming to progressively achieve greater equality; use of enabling technology, in particular information and communications technology; access to sexual and reproductive health-care services; promotion of shared responsibility within the household and the family; participatory planning and resource management; and public access to information.¹³

In addition, many SDG targets specify segments of the population that deserve special attention. For example, target 11.3 on sustainable transport specifies "with special attention to the needs of those in vulnerable situations, women, children, persons with disabilities and older persons".

1.4 Who are those left behind?

1.4.1 Defining and identifying those left behind

In order to make the imperative to leave no one behind a reality on the ground, the first question to address is who those left behind are. This question can itself be

decomposed into sub-questions, reflecting the importance of the spatial and temporal dimensions in development. A first sub-question is who are those left behind now, and who could they be in the future? A second sub-question is, where do those left behind live? The former is critical to reflect the dynamic nature of poverty, inequality and deprivation (see 1.4.2 below) and the fact that the Agenda will span the next fourteen years. It also reflects the dimension of intergenerational equity.¹⁴ The latter is critical in order to address the problem on the ground, as those left behind may be different subsets of the population in different places (e.g. in urban areas versus rural areas). In addition, most if not all development interventions – from investment in schools to water and electricity infrastructure to access to finance – have an inherent spatial component to them.

As discussed above, one of the ways to identify those left behind that has been widely used in the development discourse and practice has been to focus on poverty, and especially on income poverty.¹⁵

In recent decades, the notions of multi-dimensional poverty and multiple deprivations have gained traction both at the conceptual and practical levels, and are frequently used to identify people, groups or communities left behind. Both concepts respond to the need for more comprehensive ways to identify those left behind in society, beyond poverty income measures. Since 2010, the United Nations Development Program (UNDP) has published the Multidimensional Poverty Index (MPI), replacing the Human Poverty Index popular since 1997. The MPI incorporates ten weighted indicators that measure education, health and standard of living.¹⁶ Other examples include: the Better Life index produced by the OECD¹⁷; the Social Progress Index produced by Social Progress Imperative¹⁸; and the Human Opportunity Index (HOI), which was used for measuring inequality of access to infrastructure across time in Latin America.¹⁹ Such composite indexes have been used to better understand the factors that affect well-being and deprivation.

A methodological caveat that applies to composite indexes in general relates to the multi-dimensionality of concepts

Box 1-2: Evolution of income poverty during the MDG period

The incidence of income poverty has considerably declined over the past couple of decades. Among emerging and developing economies, in 2012 – the latest year with available data – the share of those in extreme poverty was just under 15 per cent of the total world population (excluding advanced economies) Projections indicate that the global extreme poverty rate has fallen further, to 12 per cent, as of 2015. This is down significantly from 47 per cent in 1990 and 25 per cent in 2005. Countries in Asia and the Pacific, notably China and India, have been particularly effective in reducing poverty over the last couple of decades. Progress among African countries has been less pronounced, as 41 per cent of the population in sub-Saharan Africa still live in extreme poverty. In Western Asia, the extreme poverty rate is expected to increase between 2011 and 2015.

Source: The Millennium Development Goals Report 2015, United Nations, New York, 2015.

such as poverty and deprivation, which by extension applies to concepts such as “those left behind” and “the furthest behind”. If there is more than one relevant dimension, it becomes a matter of convention or value judgment to define who is “behind”. In addition, some indicators of well-being or deprivation may not be considered so by some groups of communities with different sets of values.²⁰ However, from a normative side, there is generally broad agreement that people (or households) who do not have access to certain rights, goods or services are “left behind”.²¹ Such sets of “must haves” and the corresponding thresholds defining deprivation are often enshrined in national law and practice. Many of them are also inscribed in international law and standards.²²

In practice, those “left behind” may be different groups in different societies. For example, when considering nutrition, many countries still face stunting as the most pressing challenge; in other countries, obesity and its consequences in relation to health, mobility, and well-being, is more significant. Similarly, in education, future challenges in developed countries seem different from what they were a few decades ago. A recent OECD study shows that girls outperform boys in reading in almost all of the study countries. This gender gap is particularly large in some high-performing countries, where almost all underperformance in reading is seen only among boys, demanding special strategies to address this gap.²³

Statistics and data are increasingly available on individual indicators of deprivation, even if data availability remains a major challenge. This is reflected in the proliferation of tools, instruments and processes that monitor outcomes in specific areas of sustainable development.²⁴ In addition, research has also focused on examining the intersection between specific dimensions of deprivation and other SDG areas.²⁵

However, for operationalizing the notion of those left behind or furthest behind, it is often the combination of deprivations, in a spatial context, which matters. Advances in the conceptualization of poverty, inequality and exclusion as multidimensional phenomena, coupled with fast

progress in geographic information systems over the past decades, have extended the realm of spatial analysis of poverty. In particular, it has resulted in rapid growth in the availability of so-called “multiple deprivation maps”, which combine social, economic and environmental deprivation indicators. Such maps are published by both Governments and non-government actors. In both developed and developing countries, they have been used as an instrument for planning and management at different geographical levels, from national to sub-national to municipality level to local down to the housing block level.²⁶ Yet, data availability remains a critical issue. As highlighted in Agenda 2030, critical data gaps remain with respect to monitoring the SDGs, and this is more acute in developing countries.²⁷

1.4.2 Dynamic versus static measures of inequality and poverty

Because of the way they tend to be presented, many images of poverty and inequality, for example “the bottom billion”, “those furthest behind”, are easily interpreted in static terms, implicitly conveying the idea of stable and clearly identifiable groups within a population. This is reinforced by the fact that the poverty headcount ratio is the most common measure of poverty, and poverty is most widely measured as a stock.^{28, 29}

However, inequality and poverty are intrinsically dynamic. Individuals or households move across the income distribution and from one category to another, making the groups of the population at risk of poverty bigger than the stock of poor at any point in time. Shocks of various natures affecting households (e.g. health, employment, food prices, natural disasters) cause them to move in and out of poverty. In some countries, temporary spells below the poverty line are experienced by a broad cross-section of society.³⁰

Therefore, static analyses are not sufficient to address inequality and poverty.³¹ Exposure to poverty and other types of deprivation and capacity to exit poverty depend not only on the nature of shocks affecting individuals or households, but also on the initial position of households in terms of

Box 1-3: The Small Area Index of Multiple Deprivation in South Africa

The Small Area Index of Multiple Deprivation 2011 is the latest in a series of indices of multiple deprivation for South and Southern Africa that have been developed using census data to describe multiple deprivation at sub-municipality level. The original South African study for 2001 was at ward level and was followed by a series of further refinements to develop a very small area or datazone level index for a series of child-focused indices and updates to 2007 at municipality level. Indices have also been produced for Namibia. The ward and datazone level indices have been used in many ways by national and provincial government, including targeting areas for the take-up of child support grant, prioritising wards for specific antipoverty interventions and in the case of the City of Johannesburg, as part of the mechanism to target its indigence policy. Specific reports utilising the indices have been developed for various provinces and for the city of Johannesburg.

Source: Noble, M., Zembe, W., Wright, G., Avenell, D., (2013) Multiple Deprivation and Income Poverty at Small Area Level in South Africa in 2011 Cape Town: SASPRI.

Box 1-4: Disaggregation in the SDG Global Indicator Framework

The concept of “no one left behind” implies that the agenda’s Goals and targets should be met for all nations and people and for all segments of society. Ensuring that this commitment is translated into effective action requires data and analysis on the status of all groups of the population, including the most vulnerable and difficult to reach. However, the disaggregated data needed to address all groups – including children, youth, persons with disabilities, people living with HIV, older persons, indigenous peoples, refugees, internally displaced persons and migrants – as specified in the 2030 Agenda, are sparse. In the context of the SDG global indicator framework, the Inter-agency and Expert Group on SDG Indicators has recommended that all indicators referring to targets that explicitly mention particular groups of the population should be disaggregated for those groups. Moreover, SDG indicators will need to be disaggregated in a way that highlights the challenges of the most vulnerable populations and provide an understanding of progress and implementation in sub-national and local contexts, to ensure that no one is left behind. The list of global SDG indicators agreed by the UN Statistical Commission in March 2016 contains an overarching principle that requires that “Sustainable Development Goal indicators should be disaggregated, where relevant, by income, sex, age, race, ethnicity, migratory status, disability and geographic location, or other characteristics, in accordance with the Fundamental Principles of Official Statistics”.

Aggregated statistics often mask the situation for specific vulnerable groups. For example, while over 90 per cent of births in urban areas are attended by skilled health personnel, the share is only 72 per cent for rural areas. Children from the poorest households are nearly four times more likely to be out of school than their counterparts from the richest households. Work to identify data sources and recommend improvements in data collection and integration of innovative data sources is underway. Substantive experts who are familiar with the challenges in achieving specific SDG targets are involved in identifying the demand for disaggregated data, and data producers are working to identify ways to expand data availability, analysis and utilization to address all groups and geographical locations. The current proposed work stream of the IAEG-SDGs on data disaggregation will provide the overall direction for the work to be undertaken by the national and international statistical systems, including by promoting a dialogue between data producers and data users on data disaggregation needs and data and policy needs.

For some countries, there are also political and/or legal concerns in providing disaggregated data at the individual level in terms of confidentiality, privacy and safety of the respondents. For example, some countries legally prohibit the collection of information on race and religion, or sexual orientation, among other characteristics.

Source: UN Secretary-General’s Report on SDGs, Report of the IAEG-SDGs to the 47th Session of the UNSC, and contribution from UNEP to the GSDR 2016.

endowments (assets and income) and entitlements (access to goods; access to protection). Therefore, instruments to protect against shocks, as well as instruments to improve the circumstances of households such as opportunities for employment, are both required, as are instruments to support permanent exits from poverty and address inequality.³² The necessity to consider differentiated policies according to the transitory or permanent nature of deprivations faced by individuals and households has long been recognized in many fields. For example, policies aiming to address unemployment have long distinguished long-term unemployment from more transitory spells, and Governments have put in place different instruments in this regard.³³

As mentioned above, the temporal dimension is also intrinsically important, as the concept of sustainable development fully integrates the needs and well-being of future generations. In this context, understanding how current strategies, policies and actions are likely to impact future generations is critical.³⁴

1.4.3 Reaching those left behind

Beyond identifying those left behind, reaching them through delivery mechanisms (such as social services, basic

services, training programmes, etc.) necessitates general administrative and institutional will and capacity, trained personnel (e.g. community workers, social workers) as well as specific administration, management and accountability systems. Targeting has often been used in order to reach specific groups of the population.

Targeting methods can be broadly categorized into: direct individual/household assessment by an official or a group of community members; targeting based on a specified category such as age group or region; and self-selection targeting for programmes that are universal but are designed in a way to encourage the target categories to use the programme and discourage others to do so. All methods have advantages and drawbacks (see Table 1.2). Usually, interventions use two or more methods of targeting combined. Poor countries tend to use more self-selection and categorical targeting methods while less poor countries use relatively more individual assessments.

The costs of targeting are associated to the costs of collecting the information to identify the targeted group, which are expected to increase with the precision of the targeting; private costs of the beneficiaries, for example transportation costs; incentive costs that may induce people to change their behaviour to become part of the

targeted group; the social costs of identifying households as poor, which may cause social stigma; and political costs of excluding others from the programme, such as the middle class.³⁵

In 2004, a comprehensive review of 122 case studies drawn from 48 countries and published in academic journals in the period from 1990 to 2002 assessed the effectiveness of mechanisms used to target the poorest and most vulnerable in interventions that included cash, near-cash

and food transfers, food and non-food subsidies, public works for job creation and social funds. The study found that different targeting methods showed a range of results in terms of effectiveness in reaching the target groups.³⁶ Another comprehensive review done by the World Bank in 2005 for electricity and water subsidies found that most of the existing subsidies at the time were regressive, as the combined effects of lower connection rates, lower take-up given access, and lower consumption in the poorest groups meant that the bulk of subsidies was reaching high and middle-income groups.³⁷

Table 1-2: Typology of existing methods to target those left behind

	Description	Advantages	Limitations	Appropriate circumstances
Individual/household assessment				
Means testing	Direct assessment of the eligibility of the individual or household	<ul style="list-style-type: none"> Potentially very accurate 	<ul style="list-style-type: none"> Requires high levels of literacy and documentation Administratively demanding May induce work disincentives 	<ul style="list-style-type: none"> High administrative capacity Level of benefits justify administrative costs
Proxy means tests	Easily observed characteristics are used to give a score to households, which is compared to a cut-off to determine eligibility	<ul style="list-style-type: none"> Verifiable Less likely than means test to affect work effort 	<ul style="list-style-type: none"> May seem arbitrary Requires literate and computer-trained staff May be inaccurate at household level Insensitive to fast changes in welfare 	<ul style="list-style-type: none"> Reasonably high administrative capacity Stable situations Larger programme to maximize return for fixed overhead
Community targeting	Independent community members decide who in the community should receive benefits	<ul style="list-style-type: none"> Local knowledge Local definition of need and welfare 	<ul style="list-style-type: none"> Local actors may have other incentives besides good targeting May lower community authority or cohesion May perpetuate patterns of social exclusion Local definition of welfare may make evaluation more difficult 	<ul style="list-style-type: none"> Local communities are clearly defined and cohesive For programmes that include a small portion of the population Temporary and low benefit programmes
Categorical targeting				
Geographical targeting	Eligibility determined by the location of residency	<ul style="list-style-type: none"> Simple No labour disincentive Unlikely to create stigma Easy to combine with other methods 	<ul style="list-style-type: none"> Depend on accuracy of information Performs poorly where intended beneficiaries are not spatially concentrated Can be politically controversial 	<ul style="list-style-type: none"> Considerable spatial variation Limited administrative capacity Delivery of intervention use a fixed site such as school or clinic
Demographic targeting	Eligibility determined by age, gender or some other demographic characteristic	<ul style="list-style-type: none"> Simple Often politically popular Low stigma 	<ul style="list-style-type: none"> Inaccurate where demographic characteristics poorly correlates with those left behind 	<ul style="list-style-type: none"> Good register of demographic characteristics Low-cost targeting method required
Self-targeting				
	Intervention is open to all but it is designed in a way that take-up for it will be much higher among the intended target group	<ul style="list-style-type: none"> Administrative cost likely low Unlike to induce labour disincentives 	<ul style="list-style-type: none"> May impose costs on the recipients Stigma may be considerable May be difficult to deliver large benefit 	<ul style="list-style-type: none"> Low administrative capacity People move rapidly in and out target group Behaviour separates intended from non-intended beneficiaries

Source: Authors' elaboration, based on Coady et al. (2004) and Komives et al. (2005).

1.5 Strategies for ensuring that no one is left behind

Leaving no one behind will require, above all, understanding and addressing the root causes of poverty, inequality, and marginalization.³⁸ As detailed in chapter 4, strategies to leave no one behind will require a combination of factors, including: legal, regulatory components; multiple institutions intervening at various levels; and potentially broader societal changes, e.g. in social norms. In particular, the principle of 'leaving no one behind' can also have legal implications.³⁹

While leaving no one behind is a cross-cutting dimension of the new Agenda, ultimately, reaching those left behind will require specific strategies, whose nature may differ across SDG areas. Some areas may lend themselves more easily to strategies that focus on leaving no one behind as a core objective. Empirical evidence from past decades can inform on how concerns relating to inclusiveness can be reflected in various strategies, and how existing strategies have performed in this regard.

1.5.1 Economy-wide growth strategies.

In the context of macro-economic (economy-wide) growth strategies, poverty is often used as a proxy measure for those left behind. As a result, a large volume of economic literature has focused on the impacts of economic growth on poverty. Debates among development practitioners on how to achieve poverty eradication most efficiently have existed for decades.⁴⁰ While economic growth is generally seen as a necessary ingredient for poverty eradication, the precise channels through which growth translates into poverty reduction, as well as the role that States, policies and institutions can play in these mechanisms, have remained fiercely contested.^{41, 42, 43}

In terms of strategies for reducing income poverty, it was popular at the end of the 20th century to contrast macroeconomic pursuit of growth to increase the average income of the population and so called "pro-poor" growth strategies, which in addition to general growth also aim for relatively faster growth of incomes of poorer households. While the latter seem to embed the notion of leaving no one behind, a concrete challenge is highlighted in the literature in terms of how to identify when a strategy is really pro-poor, or how to identify strategies that are "more pro-poor" than others. Different indicators could be used and may provide different answers.⁴⁴ In addition, since the beginning of the 2000s, a general consensus has developed that inequality can negatively affect growth.

There has been considerable debate regarding the effectiveness of different strategies. One part of the literature has interpreted the empirical evidence as showing that, in the medium- to long-run, most of the

variation in changes in poverty in a sample of developing countries during the 1980s and 1990s can be attributed to growth in average incomes rather than poverty-reducing pattern of growth in relative incomes, suggesting that broad-based growth policies should be central to the pro-poor growth agenda.⁴⁵ Others have pointed that analysis of the effectiveness of poverty reduction strategies should be mindful of the differences in underlying structural economic dynamics, not only across broad economic sectors (i.e. agriculture, industry and services) but also within them⁴⁶, and of differences in integration of economies within global markets.⁴⁷ Lastly, the success of China in reducing poverty during the past decades has highlighted the importance of the State beyond its minimal Washington consensus role of providing an "enabling environment", including in that case important efforts to invest in education and conducting reforms that provided broad access to assets such as land, and implementing a long-term forward-looking industrial policy with a view to advancing industrialization and structural transformation.^{48, 49}

A key element for reaching the furthest behind is promoting the shift of labour from low- to high-productivity and high-wage activities.⁵⁰ Others emphasise the importance of broad-based economic growth that is conducive to the generation of decent jobs and stimulates the transition from informal economies to formal economy and employment, with a focus on small and medium enterprises.⁵¹ People's living standards depend on how they make a living. Hence, the importance of agriculture for rural poor and of manufacturing for urban poor⁵², and the need for strategies to eradicate poverty to be mindful that the lives and livelihoods of rural households in least developed and developing countries are becoming gradually dissociated from agriculture as non-farm opportunities have expanded.⁵³

1.5.2 Social protection systems⁵⁴

Social protection systems are a fundamental component of the way societies manage to leave no one behind. In the most general sense, the idea of social protection "... captures how members in societies support each other in times of distress".⁵⁵ This includes in particular social insurance systems, defined as contributory funds that people can draw from under specific, pre-defined circumstances, such as exclusion from the workforce due to unemployment (unemployment benefits) and old age (pensions); and social assistance measures, defined as transfers provided to different groups of households or individuals in relation to specific circumstances such as having children (child benefits, maternity coverage) and disability (disability allowances).

The majority of the people living in developing countries have weak and incomplete government provided social protection systems. The International Labor Organization

reports that only 27 per cent of the global population have access to comprehensive social security systems, whereas 73 per cent are covered partially or not at all.

Despite a large expansion of schemes, existing social protection policies do not sufficiently address the income security needs of children and families, particularly in low- and middle-income countries with large child populations. Specific child and family benefit programmes rooted in legislation exist in 108 countries, yet often cover only small groups of the population. In 75 countries, no such programmes are available at all.⁵⁶ Worldwide, less than 40 per cent of women in employment are covered by law under mandatory maternity cash benefit schemes; 57 per cent if voluntary coverage (mainly for women in self-employment) is included. Due to ineffective enforcement and implementation of the law in some regions, effective coverage is even lower. An increasing number of countries are using non-contributory maternity cash benefits as a means to improve income security and access to maternal and child health care for pregnant women and new mothers, particularly for women living in poverty. However, significant gaps remain.⁵⁷

In many countries with high shares of informal employment, pensions are accessible only to a minority. Under existing laws and regulations, only 42 per cent of people of working age today can expect to receive contributory or non-contributory social security pensions from contributory schemes in the future, and effective coverage is likely to be even lower. Many countries have recently made efforts to expand the coverage of contributory pension schemes and to establish non-contributory pensions to guarantee at least basic income security guarantee in old age to all. With rapid ageing of the population in many countries, pension systems will face considerable pressure in the future.

More than 90 per cent of the population living in low-income countries remains without any right to coverage

in health. Despite coverage, health care is frequently neither available nor affordable, and access to needed services can lead to poverty. Often, even people who are legally covered experience limited health benefits, high out-of-pocket payments and a lack of the health workers needed to deliver services, or cannot access services due to discrimination. Recently, the UN General Assembly requested ILO, along with WHO and other UN agencies, to give high priority to working jointly towards universal health coverage, and towards the associated goal of establishing social protection floors. In developed countries, according to the OECD, health care quality is not able to keep pace with the demands resulting from ageing population and the growing number of people suffering from one or more chronic diseases.⁵⁸

1.5.3 Area-based strategies

The idea that development strategies should be integrated (i.e. combining a range of actions in different sectors) and focus on well-defined geographical areas has a long history in development practice, from integrated rural development projects in the 1970s,⁵⁹ to the Millennium Villages Project, to slum upgrading and urban rehabilitation programmes. At the basis for such interventions is the recognition that the place where people live is often an overwhelming determinant of the outcomes they achieve and opportunities they are offered, in areas as diverse as access to shelter and basic services, access to education, health, transport, and jobs. Strategies used in this context tend to emphasize a comprehensive range of intervention, covering sectors as diverse as shelter, water and sanitation, electricity, infrastructure, and in the case of rural programmes agriculture and land management. The success of these interventions has been very variable.^{60, 61} For example, in slum upgrading programmes across the world, it has been a recurrent feature that programmes tended to focus on physical aspects, while not necessarily taking proper account of economic and social aspects, for

Box 1-5: Selected recent figures on the reach of social protection systems:

- Only 27 per cent of the global population enjoy access to comprehensive social security systems, whereas 73 per cent are covered partially or not at all.
- Worldwide, 2.3 per cent of GDP is allocated to public social protection expenditure ensuring income security during working age; regionally, levels vary widely, ranging from 0.5 per cent in Africa to 5.9 per cent in Western Europe.
- On average, governments allocate 0.4 per cent of GDP to child and family benefits, ranging from 2.2 per cent in Western Europe to 0.2 per cent in Africa, and in Asia and the Pacific.
- 48 per cent of all people over pensionable age do not receive a pension.
- More than 90 per cent of the population living in low-income countries remains without any right to coverage in health. Globally, about 39 per cent of the population is lacking such coverage.

Source: ILO World Social Protection Report 2014/2015.

Box 1-6: Social protection floors

SDG target 1.3 commits to “Implement nationally appropriate social protection systems and measures for all, including floors, and by 2030 achieve substantial coverage of the poor and the vulnerable”. ILO Recommendation No. 202 sets out that member States should establish and maintain national social protection floors as a nationally defined set of basic social security guarantees which secure protection aimed at preventing or alleviating poverty, vulnerability and social exclusion (ILO, 2012a). These guarantees should ensure at a minimum that, over the life cycle, all in need have access to at least essential health care and basic income security. These together ensure effective access to essential goods and services defined as necessary at the national level. More specifically, national social protection floors should comprise at least the following four social security guarantees, as defined at the national level:

- (a) access to essential health care, including maternity care;
- (b) basic income security for children, providing access to nutrition, education, care and any other necessary goods and services;
- (c) basic income security for persons in active age who are unable to earn sufficient income, in particular in cases of sickness, unemployment, maternity and disability; and
- (d) basic income security for older persons.

Such guarantees should be provided to all residents and all children, as defined in national laws and regulations, and subject to existing international obligations. Recommendation No. 202 also states that basic social security guarantees should be established by law. National laws and regulations should specify the range, qualifying conditions and levels of the benefits giving effect to these guarantees, and provide for effective and accessible complaint and appeal procedures.

Source: ILO, World Social Protection Report 2014/2015, p. 162.

example resulting in forced resettlement or not taking into account jobs that are available around slums but not close to resettlement areas.⁶² As another example, the impacts of the Millennium Villages Project have been discussed among development practitioners, with a range of opinion regarding its effectiveness.^{63, 64}

1.5.4 Sectoral strategies

Many if not most development interventions ultimately focus on sectors or sub-sectors. Therefore, evaluating how such strategies aim to reach those left behind and succeed in doing so in practice is a critical first step to understand the challenges of implementing the 2030 Agenda. This section presents some of the key points that emerge from an investigation of existing scientific evidence on strategies used in a sample of sectors. Table 1-3 provide examples of strategies commonly used in some SDG areas and the extent to which they have been found to reach those left behind, based on existing literature. The full references on which the table is based can be found in Annex to this chapter. Clearly, it would be important to conduct similar investigations for other sectors, including; agriculture, rural development; industry and manufacturing; trade; information and communication technology; infrastructure development; energy; and transport.

It could be expected that evidence is available on the degree to which interventions in various sectors impact the poor, given that, at least since the adoption of the MDGs, the notion of “pro-poor” development strategies has been prevalent. As a consequence, the frameworks used

for evaluation of the impacts and effectiveness of such strategies have increasingly tended to incorporate poverty as one of the criteria by which strategies are assessed.

In practice, the limited review of the literature undertaken for this chapter seems to suggest that evaluations at the “meta” level (e.g. multi-projects, multi-country studies that systematically analyse the impacts of interventions in a comparable methodological framework) are quite rare. Such studies can be found for some sectors in scientific journals⁶⁵ and in reports produced by evaluation units of development institutions.⁶⁶ However, and pending more detailed investigation, they do not seem to exist for all relevant SDG areas and sub-areas. It also seems clear that even when such evaluations exist, they tend to use different criteria for measuring those left behind and for assessing the effectiveness of interventions in reaching them.

In some SDG areas, commonly used development objectives and interventions have the notion of leaving no one behind at their core. For example, providing universal access to water, sanitation, electricity, clean cooking fuels, child protection services, education and health are by definition objectives that focus on those who are ‘left behind’ with respect to those services. For example, universal access to primary education without discrimination has been at the forefront of international and national efforts.⁶⁷

As a cross-cutting issue and now as a stand-alone SDG, gender equality is one of the main objectives in ensuring that no one is left behind, since women and girls around

the world are often excluded. Even though gender equality is already embodied as an objective in many policy interventions, targeted efforts are often needed to ensure the inclusion of the furthest behind, for example by ensuring the security of girls and women in education institutions and on the journey to and from school, in particular during conflict and crises.⁶⁸

Health is also a good example of an area where reaching the furthest behind has been on the forefront of national and international policy discussion. At the national level, the imperative to leave no one behind in this area is epitomized in discussions on universal health coverage, which have matured in many countries over the past two decades. In addition to universal interventions and access provision, broad but targeted schemes, such as conditional cash transfer programmes aiming at tackling multiple deprivations simultaneously, by definition aim at ensuring that no one is left behind.

In other sectors, the alignment between strategies commonly used and “leaving no one behind” may be less natural. For example, payment for ecosystem services (PES) schemes, which have become a common tool for ecosystem management, do not generally have poverty alleviation as their primary objective, even though some of them have been found to benefit poor and marginalized communities. Indeed, it has been argued that PES schemes may benefit the poor more when they are targeted on protecting the environment rather than on serving as a mechanism for poverty reduction.⁶⁹ In agriculture, there has been a focus on the need to incorporate small-holder agriculture in policy frameworks and development interventions, by providing them with access to markets, to certification schemes, helping them to address non-tariff barriers, etc. The need to ensure that the legal and regulatory framework and the support system for agriculture that are put in place do not discriminate against smallholders is also increasingly recognized.⁷⁰

Even though sectoral strategies may be well aligned with the objective of leaving no one behind, they may still require concerted efforts in order to reach the furthest behind. For example, despite efforts made in the field of child protection to understand the magnitude, causes and consequences of sexual, physical and emotional violence in childhood, without additional targeted interventions to prevent and respond to such violence, victims will continue to be at increased risk of abuse, further compounding poor health and education outcomes and significantly impacting their productivity as adults, continuing the cycle of being “left behind”.⁷¹ Similarly, despite efforts made to provide free access to education, without additional targeted interventions disadvantaged groups such as children and youth with disabilities will continue to be less likely to start school or attend school and complete schooling than other

children.⁷² While facilitating access to safe drinking water in urban areas with existing infrastructure might be done with subsidies to facilitate connections to the network at affordable cost,⁷³ individuals living in remote rural areas may not be reached by such efforts without targeted efforts to widen the network or to provide alternative water sources. Health provides clear-cut examples of an area where strategies that focus on reaching those furthest behind may sometimes be the “best” strategies from a pure efficiency sense.⁷⁴

On the one hand, interventions that aim at reaching the furthest behind first (e.g. marginalized groups and areas characterized by intensive disadvantage) may accelerate overall progress towards sustainable development. Interventions in health, access to water and sanitation and others focusing on access to basic services, have consistently been found to have extremely high social return on investment, with multiple benefits for health, household income, education and labor productivity.⁷⁵ And such interventions often make sense from a narrow cost standpoint. For example, as shown by the Global Energy Assessment, the cost of universal access to modern energy is one or two orders of magnitude lower than the cost of the transformations in energy systems that will be needed to keep climate change under control.⁷⁶

On the other hand, in some sectors reaching those furthest behind may be perceived as involving a trade-off with economic efficiency based on a utilitarian approach. For example, considering the hypothetical case of a health policy that has to allocate resources to different treatments, a utilitarian approach could allocate resources so that the average life expectancy of the whole society would increase the most. An approach that aims to leave no one behind may put more weight on the fact that rich and poor are affected by different types of diseases and may result in an allocation that maximizes the gain in life expectancy for each group. In other cases, the cost of reaching those furthest behind may be high, creating a trade-off between helping a larger number of poor or near-poor or fewer extreme poor.

From the evidence reviewed for this chapter (see Annex for details), it seems clear that in at least some areas of the SDGs, commonly used development interventions may have to be reassessed through the lens of reaching those left behind, and that in some cases, strategies that achieve this objective would not be the ones that are used today. The important point here seems to be the need for explicit recognition of the value that societies put on leaving no one behind, as this has a clear impact on the way alternative development strategies are compared and selected. In practice, this approach requires identifying the relevant groups of interest for policy (including those “left behind” according to agreed criteria), identifying which factors affect

Table 1-3: Examples of commonly used strategies and how they are aligned with 'leaving no one behind'

Topic	Commonly used strategies	Alignment with 'leaving no one behind'	Examples of strategies that aim to 'reach the furthest behind'
Nutrition	<ul style="list-style-type: none"> • Promotion of breastfeeding and nutrition for pregnant/breastfeeding women and adolescent girls • Promotion of complementary feeding with or without provision of food supplements • Micronutrient interventions • General supportive strategies to family and community nutrition • Reduction of disease burden. 	Interventions are usually delivered as universal programmes targeting pregnant and lactating women, adolescent girls, infants and young children.	Nutrition interventions that focus on the furthest behind, such as the therapeutic feeding for children suffering from severe acute malnutrition, are particularly effective when compared with other strategies. However, because stunting is difficult to reverse after 36 months of age, in some contexts, universal programmes before that critical age have been proven more successful than targeted interventions later in life.
Health	<ul style="list-style-type: none"> • Provision of primary health care • Prioritizing interventions at younger ages • Lowering the price of medicines • Diseases specific international action programmes 	<p>Universal health coverage attempts to guarantee comprehensive health coverage for the entire population.</p> <p>The need for efforts to combat "orphan diseases" such as neglected tropical diseases has been on the policy agenda for a long time.</p>	Some programmes of universal care are focused on reaching the furthest behind first. Examples include prioritizing areas with the highest social deprivation when building health centers, obligatory service in underserved areas for health care professionals, or providing specialized insurance schemes for those otherwise excluded.
Conditional cash transfers (CCTs)	<ul style="list-style-type: none"> • Cash transfers given to poor groups of the population on the condition of participation in schooling, natal care, and vaccination schemes 	CCTs are usually provided to poor families, aiming at enhancing the lives of both the parents by alleviating poverty but also increasing the human capital of the children.	Some schemes include unconditional cash transfers to the poorest families, others give additional support to youth that stay in school, tackling drop outs. Schemes can also be designed to target only marginalized groups, e.g. indigenous peoples.
Payments for ecosystem services (PES)	<ul style="list-style-type: none"> • Schemes that compensate people or communities to manage an environmental resource or service according to certain requirements. PES schemes are commonly used in areas related to climate change mitigation, watershed services and biodiversity conservation. 	The primary focus is on maintaining or restoring ecosystem services, not on poverty alleviation. However, schemes can benefit poor community managing ecosystems. Efforts to study the links between link PES and poverty reduction have developed in the past 20 years.	The precise design of the PES influences the distribution of payments across participating and non-participating groups. Hence, PES can be more or less focused on those furthest behind, depending on the case.
Access to shelter	<ul style="list-style-type: none"> • Direct provision of housing units (public sector) • Ownership and rental subsidy programmes • Slum upgrading programmes, including a comprehensive range of basic services in addition to shelter. • Reform of housing finance systems, including primary and secondary mortgage markets and rental markets. • Municipal finance • Urban planning and regulation 	<p>Traditional interventions in housing markets, both through direct provision of housing units and through subsidies, have not often reached the poorest.</p> <p>Traditional housing finance interventions aiming at increasing the depth of housing finance have not reached the poorest.</p> <p>Slums upgrading programmes clearly focus on those left behind, but have not kept pace with the rapid increase in the number of slum dwellers in past decades globally.</p> <p>Homelessness is still an issue in developed and developing countries alike.</p>	<p>The impact of interventions focused on slum dwellers depends on the design and implementation.</p> <p>The introduction of micro-finance for housing was an attempt to reach communities that did not have access to traditional banking services.</p>
Access to drinking water and sanitation	<ul style="list-style-type: none"> • Restoration and protection of water-related ecosystems that underpin the provision of freshwater supplies • Extension of networks to provide universal coverage of drinking water services • Water tariffs and associated subsidies (consumption, direct, connection subsidies) 	<p>Strategies that aim to provide universal access to safe drinking water are directly geared to leaving no one behind. However, extension of networks usually does not reach those furthest behind first. Many countries have met the MDG target relating to drinking water; yet, many still do not have access to an improved drinking water source.</p> <p>Water subsidies have often been found to be regressive; they do not reach those not connected to the network.</p>	In countries where the majority of the population has physical access, strategies to facilitate affordability of water become the main channel to reach those furthest behind. To the extent that those furthest behind live farthest from areas already served, strategies to extend water provisions may not spontaneously reach the furthest behind first. Doing so requires a deliberate prioritization of the most underserved areas and groups.

Table 1-3: (continued)

Topic	Commonly used strategies	Alignment with “leaving no one behind”	Examples of strategies that aim to ‘reach the furthest behind’
Persons with disabilities	<ul style="list-style-type: none"> • Anti-discriminatory laws and regulations • Quotas for persons with disabilities • Incentives for employers (tax credits, support for accommodation or workplace modifications) • Special supported employment, training programmes, and microfinance for self-employment • Increasing accessibility of public spaces 	Strategies aiming towards inclusion of persons with disabilities are by design aiming at leaving no one behind.	Targeted interventions can be used to reach those not otherwise included in broad-based programmes for supporting persons with disabilities. Examples include specialized services for children with disabilities in courts to facilitate access to justice; ensuring that educational materials on HIV/AIDS for youth are made in accessible formats such as videos with sign language; and providing additional unconditional cash-transfers to children with disabilities within conditional cash transfer programmes.
Education	<ul style="list-style-type: none"> • Free access to primary and secondary education • Increasing demand for education through initiatives such as cash transfers, school feeding programmes and take-home rations • Increasing the supply of schools and classrooms, investing in teachers' quality and incentives • Investing in health and infrastructure 	Evidence-based policies and strategies to address exclusion in education include elimination of cost barriers through, for example, cash transfer programmes; provision of school meals/nutrition and health services; learning and teaching materials and transport services; second chance/re-entry programmes; inclusive school facilities; teacher training on inclusive education; and language policies to address exclusion.	Education strategies and policies have encompassed measures aiming to reach groups at a special disadvantage, investing additional resources in school districts located in disadvantaged neighbourhoods. Countries have adopted different strategies to enhance school enrolment of children with disabilities.

Source: Authors' elaboration. For full references, see Annex 1.

the outcomes in each group, and allocating resources in a way that explicitly considers the outcomes of each group.

1.6 Conclusion – considerations for decision-makers

This chapter aimed to provide a reference frame for exploring the implications of the principle of “leaving no one behind” for the operationalization of the SDGs from a science-policy perspective. The chapter provided a limited review of how scientific evidence can inform decision-makers on three critical questions. First, it reviewed some of the concepts and methods used to identify those left behind in practice. Second, it pointed to existing reviews of the effectiveness of development interventions in targeting and reaching those left behind. Finally, it highlighted examples of development strategies used in various areas of sustainable development and what evidence tells us about their effectiveness in leaving no one behind, based on existing scientific reviews.

Many goals and targets across the 17 SDGs explicitly refer to specific objectives and actions that directly relate to leaving no one behind, as well as groups (of countries or people) that should be the object of sustained attention in this regard. In particular, such references are very frequent under goals that were within the scope of the Millennium Development Goals (MDGs), including poverty, gender, education and health, and means of implementation. In

those areas, considerations of inclusiveness in a broad sense have long been part of the main development discourse and practice, and actions and policies to address this dimension have become part of the standard development apparatus. Specific actions are also highlighted under other goals. For some goal areas though, specific measures to ensure that no one is left behind are not always fully specified in the associated targets.

Many criteria can be used to identify those left behind, whether within a country or across countries. In addition to the reference to certain groups (e.g., women, indigenous peoples, persons with disabilities, the youth, and others) and deprivation indicators focused on single areas or sectors, many indices of multiple deprivation exist, which incorporate social, economic and environmental dimensions. For example, multiple deprivation maps based on composite indicators have been used as an instrument of planning and management at different geographical levels, both in developed and developing countries. In practice, those “left behind” with respect to a particular dimension of the Agenda may be different groups in different societies. Further efforts to produce disaggregated data have been underlined as a critical step towards better identifying those left behind.

A variety of targeting methods have been used to reach those left behind. All need underlying data to be implemented, as well as administrative capacity in various institutions.

Available evaluations from different SDG areas all suggest that there are significant practical challenges in effectively reaching those left behind.

The chapter provides examples of strategies commonly used in some SDG areas and the extent to which they have been found to reach those left behind, based on existing literature. In many SDG areas, inclusive development strategies are the commonly accepted paradigm. Examples include drinking water, electricity and other basic services, where ensuring universal access is often an overarching objective. However, whether strategies succeed in reaching those left behind depend on many factors, from country-specific circumstances to their design, targeting methods and practical implementation. Among the examples of interventions explored in this chapter, those that are based on reaching the furthest behind first include: nutrition, where the core target of interventions in developing countries is those suffering the most from stunting; area-based interventions targeting the poorest locations; and strategies to provide shelter for homeless people. Clearly, it would be important to conduct similar investigations for other sectors, including: agriculture, rural development; industry and manufacturing; trade; information and communication technology; infrastructure development; energy; and transport.

Based on the limited evidence reviewed in the report, in many areas of the new Agenda, factoring in the imperative to leave no one behind in sustainable development interventions may not present insurmountable difficulties. Undertaking to systematically reach the furthest behind first may in some cases require a more significant departure from presently used strategies. Achieving success in this area is likely to require attention at three levels. First, better taking into account the interests of those left behind will require assessing the way in which strategies and policies are designed. This in turn may require the incorporation of enhanced understanding of the dynamics of poverty, inequality, marginalization, discrimination and vulnerability in a country- and place-specific context. This should also

involve ways to give more voice to deprived or marginalized groups in policy discussion and decision-making. The institutional dimension is clearly crucial in this, as argued in Chapter 4. Second, there will be a need to review, and possibly update, ways in which strategies are executed, with particular efforts made to reach the furthest behind, addressing gaps in administrative capacity and data to improve the targeting of programmes and addressing other obstacles that prevent progress. Third, at the highest level of decision-making in Government, taking the new Agenda at its word will require a consideration of how social objectives are balanced with other objectives, such as short-term economic efficiency. Ultimately, the priority given to those furthest behind will be reflected in the allocation of resources, both from the public and the private sectors.

Given the overarching importance of the concept of leaving no one behind in the 2030 Agenda, in going forward, it will be critical to systematically collect scientific evidence on how existing development strategies do indeed reach the furthest behind. A first step could be an inventory of existing meta-studies that attempt to review the effectiveness of development interventions in different SDG areas in reaching those left behind. Evaluations in different SDG areas use different criteria for defining and measuring those left behind or furthest behind and for assessing the effectiveness of interventions in reaching them. It could be worth assessing the costs and benefits of investing in more comparable frameworks for evaluating development interventions across the SDGs. This would likely be a significant undertaking in terms of methodology and costs. The reward might be a better grasp across the whole Agenda on how strategies put in place do indeed reach the furthest behind.

Other chapters of the report provide additional insights on aspects introduced in this chapter. Chapter 2 examines the links among resilience, infrastructure and inequality. Chapter 3 reviews technologies for the SDGs, with an emphasis on technologies for those left behind. Chapter 4 discusses inclusive institutions for the SDGs.

Endnotes

- 1 See for example: Taking income inequality reduction seriously: a pass-or-fail test for the Sustainable Development goals, IDDRI issue brief, 6/15, September 2015; Inequality and the 2030 Agenda for sustainable Development, Development Issues 4, Department of Economic and Social Affairs, October 2015.
- 2 In the UN, see for example HLCP, 2015, Equality and non-discrimination at the Heart of sustainable Development: Towards a UN System-wide shared framework for addressing inequalities and discrimination of the 2030 Agenda, HLCP positioning paper, November, CEB/2015/6.
- 3 A/RES/70/1, paragraph 4.
- 4 For references, see e.g. United Nations, 2013, Inequality Matters, Report on the World Social Situation 2013, Department of Economic and Social Affairs, New York; and World Bank, 2013, Inclusion matters: The foundation for shared prosperity, Washington D.C.
- 5 United Nations, 2002, Johannesburg Declaration and Plan of Implementation, New York.
- 6 The Oxford dictionary online defines "inclusiveness" as "(T) he quality of covering or dealing with a range of subjects or areas" or "the quality of including all sections of society". In turn, "inclusive" is defined as "including or covering a broad array of things", as "containing a specified element as part of a whole", as "not excluding any section of society or any party involved in something", and finally, when referring to language, as "deliberately nonsexist, especially avoiding the use of masculine pronouns to refer to both men and women".
- 7 Sen, A., 1999, *Development as Freedom*, New York: Oxford University Press.
- 8 See for example HLCP, 2015, Equality and non-discrimination at the Heart of sustainable Development: Towards a UN System-wide shared framework for addressing inequalities and discrimination of the 2030 Agenda, HLCP positioning paper, November, CEB/2015/6.
- 9 Other research in development and conflict studies differentiates between vertical and horizontal inequalities, showing how inequalities – particularly deep inequalities between ethnic and religious groups – whether in income, access to economic resources, social services, political participation or justice – can threaten social cohesion, radicalize groups and heighten the risk of tensions escalating into political crisis and violent conflict. See e.g. Henk-Jan Brinkman, Larry Attree and Sasa Hezir, 2013, Addressing horizontal inequalities as drivers of conflict in the post-2015 development agenda, mimeo, Frances Stewart https://www.ifw-kiel.de/konfer/2006/preg/stewart_langer.pdf, CEB paper. The concepts of horizontal equity and vertical equity are not specific to the conflict and development field.
- 10 Huq et al., Does Aquaculture Sector Concern about Women Empowerment with Sustainable Development? A Situation Analysis of Coastal Regions of Bangladesh, Brief for GSDR, 2016; Rao et al., Gendered vulnerabilities to climate change: Insights from the semi-arid regions of Africa and Asia, Brief for GSDR 2016.
- 11 Full Participation Project: No Ceilings Report: 2015, Clinton Foundation and Bill and Melinda Gates Foundation.
- 12 Djoudi et al., At the intersection of inequalities, Lessons learned from CIFOR's work on gender and climate change adaptation in West Africa, Brief for GSDR 2016; Larson et al., Can Safeguards Guarantee Gender Equity? Lessons from research on women in early REDD+ implementation, Brief for GSDR 2016; Thuy et al., Gender mainstreaming in REDD+ and PES - Lessons learned from Vietnam, Brief for GSDR 2016.
- 13 The 2030 Agenda also contains wording which potentially restricts the promise of 'ensuring that no one is left behind'. E.g. Target 5.4: Recognize and value unpaid care and domestic work through the provision of public services, infrastructure and social protection policies and the promotion of shared responsibility within the household and the family **as nationally appropriate**.
- 14 Intergenerational equity has been a central tenet of sustainable development since the concept was developed, most famously recognized in the Brundtland definition. See Matson, P., W. C. Clark, K. Andersson, 2016, *Pursuing Sustainability: A Guide to the Science and Practice*, Princeton University Press, Princeton.
- 15 The most commonly used definition of poverty counts the number of people living below a certain income threshold. Based on the revised World Bank definition, less than \$1.9 per day (USD PPP) is extreme poverty, less than \$3.1 is moderate poverty. Absolute poverty lines such as those above are often based on estimates of the cost of basic food needs (i.e., the cost a nutritional basket considered minimal for the healthy survival of a typical family), to which a provision is added for non-food needs. Relative benchmarks, on the other hand, reflect the belief that important deprivations are to be judged relative to the well-being of the whole society, approximated by the income level of the household at some point of the income distribution. Many national poverty lines are based on such relative measures.
- 16 <http://hdr.undp.org/en/content/multidimensional-poverty-index-mpi>.
- 17 <http://www.oecdbetterlifeindex.org/#/111111111111>.
- 18 <http://www.socialprogressimperative.org/wp-content/uploads/2016/04/2015-Methodology-Report.pdf>.
- 19 See Paes de Barros, R., F. H. Ferreira, J. R. Molinas Vega, and J. Saavedra Chanduvi. 2009. Measuring Inequality of Opportunities in Latin America and the Caribbean. Washington DC: Palgrave MacMillan and The World Bank. The composite index measures how personal circumstances impact a child's probability of accessing key infrastructure services. It is made of two elements: (i) the level of coverage of basic opportunities necessary for human development (such as access to primary education, water and sanitation, or electricity); and (ii) the degree to which the distribution of those opportunities varies across variables such as location (urban versus rural), gender, income, household size, education of household head, and gender of household head.
- 20 E.g. A small fraction of wealthy households in developed countries choose not to have access to television in their homes, even though for a long time, the rate of equipment of households in TV sets was considered as an indicator of "progress".
- 21 For a discussion and references, see Matson, P., W. C. Clark, K. Andersson, 2016, *Pursuing Sustainability: A Guide to the Science and Practice*, Princeton University Press, Princeton.
- 22 E.g., basic indicators such as: being above or below the national poverty line; minimal calorie intake; stunting; no access to safe drinking water and sanitation; access to clean cooking fuel; access to electricity; fall into this category.

- 23 PISA 2012, Results in Focus, What 15-year-olds know and what they can do with what they know, OECD, Paris, 2012, available at: <https://www.oecd.org/pisa/keyfindings/pisa-2012-results-overview.pdf>. However, the same study also finds gender gaps in relation to confidence in maths and science. Further, 5 percent of 15-year-old girls in OECD countries contemplate pursuing a career in engineering or computing, while 20 percent of boys do.
- 24 For example, a review done by the UN system in 2015 to assess the coverage of the SDGs by existing monitoring processes collected several hundred of such processes, see Tentative list of review and coordination platforms: Compilation of inputs submitted by the Technical Support Team (TST), available at: <https://sustainabledevelopment.un.org/content/documents/5459Tentative%20list%20of%20review%20and%20coordination%20platforms.pdf>.
- 25 For example, a substantial body of evidence and analysis is available on the gender dimension of the environment, see UNEP, 2016, *Gender Global Environment Outlook*.
- 26 For an application at the Province level in South Africa, see http://www.statssa.gov.za/?page_id=3895; For an application at the municipal level in Wales and England, see <http://gov.wales/docs/statistics/2015/150812-wimd-2014-revised-en.pdf> and <https://www.sheffield.gov.uk/your-city-council/sheffield-profile/deprivation-statistics.htm>.
- 27 See the Report of the Inter-Agency and Expert Group on Sustainable Development Goal Indicators, E/CN.3/2016/2/Rev.1, Available here: <http://unstats.un.org/unsd/statcom/47th-session/documents/2016-2-SDGs-Rev1-E.pdf>.
- 28 Sen, A., 1999, The Possibility of Social Choice, *The American Economic Review*, 89, 3, pp. 349-378.
- 29 Chen, S., M. Ravallion, 2008, The Developing World is Poorer Than We Thought, But No Less Successful in the Fight Against Poverty, *World Bank Policy Research working Paper 4703*, Washington, DC.
- 30 OECD, 2008, Growing Unequal? Income Distribution and Poverty in OECD Countries, Paris.
- 31 See e.g. Murphy, S., P. Walsh, 2014, Social Protection Beyond the Bottom Billion, *The Economic and Social Review*, 45, 2, 261-284.
- 32 Grootaert, C., R. Kanbur, G.-T. Oh, 1995, The Dynamics of Poverty: Why Some People Escape from Poverty and Others Don't – An African Case Study, World Bank Policy Research Working Paper 1499; N. Mango, P. Kristjanson, A. Krishna, M. Radeny, A. Omolo, M. Arunga, Why is it some households fall into poverty at the same time others are escaping poverty? Evidence from Kenya. ILRI Targeting and Innovation Discussion Paper, 16, Nairobi (Kenya): ILRI; Signe-Mary McKernan, Caroline Ratcliffe, and Stephanie R. Cellini, 2009, Transitioning In and Out of Poverty, the Urban Institute, Factsheet #1, September; S. R. Cellini, S.-M. McKernan, C. Ratcliffe, 2008, The Dynamics of Poverty in the United States: A Review of Data, Methods, and Findings, *Journal of Policy Analysis and Management*, 27, 3, 577–605; Bane, M.J., D. T. Ellwood, 1986, Slipping in and out of poverty: the dynamics of spells, *Journal of Human resources*, 21, 1.
- 33 International Labour Organization, 2014/2015, *World Social Protection Report 2014*, Building Economic Recovery, Inclusive Development and Social Justice, Geneva, Switzerland.
- 34 See Matson, P., W. C. Clark, K. Andersson, 2016, *Pursuing Sustainability: A Guide to the Science and Practice*, Princeton University Press, Princeton.
- 35 Interventions may have other objectives than transferring money to poor households, thus there may be trade-offs with the targeting strategy.
- 36 Coady, D.; Grosh, M.; Hoddinott, J., 2004, Targeting of Transfers in Developing Countries: Review of Lessons and Experience, World Bank regional and sectoral studies, ISBN 0-8213-5769-7.
- 37 Komives, K.; Foster, V.; Halpern, J.; Wodon, Q. with support from R. Abdullah (2005), Water, electricity, and the poor: Who benefits from utility subsidies?, *Directions in Development*, The World Bank, Washington, D.C.
- 38 See e.g. Ostry Berg etc. IMF, "Causes and Consequences of Income Inequality: A Global Perspective" (June 2015), *IMF Staff Discussion Note*, <https://www.imf.org/external/pubs/ft/sdn/2015/sdn1513.pdf>.
- 39 For example, for education, the commitments to universal youth literacy, to at least one-year of pre-primary education, to 12 years of public and free primary and secondary education, and to equal opportunity in access to post-basic education and training may require adjustment of national legislation.
- 40 See e.g. Cobbinah, P., R. Black, R. Thwaites, 2013, Dynamics of Poverty in Developing Countries: Review of Poverty Reduction Approaches, *Journal of Sustainable Development*, 6, 9.
- 41 See e.g. Chang, Ha-Joon, *Bad Samaritans: Rich Nations, Poor Policies, and the Threat to the Developing World*, Random House, London, 2007.
- 42 See e.g. Bourguignon, F. (2004), *The Poverty-Growth-Inequality Triangle*, Washington DC: World Bank.
- 43 Dan Banik & Arve Hansen (2016), The Frontiers of Poverty Reduction in Emerging Asia, *Forum for Development Studies*, 43:1, 47-68.
- 44 Ravallion, M., & Chen, S. (2003), Measuring pro-poor growth. *Economics Letters*, 78(1), 93-99; Son, H. H. (2004), A note on pro-poor growth. *Economics Letters*, 82(3), 307-314.; Duclos, J. (2009), What is "pro-poor"? *Social Choice and Welfare*, 32(1), 37-58; Essama-Nssah, B. (2005), A unified framework for pro-poor growth analysis, *Economics Letters*, 89(2), 216-221; Grimm, M. (2007), Removing the anonymity axiom in assessing pro-poor growth. *Journal of Economic Inequality*, 5(2), 179-197; Klasen, S. (2008), Economic growth and poverty reduction: Measurement issues using income and non-income indicators. *World Development*, 36(3), 420-445; Kakwani, N., Son, H. H. (2008), Poverty equivalent growth rate, *Review of Income and Wealth*, 54(4), 643-655.
- 45 Kraay, A. (2006), When is growth pro-poor? evidence from a panel of countries, *Journal of Development Economics*, 80(1), 198-227. doi:10.1016/j.jdeveco.2005.02.004.
- 46 Ferreira, F. H. G., Leite, P. G., M. Ravallion, (2010), Poverty reduction without economic growth? explaining Brazil's poverty dynamics, 1985-2004, *Journal of Development Economics*, 93(1), 20-36.
- 47 Son, H. H., N. Kakwani (2008), Global estimates of pro-poor growth, *World Development*, 36(6), 1048-1066.
- 48 See e.g. Ravallion M., *The Economics of Poverty: History, Measurement, and Policy*, Oxford University Press, 2016.
- 49 See e.g. Lin J., *New Structural Economics, A Framework for Rethinking Development and Policy*, World Bank, Washington D.C.
- 50 Amsden, A. (2001), *The Rise of "The Rest—Challenges to the West from Late-Industrializing Economies*, Oxford University Press; Reinert, E. S. (2007), *How Rich Countries Got Rich and*

- Why Poor Countries Stay Poor, London: Constable; McMillan, M., and Rodrik, D. (2011), Globalization, structural change and productivity growth, NBER Working Paper Series, 17143.
- 51 ILO (2016), World Employment and Social Outlook 2016, Transforming jobs to end poverty.
- 52 Christiaensen, L., Demery, L., & Kuhl, J. (2011), The (evolving) role of agriculture in poverty reduction-an empirical perspective, *Journal of Development Economics*, 96(2), 239-254.
- 53 Rigg, J. (2006), Land, farming, livelihoods, and poverty: Rethinking the links in the rural south, *World Development*, 34(1), 180-202.
- 54 This subsection is based on the World Social Protection Report 2014/2015, published by ILO.
- 55 Gentilini, U., S. Were Omamo, 2011, Social Protection 2.0: Exploring Issues, Evidence and Debates in a Globalising World, *Food Policy*, 36, 329-340.
- 56 International Labour Organization, 2014/2015, *World Social Protection Report 2014, Building Economic Recovery, Inclusive Development and Social Justice*, Geneva, Switzerland.
- 57 International Labour Organization, 2014/2015, *World Social Protection Report 2014, Building Economic Recovery, Inclusive Development and Social Justice*, Geneva, Switzerland.
- 58 <http://www.oecd.org/newsroom/healthcare-improving-too-slowly-to-meet-rising-strain-of-chronic-diseases.htm>.
- 59 See e.g. K.M.Cleaver, 1997, Rural Development Strategies for Poverty Reduction and Environmental Protection in Sub-Saharan Africa, World Bank, Washington D.C.; and Binns, J. A., and D. C. Funnell, "Geography and Integrated Rural Development", *Geografiska Annale*, Series B, Human Geography 65.1 (1983): 57-63.
- 60 Andersson, R. and Musterd, S. 2005, Area-based policies: a critical appraisal, *Tijdschrift voor economische en sociale geografie*, 96, 377-389.
- 61 Smith G.R., 1999, Area-based Initiatives: The rationale and options for area targeting, *Smith G.R., 1999, Case paper, CASE/25, Centre for Analysis of Social Exclusion, London School of Economics, London*.
- 62 See e.g. What works in improving the living conditions of slum dwellers; A review of the evidence across four programmes, Lucci P., Bhatkal, T., Khan A., Berliner, T. 2015, Overseas Development Institute, London; or The Welfare Effects of Slum Improvement Programs: The Case of Mumbai, Takeuchi A., Cropper M., Bento A. World Bank Policy Research Working Paper 3852, 2006.
- 63 MVP. 2010. Harvests of Development: The Millennium Villages After Three Years, New York: TheEarth Institute at Columbia University and Millennium Promise. Available at http://ciesin.columbia.edu/binaries/web/global/news/2010/mvp_midterm_report.pdf.
- 64 See e.g. Clemens, M.A., Demombynes G., When does rigorous impact evaluation make a difference? The case of the Millennium Villages, 2011. *Journal of Development Effectiveness* 3 (3): 305-339 and Butler, D. Poverty project opens to scrutiny, 2012 *Nature* 486, 165-166.
- 65 For example, The Lancet has produced meta-reviews of development interventions in the health sector, see references in Annex to this chapter.
- 66 For example, the Independent Evaluation Group of the World Bank has produced a number of systematic evaluations of the Bank's interventions in some sectors, many of which document the extent to which the Bank's and IFC's interventions are reaching the poor.
- 67 United Nations, 2015, The Millennium Development Goals Report 2015, New York.
- 68 See e.g. M. Sinclair, 2001, Education in Emergencies, in Learning for future: Refugee education in developing countries, Edited by Jeff Crisp, Christopher Talbot and Daiana B. Cipollone, UNHCR, Geneva.
- 69 Wunder, S. 2008, Payments for environmental services and the poor: Concepts and preliminary evidence. *Environment and Development Economics*, 13(3), 279-297.
- 70 International assessment of agricultural knowledge, science and technology for development (IAASTD) : global report edited by Beverly D. McIntyre et al., 2008, Washington D.C. See IAASTD.
- 71 See: (1) Toward a World Free from Violence: Global Survey on Violence against Children. Office of the Special Representative of the Secretary-General on Violence against Children, New York, 2013. (2) United Nations Children's Fund, Hidden in Plain Sight: A statistical analysis of violence against children, UNICEF, New York, 2014. (3) World Health Organization, United Nations. Global Status Report on Violence Prevention 2014. Geneva, Switzerland: WHO Press; 2014. (4) Hillis S, Mercy J, Amobi A, et al. Global Prevalence of Past-year Violence Against Children: A Systematic Review and Minimum Estimates. *Pediatrics*. 2016;137(3):e20154079. (5) Chiang LF, Kress H, Sumner SA, et al. *Inj Prev* 2016; 22:i17-i22.
- 72 World report on disability, World Health Organization, World Bank 2011, available at: http://www.who.int/disabilities/world_report/2011/en/.
- 73 Komives, K.; Foster, V.; Halpern, J.; Wodon, Q. with support from Roohi Abdullah, 2005, Water, electricity, and the poor: Who benefits from utility subsidies?, *Directions in Development*, World Bank, Washington, D.C.
- 74 A meta-review of studies that assessed the potential effect on child survival of scaling up nutrition-specific packages concluded that therapeutic feeding for severe acute malnutrition, which is a form of "reaching the further behind first", would save from 620,000 to 917,000 lives, or as many lives as the other interventions combined. In addition, estimates of the effect of scaling up nutrition interventions showed that the gains would be greatest in the poorest quintiles, see Bhutta, Z. A.; Das, J. K.; Rizvi, A.; Gaffey, M. F.; Walker, N.; Horton, S.; Webb, P.; Lartey, A. Black, R. E. (2013), Evidence-based interventions for improvement of maternal and child nutrition: what can be done and at what cost?, *The Lancet*, 382, 9890, 452 - 477.
- 75 See e.g. Heckman J., Masterov D.V., The Productivity Argument for Investing in Young Children, Working Paper 5, Invest in Kids Working Group, Committee for Economic Development, 2004; Koolwal G., van de Walle, D. 2009, Access to Water, Women's Work And Child Outcomes, World Bank, Washington D.C.; and Fay M., Leipziger D., Wodon Q., Yepes T., 2005, Achieving child-health-related Millennium Development Goals: The role of infrastructure, *World Development*, 33, 8, August, 1267-1284.
- 76 IIASA, 2012, *Global Energy Assessment*, Vienna.

ANNEX 1

Annex 1: Examples of strategies used in various SDG areas and how they are geared to reaching those left behind.

Nutrition

Context:

Maternal undernutrition is estimated to contribute to 800,000 neonatal deaths and child undernutrition, consisting of stunting, wasting and micronutrient deficiencies, brings about 3.1 million child deaths annually.¹ By 2014, 159 million children under 5 were stunted, and. Progress in reducing stunting has been uneven. Low-income countries only accounted for 15 per cent of the global under-5 population in 2014, but nearly one quarter of all stunted children live in these countries. Less than half of all children under 5 lived in lower-middle-income countries in 2014, yet these countries accounted for two thirds of all stunted children globally.² Because stunting and its consequences are difficult to reverse after 24 months of age, interventions usually target pregnancy and young children.

Commonly used strategies:

Strategies to improve maternal and child nutrition tend to focus on adolescents girls and women, on infants and young children during the first 1000 days of life, on promoting optimal nutrition practices, meeting micronutrient requirements, prevention and treatment of severe acute malnutrition, and disease prevention and management.³ These strategies include promotion of breastfeeding, promotion of complementary feeding with or without of provision of food supplements, micronutrient interventions, general supportive strategies to family and community nutrition, and reduction of disease burden.⁴

Once pregnant and young children are targeted, effective nutrition interventions use a universal approach, focus on reaching food insecure groups, or focus on severe acute malnutrition (to reach the furthest behind). For example, from a comprehensive review of 43 nutrition-related interventions, out of 13 of those that were found to have evidence of effectiveness 11 could be implemented as universal within the target groups, one was universal in nature (e.g. universal salt ionization), and one targeted severe acute malnutrition.^{5,6}

How 'reaching the furthest behind first' compares with other strategies:

Nutrition interventions that focus on the furthest behind, in terms of nutritional status or vulnerability, are particularly effective for reducing malnutrition. A meta-review of

studies that assessed the potential effect on child survival of scaling up nutrition-specific packages concluded that therapeutic feeding for severe acute malnutrition, which is a form of "reach the further behind first", would save from 620,000 to 917,000 lives, or as many lives as the other interventions combined. In addition, estimates of the effect of scaling up nutrition interventions show that the gains would be greatest in the poorest quintiles.⁷ A review of nutrition-sensitive programmes in the areas of agriculture, social safety nets, early child development, and education, show that they could be enhanced by, among other things, better targeting on the basis of nutritional vulnerability, in addition to targeting based on income or geographical location.⁸

It is important to note, however, that less targeted preventive interventions could be more effective than more targeted recuperative strategies. For example, a large programmatic intervention in Haiti found that given the difficulty to reverse stunting after 36 months of age a strategy of behaviour-change communication and food supplements for all children aged 6-23 months had a larger effect in reducing underweight and stunting than a targeted recuperative and food-support strategy that focused on underweight children under the age of five.⁹

How those left behind and 'furthest behind' are identified: Severe acute malnutrition (SAM) is detected by a weight-for-height Z score [WHZ] < -3 , while moderate acute malnutrition (MAM) is characterized by WHZ < -2 .¹⁰ In stable non-emergency situations with endemic malnutrition, MAM can often present in combination with stunting.¹¹

Health

Context:

Health is a good example of an area where the need to reach the furthest behind (not necessarily "first" though) has been on the forefront of national and international policy discussions. At the national level, the imperative to leave no one behind in this area is epitomized in discussions on universal health coverage, which have matured in many countries over the past two decades. It is also a constant concern in terms of design of health coverage systems, e.g. for the price of medicines and care that is paid by poor consumers. At the international level, efforts to combat "orphan diseases" especially in Africa have given rise to innovative policy approaches (e.g. advance market commitments). Efforts to reduce the price of medicines have also been ubiquitous and have given rise to action in international forums (WTO). In the case of HIV/AIDS, a range of responses by individual countries and the international community has included international action programmes, the creation of UNAIDS, action at the WTO, and others.

The challenge for leaving no one behind is that the availability of and access to relevant social and medical care is usually inversely related to the need of the population groups.¹² In other words, groups with the most pressing need for medical care tend to be those least likely to receive it. This is particularly central because people within the lower income groups not only tend to have more illnesses but also have more comorbidity.¹³ This can be compounded by the fact that many disadvantaged population groups, such as those in rural areas and poor populations, are also more likely to lack access to clean drinking water, sanitation and hygiene, which are essential for human health.¹⁴

Commonly used strategies:

A common strategy is universal health care, which attempts to guarantee comprehensive health coverage for the entire population. In Australia, for example, the socially disadvantaged are covered through publically funded healthcare via Medicare but actual access to medical care has been found to be limited due to excessive waiting time and scheduling difficulties. On the contrary, those who are privately insured receive care within a reasonable time frame through private appointments.¹⁵

Some programmes of universal care are focused on reaching the furthest behind first. Spain, for example, developed primary care health centres throughout the country but prioritized areas with the highest social deprivation first, which has yielded benign outcomes such as lower death rates.¹⁶ In Thailand, the people are insured through the Civil Servant Medical Benefit Scheme, the Social Security Scheme for individuals working in the private sector, and the so-called “30-Baht Scheme” for those who do not work for the private sector, non-working family members and children. The 30-Baht Scheme is a financially discounted program in order to insure the remainder of the population.¹⁷

Numerous strategies that target a specific population group focus on financially disadvantaged groups such as the unemployed and those working part-time, as well as socially disadvantaged groups such as women, children and seniors. According to the literature, the basis for much of health inequity is determined from early stages of life. Thus, prioritizing interventions at younger ages is a suggested approach.¹⁸

Some northern European countries and some provinces in Canada have attempted to regulate the distribution of health to achieve health equity by refusing to reimburse or pay physicians who settle in medically well-equipped areas. There have also been expansions of network of community health centres in deprived areas, and the benefits of this in the U.S. has been strong with lower low birth weight rates, better care quality and higher preventive service levels.¹⁹ Many developing countries have also made significant

progress towards achieving universal coverage. A study analysing 24 developing countries striving to achieve UHC, including Jamaica, Indonesia, Guatemala, Ghana and Nigeria, shows that the countries are adopting two broad approaches: So-called “supply-side programs” channel investments to expand the capacity of service provision through increased funding for inputs (for example, human resources) and for reforms such as greater flexibility in staff recruitment, financial autonomy for public clinics, strong organizational protocols, and explicit performance indicators. “Demand-side programs” earmark resources to identified groups in the population and the services they use. They often do this by identifying and enrolling their target population and purchasing health care services on their behalf via output-based payments.²⁰

How ‘reaching the furthest behind first’ compares with other strategies:

The need for strategies that target the furthest behind first is highlighted in the health literature. Studies show that even when universal access to health services is an actively pursued goal, actual access can be skewed towards those better off. For example, in 21 OECD countries, most of which have explicit policy objectives to ensure equitable access to health care, people with higher incomes are significantly more likely to see a health specialist than people with lower incomes and, in most countries, also more frequently.²¹ Such pattern tends to make total doctor utilization somewhat pro-rich, which is further reinforced when private insurance or private care options are offered. While the issues of pricing are an important part of achieving UHC, geographical coverage and inhibiting distances to nearest health facilities as well as lack of quality of care are also barriers to reaching UHC.²²

It has been suggested that health inequality can be improved when considered in conjunction with macro-level factors and other economic and social policies.^{23, 24} Social class indicators and environmental stressors, such as poor housing conditions and high crime and unemployment rates, impact the relationship between individual-level risk factors and health.²⁵ For instance, while early initiation of prenatal care reduces the risk of low-birthweight infants, the protective effect of prenatal care is heavily dependent on the residential context. In high-risk neighbourhoods, the protective effect was low while low-risk neighbourhoods benefited from the care more substantially. Thus, basing policy solely on the individual-level analyses can overestimate the individual-level risks, leading to policy interventions with skewed consequences.²⁶

It is important to be cautious about the different uptake among the different social group in order to prevent widening inequalities. Experimental studies in the areas of accident prevention and use of educational booklets

for pregnant women had a greater impact on those in the higher social classes and exacerbated the inequality gap, emphasizing the eminence of targeted interventions in such cases.²⁷

Environment and Health

Context:

Insufficient attention is being given to ensuring a healthy environment as a means to improve human health and well-being. An estimated 23%²⁸ of total premature deaths were linked to environmental and modifiable factors in 2012 (12.6 million deaths globally), and the poor and other disadvantaged groups are disproportionately affected. Poor air quality and the consequences of inadequate water and sanitation services are among the primary environmental risks that affect health worldwide (see 1.1.7 on water and sanitation). Household air pollution prematurely kills 4.3 million people every year, nearly all in low- and middle income countries.²⁹ It particularly affects women and children, as they are more exposed to fumes from solid fuels used in cooking. Exposure to toxic chemicals due to inadequate workplace and housing conditions and proximity of homes, schools and workplaces to contaminated areas adds to the burden of disease, and its effects have become increasingly evident.³⁰ The effects of exposure to certain types of pollutants are exacerbated by poor nutrition and include, among other effects, influence neurocognitive development. Certain effects of exposure to toxic substances can be transmitted from mother to child, contributing to the intergenerational transmission of inequalities.³¹

Moreover, the world's poorest 3.5 billion people rely more directly on the environment for their basic needs, such as water, food and shelter, so ecosystem degradation affects them the most. Climate change impacts add to vulnerability by affecting the quantity and quality of water, soil degradation, disease patterns, and the frequency and intensity of droughts and extreme meteorological events.³² Again, the most affected are those with scarce access to adequate infrastructure, services and support systems. Over half a billion children currently live in extremely high flood occurrence zones, and nearly 160 million children live in areas of high, or extremely high, drought severity.³³

Commonly used strategies:

The health benefits of addressing environmental problems are not often quantified. As a result, investments and policies to that effect are underprovided. Moreover, for the most part, mainstream environmental policy does not specifically target the poorest or most disadvantaged groups. For some environmental problems, targeting specific groups is, in fact, unnecessary, as these groups will benefit from an efficient global strategy.

For example, as a result of the successful phase-out of nearly 100 ozone-depleting substances through the Montreal Protocol on Substances that Deplete the Ozone Layer (1987), up to 2 million cases of skin cancer and many millions of eye cataracts may be prevented each year by 2030. Moreover, by limiting the loss of stratospheric ozone, the Montreal Protocol helps to safeguard food security by reducing ultraviolet damage to crops and marine ecosystems. Cumulative estimates from 1987 to 2060 show that the global phase-out of chlorofluorocarbons (CFCs) alone will result in an estimated US\$1.8 trillion in global health benefits and almost US\$460 billion in avoided damages to agriculture, fisheries and materials.³⁴

For other environmental problems, however, the approach used can have different results for different groups of people. Where effects are localized or otherwise unequally distributed, environmental policy that does not specifically address the needs of the poorest may exacerbate inequalities. Groups (communities, individuals, countries) that are at a disadvantage in terms of their capacity to act collectively and influence policy design and implementation may benefit less from investments and may be left out in the allocation of scarce enforcement capacity. In some cases, in the absence of adequate policy, the very existence of socioeconomic inequalities may make it easier and cheaper for certain groups to transfer the environmental costs of their activities and lifestyles onto others rather than to internalize those costs.³⁵

How 'reaching the furthest behind first' compares with other strategies:

The choice of instruments for environmental management can have significant implications on who benefits from interventions in environmental matters. For example, in conducting inspections on plants that handle toxic substances, a "police-patrol" approach will conduct regular and uniform inspections, while a "fire-alarm" approach reacts to demands from affected parties. The latter will tend to be of greater benefit in communities with a greater capacity to articulate collectively and reach out to institutional channels, and may leave the most disadvantaged behind. A strategy that reaches the furthest behind first would include a police-patrol approach at least in the most disadvantaged areas.³⁶ Ensuring access to information, participation and justice in environmental matters are necessary components of a strategy to leave no one behind when addressing environmental issues. To reach the furthest behind first, policies need to address the special needs of vulnerable communities. Experiences to that effect include active outreach strategies to engage these communities in the identification and resolution of environmental problems affecting them through technical and financial support, legal assistance, and by providing environmental information in languages and formats

accessible to linguistic minorities;³⁷ legal empowerment of communities;³⁸ and inclusion of equity criteria in impact assessments and licensing criteria.³⁹

In some cases, strategies geared at reaching the furthest behind first are also efficient strategies to address environmental issues, with universal benefits. Replacement of traditional biomass cookstoves with modern fuel cookstoves, and of traditional cooking and heating with clean-burning biomass stoves would have considerable health benefits and would also represent 25% of the share of total avoided climate warming from Short-Lived Climate Pollutants reduction by 2050.

How those left behind and 'furthest behind' are identified:

The definition of those "left behind" varies depending on the type of intervention. Although the common methodology used looks at income distribution, interventions with regards to environment and health linkages tend to take into account the issue of vulnerability, to environmental degradation, targeting those which are most vulnerable to exposure to pollutants, other forms of poor environmental quality, climate change or natural disasters. Vulnerability to environment and health inequities are linked to many other social and economic factors, including the social and economic position of individuals, in relation to social class, age, gender and ethnicity, as well as education, occupation, livelihood and income levels. These factors determine where people live, what they eat, how and when in the life cycle they are exposed to pollution, and what options they have to change their conditions.

Some jurisdictions have adopted a pragmatic approach to enable targeting of particularly vulnerable or overburdened populations, and those that are likely to be unaware of the risks they face or to be unable to effectively take part in decision making. For example, in the State of Massachusetts, United States, the operational definition of "environmental justice populations" is "a neighborhood whose annual median household income is equal to or less than 65 percent of the state-wide median or whose population is made up 25 percent Minority, Foreign Born, or Lacking English Language Proficiency".⁴⁰ The state of California has adopted a screening tool - *California Communities Environmental Health Screening Tool* (CalEnviroScreen) - to identify vulnerable communities that suffer the largest pollution burdens, considering the location of pollution sources and demographic characteristics such as the concentration of children and elderly, low birth weights, asthma emergencies, education levels, linguistic isolation, poverty and unemployment. The tool is used in the allocation of resources obtained through the Greenhouse Gas Reduction Fund, a cap-and-trade programme.⁴¹

Conditional cash transfer programmes

Context:

The multi-dimensionality of poverty has long been recognized. Poor households are likely to suffer from multiple deprivations, including with respect to education, health, and employment, and be more vulnerable to shocks. Conditional cash transfer (CCT) programmes aim at addressing tackling multiple deprivations simultaneously in poor households. These programmes are usually designed with the philosophy that poor families are not able to invest enough in the human capital of their children, leading to poor nutrition, poor health and education outcomes, and use of child labour.

Commonly used strategies:

CCTs often combine components related to education, health and nutrition of the children, conditionalizing the given cash transfers with participation in schooling, natal care, vaccination schemes and so on, while aiming at alleviating current poverty simultaneously. For Brazil's Bolsa Familia for example, the transfer is conditional on pregnant women receiving timely prenatal and postnatal care visits, all children aged 0–5 within the household receiving timely vaccinations and growth-monitoring visits, and all children aged 6–15 attending school at least 85% of school days.⁴²

Some of the programmes aim at giving particular support to girls and women. In the case of Mexico's Oportunidades program for example, the grants given increase as children progress to higher grades at school and, beginning at the secondary level, are slightly higher for girls than for boys. The cash transfers themselves are given to the female head of the family.

Growing interest to CCTs, especially in poor countries was possible through an adaptation of more flexible approaches to encouraging human capital investment and blurring of lines between conditional and unconditional transfers, with some unconditional cash transfer programs (for example, in Kenya, Ghana, and Pakistan) introducing some co-responsibility arrangements with less stringent enforcement than in most CCTs (also called "soft conditionalities). CCTs in Africa are rarely a stand-alone activity. Instead, they usually come as a part of a package of safety net interventions that often also include a public works component. The three largest CCT financing activities in sub-Saharan Africa – Nigeria's Youth Employment and Social Support, Tanzania's Productive Social Safety Net, and Ghana's Social Opportunities Project – all combine a CCT with a public works component. Approaches that combine investments in human capital with CCTs and with the building of community infrastructure through public works have now been adopted by Egypt, Togo, Burkina Faso,

Cameroon, Republic of Congo, Niger, Madagascar, Chad and Mali.⁴³

By definition, CCT programs aim to reach those left behind in a socio-economic sense. The extent to which they have succeeded varies across countries. CCT are the most evaluated form of social safety nets. In recent years, there has been a large number of impact evaluations of CCT programs, and a dramatic shift from Latin America (where most of the initial impact evaluations were concentrated)⁴⁴ to lower-income countries in Africa (where one half of the evaluations conducted in the past 3 years were concentrated) and Asia.⁴⁵ Some of the most notable evaluations published over the last year include the impact evaluation of the Pantawid Pamilyang Pilipino Program in the Philippines.⁴⁶

CCTs, particularly those in Latin America, have been widely assessed, with mainly positive results. In Mexico, newborns in beneficiary families were 127.3 grams heavier and 44.5 percent less likely to be low birth weight than newborns in non-beneficiary families.⁴⁷ Bolsa Familia has increased girls' school participation by 8.2 percentage points.⁴⁸ The probability that a child received all seven vaccines required by age 6 months increased by 12–15 percentage points and increased pregnant mothers' use of prenatal care by 1.5 prenatal care visits on average.⁴⁹ A 2012 evaluation of Brazil's Bolsa Família program yielded evidence of how beneficiary women made decisions that resulted in better living conditions for both children and women.⁵⁰ Bolsa Familia has even been linked to reduced crime rates.⁵¹ The findings of evaluations of Nicaragua's Atención a Crisis underscored the long-term positive potential of health interventions focusing on early childhood intervention. It was found that households who received Atención a Crisis transfers had increased their expenditure on critical inputs into child development (such as more nutrient-rich foods, more early stimulation provided to children, and more use of preventative health care). This had led to improvements in the cognitive outcomes of children aged 36 months old from beneficiary households, and even two years after the program was ended and the transfers had been discontinued, these positive effects continued.⁵²

The success of Latin American CCTs has encouraged developing countries around the world to adopt similar schemes. However, the success of these schemes requires that good quality services are available and physically accessible for the participants and that the public sector has the capacity to run fairly complex transfer schemes.⁵³ In some cases, these requirements have meant in practice, that those furthest behind, for example in rural areas, are left outside of the programme reach. For instance, in Nicaragua, the programme was initially implemented in departments that satisfied minimum administrative and infrastructure requirements.⁵⁴ Colombia's Familias en

Accion (FA) has included poor municipalities with fewer than 100,000 inhabitants, a bank and adequate education and health infrastructure.⁵⁵

Several countries have strengthened linkages between cash transfers and early childhood development (ECD). Conditional cash transfer programs can serve as effective vehicles for promoting early childhood nutrition, health, and development, in addition to their more traditional role of providing income support to the poor and vulnerable. Where ECD services exist, cash transfer programs can help households overcome barriers to access, for instance by making the transfers conditional on health visits, growth monitoring sessions, or attendance in preschool. Cash transfer programs can also help encourage changes in parenting practices to promote early childhood nutrition, psychosocial stimulation, or health. Countries having tested similar approaches include Burkina Faso, Djibouti, Mali, and Niger.⁵⁶

Accompanying measures to promote ECD are also being implemented in middle-income countries. In Indonesia, the conditional cash transfer Program (CCT) program Keluarga Harapan (PKH) covers 3 million poor families nationwide. The program not only provides cash, but also provides beneficiary mothers with skills. Training modules seek to promote sustainable behavioral changes in relation to early childhood education and parenting practices, and extending to such topics such as family finances or microenterprises. The training modules are given during monthly meetings that CCT beneficiaries have at local level, over three years. Messages are harmonized through the use of videos that represent daily situations of a typical CCT family.

How 'reaching the furthest behind first' compares with other strategies:

Some CCT schemes contain an element that aims at targeting the support to the furthest behind in addition to supporting poor families. For example, transfers associated with Bolsa Família consist of a conditional payment per child aged 0–15 years, for up to three children, to "poor" households below a per capita income threshold, but in addition, an additional unconditional transfer is given to "extremely poor" households below a lower per capita income threshold.

Some programmes also aim at providing additional incentives for tackling issues such as school dropouts. In Brazil in 2008, a complementary Benefício Variável Jovem program was introduced, which added variable payments and a schooling conditionality for children aged 16 and 17, requiring attendance at least 80% of school days.

Other programmes are including support to recover from disasters tackling families that are especially vulnerable to hazards, in an effort to minimize the negative effects that these events have in poverty eradication. This is the case,

for example, of Chile (*Chile Solidario*), Ecuador (*Bono de Desarrollo Humano*) and Mexico (*Prospera*, successor of *Oportunidades*).⁵⁷

In Panama, the Red de Oportunidades Led is targeted to the poorest and the indigenous communities. According to one assessment, the programme implementation led to a reduction in child labour among 12–15-year-old children by 15.8 percentage points and to increased elementary school enrolment by 7.9 percentage points in indigenous comarcas.⁵⁸

How those left behind and 'furthest behind' are identified:

CCTs can cover large sections of societies (approximately 26 % in Brazil) or narrower groups (3% in Nicaragua). Good targeting and identification of the group is crucial for the effectiveness of the programme.

Most Latin American CCTs rely on proxy-means tests for identification of the poor. A notable exception is Brazil's Bolsa Familia, which relies on self-declared per capita household income.⁵⁹ CCTs may also rely on geographic targeting to target priority areas, whether based on welfare levels or on other requirements such as minimum infrastructure facilities, or a combination of both.⁶⁰ Some programmes also use community means testing as the way to identify the ones eligible.⁶¹

Payments for ecosystem services

Context:

Payments for ecosystem services (PES) programs were originally designed primarily to meet conservation goals rather than poverty reduction objectives. Conservation strategies can indeed present constraints and challenges especially for the communities and local residents leaving in and around sites identified and designated for the implementation of such environmental conservation programmes. The challenges and constraints include lack of or reduced access by communities to services provided by the ecosystems. These challenges are exacerbated when they directly affect the poor and landless as they are for all intent and purpose effectively locked out of their sources of survival and livelihood. The understanding and practices of implementation of incentive programs such as PES have evolved and the need to balance conservation objectives and socio-economic imperatives are now widely recognized. Involving local residents or users of natural resources in conservation efforts and providing incentives to local communities to support and participate in conservation efforts is now standard practice. In the past three decades, a rapidly growing number of ecosystem functions have been characterized as services, valued in monetary terms and, to a lesser extent, incorporated into payments for ecosystem services (PES) schemes.⁶² Such

schemes have thus become one of the common tools used to manage environmental issues.

Commonly used strategies:

Under a typical payment for ecosystem or environmental services (PES) scheme, the party supplying the environmental services agrees to manage the corresponding resource or the service that provides a flow of benefits to another party according to certain requirements, in return for compensation. Some PES programs are purely private arrangements. However, the majority of the PES programs are funded by governments and involve intermediaries, such as non-government organisations. The majority of existing schemes operate in the areas of climate change mitigation, watershed services and biodiversity conservation.⁶³

The primary focus of PES is on maintaining or restoring ecosystem services, not on poverty alleviation. However, during the past decade there was increasing interest in whether PES could, in addition to environmental objectives, also capture and accommodate poverty reduction objectives, especially in developing countries. A multi-country study based on observations from three tropical continents found that poor (environmental) service providers could broadly gain access to PES schemes, and generally become better off from that participation, in both income and non-income terms.⁶⁴ However, the study pointed out the need to also look at the impact of PES schemes on service users nonparticipants. Several studies including a 2005 study conducted by the World Resources Institute on the Challenges of Pro-Poor PES found that: lack of security of tenure; restriction on land uses; high transaction costs; lack of credit and start-up funds represented serious challenges for the poor who were denied access to benefits.

The various participation filters of PES schemes contain both pro-poor and anti-poor selection biases, and different mechanisms have yielded different results in terms of reaching the poorest. Quantitative welfare effects are by nature small-scale compared to national poverty-alleviation goals.⁶⁵ The study concluded that while some pro-poor interventions are possible through PES, the prime focus of such schemes should remain on the environment.

How 'reaching the furthest behind first' compares with other strategies:

As described above, payments for ecosystem services are not explicitly designed to achieve poverty eradication objectives. The precise design of the payments systems influences the distribution of the payments across participating and non-participating groups; hence, PES can be more or less focused on those furthest behind, depending on the case. Carefully designed PES schemes can become more focused on those left behind ("the poorest") and those unable to cross above the poverty line.⁶⁶

How those left behind and 'furthest behind' are identified:

In evaluations of the pro-poor nature of PES, income and derived poverty indicators are commonly used as a measure for those "left behind". However, the evaluation of the pro-poor nature of PES programs needs to include other poverty indicators as well, such as health, education and other social indicators as gauges for those "left behind".

Access to shelter*Context:*

For shelter policy in developing countries, perhaps the most notable trend in recent decades is with respect to the spatial dimension of poverty. Though the majority of the world's poor continue to live in rural areas, poverty has rapidly become an urban phenomenon. Today, unlike the situation thirty years ago, in many countries – e.g. Russia, Brazil, Mexico - most of the poor reside in urban areas. In other countries, the poverty rate in urban areas is higher than it is in rural areas.

A clear failure of urban interventions in past decades is shown by the inability to eliminate slums. Although the MDG slum target was reached, the number of slum dwellers, in absolute terms, continues to grow, with an estimated 863 million people living in slum conditions in 2012.⁶⁷ This is not only a result of massive migration flows into the cities of the developing world. Surveys in Brazil and India, for example, indicate that in many places slum dwellers are no longer are immigrants who recently arrived from rural areas in search of better livelihoods. Today, many of the 100,000 pavement dwellers in Mumbai, for instance, are second generation residents,⁶⁸ as is the case in Rio's Favelas.⁶⁹

The broad environment has significantly changed over the last three decades. Urbanization is no longer thought of only as an engine of growth that occurs as societies grow and specialize. A more robust understanding of how housing and land markets work has emerged in both developed and developing countries. There is now much more available information and an active body of research on real estate economics in general and for developing countries in particular. Many countries have evolved sophisticated financial systems. For instance, many developing countries now have access to market rate housing finance to assist them. This has come with associated crises in some cases.

Commonly used strategies:

Strategies to provide access to shelter in an urban context have a history of several decades if not centuries. In developing countries, urban projects initially undertaken by international financial institutions were usually designed to help develop sites and services in low-income countries.

Most of the initial projects were in capital cities and attempted to show that basic housing services, e.g. shelter, water and sanitation, could be provided at much lower cost than the housing then being provided by the public sector. At that time there was considerable resistance this idea. Most developing country public housing agencies produced expensive and heavily subsidized housing that could only meet the needs of a fraction of the demand. These projects also provided an alternative to demolishing squatter settlements as was done in many countries. The overarching idea of the assistance was to suggest that rather than attempting to replace the informal sector, or see this sector as a "problem", public assistance could be used so that the strengths of this sector could be built upon. Providing just basic services and shelter allowed poor families to expand their units over time as their savings and resources permitted. It also allowed them to use their own labor to maintain and increase their wealth. A change came in the early 1970s with a shift to upgrading of existing slums rather than just the development of new sites.

The second change was to move from shelter-centered projects to broader interventions that included issues such as municipal finance, urban management and inter-governmental relations. Later, other types of interventions were centered on housing finance and broader housing policy environment, as well as disaster relief. Lastly, in the late 1990s, housing micro-finance started to be seen as a way to provide access to housing finance further down the income distribution. Various interventions in housing markets continue to target the low-income rental sector (both public and private).

How 'reaching the furthest behind first' compares with other strategies:

The degree to which urban policy interventions and strategies reach those left behind depend on the specific nature of the interventions and the local context. Yet, some general lessons can be drawn^{70, 71} In general, subsidy instruments have not been a panacea to reach the poorest.

In as much as slums provide shelter to those furthest behind in the urban context, interventions directed at slums reach this category. Their impact, however, depends on the design and implementation of urban interventions.

How those left behind and 'furthest behind' are identified:

The definition of those "left behind" varies depending on the type of intervention. For example, interventions aiming at expanding mortgage markets for individual ownership will focus on those at the margin of formal housing finance, who are typically not at the bottom end of income distribution. Intervention in slums is area-based; in addition, additional criteria within specific interventions may try to further target people or households who are most vulnerable or poor.

Access to drinking water and sanitation

Context:

Improving access to safe drinking water and sanitation has long been recognized as one of the main challenges of sustainable development, with improper water management having a direct impact on human and ecosystem health, food and energy security among many other areas which support human well-being and livelihoods. 147 countries achieved the MDG target relating to access to drinking water, while 95 met the target for sanitation. Over 90 per cent of the world's population now use improved sources of drinking water, and 68 per cent use improved sanitation facilities.⁷² The value to households of access to improved water and sanitation facilities includes direct net savings or expenses from buying water from alternative providers and savings in health expenditure to treat water-borne disease and indirect benefits in terms of time freed up to get water closer or into the household, improved nutrition, increased school attendance especially for adolescent girls and the safety and dignity of improved sanitation compared to open defecation of shared facilities. In most developing countries without universal access, use of improved facilities is higher in urban areas than in rural areas.⁷³ Households not having access to individual piped water connections must rely on alternative sources for water, whose price is often much higher than that of water provided by utility companies. Households in dense urban areas often have few options for improved sanitation and removal of excreta from communities due to a lack of space and service providers.

Investment in water and sanitation has also long been recognized as having a very high social rate of return. For example, in 2004 WHO and UNICEF estimated that the return on investment in water and sanitation services in developing countries ranged between US\$5 and US\$28 per dollar.⁷⁴ Improved access to safe water and sanitation has many co-benefits in other areas. For example, it has resulted in the number of diarrhoeal diseases attributable to inadequate water, sanitation and hygiene to fall from 1.8 million to 842,000 between 1990 and 2012, with all regions experiencing major declines.⁷⁵

Commonly used strategies:

Strategies used all over the world ultimately aim to provide universal access to safe drinking water and basic sanitation. In that sense, they are directly geared to leaving no one behind. In many countries, strategies for universal drinking water coverage are designed within the paradigm of individual water connections provided by a utility company through a network. The precise institutional features of utilities and their degree of autonomy from the government vary widely across countries. However, the challenge facing governments is the same, i.e. to ensure reliable access to

safe water at affordable rates, without compromising the long-term financial sustainability of the water provision system. Strategies for universal coverage of sanitation tend to rely on a mix of extending formal services (sewerage networks and septic tank systems) while encouraging private investment in sanitation improvements.

In countries with a large share of the population without access (e.g. large rural populations), the network structure of water and wastewater service provision provides an incentive for planners to reach "low hanging fruits" first by extending connections in proximity of existing networks or water production plants, thus not necessarily reaching those furthest behind first. Globally, eight out of ten people without improved water, and seven out of ten without improved sanitation, live in rural areas where networked solutions may not be achievable or affordable in the short to medium term, and low cost solutions operated and managed by the communities are still the main option. In countries where the majority of the population has physical access to improved facilities, strategies to facilitate affordability of water become the main channel to reach those furthest behind.⁷⁶

Water tariffs and associated subsidies have traditionally constituted the preferred instrument by which governments have tried to resolve this issue. The majority of water subsidies to households are delivered to customers connected to the network through low tariffs. A frequent way of subsidizing water consumption is through increasing block tariffs where the first consumption blocks are subsidized, while the highest blocks are priced above cost. The costs of wastewater collection and treatment are frequently cross-subsidized by revenue from water tariffs. The construction and maintenance of on-site sanitation systems presents substantial economic burdens to low-income households, but the large number of poor households without sanitation makes it difficult for governments with limited budgets to provide effective subsidies.⁷⁷

Review of the experience accumulated in various countries has provided a number of robust lessons regarding water subsidies. Consumption subsidies delivered only through low tariffs are typically not well targeted to the poorest households. Access factors biased against the poor make subsidies through low water tariffs unlikely to reach the poor. The proportion of households having potential access to the network is often higher for non-poor households than for poor households. In practice, subsidized tariffs have often resulted in regressive redistribution schemes.⁷⁸

In past decades, new practices in the design and delivery of subsidies have emerged. An increasingly common form of water provision consists of a menu of services, differentiated by quality, associated with different tariffs. Typically, subsidies are associated with the lower quality

service. The objective is to target subsidies to the poorer households or neighbourhoods, by allowing households to self-select the form of service they prefer to use, the implicit assumption being that poor households are more likely to use the (subsidized) lower-quality service. Another objective is to achieve a greater coverage with the same amount of investment, lower quality services such as community taps being less costly to provide and covering the needs of more households than private connections.

Direct consumption subsidies are paid directly to households meeting certain eligibility criteria (low income being the most obvious criterion) to cover part of their water bill. The direct subsidy system was pioneered by the Chilean government in 1990, when it was successfully used to soften the distributional impacts of a convergence towards cost-reflective water tariffs. The main advantages of direct subsidies are that they are transparent, explicit, and minimize distortions in the behavior of water utilities and their customers. The main drawbacks are the difficulty of defining suitable eligibility criteria, as well as the administrative cost entailed in identifying eligible households.

Connection subsidies have become more and more frequent, based on the recognition that, for some groups of the population, the main obstacle to connection to the network is not that of paying the monthly water bill but rather paying the initial connection fee. Connection subsidies also provide a strong incentive for water providers to extend the network.⁷⁹

One emerging approach is to provide hardware subsidies on an output basis rather than an input basis. Providing a subsidy on an output basis can ensure that the activity that is subsidized is actually delivered, and can be effective at stimulating demand and leveraging private investment. It can also give incentives to producers to reduce costs and to serve areas which they might otherwise not consider.⁸⁰

How 'reaching the furthest behind first' compares with other strategies:

In general, it is easier to extend a network for water provision from existing networks or from water production centers. To the extent that those furthest behind live farthest from areas already served, strategies to extend water provisions may not spontaneously reach the furthest behind first. Doing so requires a deliberate prioritization of the most underserved areas and groups.

How those left behind and 'furthest behind' are identified:

The most commonly used indicators at the country level are the percentage of households having access to a safe source of drinking water and basic sanitation facilities. However, several scales and categorizations are used, and different

monitoring processes use different definitions of access to water and sanitation.⁸¹ Administrative targeting in various forms is increasingly used to administer programmes that aim to improve affordability of water for the poor. Methods used going from categorical targeting, to selection based on family structure and location, with the most sophisticated methods relying on means testing.⁸² Selection based on family size alone is usually found to perform poorly in targeting the poorest households. The power of geographic targeting depends in large measure on the correlation between poverty and location of households. Geographic targeting has given interesting results in Nepal, but seems to have limited potential in Colombia and Senegal.⁸³ Sanitation subsidies have been delivered using a range of methods, including geographic targeting, means-tested targeting, community-based targeting, and self-selection targeting, with the latter two approaches appearing to be more effective than means-tested systems, which can be costly and generate perverse incentives.⁸⁴

Persons with disabilities

Context:

Persons with disabilities are overrepresented in the furthest behind when looking at almost any of the SDGs. Households with a person with disability are more likely to experience material hardship – including food insecurity, poor housing,⁸⁵ lack of access to safe water and sanitation, and inadequate access to health care.^{86, 87} Children with disabilities are less likely to get an education, less likely to be employed as adults, less likely to start their own families, and more likely to live in poverty.⁸⁸ People with disabilities are more likely to be unemployed and generally earn less even when employed around the world.⁸⁹ On average across the OECD, the income of persons with disability is some 15% lower than the national average and as much as 20-30% in some countries.⁹⁰ Persons with disabilities also have limited opportunities to seek and receive information and knowledge, particularly public, available in accessible, affordable and adaptable formats and tools.⁹¹ This limits their opportunities to make the transition from education to work and ensure full participation in society. They are more likely to die in disasters, to be left behind during evacuation, or may have limited access to emergency shelters and transportation systems^{92, 93} and disaster risk reduction programmes that target people with disabilities remain the exception.⁹⁴

Commonly used strategies:

The needs of persons with disabilities are often addressed through a twin track approach, through specific programs targeting persons with disabilities as well as through provisions added to mainstream community-wide policy interventions.

For example, to address exclusion from employment markets, countries use a variety of mechanisms, such as anti-discriminatory laws and regulations, quotas for persons with disabilities at the workplace and incentives (tax credits, support to the employers for accommodation or workplace modifications), special supported employment, training programmes, and microfinance for self-employment.

Access barriers to health care for persons with disabilities are often complex,⁹⁵ ranging from barriers related to the affordability, to physical accessibility, to communication with health care professionals and so on. In some cases, primary health care can be the best solution for providing health care for persons with disabilities, along with support from specialized services.⁹⁶ This has been proven efficient for example with persons with mental health problems, minimizing stigma and discrimination.⁹⁷ However, targeted interventions can be used to reach those that are not otherwise included in broad-based programmes. Examples of such interventions include outreach teams in Brazil and India follow-up on patients with spinal cord injuries to address issues such as skin care, bowel and bladder management, joint and muscle problems, and pain management,⁹⁸ or ensuring that educational materials on HIV/AIDS for youth are made in accessible formats such as videos with sign language.⁹⁹ In some cases practical arrangements can make a difference for accessibility, such as building ramps to access hospitals and health care centers, or procuring mammography equipment that can accommodate women who cannot stand.¹⁰⁰ A significant shift in the design of mainstreaming ICTs to incorporate accessibility and user functionalities for the widest number of users has been introduced by various producers which provide new opportunities for persons with disabilities to access to information and knowledge.

Strategies aiming towards inclusion of persons with disabilities are by design aiming to reach those left behind. However, in some cases the evidence of real impacts and costs and benefits of these strategies, for example for enhanced employment opportunities, are still lacking and further research is needed.¹⁰¹

How 'reaching the furthest behind first' compares with other strategies:

Some strategies aim to reach those furthest behind. For example, efforts have been made in a number of countries to support inclusive access to justice for children with disabilities. In Zimbabwe, targeted services have been provided to children with disabilities in regional courts, and police seek professional services as soon as a child with disability is identified as a survivor, witness or alleged offender. Stand-by teams of disability experts have been established in regional courts. This has improved communication and interpretation of evidence by court

intermediaries in cases of abuse and rights violations, resulting in effective and consistent prosecution and expeditious adjudication of pending cases by magistrates and public prosecutors.¹⁰² In relation to inclusive social protection schemes, Jamaica, for instance, has combined its conditional cash transfer programme to poor families with children up to 17 years of age with unconditional cash transfers for families caring for children with disabilities, along with free home-based health care visits.¹⁰³ In some countries, access to information and knowledge for students with disabilities, particularly through Open and Distance Learning, is ensured by applying procurement procedures and practices that include accessibility standards and requirements for persons with disabilities from the outset.

How those left behind and' furthest behind' are identified:

Disability, a complex multidimensional experience, poses several challenges for measurement. Approaches to measuring disability vary across countries and influence the results of research and reviews.¹⁰⁴ Historically, reported prevalence estimates have varied widely because of different definitions of disability and the fact that data has often been of poor quality. However, efforts have been made to address this situation in recent years, and estimates of the prevalence rates of adults with disabilities are becoming more reliable and less varied in quality. The International Classification of Functioning, Disability and Health, known more commonly as ICF, is the WHO framework for measuring health and disability at both individual and population levels.¹⁰⁵ As the functioning and disability of an individual occurs in a context, ICF also includes a list of environmental factors. Determining disability in childhood through survey data is complicated because of the natural variance in children's development, the differing cultural standards of what children are expected to be capable of doing, and the need to use proxy respondents.¹⁰⁶ Recently, UNICEF and the UN Statistical Commission's Washington Group on Disability Statistics have developed a survey module for identifying children with disabilities in surveys.

In terms of reaching the furthest behind, some programmes pay particular attention to persons with multi-layered vulnerabilities, such as children with disabilities.

Access to primary education

Context:

The world has achieved considerable advances in primary education during the life span of the MDGs. For example, the primary school net enrolment rate in the developing regions has reached 91 per cent in 2015, up from 83 per cent in 2000.¹⁰⁷ However, poverty, children's gender, caste, ethnic and linguistic background, race, disability, geographical location and child labour continue to serve as barriers for many children's education.¹⁰⁸

Almost 16 million girls between the ages of about 6 and 11 will never get the chance to learn to read or write in primary school compared to about 8 million boys if current trends continue.¹⁰⁹ In South and West Asia about 4 million girls will never get the chance to learn to read and write in primary school, compared to almost 1 million boys.¹¹⁰ However, future challenges in developed countries seem very different. A recent OECD study shows that girls outperform boys in reading in almost all of the PISA study countries. This gender gap is particularly large in some high-performing countries, where almost all underperformance in reading is seen only among boys, demanding special strategies to address this gap.¹¹¹

Despite improvements in recent decades, children and youth with disabilities are less likely to start school or attend school than other children. They also have lower transition rates to higher levels of education.¹¹² Research shows that disability is a stronger predictor of educational enrolment than either gender or socio-economic class in a study of 11 developing countries.¹¹³

Children in conflict-affected countries account for just 17% of primary school-age children, but more than one-third (36%) of all children who were denied an education in 2012 globally. This failure means that children of primary school age in fragile and conflict-affected situations are nearly twice as likely to be out of school than children in the developing world as a whole.¹¹⁴

Commonly used strategies:

In many countries, education is seen as a primary policy lever to reach those left behind and as a key means of enhancing and democratizing learning opportunities for children coming from disadvantaged families or communities. Although the ways education systems are financed varies widely across countries, a number of countries provide primary and secondary education for free, with some investing extra resources in school districts located in disadvantaged neighborhoods.^{115, 116}

Key factors contributing to enhancements in universal primary education have included abolishing school fees; increasing demand for education through initiatives such as cash transfers, school feeding programmes and take-home rations; increasing the supply of schools and classrooms, investing in teachers' quality and incentives, as well as investing in health and infrastructure.¹¹⁷

Evidence-based policies and strategies to address exclusion in education include elimination of cost barriers through, for example, cash transfer programmes; provision of school meals/nutrition and health services; provision of learning and teaching materials and transport services; second chance/re-entry programmes; inclusive school facilities; teacher training on inclusive education; and language policies to address exclusion.¹¹⁸

To ensure gender equality in education systems, Governments and partners have mainstreamed gender issues in teacher education and curricula and monitoring processes, and have aimed to eliminate gender-based discrimination and violence in education institutions to ensure that teaching and learning processes have an equal impact on girls and boys, women and men, and to eliminate gender stereotypes and advance gender equality. Evidence has found the importance of putting in place special measures to ensure the personal security of girls and women in education institutions and on the journey to and from school, in all situations but in particular during conflict and crises.¹¹⁹

How 'reaching the furthest behind first' compares with other strategies:

Education strategies and policies have encompassed measures aiming to reach groups at a special disadvantage. Focusing on children with disabilities, subject to the context, availability of resources and engagement towards fostering more inclusive societies, countries are adopting different strategies to progress towards inclusive education that addresses the needs of all learners in regular schools. In some countries, segregated educational provision for children with disabilities is still prevalent.^{120, 121} Others have opted for models more geared towards inclusion, which involve the reduction of special school provision by employing whole-school policies and planning to develop inclusive approaches that respond to a wide range of learning needs and diversity of learners. Other models are based on the premise of the development of inclusive regular schooling and inclusive pedagogy, while keeping some separate specialized provision particularly for some specific types of impairments, until provisions to support whole school inclusive policies in regular schools can be provided. Lastly, other approaches are focused on providing additional funding for schools that include children with disabilities by allocating more resources and increasing incentives for enrolment.¹²²

How those left behind and 'furthest behind' are identified:

Many countries have standards by which they assess the education level of children at all levels of schooling. In many countries, detailed statistics are available at a school or even class level on students having difficulty in school or suffering from other disadvantages. In many cases though, in order to identify the furthest behind, household surveys or other methods are required. The UNESCO Institute for Statistics generates estimates of the number of out-of-school children from official administrative data for three age groups: children of primary school age and adolescents of lower and upper secondary school ages. Within each age group, only children in formal primary or secondary education are counted as in school.

Endnotes

- 1 Liu L.; Johnson H. L.; Cousens S.; J. Perin; S. Scott; J. E Lawn; I. Rudan; H. Campbell; R. Cibulskis; M. Li; C. Mathers; R. E Black, for the Child Health Epidemiology Reference Group of WHO and UNICEF (2012). Global, regional, and national causes of child mortality: an updated systematic analysis for 2010 with time trends since 2000. *Lancet* 2012; 379: 2151–61.
- 2 Levels and Trends in Child Malnutrition: 2015 edition, 2015, UNICEF, WHO and World Bank Group, Available at: <http://data.unicef.org/resources/levels-and-trends-in-child-malnutrition-2015-edition.html>
- 3 Bhutta, Z. A.; Das, J. K.; Rizvi, A.; Gaffey, M. F.; Walker, N.; Horton, S.; Webb, P.; Lartey, A. Black, R. E. (2013). Evidence-based interventions for improvement of maternal and child nutrition: what can be done and at what cost? *The Lancet*, 382, 9890, 452 – 477.
- 4 Bhutta, Z. A.; Ahmed, T.; Black, R. E.; Cousens, S.; Dewey, K.; Giugliani, E.; Haider, B. A.; Kirkwood, B.; Morris, S. S.; Sachdev, H. P. S.; Shekar, M., for the Maternal and Child Undernutrition Group (2008). What works? Interventions for maternal and child undernutrition and survival. *The Lancet* 2008; 371: 417–40.
- 5 Ibid.
- 6 Bhutta, Z. A.; Das, J. K.; Rizvi, A.; Gaffey, M. F.; Walker, N.; Horton, S.; Webb, P.; Lartey, A. Black, R. E. (2013). Evidence-based interventions for improvement of maternal and child nutrition: what can be done and at what cost? *The Lancet*, 382, 9890, 452 – 477.
- 7 Ibid.
- 8 Ruel, M. T.; Alderman, H., and the Maternal and Child Nutrition Study Group (2013). Nutrition-sensitive interventions and programmes: how can they help to accelerate progress in improving maternal and child nutrition?, *The Lancet*; 382: 536–51.
- 9 Bhutta, Z. A.; Ahmed, T.; Black, R. E.; Cousens, S.; Dewey, K.; Giugliani, E.; Haider, B. A.; Kirkwood, B.; Morris, S. S.; Sachdev, H. P. S.; Shekar, M., for the Maternal and Child Undernutrition Group (2008). What works? Interventions for maternal and child undernutrition and survival. *The Lancet* 2008; 371: 417–40.
- 10 The full definition is more complex. Severe acute malnutrition is defined as the percentage of children aged 6 to 59 months whose weight for height is below minus three standard deviations from the median of the WHO Child Growth Standards, or by a mid-upper-arm circumference less than 115 mm, with or without nutritional oedema.
- 11 Bhutta, Z. A.; Ahmed, T.; Black, R. E.; Cousens, S.; Dewey, K.; Giugliani, E.; Haider, B. A.; Kirkwood, B.; Morris, S. S.; Sachdev, H. P. S.; Shekar, M., for the Maternal and Child Undernutrition Group (2008). What works? Interventions for maternal and child undernutrition and survival. *The Lancet* 2008; 371: 417–40.
- 12 Proposed by Julian Hart in 1971, this “the inverse care law” describes one of the central issues that healthcare interventions have to address.
- 13 Starfield, B (2006). “State of the Art in Research on Equity in Health.” *Journal of Health Politics, Policy and Law* 31.1 (2006): 11-32. Web.
- 14 World Health Organization (2014), the UN-Water global analysis and assessment of sanitation and drinking-water (GLAAS) report.
- 15 Meyer, S. B., T. C. Luong, L. Mamerow, P. R. Ward (2013). “Inequities in Access to Healthcare: Analysis of National Survey Data across Six Asia-Pacific Countries.” *BMC Health Services Research BMC Health Serv Res* 13.1 (2013): 238.
- 16 Starfield, B (2006). “State of the Art in Research on Equity in Health.” *Journal of Health Politics, Policy and Law* 31.1 (2006): 11-32. Web.
- 17 Meyer, S. B., T. C. Luong, L. Mamerow, P. R. Ward (2013). “Inequities in Access to Healthcare: Analysis of National Survey Data across Six Asia-Pacific Countries.” *BMC Health Services Research BMC Health Serv Res* 13.1 (2013): 238.
- 18 Ibid.
- 19 Starfield, B (2006). “State of the Art in Research on Equity in Health.” *Journal of Health Politics, Policy and Law* 31.1 (2006): 11-32. Web.
- 20 Cotlear, D. Nagpal S., Smith, O., Tandon A., Cortez R., Goin Universal; How 24 Developing Countries Are Implementing Universal Health, Coverage Reforms from the Bottom Up, 2015 International Bank for Reconstruction and Development / The World Bank, Washington, DC.
- 21 Van Doorslaer, E., Masseria, C., & Koolman, X. (2006). Inequalities in access to medical care by income in developed countries. *CMAJ*, 174(2), 177-183. doi:10.1503/cmaj.050584.
- 22 UNICEF, contribution to the GSDR 2016.
- 23 O’Campo, P, Xiaonan, X, Mei-Cheng, W, & Caughy, M 1997, ‘Neighborhood Risk Factors for Low Birthweight in Baltimore: A Multilevel Analysis’, *American Journal Of Public Health*, 87, 7, pp. 1113-1118, Academic Search Premier, EBSCOhost, viewed 22 April 2016.
- 24 Arblaster, L, Lambert, M, Entwistle, V, Forster, M, Fullerton, D, Sheldon, T, & Watt, I 1996, ‘A Systematic Review of the Effectiveness of Health Service Interventions Aimed at Reducing Inequalities in Health’, *Journal Of Health Services Research And Policy*, 1, 2, p. 93, Supplemental Index, EBSCOhost, viewed 22 April 2016.
- 25 US welfare programs, such as Special Supplemental Food Programme for Women, Infants and Children in 1972 and Project Head Start in 1965, were successful in improving not only health-related deficiencies but also taking a multidisciplinary approach by including social and educational interventions.
- 26 O’Campo, P, Xiaonan, X, Mei-Cheng, W, & Caughy, M 1997, ‘Neighborhood Risk Factors for Low Birthweight in Baltimore: A Multilevel Analysis’, *American Journal Of Public Health*, 87, 7, pp. 1113-1118, Academic Search Premier, EBSCOhost, viewed 25 April 2016.
- 27 Arblaster, L, Lambert, M, Entwistle, V, Forster, M, Fullerton, D, Sheldon, T, & Watt, I 1996, ‘A Systematic Review of the Effectiveness of Health Service Interventions Aimed at Reducing Inequalities in Health’, *Journal Of Health Services Research And Policy*, 1, 2, p. 93, Supplemental Index, EBSCOhost, viewed 22 April 2016.
- 28 WHO (2016) *Preventing disease through healthy environments. A global assessment of the burden of disease from environmental risks.*
- 29 WHO (2014b) *Burden of disease from Household Air Pollution for 2012.*

- 30 The WHO global burden of disease (GBD) measures burden of disease using the disability-adjusted-life-year (DALY). This time-based measure combines years of life lost due to premature mortality and years of life lost due to time lived in states of less than full health.
- 31 Currie, Janet (2011) "Inequality at Birth: Some Causes and Consequences," American Economic Review, Ely lecture, May 2011. <http://www.princeton.edu/~jcurrie/hemicalsns/Inequality%20at%20Birth%20Some%20Causes%20and%20Consequences.pdf>
- 32 Alan, M (2015). Available from <https://giwps.georgetown.edu/sites/giwps/files/Women%20and%20Climate%20Change.pdf>.
- 33 United Nations Children's Fund, *Unless we act now. The Impacts of climate change on children* (2015).
- 34 UNEP (2015) *The Montreal Protocol and Human Health. How global action protects us from the ravages of ultraviolet radiation*.
- 35 Boyce, James K., (1994) "Inequality as a cause of environmental degradation", *Ecological Economics* 11, 169-178.
- 36 Hamilton, James T. (1995) "Testing for environmental racism: Prejudice, Profits, Political Power" *Journal of Policy Analysis and Management*, Vol. 14, No. 1 (Winter, 1995), pp. 107-132.
- 37 See, for example, Environmental Protection Agency (EPA) (2015), "Guidance on Considering Environmental Justice During the Development of Regulatory Actions", <https://www.epa.gov/sites/production/files/2015-06/documents/considering-ej-in-rulemaking-guide-final.pdf>
- 38 UNDP (2014), *Environmental Justice: Comparative Experiences in Legal Empowerment*. <http://www.undp.org/content/dam/undp/library/Democratic%20Governance/Access%20to%20Justice%20and%20Rule%20of%20Law/Environmental-Justice-Comparative-Experiences.pdf>
- 39 Walker, Gordon, Helen Fay y Gordon Mitchell (2005), "Environmental Justice Impact Assessment An evaluation of requirements and tools for distributional analysis". *Friends of the Earth*. https://www.foe.co.uk/sites/default/files/downloads/ej_impact_assessment.pdf
- 40 "Environmental Justice Policy of the Executive Office of Environmental Affairs", <http://www.mass.gov/eea/docs/eea/ej/ej-policy-english.pdf>
- 41 California Environmental Protection Agency (2014). "Approaches to identifying disadvantaged communities". <http://oehha.ca.gov/ej/pdf/ApproachesIdentifyDisadvantagedCommunitiesAug2014.pdf>
- 42 The impact of Brazil's Bolsa Família conditional cash transfer program on children's health care utilization and health outcomes, Amie Shei, Federico Costa, Mitermayer G Reis and Albert Ko, *BMC International Health and Human Rights*, April 2014.
- 43 World Bank, contribution to the GSDR 2016.
- 44 Fiszbein a. et al 2008 *Conditional Cash Transfers: Reducing Present and Future Poverty: Policy Research Report*. Washington, DC: World Bank.
- 45 World Bank. 2015. *The State of Social Safety Nets 2015*. Washington, DC: World Bank.
- 46 Chaudhury, N., J. Friedman, and J. Onishi. 2014. *Philippines Conditional Cash Transfer Program: Impact Evaluation 2012*. Washington, DC: World Bank.
- 47 Barber, Sarah, and Paul Gertler, 'Empowering Women: How Mexico's conditional cash transfer programme raised prenatal care quality and birth weight', *Journal of Development Effectiveness*, vol. 2, issue 1, 2010, pp. 51–73.
- 48 de Brauw, A., Gilligan, D. O., Hoddinott, J., & Roy, S. (2015). The Impact of Bolsa Família on Schooling. *World Development*, 70, 303-316.
- 49 de Brauw, Alan, et al., 'The Impact of Bolsa Família on Education and Health Outcomes in Brazil', *International Food Policy Research Institute*, Washington, DC, 2010.
- 50 DeBrauw (2012).
- 51 Spillovers from Conditional Cash Transfer Programs: Bolsa Família and Crime in Urban Brazil, Laura Chioda, João M. P. De Mello, Rodrigo R. Soares, April 2013.
- 52 Macours et al (2012).
- 53 Comparative Case Studies, Review of IDB Institutional Support to Conditional Cash Transfers in Three Lower-Middle-Income Countries, Office of Evaluation and Oversight, Inter-American Development Bank, November 2015.
- 54 Impact Evaluation of a Conditional Cash Transfer Program: The Nicaraguan Red de Protección Social, IFPRI Research Report 4. Washington, DC, International Food Policy Research Institute.
- 55 Attanasio, O., Battistin, E., Fitzsimons, E., Mesnard, A. and Vera-Hernandez, N. (2005) How effective are conditional cash transfers? Evidence from Colombia? IFS Briefing Note No 54, IFS London.
- 56 World Bank, contribution to the GSDR 2016.
- 57 UNEP, contribution to the GSDR 2016.
- 58 Arraiz, Irani, and Sandra Roza, 'Same Bureaucracy, Different Outcomes in Human Capital? How indigenous and rural non-indigenous areas in Panama responded to the CCT', Working Paper, Inter-American Development Bank, Washington, DC, May 2011.
- 59 Bastagli, Francesca (2010) Poverty, inequality and public cash transfers: lessons from Latin America. Background Paper for the European Report on Development (ERD) 2010 on Social Protection for Inclusive Development, European University Institute, Florence
- 60 Bastagli, Francesca (2010) Poverty, inequality and public cash transfers: lessons from Latin America. Background Paper for the European Report on Development (ERD) 2010 on Social Protection for Inclusive Development, European University Institute, Florence.
- 61 Ariel Fiszbein and Norbert Schady with Francisco H.G. Ferreira, Margaret Grosh, Nial Kelleher, Pedro Olinto, and Emmanuel Skoufias, 2009, *Conditional cash transfers reducing present and future poverty*, The World Bank, Washington, DC.
- 62 Gomez-Baggethun, E., R. de Groot, P. Loma, C. Montes, 2010, The history of ecosystem services in economic theory and practice: From early notions to markets and payment schemes, *Ecological Economics*, 69, 1209-1218.
- 63 Source: Wikipedia, payments for ecosystem services.
- 64 Wunder, S. (2008). Payments for environmental services and the poor: Concepts and preliminary evidence. *Environment and Development Economics*, 13(3), 279-297.
- 65 Wunder, S. (2008). Payments for environmental services and the poor: Concepts and preliminary evidence. *Environment and Development Economics*, 13(3), 279-297.

- 66 Important parameters that influence the distributional, social and equity aspects of the benefits across participating and non-participating groups found in the literature include: participatory co-design with a strong governance dimension; finding the right combination of short and long-term incentives; combination of both regulatory and market incentives; the setting up of communities- managed funds; and transparent payments systems.
- 67 The Millennium Development Goals Report 2012, United Nations, New York, 2012.
- 68 SPARC, 2002,. We the Invisible: Revisited. www.sparcindia.org
- 69 Perlman (2002).
- 70 World Bank, 2006, Thirty years of World Bank shelter lending: What Have we Learned?, Robert Buckley and Jerry Kalarickal, eds., the World Bank, 2006.
- 71 World Bank, 2009, Housing Finance Policy in Emerging Markets, Loic Chiquier and Michael Lea, eds., 2009, the World Bank, Washington, DC, ISBN 978-0-8213-7750-5.
- 72 WHO and UNICEF, 2015, *Progress on sanitation and drinking water – 2015 update and MDG assessment*, Geneva, Switzerland, ISBN 978 92 4 150914 5.
- 73 Kariuki, M., and J. Schwartz, 2005, *Small-Scale Private Service Providers of Water Supply and Electricity: A Review of Incidence, Structure, Pricing, and Operating Characteristics*, Energy and Water Department, World Bank, Washington, DC.
- 74 WHO (2004) *Evaluation of the Costs and Benefits of Water and Sanitation Improvements at the Global Level*.
- 75 WHO (2015) *Health in 2015: from MDGs to SDGs*.
- 76 Le Blanc, D., 2008, A Framework for Analyzing Tariffs and Subsidies in Water Provision to Urban Households in Developing Countries, *DESA Working paper #63*, January.
- 77 Trémolet, S., Kolsky, P., and Perez, E., 2010, Financing on-site sanitation for the poor, *Water and Sanitation Program Technical Paper*, World Bank, Washington, DC.
- 78 Komives, K., V. Foster, J. Halpern, Q. Wodon, with support from R. Abdullah, 2005, *Water, Electricity, and the Poor – Who Benefits from Utility Subsidies?*, World Bank, Washington, DC.
- 79 Drees-Gross, F. J. Schwartz, M. Sotomayor, 2005, *Output-based Aid in Water – lessons in implementation from a pilot in Paraguay*, OBAApproaches note number 07.
- 80 Trémolet, S., Kolsky, P., and Perez, E., 2010, Financing on-site sanitation for the poor, *Water and Sanitation Program Technical Paper*, World Bank, Washington, DC.
- 81 The WHO/UNICEF Joint Monitoring Programme defines “safe drinking water” as water with microbial, chemical and physical characteristics that meet WHO guidelines or national standards on drinking water quality. More information available at: http://www.who.int/water_sanitation_health/mdg1/en/. MDG monitoring has measured access to an improved source of drinking water, which includes sources that, by nature of their construction or through active intervention, are protected from outside contamination, particularly faecal matter. It comprises piped water on premises such as piped household water connection located inside the user’s dwelling, plot or yard. Other improved drinking water sources include public taps or standpipes, tube wells or boreholes, protected dug wells, protected springs and rainwater collection. Improved sanitation facilities, which are likely to ensure hygienic separation of human excreta from human contact, include flush toilets connected to sewers, septic tanks, and protected pit latrines. Shared facilities are not considered improved for MDG reporting purposes.
- 82 Coady, D., M. Grosh, and J. Hoddinott, 2004, *Targeting of Transfers in Developing Countries: Review of Lessons and Experience*, World Bank regional and sectoral studies. ISBN 0-8213-5769-7.
- 83 Le Blanc, D., 2008, A Framework for Analyzing Tariffs and Subsidies in Water Provision to Urban Households in Developing Countries, *DESA Working paper #63*, January.
- 84 Trémolet, S., Kolsky, P., and Perez, E., 2010, Financing on-site sanitation for the poor, *Water and Sanitation Program Technical Paper*, World Bank, Washington, DC.
- 85 Beresford, B. with Rhodes, D. (2008) *Housing and disabled children, Round-up: Reviewing the Evidence*, Joseph Rowntree Foundation, York.
- 86 World report on disability, World Health Organization, World Bank 2011, available at: http://www.who.int/disabilities/world_report/2011/en/
- 87 She P, Livermore GA. Material hardship, poverty and disability among working-age adults. *Social Science Quarterly*, 2007, 88:970-989.
- 88 World Bank Economic Review 22.1 (2008): 141-163.
- 89 World report on disability, World Health Organization, World Bank 2011, available at: http://www.who.int/disabilities/world_report/2011/en/
- 90 *Sickness, disability and work: breaking the barriers. A synthesis of findings across OECD countries*. Paris, Organisation for Economic Co-operation and Development, 2010.
- 91 Global Report, *Opening New Avenues for Empowerment: ICTs to Access Information and Knowledge for Persons with Disabilities*, UNESCO 2013, available at: <http://unesdoc.unesco.org/images/0021/002197/219767e.pdf>
- 92 *Building social resilience of the poor: protecting and empowering those most at risk*, Global Facility for Disaster Reduction and Recovery (GFDRR), input to the *Global Assessment of Risk 2015*, 2014, Available at: <http://www.preventionweb.net/english/hyogo/gar/2015/en/bgdocs/GFDRR,%202014d.pdf>
- 93 IFRC, HI and CBM (2015), *All under one roof: Disability-inclusive shelter and settlements in emergencies*.
- 94 *Global Assessment of Risk 2015*, UNISDR, 2015, Geneva, Available at: <http://www.preventionweb.net/english/hyogo/gar/2015/en/home/index.html>
- 95 Scheer, J., Kroll, T., Neri, M. T., & Beatty, P. (2003). Access barriers for persons with disabilities: The consumer’s perspective. *Journal of Disability Policy Studies*, 13, 221-230.
- 96 World report on disability, World Health Organization, World Bank 2011, available at: http://www.who.int/disabilities/world_report/2011/en/
- 97 *Integrating mental health into primary care : a global perspective*, World Health Organization and World Organization of Family Doctors (Wonca), 2008.
- 98 *Strengthening care for the injured: Success stories and lessons learned from around the world*. Geneva, World Health Organization, 2010.
- 99 *Final technical report: Raising the voice of the African Decade of Disabled Persons: Phase II: Training emerging leaders in the disability community, promoting disability rights and*

- developing HIV/AIDS awareness and prevention programs for adolescents and young adults with disabilities in Africa. New York, Rehabilitation International, 2007.
- 100 Kaplan C. Special issues in contraception: caring for women with disabilities. *Journal of Midwifery & Women's Health*, 2006,51:450-456. doi:10.1016/j.jmwh.2006.07.009 PMID:17081935
 - 101 World report on disability, World Health Organization, World Bank 2011, available at: http://www.who.int/disabilities/world_report/2011/en/
 - 102 UNICEF Zimbabwe, Country Office Annual Report 2014.
 - 103 UNICEF (2012), Integrated Social Protection Systems: Enhancing Equity for Children, UNICEF, New York.
 - 104 World report on disability, World Health Organization, World Bank 2011, available at: http://www.who.int/disabilities/world_report/2011/en/
 - 105 Available at: <http://www.who.int/classifications/icf/en/>
 - 106 UNICEF, Monitoring Child Disability in Developing Countries: Results from the Multiple Indicator Cluster Survey, (2008).
 - 107 The Millennium Development Goals Report 2015, United Nations, 2015, New York.
 - 108 EFA Global Monitoring report, EDUCATION FOR ALL 2000-2015: achievements and challenges, United Nations Educational, Scientific and Cultural Organization, Paris, 2015, available at: <http://unesdoc.unesco.org/images/0023/002322/232205e.pdf>
 - 109 UIS. UNESCO eAtlas of Gender Inequality in Education, <http://www.tellmaps.com/uis/gender/#!/tellmap/1152163451>
 - 110 UIS. UNESCO eAtlas of Gender Inequality in Education, <http://www.tellmaps.com/uis/gender/#!/tellmap/1152163451>
 - 111 PISA 2012 Results in Focus What 15-year-olds know and what they can do with what they know, OECD, Paris, 2012, available at: <https://www.oecd.org/pisa/keyfindings/pisa-2012-results-overview.pdf>
 - 112 World report on disability, World Health Organization, World Bank 2011, available at: http://www.who.int/disabilities/world_report/2011/en/
 - 113 Filmer, Deon. "Disability, poverty, and schooling in developing countries: results from 14 household surveys." *The World Bank Economic Review* 22.1 (2008): 141-163.
 - 114 Based on updated UNESCO Institute for Statistics calculations.
 - 115 Improving educational outcomes for poor children, Brian A. Jacob and Jens Ludwig, Focus Vol. 26, No. 2, Fall 2009, Available at: <http://www.irp.wisc.edu/publications/focus/pdfs/foc262j.pdf>
 - 116 Schools in Disadvantaged Areas: Recognising Context and Raising Quality, Ruth Lupton, CASEpaper 76 Centre for Analysis of Social Exclusion January 2004 London School of Economics.
 - 117 EFA Global Monitoring report, EDUCATION FOR ALL 2000-2015: achievements and challenges, United Nations Educational, Scientific and Cultural Organization, Paris, 2015, available at: <http://unesdoc.unesco.org/images/0023/002322/232205e.pdf>
 - 118 UNESCO (2015): Education 2030 Framework for Action. Available at: <http://unesdoc.unesco.org/images/0024/002432/243278e.pdf>.
 - 119 UNESCO (2015): Education 2030 Framework for Action. Available at: <http://unesdoc.unesco.org/images/0024/002432/243278e.pdf>.
 - 120 UNICEF Children with Disabilities in Malaysia: Mapping the policies, programmes, interventions and stakeholders, 2014 and Contributions to the OHCHR study on the Right to Education of Persons with Disabilities, Malaysia.
 - 121 Sharma U., Shaukat S. and Furlonger Br., Attitudes and self-efficacy of pre-service teachers towards inclusion in Pakistan in *Journal of Research in Special Education Needs*, June 2014, pp. 1-7. See p.6.
 - 122 Bines H. and Lei Ph., Disability and education: the longest road to inclusion in the *International Journal of Educational Development* 31, 2011, pp.423.

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