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Subnational investment in human capital

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Development Initiatives is an independent international development organisation working on the use of data to drive poverty eradication and sustainable development.

Acknowledgements

Contents

List of figures and tables

Figures

Tables

Acronyms

AIMS	Aid Information Management Systems
CRS	Creditor Reporting System
CRVS	civil registration and vital statistics
DAC	Development Assistance Committee (of the OECD)
DEEP	Donor Efficiency at targeting Extreme Poverty
DHS	Demographic and Health Survey
DI	Development Initiatives
FDI	foreign direct investment
GAVI	Global Alliance for Vaccines and Immunization
GDP	gross domestic product
GNI	gross national income
HCP	Human Capital Project (of the World Bank)
IATI	International Aid Transparency Initiative
LDCs	Least Developed Countries
LICs	low-income countries
LMICs	lower-middle-income countries
MICs	middle-income countries
MPI	Multidimensional Poverty Index
ODA	official development assistance
ODI	Overseas Development Institute
OECD	Organisation for Economic Co-operation and Development
SDGs	Sustainable Development Goals
UMICs	upper-middle-income countries
UNDP	United Nations Development Programme

Executive summary

The 2030 Agenda for Sustainable Development sets an ambitious, universal standard for the world: sustainable development for all. This includes a specific pledge to leave no one behind. To deliver on this commitment, development thinking must undergo a transformational shift to address inequalities *within* countries as well as global and national imbalances. How public finance is targeted therefore matters, at the *sub*national level as well as the global and national level.

As this report shows, much more can be done to transform the prospects of those most at risk of being left behind by better targeting investment in human capital that both builds peoples' wellbeing and boosts their economic potential. The fact that some donors and countries are already much better at targeting than others points to what is possible to achieve at the global and national level:

- At a global level, only a third of all aid goes to the Least Developed Countries (LDCs), way below the half that is needed to support the investment needs for the two key sectors for human capital: education and health. There is clear scope for improvement with the best donors eight times more efficient than the worst at targeting those in greatest financial need.
- At a national level, none of the LDCs – and none of the other low-income and lower-middle-income countries (LICs and LMICs) – meet the internationally recognised targets for the share of their domestic resources that is spent on education and health (UNESCO, 2015 and Abuja Declaration, 2001), although some LICs do manage to achieve 75%.

The need for better targeting at a subnational level is clearly supported by evidence to date. For example in Ghana and Tanzania, the number of teachers and health workers in the very poorest areas can be as much as ten times less than the national average. And UN research suggests that an extra 20%–30% is needed to cover the higher costs of reaching the most marginalised (UNESCO, 2015).

However, data challenges make it difficult to assess the degree of targeting at a subnational level. This report seeks to address this by reviewing subnational spending on health and education by both government and donors in all of the 82 poorest countries – that is all LICs, LMICs and LDCs.

The first key finding is that there is little evidence from the data that is publicly available that either government or donor funding allocations are responding to the distribution of poverty within countries.

- **On average, poorer regions receive less government funding than wealthier ones.** This is true for both education and health with the difference clearer for education. On average, poorer regions receive 15% less than the national average for education and in only one of the six countries where data is available is education spending higher in the poorer regions.
- **In other countries targeting is likely to be even worse, since countries which are trying to increase funding to poorer subnational regions are more likely to publish their data.**
- **On average, poorer regions receive the same level of donor support in education as the national average.** In the nine countries where data is available, there is a spread of allocations with poorer regions receiving less in five and more in four.
- **On average, poorer regions receive a slightly higher level of donor support for health than the national average.** In education, there is a wide range in allocations and the figures for the most positive country example (Ghana) are skewed by just one large hospital project.

The second key finding is that data on how finance is allocated at the subnational level is extraordinarily lacking. Only one in seven countries publishes adequate budget data and only one in eleven publishes adequate aid data.

Simple improvements could be made. While technical and political challenges undermine the production of comprehensive, sufficiently detailed and timely subnational information, much would be gained by just publishing the data that is already gathered. Such improvements would transform the ability of citizens and parliamentarians to press for a more equitable share of education and health spending across regions. Even just including in budget documents the distribution of the number of teachers and health workers across the country (which is normally readily available) would give a useful insight into subnational financial allocations, as their salaries account for the majority of education and health spending.

Incentivising the publication of data and building the case for the benefits of greater data availability would help to overcome barriers to increasing transparency and accountability. At the same time, better disaggregated non-financial data on needs is also required – e.g. on health needs and education outcomes – at the least by income quintile, gender, geography and disability. Countries need to double the current, low aid spend on statistical capacity.

Reaching the poorest groups and delivering on the leave no one behind commitment is no easy task. For donors, it will mean accepting the higher costs of working in more challenging and remote contexts to reach those most in need. These costs should be set against the long-term costs of not reaching these groups and donors will therefore need to reconsider the weightings given to needs and effectiveness criteria in allocating aid funds. In some cases, prioritising the poorest groups can also be more efficient as well as more equitable. The United Nations Children's Fund (UNICEF) has shown that twice the number of lives can be saved by investing in the health of worst-off children (Carrera et al., 2017). There are, therefore, both economic and moral imperatives for targeting support at those populations and places most at risk of being left behind.

This year, four years on from the agreement of the Sustainable Development Goals (SDGs), is critical. As the world prepares for key global political moments, including the 2019 High-level Political Forum on Sustainable Development and the SDG Summit in September, attention and action should focus on these issues.

Recommendations

Recommendation 1 Improve targeting

National governments should commit to:

- increasing the share of taxes spent on health and education from an average of two-thirds to a minimum of three-quarters of the internationally recognised spending targets for health and education
- ensuring the poorest regions receive at least the same health and education funding as the national average and assessing what funding is necessary in addition to this.

Donors should commit to:

- increasing ODA to LDCs from one-third to a minimum of half of total ODA
- providing the poorest subnational regions with greater per-person spend than the national average, while recognising the need to address inequalities within regions.

Recommendation 2 Increase transparency

National governments should:

- publish the subnational financial data they have
- at least include information on the number of teachers and health workers at subnational level in the national budget documents.

Donors – especially the five largest in terms of ODA spend – should:

- disaggregate their information on spending subnationally and ensure this data is publicly available and reported to government, particularly in the most aid dependent and poorest countries.

Winston Mills-Compton teaches a class in mathematics at the Mfantsipim Boys School in Cape Coast, Ghana. Photo: World Bank, 2006.

1   Introduction

The 2030 Agenda for Sustainable Development sets an ambitious, universal standard for the world: sustainable development for all. And this means ensuring that development leaves no one behind. To achieve this, development thinking must undergo a transformational shift, going beyond global and national averages to address inequalities within countries and focus on those most at risk of being left behind (OECD, 2018).

Progress over the past 15 years has been inadequate and uneven. The world is off track to end extreme poverty by 2030, with 430 million people expected to be still living in extreme poverty.[1] The distribution of poverty globally is also shifting (Coppard et al., 2018).

The World Bank's Human Capital Project (HCP) has highlighted that a key factor in this inadequate and uneven progress is that many countries are failing to develop their greatest resource: their people. If millions are not to be left behind, urgent action is needed to change the level, equity and efficiency

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1   Poverty projections in this report have been provided by Emma Samman, ODI Research Associate, updating analysis in Manuel et al. (2018) using latest World Bank poverty data (October 2018) and assuming recent trends in inequality persist.

of investment in human capital, particularly in education and health – two sectors that are critical to long-term development and tackling inequality (Greenhill et al., 2015).

Aid is a critical, if not sufficient, part of meeting that challenge. It plays a well understood and well evidenced role in supporting the poorest people in the poorest places. It is a precious and rare resource and yet one that is declining: global aid levels fell for the first time in five years in 2017 (Dodd et al., 2018). Despite repeated commitments to reach the target ratio of ODA being 0.7% of gross national income (GNI) – a target set almost half a century ago and reiterated by the Addis Ababa Agenda for Action – most donors have failed to substantially increase aid levels. Instead, on average, ODA as a proportion of GNI has remained at around 0.3% for some years (0.31% in 2017). At the same time larger proportions of ODA are never even leaving the donor country: in 2017, only 65% of ODA was transferred to a specific country (Dodd et al., 2018). Spending within donor countries continues at record highs, driven in large part by refugee costs in donor countries. So while aid will remain a vital source of financing for many countries, and the poorest in particular, domestic spending will also remain critical, as well as how they are targeted.

This report examines the role of finance in transforming the prospects of those most at risk of being left behind, looking specifically at relative allocations to health and education as two of the most critical sectors for human development and human capital. Chapter two analyses financial flows at the global, national and sectoral levels to assess how well these flows match health and education needs. The greatest needs in general are in the 82 poorest countries in the world – that is, all LICs, LMICs and LDCs.

Action at only the national level will not be enough to tackle the challenges of leaving no one behind and enable access to health and education for all: actions to address inequities within countries are also needed. The third chapter of this report examines one way of doing this – targeting subnational financing flows to where the needs are the greatest. Using the global Multidimensional Poverty Index (MPI) developed by the Oxford Poverty and Human Development Initiative, this section explores whether spending on education and health by both governments and donors is being targeted at the more deprived subnational regions.

As this analysis reveals, few countries publish subnational financing data. As such, the fourth chapter of this report explores in more detail the issue of transparency. The fifth chapter draws together the conclusions and identifies two key recommendations for change. Additional technical detail on the research methodology and results can be found in the annexes.

Sudan's MultiDonor Trust Fund in action. Photo: World Bank/Salahaldeen Nadir, 2013.

2   Global and national financing flows

2.1   Do donors target aid to countries most at risk of being left behind?

ODA continues to be poorly targeted at the countries where it is most needed. Despite promises to the contrary, bilateral and multilateral aid to LDCs is still below the 2010 level of 36%. Even after a slight increase in last two years, only 32% went to LDCs. This is well below the 50% figure that the Organisation for Economic Co-operation and Development (OECD) and civil society organisations proposed for the Addis Ababa Agenda for Action, and which is needed to finance the end of extreme poverty.[2] The proportion of people in extreme poverty living in LICs grew from 24% to 38% between 2010 and 2015. Yet aid to these countries grew by only 1%. Conversely, aid to MICs, where the proportion of the world's poor has fallen, grew by 29% (Dodd et al., 2019; Development Initiatives, 2019).

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2   In conjunction with donors meeting ODA to GNI target – see Manuel et al. (2018).

Figure 1 Share of total ODA to LDCs (2000–2017)

Source: OECD. Stat, DAC 2a.

ODI's Donor Efficiency at targeting Extreme Poverty (DEEP) index analyses the extent to which donors are targeting the 30 most severely financially challenged countries (those that can't even afford half the costs of ending extreme poverty). It also assesses the extent to which aid matches the individual financing needs. Some of these 30 countries, like Madagascar, have much larger financing needs than others, like Rwanda (see Manuel et al., 2018). A score of 100% on the DEEP index suggests that aid is perfectly matched to needs.

The update to this index, based on the latest poverty and aid figures, shows that there have been no major changes in how effectively donors allocated their funding in 2017. The average score for DAC donors continues to flatline at 25% (compared to peak of 33% in 2012). The top three and bottom three performers also remained the same. Ireland's score of 81% shows that when a donor choses to focus on the poorest countries, close targeting of needs is possible. The three best donors are on average eight times more efficient than the three worst at targeting their aid to those countries that face the most severe financing challenges.

The failure of donors to target countries with the most severe financing constraints is particularly concerning given they have limited access to other sources of finance. Note the following challenges, for example.

- While there is $2 trillion a year of additional tax revenues that could be raised in LICs and middle-income countries (MICs), 99% of this would be in MICs (Manuel et al., 2018).
- On average, the group of 82 LICs/LMICs/LDCs could increase their tax revenue by a quarter, with their tax share of gross domestic product (GDP) rising from 18% to 23%.[3]

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3 Authors' own calculation drawing on Manuel et al. (2018) published dataset (www.odi.org/sites/odi.org.uk/files/resource-documents/12397.xlsx).

Figure 2   Individual donor efficiency at targeting extreme poverty (DEEP) (major DAC donors, 2017)
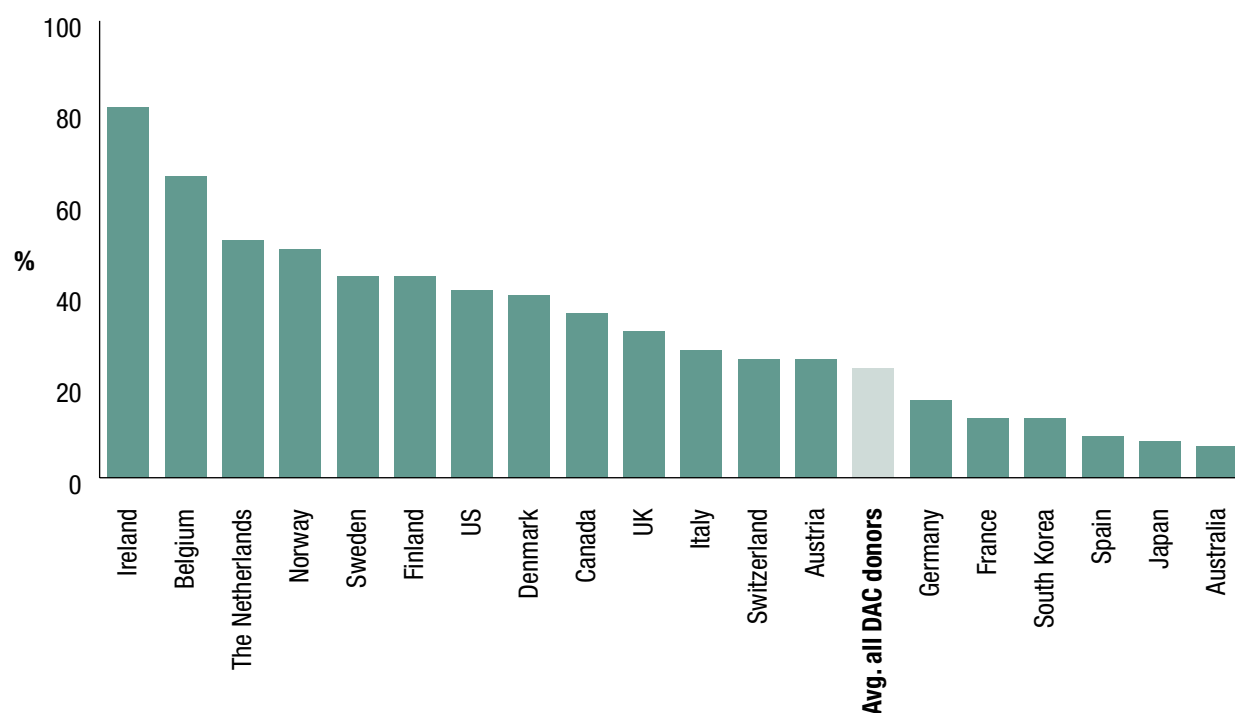
Source: authors' own calculations based on methodology in Manuel et al. (2018).

- Many LICs are close to the level of debt that the International Monetary Fund judges to be sustainable (and a growing number have exceeded these levels). Despite this, ODA loans to LDCs have grown 138% since 2010, while grants have fallen by 8%. In 2017, a quarter of all loans to LDCs went to countries either at high risk of debt distress or actually in debt distress (Dodd et al., 2019).
- Of the $1 trillion of private financing invested in infrastructure during the past decade, 98% flowed to MICs (Tyson, 2018).
- It is much harder in LICs to leverage private sector funding through aid: the average amount of private sector finance mobilised for each dollar of multilateral development bank and development finance institution investment is just $0.37 in LICs, compared to $1.06 in LMICs and $0.65 in upper-middle-income countries (UMICs) (Attridge and Engen, forthcoming)
- LICs receive much less foreign direct investment (FDI). In 2016 LICS received three times less FDI than other developing countries ($23 per person in LICs compared to $85 per person in MICs) (Development Initiatives, 2018a).
- LICs also receive three times less in remittances. In 2016 LICs received $27 per person compared to $74 per person in MICs (Development Initiatives, 2018a).

2.2   Do countries live up to internationally recognised spending targets on education and health?

There are two internationally recognised spending targets for countries' own domestic spending that directly relate to human capital:

1. **spending on education,** which has a target of 20% of total government expenditure, as set by the Education for All coalition, UNESCO (2015)

2. **spending on health,** which has a target of 15% of government expenditure. This is the Abuja Declaration (2001)[4] target that was agreed by African countries, but we consider it to be a reasonable target for other states too.

Few of the poorest countries currently meet these targets.[5]

- None of the 82 LICs/LMICs/LDCs meet both targets; 14 meet the education target and 4 meet the health target.
- No fragile state (as defined by World Bank) meets both targets.
- Richer countries do better: only a small number of UMICs fail to meet any target (18%) and even fewer high-income countries (10%).
- Average combined spend on health and education in the 82 LICs/LMICs/LDCs is 23% of total government expenditure – two-thirds of the combined target of 35% of total government expenditure.
- There is little difference between the spending patterns of LICs and LMICs: LICs spend on average 60% of the combined targets; LMICs, 70%.
- Some of the poorest countries manage to allocate a high proportion of their resources. For example, five LICs spend more than 75% of the combined targets for education and health spending: Burundi, Ethiopia, Madagascar, Malawi and Zimbabwe. If all countries spent at least 75% of the target, that would increase total spending in LIC/LMIC by 21% or $34 billion a year.

Figure 3   LIC spending on health and education relative to internationally recognised targets
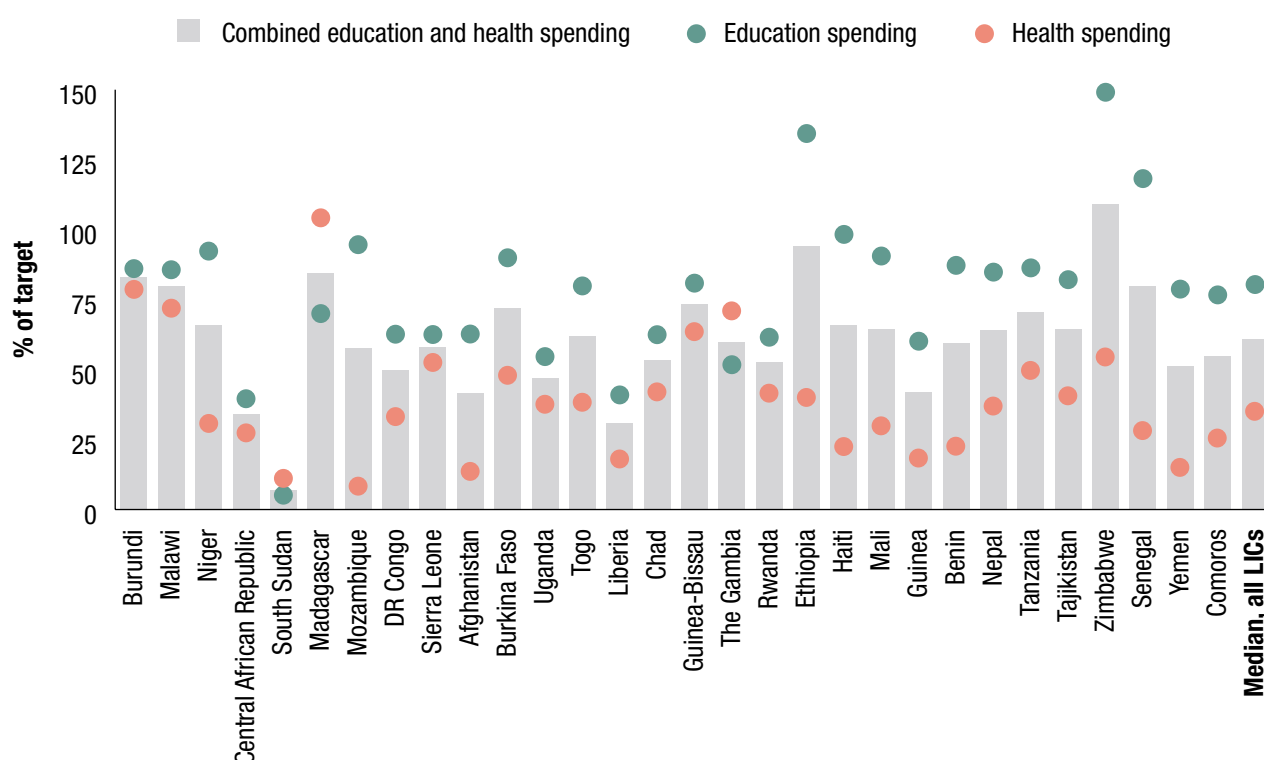
Note: countries are in listed in ascending order of GNI per capita. Data for one or both targets was not available for the Democratic People's Republic of Korea, Eritrea, Somalia and the Syrian Arab Republic.
Source: World Bank, International Labour Organization and Oxfam (principally). See Annex A for full details.

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4   www.who.int/healthsystems/publications/abuja_declaration/en/.

5   See Annex A for sources.

- One striking feature of spend relative to targets is that most of the 82 LICs/LMICs/LDCs spend much more on education (79% of the target) than on health (48% of the target). This may, in places, reflect a deliberate decision to rely on aid for health costs as well as a response to there being less aid for education.
- While there is little difference between LICs' and LMICs' education spending (78% and 80% of the international target respectively), there is a clear difference on health, with LICs spending 38% of the target and LMICs averaging 55%.

The fact that poorer countries spend less on social spending than richer ones is not surprising; social spending has tended to grow as states have become wealthier. Today's richest countries were not meeting these targets when they were developing, and they too had much larger proportion of spending on security and infrastructure. But the considerable variation across this group of countries shows there is not a deterministic relationship between income level and resource allocation. Five LICs and 15 LMICs achieve 75% of the combined target.

Figure 4   LMIC spending on health and education relative to internationally recognised targets
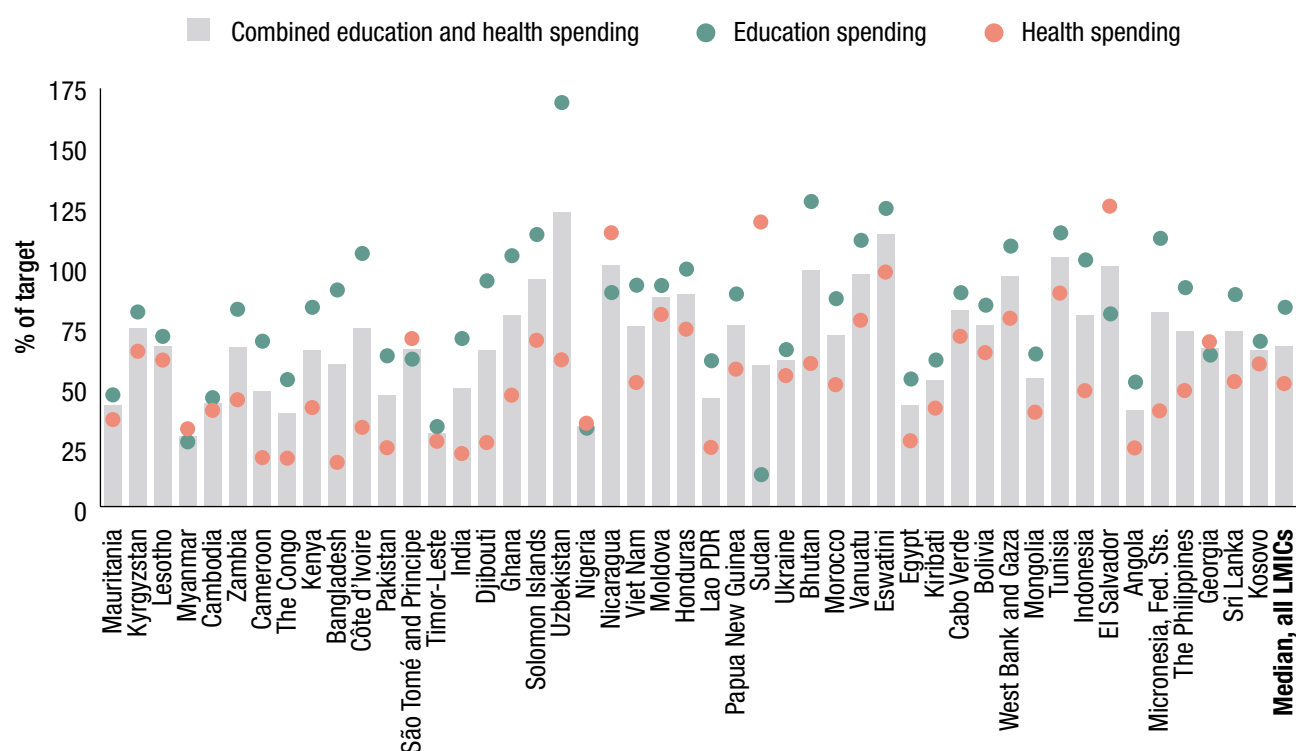
Note: countries are in ascending order of GNI per capita.
Source: World Bank, International Labour Organization and Oxfam (principally). See Annex A for full details.

Students at Aberdeen Primary School in Freetown Sierra Leone. Photo: World Bank/Dominic Chavez, 2015.

3   Subnational finance

3.1   Why does subnational finance matter?

The difficulty of providing education and health services to reach a country's poorest groups and those most at risk of being left behind has long been recognised (e.g. World Bank, 2004). This report focuses only on the challenges related to where the poorest groups live and does not consider other factors such as ethnicity or caste.

The poorer parts of any country are often harder to reach, with widely dispersed populations and fewer transport connections. Teachers and health workers are often reluctant to go to more remote locations. For example, in Tanzania, health workers reported that distance away from their spouse and distance from their employer (resulting in lack of support) were key factors that informed their decision about where to work (Tidemand et al., 2014). Another aspect of the challenge is supervision of staff providing services, as absenteeism is a problem in many countries and this is particularly hard to monitor in more remote areas.

The potential of finance to help tackle these challenges is also well recognised. For example, the United Nations Educational, Scientific and Cultural Organization (UNESCO) has identified a

range of additional cost-effective investments, including in nutrition and mobile schools for pupils in communities that are hard-to-reach. Additional spending is also needed to facilitate access to services by people with disabilities. In relation to the availability and reliability of service providers, the Tidemand et al. (2014) study in Tanzania noted that staff satisfaction in more remote areas was highly dependent on finance – for example: payment of hardship allowance; provision of staff housing and access to electricity/water. It also noted that few local authorities had adequate funding to provide such incentives (ibid.).

Our analysis, which draws on data from Development Initiatives (2018b), reveals that in Uganda lower spend is clearly associated with more children in each classroom,[6] less space to write and read,[7] more children out of school[8] and more children missing school.[9]

Figure 5   Ugandan students' space to write and read relative to education spending
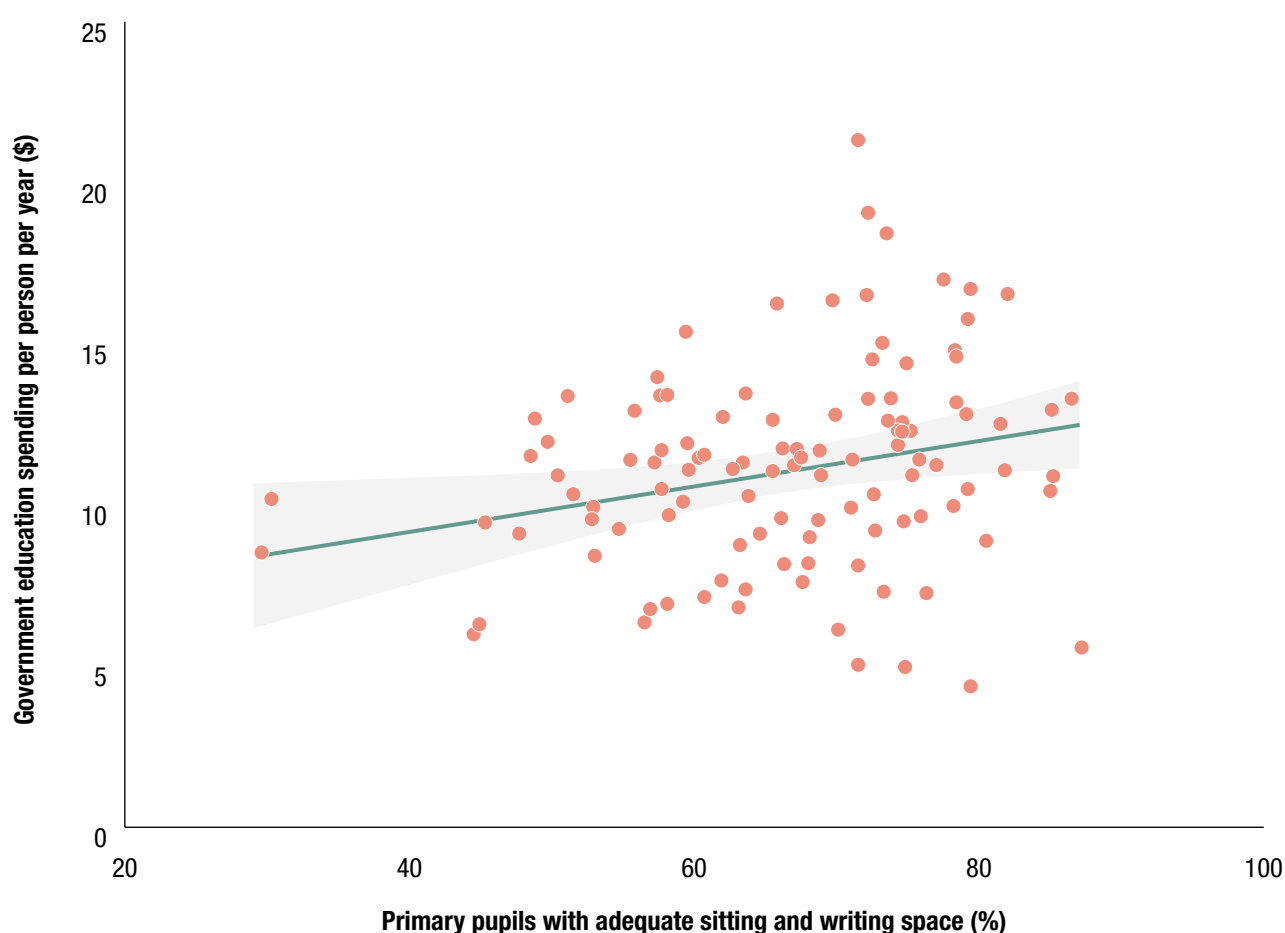
Source: authors' own calculations.

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6   Significant at 10%, but very low adjusted R squared (2%).

7   Significant at 5%, but very low adjusted R squared (4%).

8   Significant at 10%.

9   Significant at 5%.

3.2   Previous analysis of targeting of subnational finance

3.2.1   Government funding

To date, analysis of the targeting of subnational government spending has mainly been at the individual country level – for example World Bank Public Expenditure Reviews and specific education and health sector reviews undertaken by UNICEF and the World Health Organization. This analysis tends to point to either poor targeting of investments or a lack of resources where needs are greatest. A typical example is one study in Ghana (Blampied et al., 2018), which revealed that government spending on education was negatively associated with poverty. The picture on health was more mixed but there was no evidence that poverty or need was driving subnational allocations.

This study also noted the impact of the poor targeting of resources. Health workers were unevenly distributed across the country and were not given adequate incentives to take up postings in remote and deprived communities. There was a deprived area incentive scheme that provided an additional allowance of 20% to 35% salary increase but this was discontinued as it was paid irregularly and was not consistently applied to health workers. The lack of financial incentives combined with the inability of the government to adequately monitor and sanction absenteeism led to chronic inefficiency in the deployment of resources – which disproportionately affected poor and marginalised communities.

And targeting within districts can be even worse. While education spending in Ghana varied by 50% between districts, spending *within* districts varied by a factor of two, with the result that the ratio of primary aged children to teachers within districts varied from 38:1 to 80:1 (Blampied et al., 2018). Another detailed study in Tanzania reached similar conclusions, noting that inequities within local government authorities can be greater than those between local government authorities (Tidemand et al., 2014). While funding for education across districts varied by a factor of 4, within the poorest districts the number of teachers per pupil could vary by as much as 10 times (from 19:1 to 280:1) and the number of health workers per facility by 9 times. This range reflects in part the limited funding options available to poorer districts to incentivise teachers and health workers to work less centrally. One result is that the average primary education graduation rates were much lower in all the less well funded districts.

3.2.2   Donor funding

Previous studies of subnational aid have suggested that finance is not well targeted at poorer regions and instead tends to flow to richer regions and/or those with better social indicators.[10] As the authors of these studies readily acknowledge, the dataset underlying this research is limited; much of the analysis relates just to the World Bank and the African Development Bank. And, as the underlying dataset has not been updated, it mostly reflects aid patterns from around 5 to 10 years ago.

For example, Öhler and Nunnenkamp's (2014) review of World Bank and the African Development Bank funding in 27 countries from 2005 to 2011 found that regions with higher infant mortality did not get more projects. Öhler et al. (2017) reviewed World Bank funding from 2005 to 2014 in 58 countries and found in sub-Saharan Africa negative correlation between total project funding and the

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10 For instance, Zhang (2004); Öhler and Nunnenkamp (2014); Briggs (2017, 2018b, 2018a); Nunnenkamp, Sotirova and Thiele (2016); Nunnenkamp, Öhler and Andres (2017); Öhler et al. (2017); Custer et al. (2017), Kotsadam et al., (2017) and Desai and Greenhill (2017) (although their findings were more mixed). The only research that suggested donor effort is targeted at the poorer regions is Nunnenkamp, Sotirova and Thiele (2016), which found the number of donors clustered in the poorer regions of Malawi.

bottom 40% of the population (with insignificant correlation in other regions in the world). However, this correlation was just the result of infrastructure projects. There were no significant correlations between poverty and projects for education and health.

More recently, Briggs has drawn on much more fine-grained measures of poverty. Briggs (2017) and Briggs (2018a) reviewed World Bank and African Development Bank funding in 17 African countries that was approved in 2009 and 2010. Briggs (2018b) compared AIMS data from Uganda (1978–2014), Nigeria (1988–2014), and Senegal (2000–2012). All three papers found similar pro-rich patterns for total aid.

3.3   Basis of the new analysis in this report

The analysis in this report is based on a review of the available data for education and health subnational spend by governments and donors against four criteria:

1. recent (within the past three years)
2. publicly available
3. adequately comprehensive (captures the majority of aid to a country)
4. sufficiently disaggregated (at least two–thirds of government spend and 30% of aid are disaggregated subnationally)

Only 16 of the 72 LICs/LMICs/LDCs surveyed[11] had either government or donor spend that matched these criteria, and only 2 of these – Afghanistan and Ghana – had acceptable data for both aid and government spend (see Chapter 4). Some other countries appeared initially to meet the criteria but on closer examination the data quality was insufficient. For example, some countries recorded adequate levels of subnational aid but only because a few large projects had been arbitrarily divided across all districts equally (with no regard to population differences).

To ensure consistency across countries, we compared the level of subnational finance per person with the same measure of deprivation: the UNDP/Oxford MPI.[12] This index includes a wide range of indicators and is therefore not directly affected by spending on either education or health. In Annex A we also present analysis using subcomponents of the index: child mortality and proportion of children not in school.

One feature of this analysis is the exclusion of spending in capital cities, where the numbers are often boosted by spending on national institutions and the failure of donors to properly disaggregate their funding, simply geocoding to the main donor office. The analysis also excluded extreme outliers, in case they reflected data-entry errors or one-off 'lumpy' projects. The full details of the dataset and any exceptions are set out in Annex A.

The analysis in the following sections plots spend against MPI. A higher MPI figure implies greater level of deprivation, and therefore pro-poor spending is indicated by an upward sloping line. But while it is possible to construct trend lines, these are of limited analytical value as the statistical correlations in nearly all cases are weak,[13] suggesting that poverty is not consistently driving spending allocations across all regions/districts.

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11 Due to time constraints this report was only able to survey countries with populations of more than 1 million.

12 http://hdr.undp.org/en/2018-MPI

13 R squared stats are in the main less than 10% and some cases less than 1%. See Annex A for full results.

In view of the weak correlations, we instead focused on a more robust but less disaggregated measure, comparing average spend across all the poorest regions/districts (that account for 20% of the population with the highest MPI scores) with the average spend in all regions (again excluding capital cities). Further statistical details are set out in Annex A.

3.4   Our analysis of targeting of subnational finance

3.4.1   Government spend on education is lower in the poorer regions

Evidence from the seven countries that have adequate subnational education data clearly shows that in six countries **government education spend per person in the poorer regions is less than the national average.**[14] Rwanda is the only country where spending is higher in the poorer regions. On average poorer regions received 15% less than the national average.

A similar pattern is also apparent from the analysis of spending across all regions/districts with a tendency for spending to fall as deprivation increases (that is, there is downward slope – Figure 7). However, in most cases the statistical correlation is weak suggesting that deprivation is not driving allocation decisions. The main exception is Tanzania, where the statistical correlation is 52%, implying half the variation in spending can be explained by deprivation. Correlations in the other countries are all between 9% and 18% and even lower in Mozambique (3%).

On both measures Tanzania shows the most marked shortfall between spending in the more deprived districts compared to the national average. Nigeria is not included in the simple comparison of means as time constraints meant the average for all states could not be calculated.

Figure 6   Mean government education spending vs mean spending among poorest quintile of regions
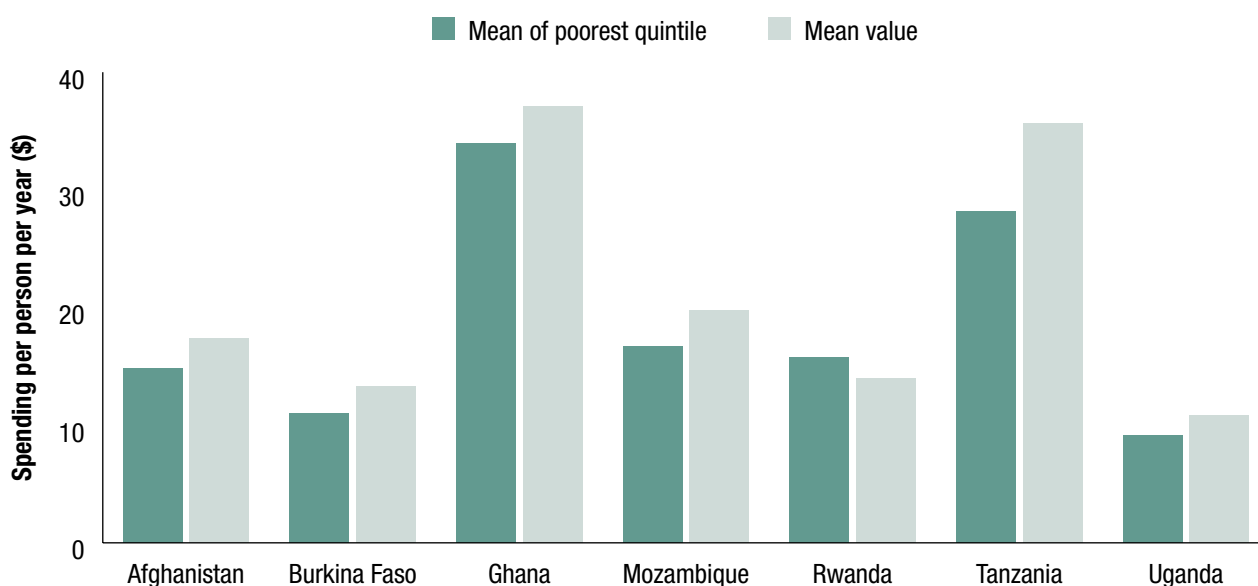
Source: authors' own calculations.

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14 All analysis in this section focuses on spending per person to ensure consistency. Future research could also consider spending per pupil or per child of school age.

Figure 7 Government subnational education spending
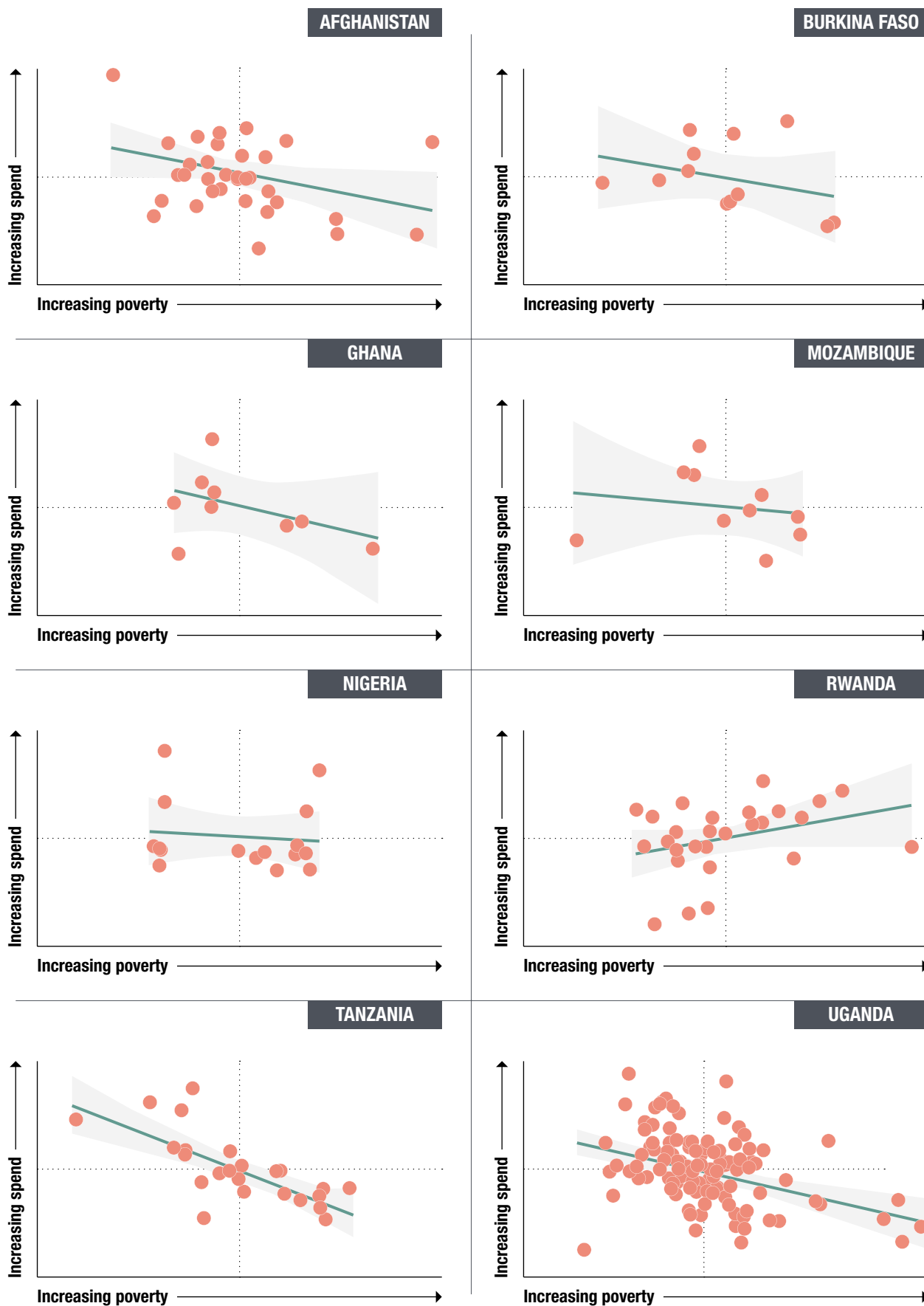
Note: dotted lines indicate national average and scale is determined by standard deviation. See Annex A for full details.
Source: authors' own calculations.

3.4.2   Government spend on health is marginally lower in poorer regions

The evidence from the eight countries with adequate subnational data suggests that **government health spend also tends to be lower in those more deprived regions and districts.** On average, poorer regions received 9% less than the national average. However, as Figure 8 shows, the pattern is less clear-cut than for education. In most countries spending in the poorer regions is close to the national average (and is just above the national average in two countries). Spending across all regions/districts also shows a less distinct pattern. Tanzania is the only country where there the correlation is high (45%). All other countries the correlation is less than 12%.

It is striking how low the levels of government spending are for both education and health in the more deprived districts in Tanzania, by up to 29%. The correlation is unusually high in both cases, around 50%, suggesting half of the variation in funding is explained by relative deprivation – with the least deprived receiving the most funding. As earlier analysis by Tidemand et al. (2014) also revealed large inequalities within districts, funding in the more deprived sub-districts is likely to be even lower than the national average.

Figure 8   Mean government health spending vs mean spending among poorest quintile of regions

Source: authors' own calculations.

Figure 9   Government subnational health spending
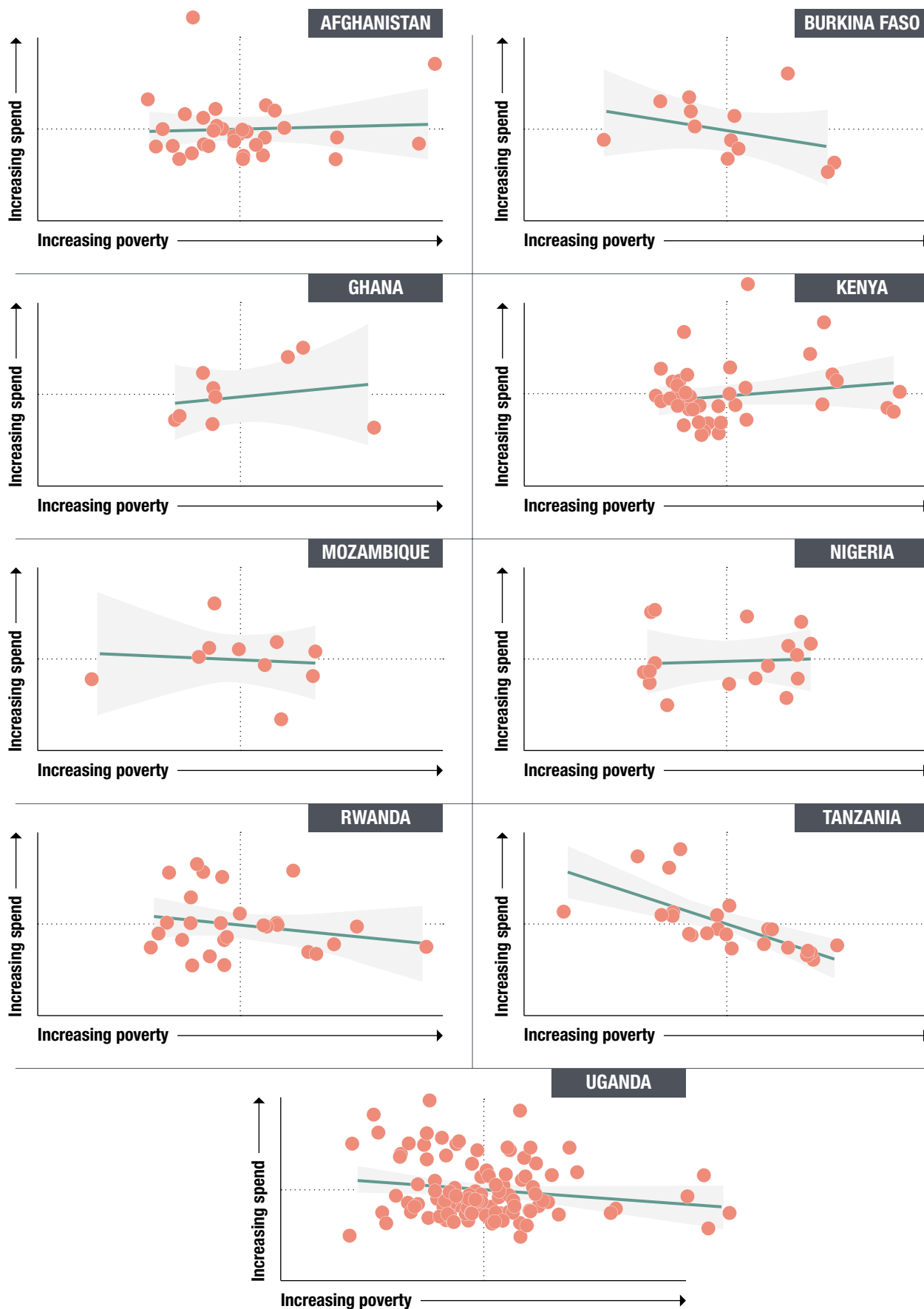
Note: dotted lines indicate national average and scale is determined by standard deviation. See Annex A for full details.
Source: authors' own calculations.

3.4.3 Donor spend on education shows no clear pattern and on average is evenly spread

The pattern of donor support for poorer regions varies considerably across the nine countries surveyed. In half the countries the poorer regions received slightly more support and in half slightly less. **On average, poorer regions receive the same level of education support as the national average.** In Ghana[15] and Afghanistan, donor spend favours *more* deprived regions, while in Bangladesh and Myanmar, donor spend favours *less* deprived regions. It is possible that the more even spread in other countries may reflect poor coding, as some donors may assume uniform spend per person when disaggregating projects covering multiple districts.

Figure 10   Mean education ODA vs mean spending among poorest quintile of regions
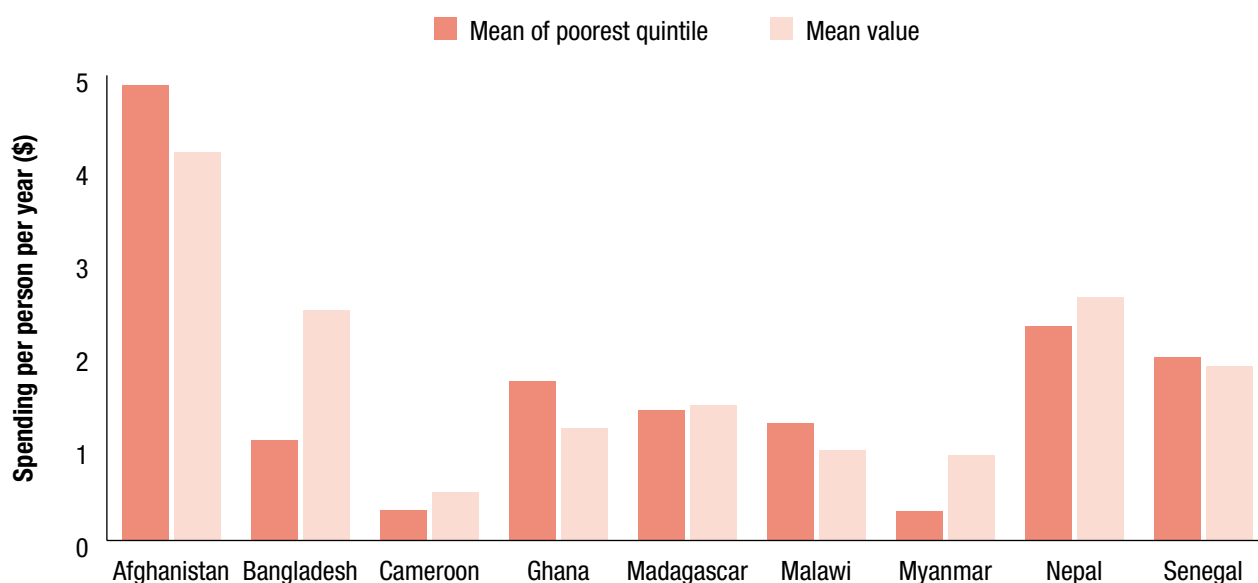
Source: authors' own calculations.

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15 The correlation for Ghana is 33%.

Figure 11   Donor subnational education spending
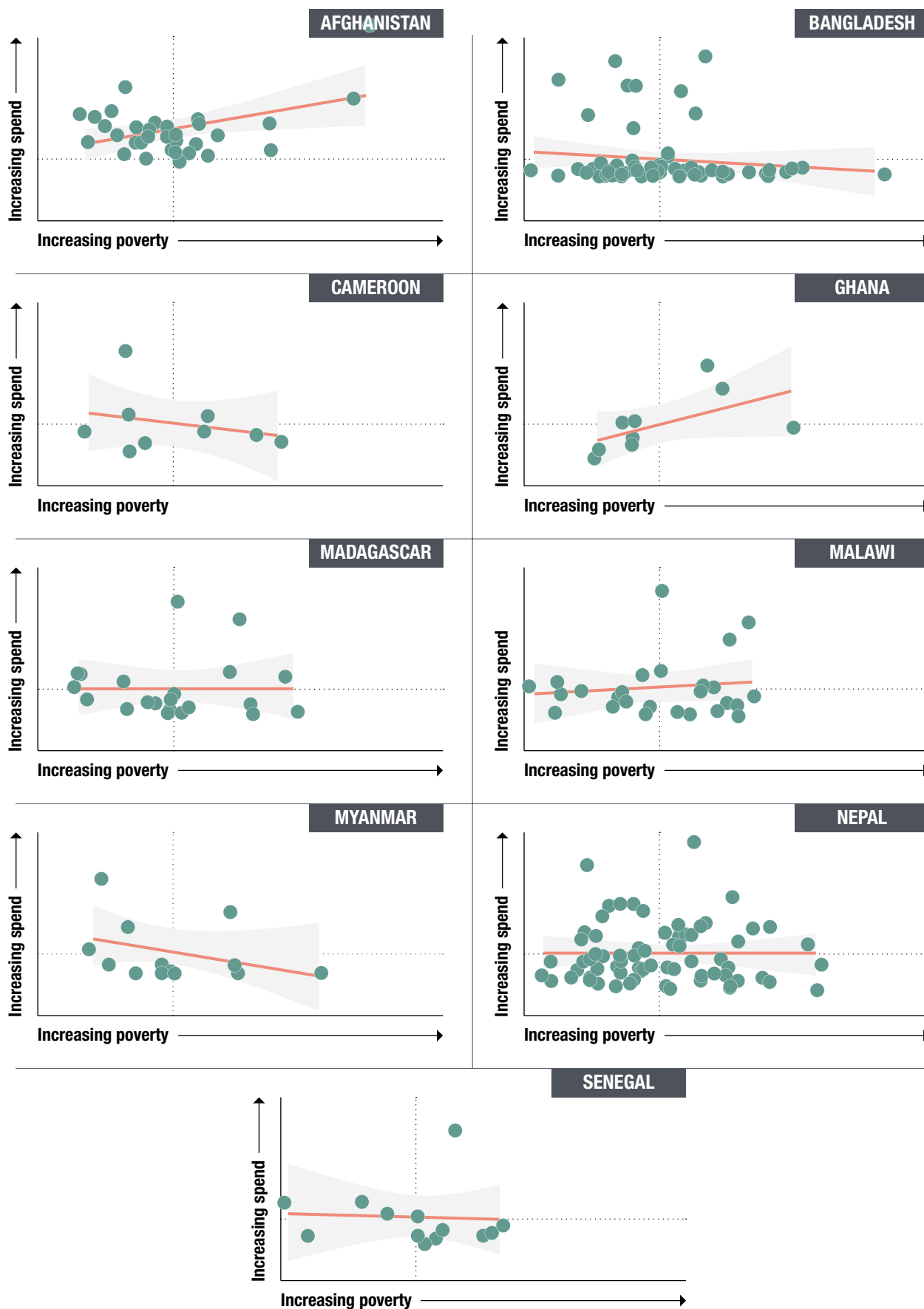
AFGHANISTAN

Increasing spend

Increasing poverty

BANGLADESH

Increasing spend

Increasing poverty

CAMEROON

Increasing spend

Increasing poverty

GHANA

Increasing spend

Increasing poverty

MADAGASCAR

Increasing spend

Increasing poverty

MALAWI

Increasing spend

Increasing poverty

MYANMAR

Increasing spend

Increasing poverty

NEPAL

Increasing spend

Increasing poverty

SENEGAL

Increasing spend

Increasing poverty

Note: dotted lines indicate national average and scale is determined by standard deviation. See Annex A for full details.
Source: authors' own calculations.

3.4.4 Donor spend on health is weakly pro-poor

The evidence from the seven countries with adequate subnational data suggests that **on average donor health spend is higher in poorer regions,** with poorer regions receiving 33% more than the national average. Spend in the more deprived regions of Ghana is 2.7 times that of the national average and shows a strong positive pattern across the country with a correlation of 91%. However, the average spend in the poorer regions is low – $3 per person – and two-thirds of this is due to one large donor hospital project in the northern part of the country. And while spend is clearly higher in three other countries in the sample, spend is lower in the other three. And in none of these six countries is the correlation more than 10%.

Figure 12   Mean health ODA vs mean spending among poorest quintile of regions
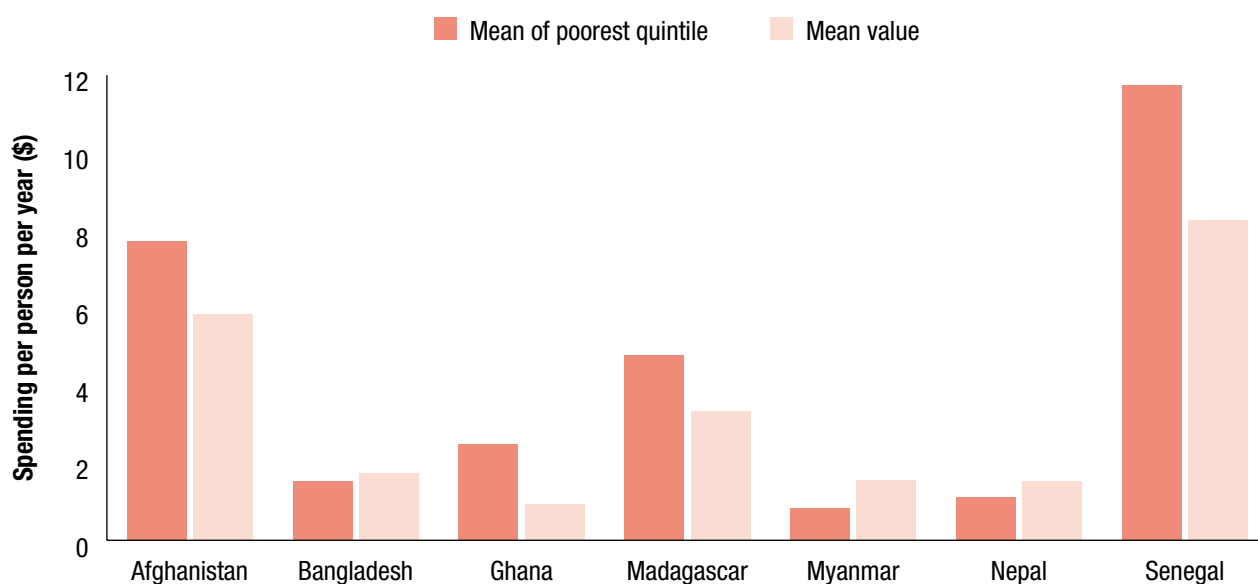
Source: authors' own calculations.

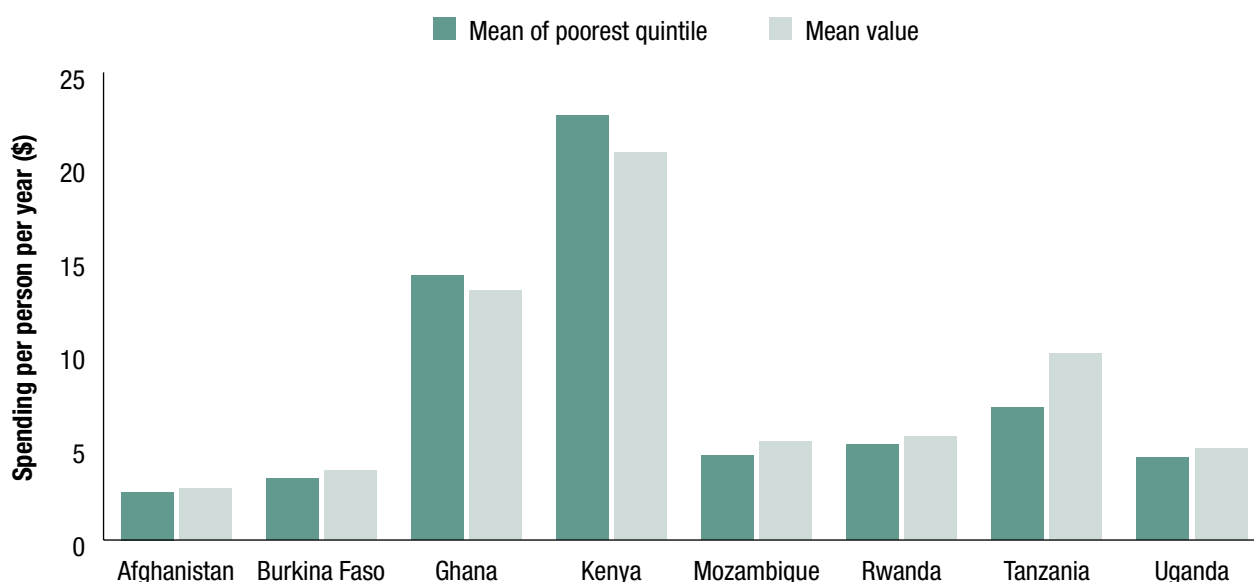**Figure 13   Donor subnational health spending**
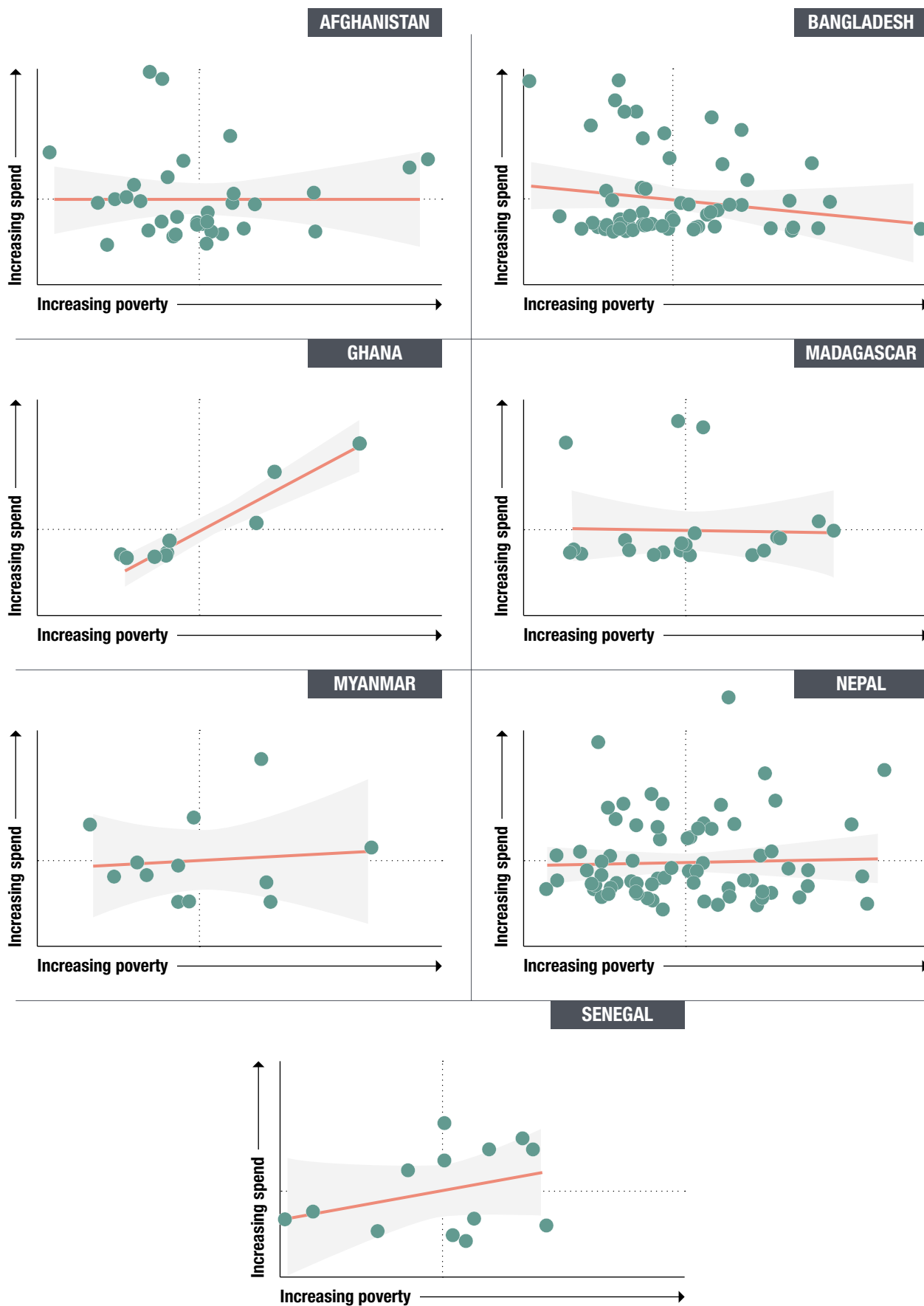
Note: dotted lines indicate national average and scale is determined by standard deviation. See Annex A for full details.
Source: authors' own calculations.

3.5   Overall analysis of targeting

This analysis is a first step in understanding the distribution of subnational flows. The small sample makes it inappropriate to generalise and makes selection bias a particular concern. Countries with allocation formulas that seek to increase funding for poorer subnational regions are more likely to publish their data, therefore these results are likely to overstate the extent of pro-poor targeting.

Figure 14 summarises how spending in the poorest 20% of regions compares with the national average. It shows the ratios for government and donor spending for health and education in all the countries surveyed. The line in each chart shows the average (median) for each category of spending and a box shows the interquartile range of values (i.e. the range that covers the top half of countries below the median and the bottom half of countries above the median). The larger the box, the wider the distribution – with dots indicating more extreme values. For example, government education spending in poorer regions is below the national average with little variation among them (small box) and few extreme values. For health, donor spending in the poorer regions, by contrast, the median spending is above the national average but has a much wider distribution around this, with much more extreme values.

This potential positive bias in the sample makes the finding that the governments in this sample are not clearly pro-poor even more concerning.

- Government education spend on average is lower in the more deprived regions/districts.
- Government health spend on average is also lower in the more deprived regions/districts, although the difference is less marked than for education.

Figure 14   Government and donor spending on education and health in the poorer regions compared to national average

Source: authors' own calculations.

- In one country, government spending on education and health in more deprived regions is 29% less than the national average.

This sample also suggest that there is no clear consistent pattern in donor spending.

- Donor education spend on average is spread fairly evenly across all districts.
- Donor health spend on average is higher in more deprived regions/districts.

Because government spend in most countries is much greater than donor spend, the failure of governments to clearly prioritise the poorest regions dominates the overall pattern of subnational financial flows. This failure directly impacts staffing levels in schools and health clinics. People in these regions – particularly the poorest parts of those regions – continue to be massively underserved. As such, there is whole generation that are at great risk of being left behind.

Our finding that donor health funding is on average pro-poor is at odds with previous research noted earlier that found no clear correlation for World Bank projects. This may reflect the use of a wider and more recent set of donor data. It may also reflect our deliberate omission from this analysis of outliers and capital cities; poorer regions will appear to receive much less funding if their spend is compared with national spend data that includes the capital city, where spending is boosted by national projects and the failure of some donors to disaggregate subnational spending. Including the outliers and capital cities in our analysis switches the pattern for donor health aid from pro-poor to anti-poor (Figure 15).

Figure 15   Impact of excluding and including outliers and capital cities in donor subnational health spend
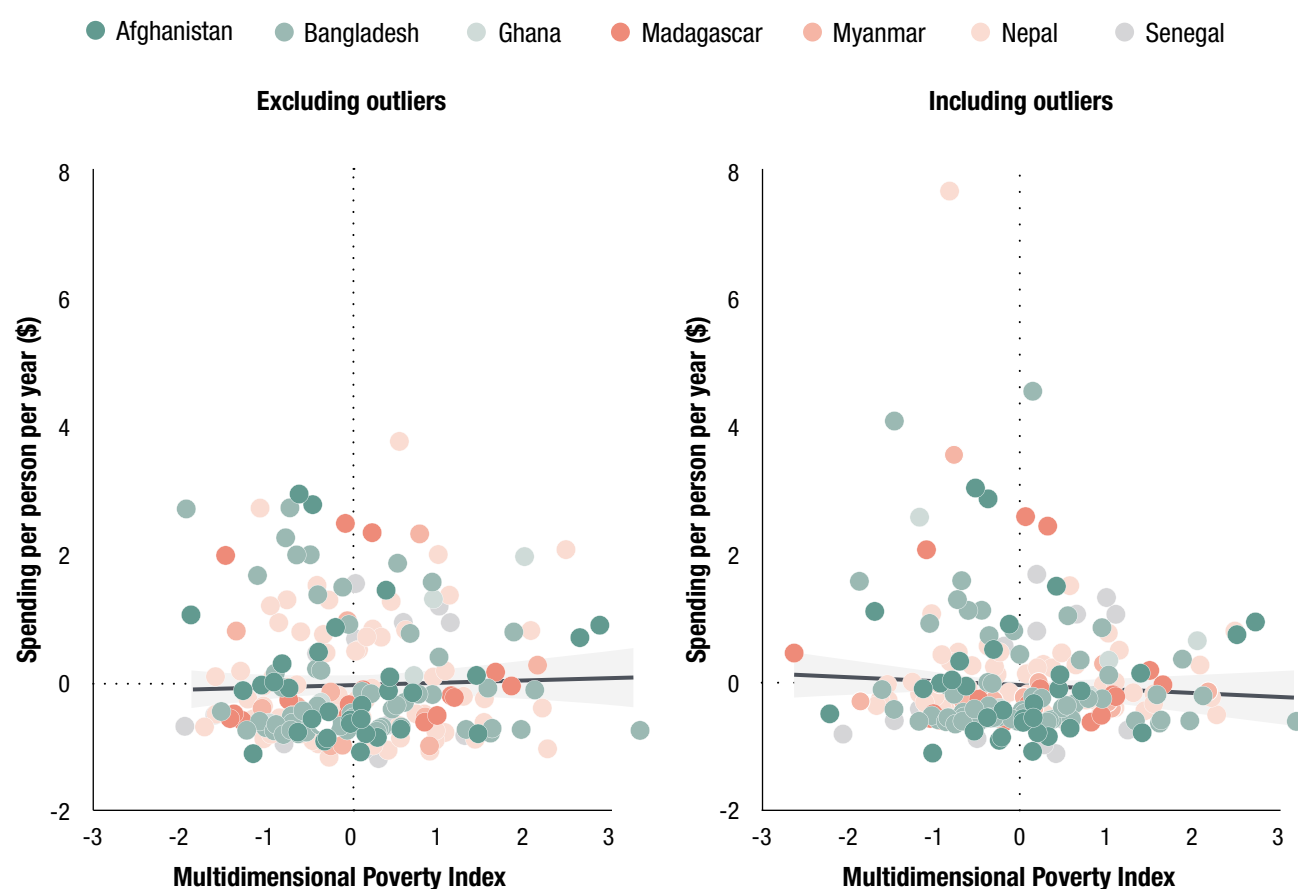
Source: authors' own calculations.

3.6 Beyond targeting: balancing needs, effectiveness and efficiency

Better targeting of the very poorest people and places has significant implications for how public development finance is allocated (OECD, 2018). Beyond the powerful geopolitical dynamics of international assistance, the targeting of aid has historically been based on two core criteria. The first is the distribution and severity of needs, as measured by a range of socioeconomic and performance indicators, while the second is effectiveness – that is, the extent to which and certainty that aid impact will be maximised. This second criterion is also concerned with efficiency, which may be affected by issues such as economic or political governance or the ability for countries or institutions to receive, manage and use aid effectively.[16]

Donors, quite justifiably, seek value for money in their investments, which translates into preferring high per-person returns. But seeking aid investments with higher rates of return is increasingly at odds with the leave no one behind agenda, which calls for outcomes in more challenging or remote places – where per person costs may be higher.

By adopting the leave no one behind agenda, governments and donors need to acknowledge these additional costs and incorporate them into their budgetary allocations. UNESCO, for example, incorporates a 20%–30% mark-up in its universal primary and secondary education costings to ensure equitable access for all children (UNESCO, 2015). These costs must be set against the long-term costs of not reaching these groups; as one study that examined the costs of exclusion of people with disabilities concluded:

> While creating inclusive societies will involve financial investments, the costs of inaction – economic and otherwise – dwarf any programmatic expenses (Banks and Polack, 2015)

And there is growing evidence that suggests that there need not be a trade-off between reaching the very poorest and effectiveness: it may cost more but returns can be high. Evaluations of donor performance have shown that effectiveness can be achieved in fragile contexts (Hellman, 2013; Chandy et al., 2016). Meanwhile case studies have identified project success in such contexts across a range of sectors, including social funds and community driven development, public finance management and social sectors – notably in health, education and social protection (Gisselquist, 2015).

Moreover, reaching those most in need may not come at an efficiency cost (OECD, 2018). UNICEF has shown that that the number of lives saved by investing in the health of the worst-off children is nearly twice as high as the number saved by equivalent interventions with and investments in the health of less poor children (Carrera et al., 2017). Similarly, a study in Tanzania calculated that efficiency savings of 40% could be made by switching education funding from the best-resourced to less well-resourced districts (that is, the same funding could achieve 40% greater outcomes) (World Bank, 2012).[17] A UNICEF/World Bank model in Ghana highlighted the overall inefficiency of poor targeting, noting that the investment costs in the poorest villages in the north of the country were a quarter of the nationwide costs, per additional child completing primary education (Blampied et al., 2018).

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16 The availability, or lack of, other sources of finance is also increasingly recognised as a factor to be considered in the allocation of public development finance. See, for example, Development Initiatives (2015; 2018a) and Manuel et al. (2018).

17 Authors' own calculation based on World Bank figures.

Recent case studies are also challenging the perceived constraints of aid absorption, an oft-noted but poorly evidenced inhibitor to donor engagement (Haider, 2018). Some studies find that LDCs – typically subject to a number of institutional, policy, technical, human and physical capital constraints – benefit from increasing returns to aid and higher absorptive capacity, even if they obtain lower average rates of success (Guillaumont and Wagner, 2014).

4   Improving subnational financial transparency

4.1   Subnational finance: a significant lack of transparency

One key finding that emerged from our review of data on government and donor spending in the 82 LICs/LMICs/LDCs is the extraordinary lack of transparency about subnational financial flows. This is particularly concerning given that this group of countries included all 40 of the countries in the bottom quartile of the Human Capital Project (HCP) and all of the 30 severely financially challenged countries (see Annex B for a more detailed assessment of challenges faced in this analysis).

4.1.1   Transparency of government subnational funding

There are two key obstacles to tracking data on government spending at the subnational level. First, spending data needs to be collected from all the different authorities and agencies involved, and this is often not a straightforward process. Second, even spending by central government may not be

disaggregated; although salaries often account for more than half of all spending on education and health, few governments break down these payments by subnational authority.

New analysis prepared for this report reviewed budget information for the 72 of the 82 LICs/LMICs/LDCs that had populations of over 1 million people. It found that only 10 countries (14%) publish sufficient recent budget information to assess the level of total government spending from all sources at a subnational level for both health and education. Another six countries have enough data for either health or education.

Figure 16   Transparency of subnational government spending on education and health

Of the **82** LDCs, LICs and LMICs, for:

16	4	4	48	10
it is possible to accurately track subnational domestic public resource investments on education and/or health	it is possible to track some (e.g. >30%) subnational domestic public resource investments on education and health	it may be possible to subnationally dissaggregate domestic public resource investments on education and/or health but information is not publicly available	it is not possible to subnationally dissaggregate domestic public resource investments on education and health	their population was below one million and so were excluded from the analysis

either for

↓

both sectors

- Afghanistan
- Burkina Faso
- Ghana
- India
- Mozambique
- Rwanda
- Somalia
- Tanzania
- Uganda
- Zambia

or for

↓

education

- Mali
- Moldova
- Togo

or for

↓

health

- Kenya
- Kosovo
- Nigeria

- Haiti
- Malawi
- Pakistan
- Papua New Guinea

- Bolivia
- Ethiopia
- Honduras
- Indonesia

due to either

↓

- a lack of detailed budget information
or
- a lack of budget transparency/availability

by

- central governments
and/or
- local governments

Source: authors' own calculations.

4.1.2 Transparency of donor subnational funding

Few donors disaggregate their aid and publish the results, despite commitments they have made to the Open Aid Partnership since as early as 2011. Our analysis considered subnational aid information found in Aid Information Management Systems (AIMS). AIMS are part of governments' attempts to increase transparency and accountability of donors' external financing and contributions to the budget.

A first assessment suggests that AIMS are prevalent: 65 (79%) of the 82 LICs/LMICs/LDCs have an AIMS. However, of these, just over half (36) are inaccessible as they are either under construction, do not function consistently or are closed to the public. Of the 29 that *are* accessible and operational, 16 don't capture even half the level of aid reported as being given to the country by donors in the health

Figure 17 Transparency of subnational donor spending on education and health

Of the **82** LDCs, LICs and LMICs, for:

10 — it is possible track subnational ODA to education and health that meets a threshold of >50% of the DAC aid records and >30% being subnational flows

3 — it is possible to track subnational ODA but it does not meet the threshold of >30% being subnational flows

16 — it is possible to track subnational ODA but it does not meet either threshold

36 — it may be possible to track subnational ODA but AIMS is either operational but not publicly available, not functioning or under construction

17 — it is not possible to track subnational ODA as these countries do not have AIMS

either for
↓
both sectors
- Afghanistan
- Bangladesh
- Ghana
- Madagascar
- Myanmar
- Nepal
- Senegal

or for
↓
education
- Cameroon
- Malawi

or for
↓
health
- Somalia

- Cambodia
- Rwanda
- Sierra Leone

- Comoros
- El Salvador
- Haiti
- Honduras
- Kenya
- Kosovo
- Kyrgyzstan
- Liberia
- Macedonia, FYR
- Moldova
- Mozambique
- Nigeria
- Timor-Leste
- Uganda
- Ukraine
- Yemen

Source: authors' own calculations.

and education sectors (through OECD DAC).[18] And, of the 13 AIMS that *do* capture the majority of aid, only 7 report realistic levels of disaggregated health and education data of at least 30%. Some only report less than 15% of spend subnationally. The effective transparency is therefore just 7 countries – representing 9% of the 82 countries surveyed and accounting for just 16% of the total value of the aid the 82 countries receive.

4.2   The case for progress on financial transparency

4.2.1   The need for more data

Financial transparency is not an end in and of itself but it is critical to achieving accountability. And accountability, while insufficient on its own to achieve desired outcomes for peoples' lives, is an essential component for change.

There has been significant progress in financial transparency and accountability over the past two decades. Driven internationally by a focus on transitions to democracy and nationally through civil society and government efforts to improve public finance processes and outcomes, financial transparency has become a norm of good governance. Many countries now have greater budget transparency and evidence has shown that, with the right enabling environment, this has facilitated greater monitoring and oversight by government and civil society (Rudiger, 2018), more effective and efficient spending, including on critical social services (IBP, Development Finance International and Oxfam, 2014) and has helped to reduce corruption and strengthen local voices and democratic processes (Rudiger, 2018).

But more progress is needed. The 2017 Open Budget Survey found that roughly three-quarters of countries assessed did not publish sufficient revenue and expenditure information (IBP, 2018). Similarly, progress has not seen a concomitant shift in public finance structures and processes in order to address the needs of the poorest places and people (Rudiger, 2018).

Access to high quality subnational budgetary and expenditure information is a fundamental – but until recently, often overlooked – dimension of financial transparency and accountability. The limited availability of subnational public finance information identified presents serious challenges to the leave no one behind agenda. If governments are to make access to services more equitable, they, together with subnational representatives such as parliamentarians, need to understand how their mechanisms for allocating resources (either through central government or subnational structures) are serving different parts of the population.

4.2.2   The need for disaggregation on people and their needs.

Poor subnational financing data is mirrored by limited disaggregated data on people and their needs. Existing statistics can help to track national averages, but they often mask disparities at subnational, community and household levels. Combined with poor local finance data, efforts to target resources effectively and monitor progress of people and different groups are severely undermined (Development Initiatives, 2017). Better disaggregated data, at least by geography, income quintile, gender, and disability, is needed to address these limitations.

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18 While some difference would be expected – e.g. due to difference between financial year and calendar year – a gap of 50% suggests that significant amounts of aid are not being captured properly.

For everyone to be included in progress, everyone needs to be counted. But the current data landscape does not provide enough detailed data about individuals (Development Initiatives, 2017). Surveys that measure wealth at the household level often mask disparities between individuals within a household. And civil registration and vital statistics (CRVS) systems – which provide the bedrock of population data, the basis for legal identity and fundamental information for planning and delivering services – are neither sufficiently widespread nor comprehensive. Nearly half (44%) of all countries don't have a basic functioning CRVS system. In 36 of 74 countries for which data is available, at least 25% of under-five children don't have a birth certificate, the most basic element of CRVS systems (Development Initiatives, 2017). Those facing the greatest disadvantages are the least likely to be counted. Only one in three people among the poorest 20% of people globally have a birth certificate, compared to two in three globally (Development Initiatives, 2017).

Increasing and improving vital statistics systems will require investment. ODA for developing statistical systems is low, accounting for only 0.33% of total aid. Doubling this to 0.7% is estimated to be enough to meet the funding needed for the systems modernisation and capacity-building objectives of the UN Cape Town Global Action Plan for Sustainable Development Data (Calleja and Rogerson, 2019).

4.3 The challenges of improving transparency

Both technical and political challenges continue to undermine the production and publication of comprehensive, sufficiently detailed and timely subnational financial information. This is combined with difficulties posed by budgeting structures and processes that are not necessarily designed to produce such information.

The multiple challenges faced by public finance management systems are beyond the scope of this report. However, one broad limitation is the fundamental purpose of such systems. Budgetary and treasury systems are primarily designed for accounting and management purposes and focus on how finance is authorised, controlled and monitored, rather than the production of the data needed for public expenditure analysis – including at subnational levels.

Resources and capacity are well recognised technical limitations, particularly at subnational levels of government. This can be exacerbated by challenges the poorest districts and counties face in raising local revenues. In Kenya, for example, six of the ten counties with the lowest revenues have some of the highest poverty rates in the country, with over 50% of their populations living below the national poverty line (Development Initiatives, 2018c).

However, evidence suggests that it is not necessarily a lack of data but a lack of publicly available information that is undermining transparency. The Open Budget Survey finds, for example, that among the 47 countries providing minimal, scant or no information, 40% of the key budget documents are actually produced but they are either not accessible or designed for internal use only. Through an investigative approach to sourcing data for this report, we similarly found subnational data held by government ministries that was not readily available to the public. The upshot: budget transparency could be significantly improved without significant effort.

Donors face a similar set of technical challenges. Despite the potential of the International Aid Transparency Initiative, few donors report subnational, geocoded detail and have few incentives to report their activities in sufficient detail (Staid and Goas, 2019). Technical challenges and cost limit

donors' ability to follow funding through their chain of delivery, which may entail contracts with large institutions through to intermediaries that are several steps removed from donor disbursements.

Small delivery agencies, such as local non-governmental organisations, face challenges and disproportionate costs associated with reporting to this level. Consequently, generating accurate or comprehensive data is problematic; limiting coding to a capital city – a common finding in this analysis – may be all that donors can do or is seen as a quick win for reporting.

Various factors affect data coverage of AIMS – for example the capacity of the government institution managing these systems; the political buy-in of the government and donors to quality AIMS reporting; the information management and coordination processes established between central and sector ministries, donors and implementing agencies; etc. These issues have been discussed at length in assessments of such systems, and highlight both technical and political challenges to effective AIMS implementation (i.e. Petras, 2009; Weaver et al., 2014; Park, 2017).

These problems are not insurmountable. Some AIMS assessed for this report have overcome these challenges to provide sufficient detail. And a limited number of donors have invested in detailed geocoding. Future analysis of such donor reporting against subnational indicators can both provide detailed insight into how investments are targeted and demonstrate the value of such information.

4.4   Steps to improve transparency

There are concrete technical and political steps that can be taken now. Governments should:

- **Publish subnational financial data where it is already produced.** Over the last decade financial transparency, as monitored by the Open Budget Survey, has improved year on year. However, 2017 saw the first signs of erosion to this progress as transparency scores fell in aggregate, with declines most noticeable in sub-Saharan Africa (IBP, 2018).
- **Enhance coordination.** Technical efforts can enhance both horizontal and vertical coordination between ministries and between federal and subnational entities. For example, in Ghana and Uganda, a consistent approach to accounting systems at central and subnational levels support integrated and centralised reporting (Ministry of Finance Budget Division – Government of Ghana, 2014; PEFA Secretariat, 2017). Governments can address resistance – at the individual or the government level – through incentives, such as in Uganda, where reporting standards and norms are incorporated into performance and funding criteria used by subnational government.
- **Take the lead and incentivise donors.** Given the centrality of national financing, governments themselves can also be proactive in encouraging such reporting. For example, line ministries in Côte d'Ivoire have been involved in the aid management platform from the outset. By reporting budget information from sector ministries, development partners have been encouraged to supplement with detail on off-budget allocations, building a stronger shared ownership of the system.

Donors should:

- **Report activities better and more to government.** Failure to do so places the functional burden on those governments, undermines national planning and can lead to inefficiencies (Ramkumar and de Renzio, 2009). Data provided must be complete and comprehensive and include, for example, planned as well as disbursed amounts and detailed information on where funds were used.

Policy research institutions and civil society should:

- **Build the evidence base.** Technical efforts cannot be scaled up without addressing political resistance to change (Fritz, Verhoeven and Avenia, 2017). To start to address barriers to progress, demonstrating and evidencing the multiple benefits of subnational budgetary transparency will help to counter the disincentives to publish.
- **Incorporate subnational financing into existing monitoring efforts.** As budgets are increasingly, but not completely, devolved to subnational entities, so must efforts to monitor budgetary transparency widen focus to incorporate this level.

Registered Nurse Jacqueline Sivili works with patients and staff members at C.H. Rennie Hospital in Kakata, Margibi County, Liberia. Photo: World Bank/Dominic Chavez, 2016.

5   Conclusion and recommendations

5.1   Countries could do more to increase national levels of investment in human capital

Many countries face considerable financing challenges to invest in human capital. But much more could be done at the global and national level to transform the prospects of those most at risk of being left behind and invest in their human capital, particularly in the 82 poorest countries – the group of all the LICs, LMICs and LDCs.

First, this group could increase their tax revenues by 25%. Second, if this group also matched the performance of some of the poorest members who met at least 75% of the international domestic spending targets for the share of spending allocated to education and health – the two key human capital development sectors – that would increase investment in human capital by 21%. Meanwhile, if all DAC donors met the 0.7% of GNI international target for spending on ODA, that would double

global aid flows. Donors could also do much better at targeting their aid at the countries that face the most severe financing challenges: the best three donors are eight times more efficient than the worst three.

5.2   There is little evidence of pro-poor targeting within countries

There is little evidence that financing is being targeted effectively to the poorest within countries. Inequality between countries is important but so too is inequality within countries, yet it receives substantially less attention. Where financing goes matters and can have long-term effects (Khomba and Trew, 2019). Ensuring at least equality of financing is an important part of the answer to the leave no one behind challenge.

Our analysis shows that government spending is not pro-poor. In the countries where analysis is possible on education spending (seven countries) and health spending (eight countries), spending on average is lower in the more deprived regions/districts. In one case government spending in the more deprived districts was 29% less than the national average. And in the same country spending in the poorer areas of a deprived district could be half that of the average for the district.

We also find that donor spending could be better targeted. While health spending in the seven countries where analysis was possible is already on average higher in the poorer regions, education spending in the nine countries surveyed was just evenly balanced.

This analysis is likely to overstate the degree of targeting that is happening in other countries that we could not survey. Those countries that do analyse and publish data on spending at a subnational level are more likely to be attempting to target resources at their poorer regions and districts.

These findings suggest that most countries don't have pro-poor targeting nor is donor aid strongly focused on the poorest people or places. And this has real-world implications. In Uganda, analysis shows lower spend is clearly associated with more children in each classroom, less space to write and read, more children out of school and more children missing school. And in Ghana and Tanzania the number of teachers and health workers in the poorest areas can be as much as 10 times lower than the national average.

The international commitment to leave no one behind means reaching everyone, including the poorest. Governments and donors need to do much more: they need to focus more on challenging contexts and finding more effective ways to reach the poorest. They will need to budget for the higher per-person costs that doing so often involves, e.g. the extra 20–30% that UNESCO estimates is required for education.

But there is also an increasing body of evidence suggesting that efforts in poorer, more challenging contexts need not be less effective and that, in some cases, targeting the most deprived can deliver greater outcomes for a given investment. UNICEF has shown that the same funding can save twice as many lives if it is targeted at the worst-off children. Prioritising the needs and outcomes of the poorest does not lead only to more equitable outcomes: it can also be more efficient. Improved data on who and where the poorest groups are, together with what investments and services are available to them, is a key step to refocus financing to ensure those most in need are included in progress.

5.3   Financial transparency is lacking

Subnational financial transparency is critical to efforts to make access to services more equitable. Combined with improved disaggregated data on people's needs and identities, this information can show the extent to which different populations, as well as the poorest, are being included – or not – in development investments. Conversely, its absence makes it much harder for representatives of poorer regions or their advocates to make the case for more equitable funding.

But information on financing, much less linking to results, is largely absent at the subnational level. This is perpetuated by a range of technical and political barriers, but ultimately falls to a lack of sufficient incentives for governments to invest in, collect, share and publish such information.

Only 10 of the 72 LICs, LMICs and LDCs with populations over 1 million publish enough recent budget information to assess the level of total government spending from all sources at a subnational level for both health and education. Data on donor funding at the subnational level is equally poor. Despite aid information systems being prevalent in almost 80% of all LICs, LMICs and LDCs, more than half are not accessible or functional, and only 7 of the 82 countries had sufficient data to enable analysis.

Political and technical challenges – such as resourcing and capacity – hold back progress on improving data. More work can be done to better understand the key constraints across different country contexts but there are steps that can be taken now. In many cases, data already exists; publishing this existing data would allow governments to significantly improve budget transparency without significant effort. Governments can do more to enhance coordination between ministries and between subnational and federal entities, as well as provide incentives for better reporting from both government departments and donors.

Action can also be taken beyond governments. Donors themselves can do much more to report activities to governments and remove the functional burden on governments. Civil society can start to incorporate subnational financing in its monitoring of financial transparency, and all actors can do more to demonstrate the benefits of better subnational transparency to counter disincentives to publish. At the same time, countries need to invest more in better disaggregated data, including civil registration and vital statistics.

Recommendations

Almost five years into the SDGs, 2019 is a critical moment. As the world is preparing for key global political moments, including the 2019 High-level Political Forum on Sustainable Development and the SDG Summit in September, attention and action should focus on these issues.

Recommendation 1   Improve targeting

National governments should commit to:

- increasing the share of taxes spent on health and education from an average of two-thirds to a minimum of three-quarters of international domestic spending targets
- ensuring poorest regions receive at least the same health and education funding as the national average and assessing what funding is necessary in addition to this.

Donors should commit to:

- increasing ODA to LDCs from one-third to a minimum of half of total ODA
- providing the poorest subnational regions with greater per-person spend than the national average, while recognising the need to address inequalities within regions.

Recommendation 2 Increase transparency

National governments should:

- publish the subnational data financial data they have
- include information on subnational allocation on education and health workers in national budget documents.

Donors – especially the five largest in terms of ODA spend – should:

- disaggregate their information on spending subnationally and ensure this data is publicly available and reported to government, particularly in the most aid dependent and poorest countries.

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Annex A Spending analysis methodology

Data sources for analysis of national spending on education and health

A range of data sources were drawn upon for analysis. The principle data sources included:

- World Bank World Development Indicators (https://datacatalog.worldbank.org/dataset/world-development-indicators)
- International Labour Organization World Social Protection Report 2017–19 (www.ilo.org/global/publications/books/WCMS_604882/lang--en/index.htm)
- Oxfam Commitment to Reducing Inequality Index (http://inequalityindex.org).

Alternative sources used where data was not available included:

- Government Spending Watch (www.governmentspendingwatch.org)
- International Monetary Fund Government Finance Statistics (expenditure by government function, per the Classification of the Functions of Government) (http://data.imf.org/?sk=5804C5E1-0502-4672-BDCD-671BCDC565A9)
- Economic Commission for Latin America and the Caribbean Database (http://interwp.cepal.org/sisgen/ConsultaIntegrada.asp?IdAplicacion=38&idTema=882&idIndicador=3127&idioma=i)
- World Bank Atlas of Social Protection Indicators of Resilience and Equity database (http://datatopics.worldbank.org/aspire/home)
- Asian Development Bank Social Protection Indicator (www.adb.org/themes/social-development/social-protection/index)

In some cases, figures were drawn from national statistics offices, government documents or reports by international organisations.

Coverage of subnational data

The new analysis in this report is based on a review of the available data for education and health spend by governments and donors against three criteria:

1. publicly available (within last three years)
2. adequately comprehensive (covering at least one-half of country's total aid as reported by donors to the OECD Development Assistance Committee)
3. sufficiently disaggregated (at least two-thirds of total government spend and 30% of aid spend on health and education is allocated to subnational level)[19]

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19 For AIMS aid data, the criteria exclude nationwide or 'region, undefined' projects

Only 24 of the 82 LICs/LMICS/LDCs had data for government or donor spend for at least one sector that matched these criteria, and only two of these – Afghanistan and Ghana – had acceptable data for government and donor spending for both education and health sectors. Some other countries initially appeared to meet the criteria but on closer examination data quality was still not sufficient. For example, some countries recorded adequate levels of subnational disaggregated aid but only because a few large projects had been arbitrarily equally divided across all districts (with no regard to differences in population and thus not a reflection of how project spend was necessarily allocated). In other cases volumes or purposes of projects were clearly miscoded. In such cases, to the extent possible, we either corrected these records using additional donor documentation if available or opted against including a country with problematic/miscoded data in our analysis.

Donor reporting varied within a single AIMS, with some reporting more completely and frequently than others. Some donors, such as Global Fund, do not provide the subnational locations of their country-wide projects.

Our analysis excluded capital cities because: (1) spend will include national institutions that are based in the capital city; and (2) capital cities are often growing rapidly and many people live in informal settlements meaning actual populations may differ significantly from census data. The analysis also excluded extreme outliers (in case these reflected data entry errors or one-off 'lumpy' projects).

Time constraints limited the analysis to 16 of the 24 countries where there was adequate government or donor spending data for at least one sector. These covered a wide geographical area: Asia, West Africa, Southern Africa and East Africa. There was a reasonable balance of LIC and LMICs (10 LICs and 6 LMICs) and good coverage fragile states (14 of the 16 countries were on the OECD list of fragile states and 3 are on the World Bank list). Finally, 11 of the countries were in the bottom quartile of the HCI, 9 were on ODI's list of 30 severely financially challenged countries and 6 were on Development Initiatives' list of 30 countries most at risk of being left behind.

Multidimensional Poverty Index

To understand the relationship between needs and resources at the subnational level, we have used the Multidimensional Poverty Index (MPI), which relies principally on the Demographic and Health Survey (DHS) and the Multiple Indicator Cluster Survey.

Frequently, the household surveys used to calculate MPI are representative at subnational units that do not match administrative boundaries. In these instances, we have recalculated the scores matching GPS coordinates of survey clusters to boundaries for administrative units. Otherwise, we use subnational MPI scores as published by OPHI. In Cameroon's case, Douala and Yaoundé have separate MPI scores from their respective districts. As no financing data is available for those cities, the MPI scores have been recalculated with the city scores averaged with the regions within which they sit.

For Bangladesh, Kenya, Nepal, Senegal, Tanzania and Uganda, we mapped districts to smaller administrative units manually using the most recently available boundaries in the Database of Global Administrative Areas (GADM 2.8). This disaggregation process allowed us to achieve more granular results than that published by OPHI. The MPI scores were recalculated at the household level from the microdata in the DHSs and then aggregated up to the new administrative units based on the DHS-published latitudes and longitudes. The MPI numbers from these regions should be used with caution because the survey was not intended to be representative at those levels.

We also tried to repeat this for Ghana, where MPI data is only available for 10 regions, compared to 232 districts. Although the underlying DHS data is based on 11,835 households in 427 clusters in 128 districts, the sampling is designed to be only representative at the level of 10 subnational regions. We did compare spending at district level with MPI but found that the many data gaps make it hard to discern any clear pattern.

Population estimates

We adjusted all ODA and government spend estimates by the total population in each country, using the sources of population data specified in the following table.

Table A1   Sources of population estimates by country

Afghanistan	2017/18 population estimates from the Afghanistan Central Statistics Organization
Bangladesh	2017 population estimates from latest Bangladesh statistical yearbook
Burkina Faso	2016 population estimates from OPHI
Cameroon	2016 population estimates from OPHI
Ghana	2016 population estimates from OPHI (regions)
Kenya	2017 population estimates from latest Kenya statistical yearbook
Madagascar	2016 population estimates from OPHI
Malawi	2016 population estimates from OPHI
Mozambique	2016 population estimates from OPHI
Myanmar	2016 population estimates from OPHI
Nepal	2011 population estimates from latest Nepal statistical yearbook
Nigeria	2016 population estimates from latest Nigeria statistical yearbook
Rwanda	2012 population estimates from latest Rwanda statistical yearbook
Senegal	2013 population estimates from latest Senegal statistical yearbook
Tanzania	2012 population estimates from latest Tanzania statistical yearbook
Uganda	2018 population estimates from latest Uganda statistical yearbook

Note: OPHI = Oxford Poverty and Human Development Initiative
Source: authors own calculations.

Government-funded expenditure

We report government funded expenditure (e.g. domestic public resources) by subnational administrative divisions as detailed in national and local government budget documents or accounting databases. Due to the complexities in collecting this type of data, there is typically only one year of analysis (the latest available financial year), which represents budgeted, rather than actual, disbursements.

Data on education refers to primary and secondary levels and health refers to all non-specialist or non-training related expenditure. In cases where wider education (e.g. pre-primary education or education management) or health (e.g. hospitals with specialist healthcare services) were not possible to disaggregate, these have been included. The choice of countries analysed was predicated on the

ability to track significant proportions (e.g. above two-thirds) of the defined type of government funded education and healthcare expenditure to the chosen subnational administrative level.

Therefore, while it was not possible to disaggregate all education and health expenditure (such as pharmaceutical supplies in some countries), the findings are considered to provide a robust reflection of the geographic variances in government funded expenditure. Although a significant proportion of on-budget aid was excluded, in some cases the analysis may include certain aspects, for example where it was not possible to disaggregate general budget support from recurrent expenditure.

Table A2   Sources of government expenditure data by sector and country

Country	Sectors	Dates	Methodology and caveats	Source
Afghanistan	Education and Health	FY 1396 (2017/18)	i) Development budget includes all projects listed under the Ministry of Education and health. ii) Operating budget includes all health funding, primary and secondary education and education not classified. Not classified was taken as some provinces reported differently. iii) Although operating budget FY 1398 was used, data for FY 1396 was taken. iv) Although all on-budget aid was removed from the development budget, it was not possible for the operating budget.	Fiscal Year 1396 Budget by Province (Development Budget), Ministry of Finance; – Fiscal year 1398 Budget by Province (Operating Budget), Ministry of Finance. Available from www.budgetmof.gov.af/index.php/en/2012-12-06-22-51-13/national-budget
Burkina Faso	Health	2015	i) Research and development expenditures were not included. ii) on-budget aid was not included.	World Bank BOOST dataset. Available from http://boost.worldbank.org/country/burkina-faso
Ghana	Education and Health	2015	i) Health funding to teaching hospitals and training institutes was removed. ii) Only education funding to primary, secondary education and school services was included in the analysis. iii) Included with the national budget was funding to health and education by district governments. Where budgets for districts were not available for 2015, later years were used instead. iii) on-budget aid was removed from both national and district data.	2015 National Budget, MDA budgets for the Ministry of Health and Education. Available from www.mofep.gov.gh/publications/budget-estimates 2015 MMDA composite budgets for district governments. Available from www.mofep.gov.gh/publications/composite-budget
Kenya	Health	FY 2015/16, 2016/17 and 2017/18	i) Data refers to all health spending on county budgets. ii) On-budget aid from Danida and the World Bank was removed.	Office of the Controller of Budget, National Government of Kenya. Available from https://cob.go.ke/publications/consolidated-county-budget-implementation-review-reports/
Moldova	Education	2015	i) Includes government spending on pre-primary, primary and secondary education and education activities and facilities	World Bank Boost dataset. Available from http://boost.worldbank.org/country/moldova
Mozambique	Education and Health	2018	i) Health and education funding were taken from provincial and local government budget allocations. Health funding on central government budget was not possible to disaggregate. ii) On-budget aid was removed from the development budget but was not possible from the operational budget.	Orçamento do Estado para o Ano de 2018, Ministério da Economia e Finanças. Available from www.mef.gov.mz/

Table A2   Sources of government expenditure data by sector and country cont'd

Country	Sectors	Dates	Methodology and caveats	Source
Nigeria	Education and Health	2017 or 2018, depending on State budget availability	i) Education spending excluded funded to tertiary institutes. ii) Health funding excluded funding to teaching colleges and health research. iii) The Federal government was reviewed, but spending was primarily focused on tertiary level health and education services. Local government budgets were not available, although they do contain some funding for primary school teacher salaries. iv) Analysis of state government budgets prioritised those with the highest and lowest MPI. In all 18 were analysed. In addition, Bayelsa, Imo, Osun, Sokoto and Zamfara states were reviewed, but either didn't have available budget documentation or were significantly out of date to not provide a valid comparison. v) On-aid funding where possible was removed from the analysis.	Approved State budget documents, 2017 or 2018. These were collected from State Government web portals or www.yourbudgit.com/
Rwanda	Education and Health	FY 2016/17, 2017/18 and 2018/19	i) Data includes funding for health and education on district government budgets. Where possible health funding on central government budget was disaggregated. ii) on-budget aid was not included.	2016/17, 2017/18 and 2018/19 Finance Laws, Ministry of Finance. Available from www.minecofin.gov.rw/index.php?id=86
Tanzania	Education and Health	2017/18	i) Data includes spending on health and education by local government authorities and Regional Administrative Secretaries. ii) Regional Administrative Secretaries spending excludes health and education transfers to local government authorities and on-aid development spending. iii) Although on-budget aid for local government authorities was not possible to remove, on-budget aid included within Regional Administrative Secretaries (RAS) as a transfer to local authorises was subtracted from the local government authority allocations.	Local Government Authority Quarterly Financial Report, June 2018. 2018/19 Budget Book, Ministry of Finance and Planning. Available from www.mof.go.tz/index.php/budget/budget-books
Uganda	Education and Health	FY 2018/19	i) Includes funding on health and education by higher level local governments (districts) and where possible spending by the central government on health (e.g. regional hospitals) and education. ii) On-budget aid was excluded from the development budget components.	Higher level local government budgets 2018-19. Central Government Approved budget estimates, Ministry of Finance, Planning and Development. Available from www.budget.go.ug/budget/home

ODA

We report aid disbursements (both on- and off-budget, where available) to subnational administrative divisions from the AIMS of each country. To minimise the effect of data discrepancies, we average figures across three financial years (either 2014 to 2016, or 2015 to 2017). Within each AIMS database, we apply filters for health and education, using sub-sectoral codes comparable to OECD-Creditor Reporting System (CRS) codes where possible for greater accuracy. We also manually check project titles/descriptions for each AIMS to correct coding errors and ensure only projects relevant to our analysis are included (i.e. no tertiary education or research and development projects). Finally, we apply filters to exclude projects funded solely by the government, as some AIMS may include government-funded projects. These filters result in a dataset of aid from all donors towards health and education across three years.

Two inclusion criteria are applied for analysis. First, if the AIMS total (including all precision codes, including nation-wide projects) amounts to 50%+ of the OECD-CRS total (using comparable sector codes), the AIMS meets our first threshold. Next, we consider if the proportion of subnational to total flows is 30%+. If AIMS satisfies both criteria, we include it in our analysis. The following table further specifies the parameters used for each country in our analysis; for all countries, we exclude higher education and health or education research and development projects unless otherwise noted.

Table A3   Sources of aid disbursement data by sector and country

Country	Sectors	Dates	Manual adjustments	Source
Afghanistan	Health and Nutrition; Education	2015–17	N/A	Afghanistan Development Assistance Database (http://dadafghanistan.gov.af/dad/)
Bangladesh	Health, Population, Nutrition, and Family Welfare; Education (excluding University Education)	2015–17	N/A	Bangladesh Aid Information Management System (http://aims.erd.gov.bd/)
Cameroon	Education	2014–16	N/A	Cameroon Development Assistance Database (http://dad.minepat.gov.cm/)
Ghana	Health, Nutrition, and Population; Education	2015–17	Re-classified 'unspecified' projects under relevant health and education sectors	Ghana Development Cooperation Management Information System (https://dcmis.mofep.gov.gh/ghana/main/)
Madagascar	Health (including basic nutrition and population/reproductive health); Education	2015–17	N/A	Madagascar Aid Management Platform (http://amp-madagascar.gov.mg/)
Malawi	Education (including R&D as it was not possible to disaggregate)	2014–16	N/A	Malawi Aid Management Platform (http://malawiaid.finance.gov.mw/portal/)
Myanmar	Health (including population/reproductive health); Education	2016–17	N/A	Mohinga Aid Transparency Portal (https://mohinga.info/en/)
Nepal	Health (including basic nutrition and population/reproductive health); Education	2014–16	N/A	Nepal Aid Management Platform (http://portal.mof.gov.np/portal/)
Senegal	Health (including basic nutrition and population/reproductive health); Education	2014–16	N/A	Senegal Aid Management Platform (http://pgfe.finances.gouv.sn/portal/)

Table A4   The top-five donors per sector as reported in the AIMS

Country	Top-five donors for health expenditure	Top-five donors for education expenditure
Afghanistan	Afghanistan Reconstruction Trust Fund (40%) United States (17%) Germany (8%) Canada (7%) Japan (5%)	United States (22%) Afghanistan Reconstruction Trust Fund (20%) Germany (13%) Sweden (11%) Global Partnership for Education/UNICEF (8%)
Bangladesh	World Bank (28%) Japan (22%) United States (11%) United Kingdom (9%) World Health Organization (7%)	World Bank (50%) Asian Development Bank (28%) European Union (7%) Australia (4%) World Food Programme (4%)
Cameroon	N/A	Korean EXIM Bank (46%) Islamic Development Bank (24%) UNICEF (20%) World Bank (9%) Japan (1%)
Ghana	United States (40%) Israel (29%) European Union (11%) World Bank (5%) Japan (4%)	World Bank (41%) United States (24%) African Development Bank (22%) UNICEF (4%) Japan (3%)
Madagascar	United States (42%) Global Fund (15%) United Nations (14%) GAVI (12%) World Bank (5%)	World Bank (71%) European Union (21%) France (4%) International NGOs (3%) China (1%)
Malawi	N/A	United States (18%) United Kingdom (17%) World Bank (17%) Japan (13%) African Development Bank (11%)
Myanmar	UNOPS (21%) UNICEF (20%) WFP (18%) World Bank (18%) United States (16%)	World Bank (43%) UNICEF (13%) Denmark (13%) Switzerland (9%) Japan (6%)
Nepal	United States (22%) United Nations (11%) Global Fund (9%) European Union (6%) United Kingdom (4%)	World Bank (32%) Asian Development Bank (14%) United States (13%) United Nations (5%) Japan (5%)
Senegal	United States (57%) GAVI (8%) UNICEF (6%) UNFPA (4%) Global Fund (4%)	World Bank (32%) Canada (24%) Japan (21%) United States (9%) France (6%)

Statistical analysis

Simple scatter plots were generated between the share of people in need (as defined by education, health or poverty indicators) and the amount of resources available to those people (converted to per capita $ terms).[20] When possible, we have used the population figures published by the MPI for 2016. Otherwise, population figures have been taken from government sources. All finance currencies have been converted to current US dollars.

These figures were adjusted to z-scores to increase comparability between countries. Simple Ordinary Least Squares (OLS) regression lines have been plotted with 95% confidence intervals. The results were generally unchanged by changing model specifications to a probit model. The results generally have very low R-squared values. This suggests that even if finance seems to have a statistically significant relationship with need, many other factors may be driving the allocation of resources at a subnational level.

We also considered the ways in which idiosyncratic allocation patterns may be skewing results. The budget information generally is only available for a single year making it difficult to determine if one-time allocations are driving observed patterns. To seek to find another way to find the patterns, we identified the poorest regions (according to MPI scores) in a country that, when added together, come closest to accounting to 20% of the population. The average finance per person for these regions was compared to the average of all regions in the country (excluding the capital city). We divided the average for these poorer regions by the average MPI for all regions. A progressive allocation pattern would have a value greater than 100% for this indicator, a regressive allocation pattern would be below 100%.

We conducted additional robustness tests drawing indicators of need in education and health from Development Initiative's Spotlight on Uganda and Spotlight on Kenya (http://data.devinit.org/). Various health and education indicators were tested as measures of need. The findings were generally consistent with other findings. These results were robust to various specifications of the poverty line in Kenya including the 'hardcore poverty line', the food poverty line and the national poverty line, as defined by the Kenya National Bureau of Statistics. Furthermore, analysis of Afghanistan has been repeated using the national poverty line in place of the MPI as a robustness check.

In each country, the results were largely consistent when looking at the share of the population within each region that are in the national P20 (the bottom quintile) of wealth as defined by the asset-based wealth index used in the DHS and Multiple Indicator Cluster Surveys used in the MPI calculation. These measures of need did not produce results that were substantively different from MPI as a measure of need. These various specifications identify need in different ways suggesting that the results are not particularly sensitive to a specific segment of the population being defined as having need.

In the case of Nigeria, financing data was available for some states but not all. We have taken a sample of some of the highest-need and lowest-need regions in the country and included them in the analysis. These results should be taken with caution but do not suggest that funding is particularly directed toward the highest need regions.

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20 The numbers reported in this report are based on conversions to current US dollars. However, as a robustness check, the analysis was repeated with currencies deflated to the year when the level of need was identified.

Additional results

Below, we report results for additional regressions that compare spending with the sub-components of MPI: child mortality and school absenteeism. We analyse government and donor sub-national education spending relative to the proportion of children not attending school (up to class 8), as well as government and donor sub-national health spending relative to child mortality. For each country in the analysis, we report slope and r-squared values.

Table A5   Government education spending vs proportion of children not attending school

Country	Slope	r-squared
Afghanistan	-0.37	0.13
Burkina Faso	-0.42	0.18
Ghana	-0.21	0.04
Mozambique	-0.32	0.10
Nigeria	-0.13	0.02
Rwanda	-0.07	0.01
Tanzania	**-0.70**	**0.49**
Uganda	-0.39	0.15

Table A6   Government health spending vs child mortality

Country	Slope	r-squared
Afghanistan	0.22	0.05
Burkina Faso	-0.02	0.00
Ghana	0.01	0.00
Kenya	-0.07	0.00
Mozambique	**-0.56**	**0.31**
Nigeria	0.02	0.00
Rwanda	-0.28	**0.08**
Tanzania	-0.55	0.30
Uganda	-0.22	0.05

Table A7   Donor education spending vs proportion of children not attending school

Country	Slope	r-squared
Afghanistan	0.26	0.07
Bangladesh	-0.13	0.02
Cameroon	-0.22	0.05
Ghana	0.08	0.01
Madagascar	0.35	0.12
Malawi	-0.24	0.06
Myanmar	-0.05	0.00
Nepal	-0.30	0.09
Senegal	-0.46	0.21

Table A8   Donor health spending vs child mortality

Country	Slope	r-squared
Afghanistan	0.03	0.00
Bangladesh	-0.23	0.05
Ghana	**0.84**	**0.71**
Madagascar	0.20	0.04
Myanmar	0.19	0.04
Nepal	0.05	0.00
Senegal	0.23	0.06

Regressions: statistical details

The following table reports statistical details, namely the R-squared values, for each chart in the main report.

Table A9   Statistical details of analysis by funding source, sector and country

Country	Independent variable (spending per capita, z-score adjusted)	Slope	r-squared
Afghanistan	Government education	-0.35	0.12
Afghanistan	Government health	0.05	0.00
Afghanistan	Donor education	0.40	0.16
Afghanistan	Donor health	0.01	0.00
Bangladesh	Donor education	-0.13	0.02
Bangladesh	Donor health	-0.16	0.03
Burkina Faso	Government education	-0.31	0.10
Burkina Faso	Government health	-0.33	0.11
Cameroon	Donor education	-0.27	0.07
Ghana	Government education	-0.42	0.18
Ghana	Government health	0.20	0.04
Ghana	**Donor education**	**0.57**	**0.33**
Ghana	**Donor health**	**0.95**	**0.91**
Kenya	Government health	0.16	0.02
Madagascar	Donor education	0.00	0.00
Madagascar	Donor health	-0.04	0.00
Malawi	Donor education	0.13	0.02
Mozambique	Government education	-0.17	0.03
Mozambique	Government health	-0.09	0.01
Myanmar	Donor education	-0.32	0.10
Myanmar	Donor health	0.10	0.01
Nepal	Donor education	-0.02	0.00
Nepal	Donor health	0.07	0.00
Nigeria	Government education	-0.11	0.01
Nigeria	Government health	0.04	0.00
Rwanda	Government education	0.33	0.11
Rwanda	Government health	-0.20	0.04
Senegal	Donor education	-0.07	0.00
Senegal	Donor health	0.32	0.10
Tanzania	**Government education**	**-0.72**	**0.52**
Tanzania	**Government health**	**-0.67**	**0.45**
Uganda	Government education	-0.39	0.15
Uganda	Government health	-0.15	0.02

Annex B Transparency: additional analysis

While the importance of subnational finance is increasingly being recognised, one key finding of this report is the extraordinary lack of effective transparency about subnational financial flows.

Transparency of government subnational funding

There are two key obstacles in tracking data on government spending at subnational level. First, spending needs to be collected from all the different authorities and agencies involved. Gathering the data from all the different levels of government is often not a straightforward process. And there can be additional institutional complications. For example, in Ghana one-third of health spending at district levels is provided through a central government grant to the Christian Health Association. Also, 5% of funding is through district governments whose spending by sector is not included in the national budget figures. Especially in the poorest countries, who often have limited statistical capacity, this information may not be compiled at all or at least not disaggregated by sector.

The second obstacle is that even spending by central government may not be disaggregated. Although salaries often account for more than half of all spending on education and health, few governments break down these payments by subnational authority. Even in countries with substantial subnational financial decentralisation, the budgeting (and the management) of teachers and health workers is often done centrally. While the allocation of teachers and health workers by district is tracked, such information is rarely contained in budget documents.

The lack of transparency makes it harder to draw international comparisons about spending. For example, the OECD and United Cities and Local Government World Observatory on Subnational Government Finance and Investment database captures spending by subnational authorities but does not include spending by national governments at subnational level.

The most important drawback of this lack of transparency is that parliamentarians do not have this information when they are debating the relative allocation of funding across the country. This makes it much harder for representatives of the poorer regions – or their advocates – to make their case for more equitable funding. The combination of low transparency of the data itself, with poor clarity/ understanding about where these allocations are made, also inhibits other actors from participating in or influencing the process.

Bringing together the data in a comprehensive manner is a major investment. This is sometimes done for individual one-off studies in a country (e.g. World Bank Public Expenditure Reviews). The World Bank BOOST project is one of the best attempts to compile complete datasets, but this only covers 16 of the 82 LICs/LMICs/LDCs. And of these, only five have recent data (i.e. 2015 onwards), which includes disaggregated figures for either teachers or health workers' salaries – and only two (Uganda and Burkina

Faso) have data on both.[21] As this data is curated and hosted on the World Bank website, there is limited incentive for governments to update the data or to undertake the necessary checking and validation processes.

Governments could choose to publish much more information. Even in the poorest countries an increasing number have computerised information systems. Some that do have chosen not to publish (e.g. Ethiopia). This could be because of the extra cost and effort involved. And there may also be political considerations. Yet inequitable sharing of a country's resource is potential trigger for conflict and publication is key to building trust, especially in post-conflict countries.[22]

New analysis prepared for this paper reviewed budget information for 72 LIC/LMICs/LDCs. This reveals that only 10 countries publish sufficient recent budget information to assess the level of total government spending from all sources at a subnational level for both health and education. Another four countries have enough data for either health or education.

Transparency of donor subnational funding

Donor funding at subnational level is also not transparent. The main obstacle is that few donors disaggregate their aid and publish the results, despite commitments made by donors to the Open Aid Partnership as early as 2011. AIMS are part of governments' attempts to increase the transparency and accountability of donors' external financing and contributions to the budget. We analyse AIMS availability and usability for 82 LICs/LMICs/LDCs through desk research and building upon previous efforts.[23] Despite the fact that 65 of 82 LICs/LMICs/LDCs analysed have an AIMS, we find limited coverage of spending at the regional or district level within AIMS. Various factors affect data coverage, such as the capacity of the government institution managing the AIMS; the political buy-in of the government and donors to quality AIMS reporting; the information management and coordination processes established between central and sector ministries, donors, and implementing agencies; etc. These issues have been discussed at length elsewhere, but they highlight both technical and political challenges to effective AIMS implementation (i.e. Petras, 2009; Weaver et al., 2014; Park, 2017).

As a result, the apparent very good coverage is misleading. Of the 65, just over half (36) are not accessible as they under construction, not functioning consistently, or are closed to the public. And of the 29 that are accessible and operational, 16 don't even capture half the level of aid reported as being given to the country by donors in the health and education sectors (through OECD DAC).[24] Unfortunately, this includes some countries where aid has been geocoded in the past by organisations such as AidData and Development Gateway (e.g. Nigeria and Uganda). And of the 13 AIMS that do capture most aid, only 7 report realistic levels of disaggregated health and education data of at least 30% (meaning flows that are not nation-wide in scope, or undefined/unreported regions). Some only report less than 15% of spend subnationally. Therefore, the effective transparency is just 7 countries or 9% of 82 LIC/LMIC/LDC countries, accounting for 16% of the total value of aid to the 82 countries.

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21 The other three are Kenya (health only); Mali and Moldova (education only). Uganda and Burkina Faso were regarded as the two-star performers in low-income Africa in the 1990s and had long history of budget support.

22 See for example emphasis on transparency in the 'New deal for fragile states' (International Dialogue of Peacebuilding & Statebuilding, 2011). Also, personal interview with former Finance Minister of Timor Leste (2010).

23 See, for example, this blog post: https://medium.com/@leighmitchell/tracking-the-tracking-systems-ddd3d6578fef.

24 While some difference would be expected e.g. due to difference between financial year and calendar year, a gap of 50% suggest significant amounts of aid are not being properly captured.

Figure B1   Status of AIMS in all LICs and LMICs
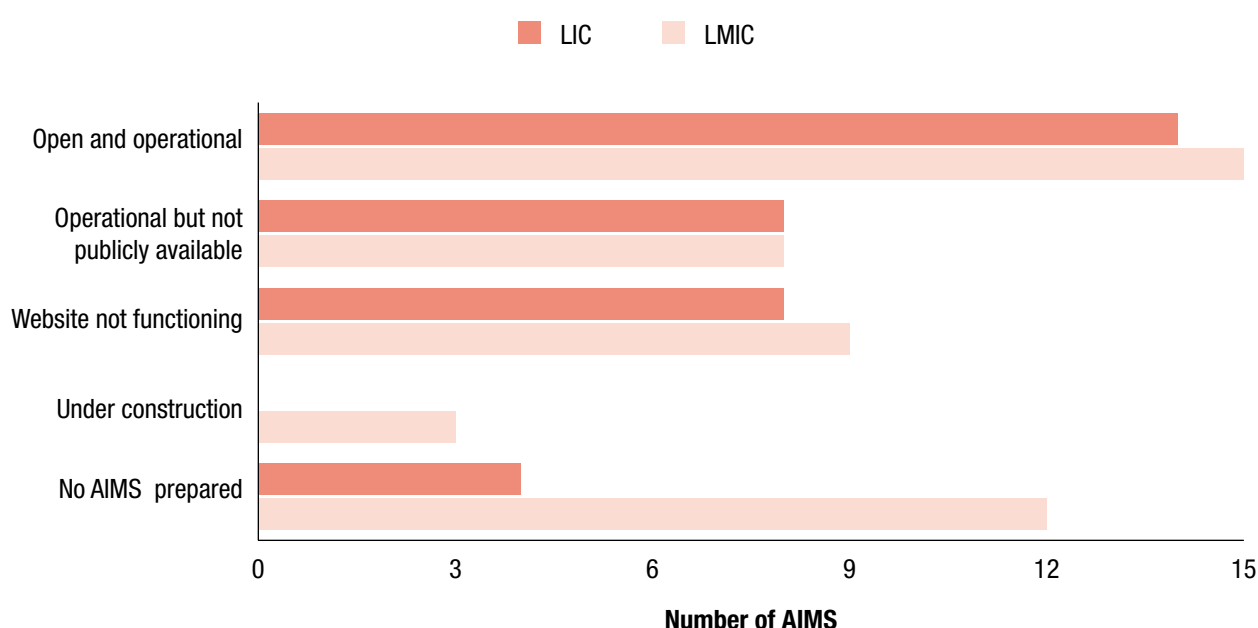
Source: authors own calculations.

While some countries may not have effective subnational AIMS, they may still report the aid in their budget documents. But, again, the coverage rate is often very low. Uganda is recognised to have one of the best online budget documentation systems in any LIC (e.g. it allows resources to be tracked to individual schools).[25] However, the amount of health aid that is reported in the budget system as being allocated to subnational level is only 3% of total health aid to the country that is reported to OECD DAC. While some proportion of health aid would be to support national institutions, their need is unlikely to account for 97% of all aid. Even the best systems are necessarily dependent on donors tracking their own funds and reporting these to the government.

Need for greater transparency

Greater transparency of subnational financing will be key to assessing whether sufficient support is being given, especially to those areas most at risk of being left behind, including those most politically marginalised. The necessary data exists within different parts of governments – and increasingly through Integrated Financial Management Information Systems. With some limited additional support, the data could be published.

Greater transparency would be the foundation for better public debate within countries and more efficient allocation of donor support, especially direct financing support from the EU and others.

Various initiatives have been undertaken to improve the transparency of donor subnational spending. Multilateral agencies such as the World Bank, African Development Bank, Asian Development Bank, and the Global Environment Facility have geocoded their project portfolios in the past with the support

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25   Ministry of Finance, Planning and Economic Development, *Uganda Budget Dashboard*. Available at: http://budget.go.ug/budget/dashboard/ (Accessed: 19 February 2018).

of organisations such as AidData and Development Gateway (Global Environment Facility Independent Evaluation Office, 2016; Custer et al., 2017). The World Bank-led Mapping for Results Initiative, launched circa Spring 2010, represented among the first of these efforts and led to the geocoding of 1,200 World Bank projects across over 12,000 locations world-wide (BenYishay et al., 2015). These initial efforts prompted the World Bank to commit to providing subnational location information in all its project documentation. However, such commitments are not uniform across all multilaterals.

Many other multilateral agencies do not publish subnational data, even those who work extensively at a subnational level and account for a large amount of the expenditure in a particular sector in the poorest countries, such as Global Alliance for Vaccines and Immunization (GAVI) and Global Fund. Challenges with reporting subnational data also emerge from information asymmetries between staff at headquarters and those based in countries. Staff at headquarters, among other functions, report data to international initiatives such as the OECD-CRS and International Aid Transparency Initiative (IATI), whereas staff in country offices tend to report to country-level AIMS (or their equivalent). At times, due to differences in information management and sharing practices, information reported to multiple sources by staff in the same donor agency may not be uniform, as was seen when comparing donor documentation with OECD-CRS project records, IATI activity records, and AIMS project entries for select donors in Nigeria. Thus, even if donors report subnational information, it may not be readily accessible or useable.

Donors also publish 'location details' and 'geographic coordinates' (as data elements) to activity records in IATI. However, despite the substantial growth in IATI reporting over the past four years, reporting on subnational location information has lagged and is considered a 'value-added' element in the IATI Standard. According to the IATI Annual Report 2017, only 22% of publishers reported 'at least some' location details to their activities; 14% reported geographic coordinates. These are by far the lowest-reported fields in IATI, other than 'capital spend' (at 5%). Reporting has also not improved appreciably in the past four years. Despite a doubling of reporting for 'geographic coordinates' from 6% in 2015 to 12% in 2016, a closer analysis reveals low reporting quality. Some donors, aiming at quick wins, report coordinates for the centre of a country, or the centre of every district in the country, which does not suggest much about the actual location of a project. Thus, there is much room for donors to improve their reporting of subnational spend to IATI.

Since 2011, the AidData Center for Development Policy has geocoded project records from the AIMS of 17 of the 82 LICs/LMICs/LDCs, with static datasets for 14 countries published online. Donor and year coverage varies across the published datasets (Isaksson, 2016). For example, the published dataset of Malawi's AIMS – the earliest effort to geocode AIMS data (Weaver et al., 2014) – records projects from 30 donor agencies from 2000 to 2011. Most of the other datasets cover aid from early 1990s to 2014 for a broad array of donors (i.e. more than 25 donors), including major donors such as the US, UK, World Bank, GAVI, etc. Geocoding aid to these countries was a time-intensive exercise, with activities carried out over five years and comprising thousands of hours of manual coding from student research assistants across three universities in the US. In view of this, organisations such as Development Gateway have sought to build capacity within governments to maintain the geocoding of these AIMS. Development Gateway has also published auto-geocoding tools that rely on machine learning and natural language processing to scrape location information in project records (see, for e.g., Dimunzio, 2018).

# Annex C   Country case studies

Ghana

Introduction

This case study supports the paper *Subnational investment in human capital*.

As the health and education sectors play a critical role in human capital development, particularly for the poorest people, it is vital to understand how well public resources are being targeted within these sectors. The paper explores the relationship between subnational government and aid spending on health and education and the presence of multi-dimensional poverty.

The (limited) evidence suggests that in many countries there is little relationship between need and financing. This case study explores data from Ghana, which was one of only two countries (of over 80 scanned) where reasonable quality data was available to allow analysis of both government expenditure and aid for both health and education.

Subnational poverty and financing in Ghana

Government subnational health and education spending per person relative to MPI in Ghana
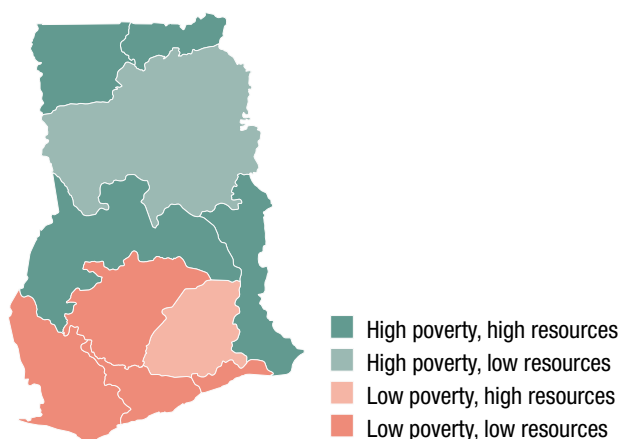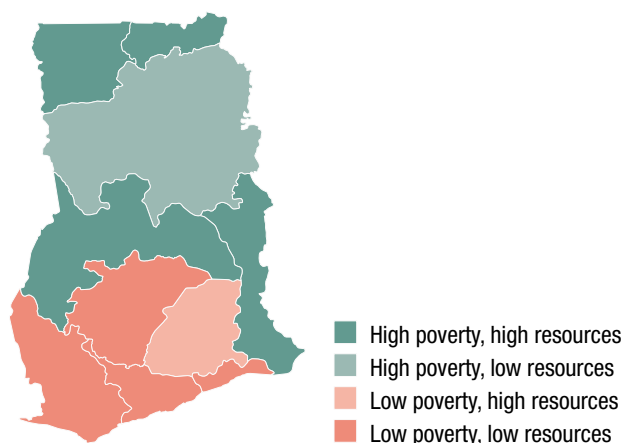
Multidimensional poverty in Ghana
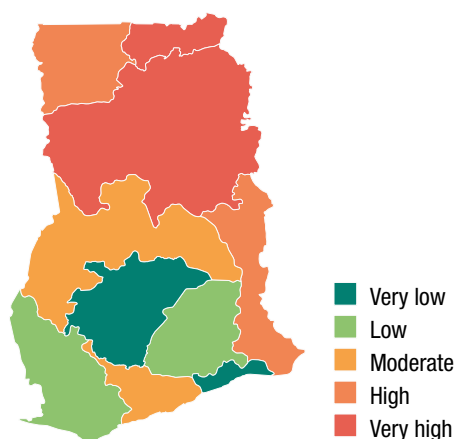
Donor subnational health and education spending per person relative to MPI in Ghana
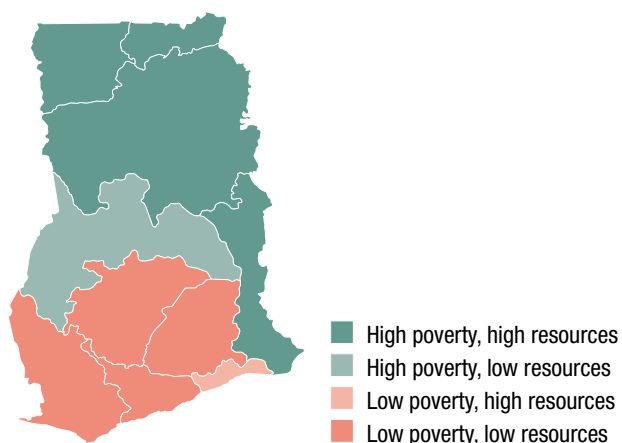
Donor and government subnational health and education spending per person relative to MPI in Ghana

Country profile

- Ghana is categorised by the World Bank as a Lower Middle Income country (LMIC).
- Ghana's poverty headcount ratio as 24% (in 2012, down from 32% in 2005).[26]
- In 2017, 14.8% of primary aged children were out of school in Ghana.[27]
- The mortality rate for infants was 36 per 1,000 live births in 2017.[28]
- From the latest data, global domestic spending targets for education (21% of 20% of government expenditure) has been met and health (7.1% of 15% of government expenditure) has not.
- Of the combined targets, 80% was met, higher than the 67% average for LMICs.[29]

Key findings and implications

- Ghana provides a positive example of how ODA can and should be allocated to correspond to levels of poverty and need.
- ODA spending on both health and education correlates with MPI, where need is greatest.
- There is a positive relationship between greater education spending and years of schooling.
- There is a positive relationship between increased ODA spending on health and the need shown through child mortality rates.
- Government spending on health correlates with MPI, where need is greatest.
- Government spending on education does not correlate with MPI, where need is greatest, showing that there is potential for better alignment between resources and need.
- Ghana is a better example than most in relation to budget data availability and transparency. Understanding how it has achieved this progress and overcome barriers would provide useful lessons for others.
- Transparency of financial flows could be further improved, with greater disaggregation for all funding at all levels of government. Ensuring it is possible to follow all funding from start to finish is critical.

26 https://data.worldbank.org/country/ghana.

27 UNESCO Institute for Statistics (http://uis.unesco.org)

28 https://childmortality.org/data

29 See *Subnational investment in human capital* (www.odi.org/publications/11308-subnational-investment-human-capital) for details.
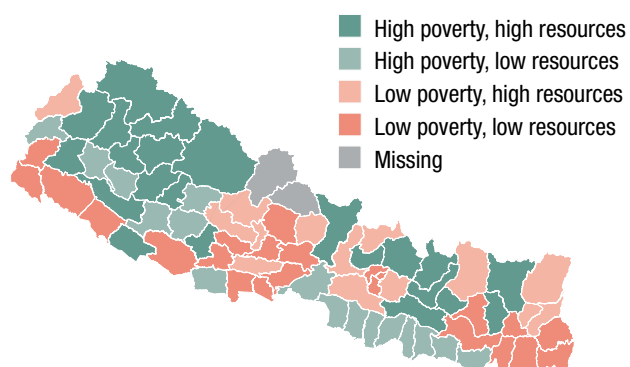
Nepal

Introduction

This case study supports the paper *Subnational investment in human capital*.

As the health and education sectors play a critical role in human capital development, particularly for the poorest people, it is vital to understand how well public resources are being targeted within these sectors. The report explores the relationship between subnational government and aid spending on health and education and the presence of multi-dimensional poverty.
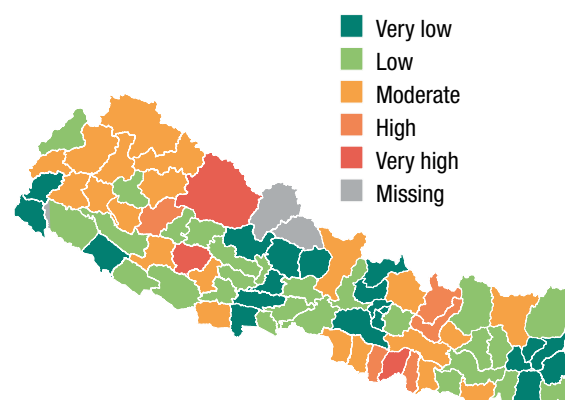
The (limited) evidence suggests that in many countries there is little relationship between need and financing. This case study explores data from Nepal. It covers ODA spending only, as coverage of government expenditure data at the subnational level was insufficient to allow for detailed analysis. This shows a need for greater transparency to enable better informed decisions on allocation.
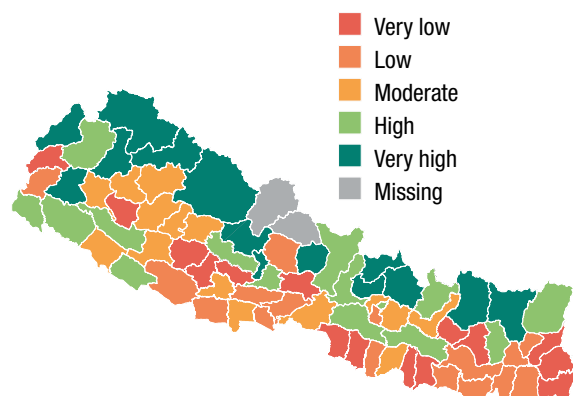
Subnational poverty and financing in Nepal

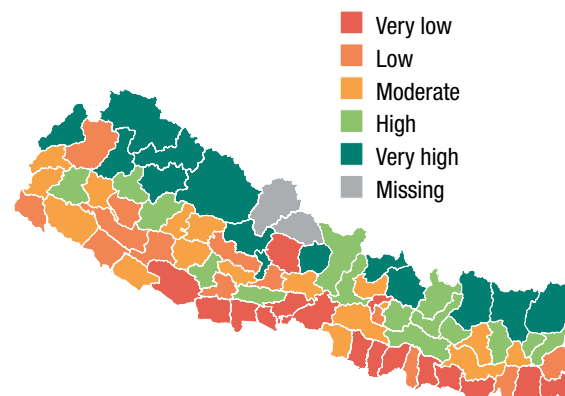**Donor subnational health and education spending per person relative to MPI in Nepal**

- High poverty, high resources
- High poverty, low resources
- Low poverty, high resources
- Low poverty, low resources
- Missing

Multidimensional poverty in Nepal

- Very low
- Low
- Moderate
- High
- Very high
- Missing

Donor subnational health spending per person in Nepal

- Very low
- Low
- Moderate
- High
- Very high
- Missing

Donor subnational education spending per person in Nepal

- Very low
- Low
- Moderate
- High
- Very high
- Missing

Country profile

- Nepal is categorised by the World Bank as a Low Income Country (LIC).
- Nepal's poverty headcount ratio is 25% (2010).[30]
- 73% of children progressed from the first to the last grade of primary school in 2016.[31]
- The mortality rate for infants was 28 per 1,000 live births in 2017.[32]
- From the latest data, global domestic spending targets for education (17% of 20% of government expenditure) and health (5.5% of 15% of government expenditure) are not being met.
- Of the combined targets, 64% was met, meeting the 61% average for LICs.[33]

Key findings and implications

- There is a slightly negative correlation between ODA spending on education and the multidimensional poverty index. While the correlation is only slight, it shows that ODA is not being spent where need is greatest.
- As detailed analysis shows,[34] average years of schooling decline as ODA per capita declines. This raises concerns about educational outcomes, particularly given the vital role assigned to education in the Human Capital Index and highlights the importance of financing.
- There is a stronger negative correlation between ODA spending on health and need. As an example, ODA is slightly lower to regions with higher child mortality rates. Causation is impossible to establish at this level, influenced by numerous factors including challenging geography in some parts of the country, and the difference in per capita ODA is relatively small, but regions with very high levels of child mortality and lower than average levels of funding raise serious concerns.
- Greater transparency of aid data through International Aid Transparency Initiative and aid information management systems is necessary to allow more nuanced analysis and to provide valuable information for more efficient government planning.
- Greater alignment between the allocation of resources for education and health can be beneficial in development outcomes. In Nepal, it appears there is significant room for improvement in the progressive allocation of both health and education ODA.

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30 https://data.worldbank.org/indicator/SI.POV.NAHC?locations=NP&view=chart.

31 UNESCO Institute for Statistics (http://uis.unesco.org).

32 https://childmortality.org/data

33 See *Subnational investment in human capital* (www.odi.org/publications/11308-subnational-investment-human-capital) for details.

34 See annex A of the full report at www.odi.org/publications/11308-subnational-investment-human-capital for data and analysis.
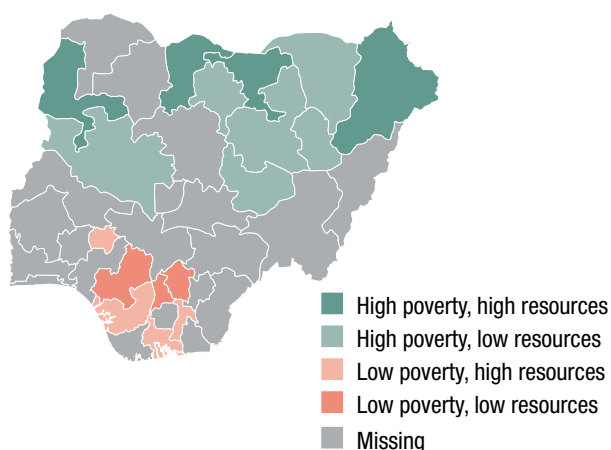
Nigeria

Introduction

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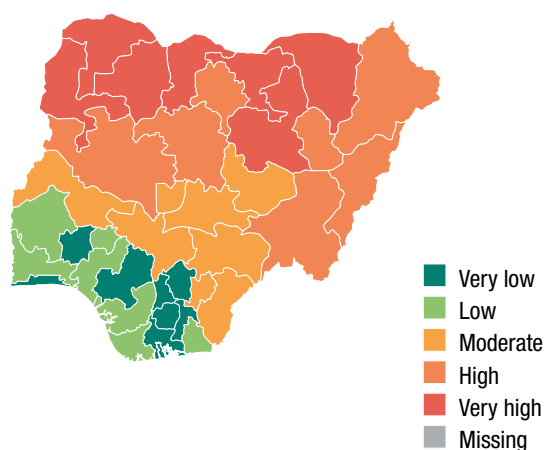
The (limited) evidence suggests that in many countries there is little relationship between need and financing. This case study explores data from Nigeria and government expenditure. However, data was unavailable for some states and difficult to gather for others, so this study only covers a selection of regions with the highest and lowest levels of poverty.
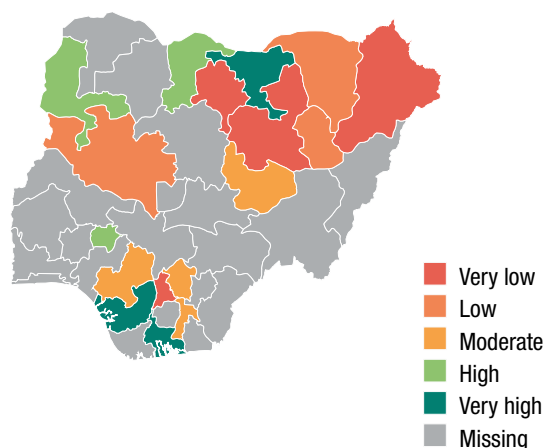
Subnational poverty and financing in Nigeria

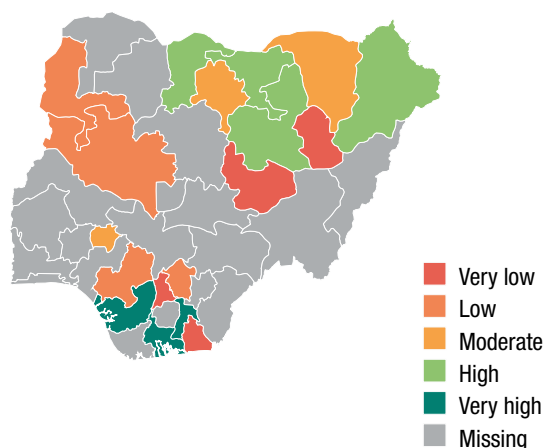### Government subnational health and education spending per person relative to MPI in Nigeria

- High poverty, high resources
- High poverty, low resources
- Low poverty, high resources
- Low poverty, low resources
- Missing

Multidimensional poverty in Nigeria

- Very low
- Low
- Moderate
- High
- Very high
- Missing

Government subnational education spending per person in Nigeria

- Very low
- Low
- Moderate
- High
- Very high
- Missing

Government subnational health spending per person in Nigeria

- Very low
- Low
- Moderate
- High
- Very high
- Missing

Country profile

- Nigeria is categorised by the World Bank as a Lower Middle Income country (LMIC).
- Nigeria's poverty headcount ratio was 46% in 2009, down from 48% in 2003.[35]
- In 2010, 34% of children were not enrolled in education.[36]
- The mortality rate for infants was 65 per 1,000 live births in 2017.[37]
- From the latest data, global domestic spending targets for education (6.54% of 20% of government expenditure) and health (5.3% of 15% of government expenditure) are not being met.
- Of the combined targets, 34% was met, lower than the 67% average for LMICs.[38]

Key findings and implications

- There is a slightly negative correlation between MPI and government spending on health and education, suggesting resources are not being spent where need is greatest.
- Total ODA and MPI also show a small negative correlation. While the correlation is only slight, it shows that ODA could be better targeted based on need.
- Looking in more detail at ODA from the World Bank, there is a positive relationship between need in the poorest districts and higher spending. The degree of difference is small and does not represent a statistically significant finding but does suggest some greater allocation to need.
- More should be done to allocate spending to meet need. Given Nigeria's predicted poverty levels in 2030 and that the country is predicted to be one of the two that will have significant levels of extreme poverty in 2050,[39] meeting this need should be a pressing political issue.
- Statistical capacity and the availability and accessibility of data will be essential to improve targeted resource allocation; knowing who and where the poorest people are, how well interventions are reaching them, and understanding the impact of those interventions will be vital.

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35 https://data.worldbank.org/country/nigeria.

36 UNESCO Institute for Statistics (http://uis.unesco.org).

37 https://childmortality.org/data

38 See *Subnational investment in human capital* (www.odi.org/publications/11308-subnational-investment-human-capital) for details.

39 www.gatesfoundation.org/goalkeepers/report.
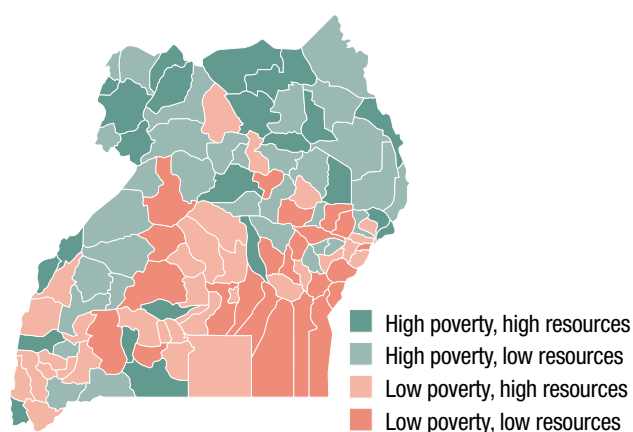
Uganda

Introduction

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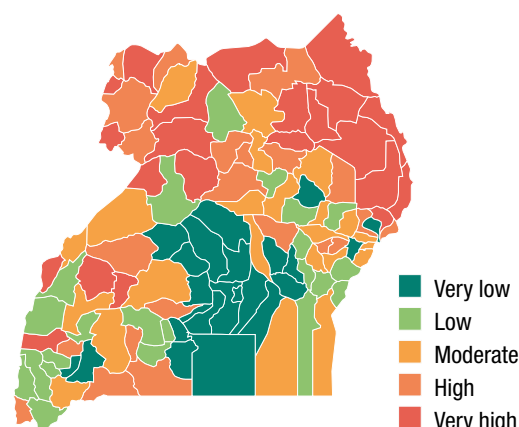
The (limited) evidence suggests that in many countries there is little relationship between need and financing. This case study explores data from Uganda. It covers government spending only as there was not sufficient coverage of aid data at the subnational level to allow for detailed analysis.
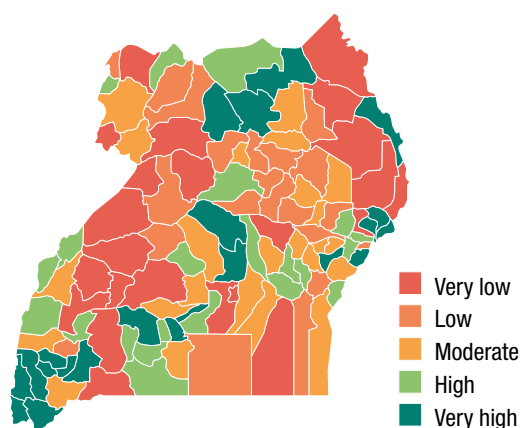
Subnational poverty and financing in Uganda

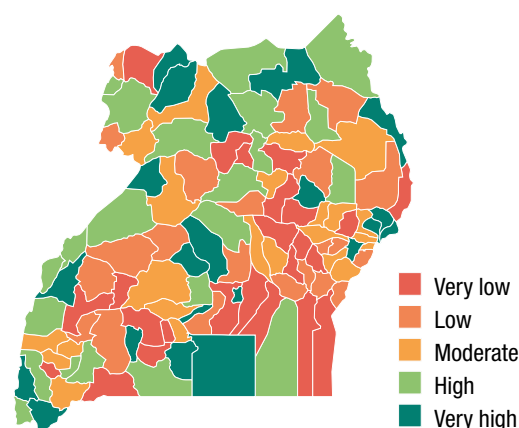**Government subnational health and education spending per person relative to MPI in Uganda**

- High poverty, high resources
- High poverty, low resources
- Low poverty, high resources
- Low poverty, low resources

Multidimensional poverty in Uganda

- Very low
- Low
- Moderate
- High
- Very high

Government subnational education spending per person in Uganda

- Very low
- Low
- Moderate
- High
- Very high

Government subnational health spending per person in Uganda

- Very low
- Low
- Moderate
- High
- Very high

Country profile

- Uganda is categorised by the World Bank as a Low Income Country (LIC).
- Uganda's poverty headcount ratio is 21% in 2016, up from 20% in 2012.
- 35% of children progressed from the first to the last grade of primary school in 2016.[40]
- Life expectancy at birth was 59 years in Uganda in 2016.[41]
- The global domestic spending targets for education (2014 11% of 20% of government expenditure) and health (2015 5.6% of 15% of government expenditure) are not being met.
- Of the combined targets, 47% was met, lower than the 61% average for LICs.[42]

Key findings and implications

- There is a negative correlation between government education spending and MPI, meaning that spending is not targeted to areas of greatest need.
- In fact, in areas with greater numbers of people living below the poverty line, per capita government spending is lower, showing a need for better alignment between government resource allocation and need.
- Conversely, the data shows that greater government spending is linked to higher net enrolment rates and greater space for children to read and write, suggesting there are benefits associated with higher level of spending.
- Government spending on health positively correlates with MPI, showing a better alignment of spending with need.
- As government health spending declines so too do health outcomes, suggesting again that greater investment has benefits, and with potential positive knock on effects to human capital development.
- As there was not sufficient coverage of aid data at the subnational level to allow for detailed analysis, there is a clear need for greater transparency of that data through IATI and AIMs. This would allow much more nuanced analysis and provide valuable input data for more efficient government planning.

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40 UNESCO Institute for Statistics (http://uis.unesco.org).

41 https://data.worldbank.org/indicator/SP.DYN.LE00.IN?locations=UG

42 See *Subnational investment in human capital* (www.odi.org/publications/11308-subnational-investment-human-capital) for details.