Delivering on the promise

Leveraging natural resources to accelerate human development in Africa

AFRICAN DEVELOPMENT BANK GROUP

BILL & MELINDA GATES *foundation*

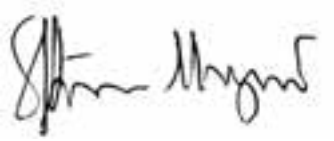
Preface

History shows that an abundance of natural resources does not necessarily improve a country's human development. Natural resource-rich countries in Africa tend to have lower average life expectancy and higher maternal mortality and under-five mortality rates than non-natural resource-rich countries with equivalent incomes. This is just not acceptable.

Most governments have expressed a commitment to turn new revenues from natural resources into outcomes that matter for their citizens: better health, better education, and access to quality social services. They also want to make sure the discovery of natural resources translates into more and better jobs and business opportunities. Yet they are also aware that delivering on those commitments demands tough and sometimes complex policy choices: balancing the need for social sector investments with the needs of other sectors across the economy; being transparent and carefully managing citizen expectations; and adequately distributing benefits both between extractives and non-extractives communities and between current and future generations.

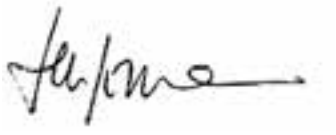
In the light of these challenges, this report makes three fresh contributions on how to leverage oil, gas, and mineral resources to accelerate human development progress in Africa. First, it provides a broad estimate of the possible magnitude and timing of potential new extractives revenues in Ghana, Liberia, Mozambique, Sierra Leone, Tanzania, and Uganda – six countries that have recently discovered significant oil, gas, or mineral resources. Second, it presents a practical policy framework for helping governments to better link their revenue management decisions to their human development agendas. Third, it highlights ways to leverage extractives companies' direct spending, including procurement and employment throughout the lifecycle of extractives projects, to ensure businesses and individuals are ready to harness the benefits.

The tools and analytics presented in this report are intended to help African governments with newly discovered natural resources to make a bigger yet safer bet on investing in human development outcomes. As the title of the report indicates, we hope this guidance will empower African leaders to deliver on the promise and transform new natural resource discoveries into healthier and more productive lives.



Steve Kayizzi-Mugerwa
Ag. Chief Economist and
Vice President

The African Development Bank



Mark Suzman
President of Global Policy, Advocacy
and Country Programs

Bill & Melinda Gates Foundation

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Disclaimer
This report focuses on one part of the extractives debate and reflects research gaps identified by the contributors within their areas of expertise. The contributors are not held responsible for the views expressed in this report. This report is based on research, analytics, and expert consultations completed during the writing of the report and the eight background papers. However, this report should not be considered as an alternative to in-depth technical expertise. Any mention of specific entities, individuals, source materials, trade names, or commercial processes in this publication does not constitute endorsement by the AfDB or the BMGF.

For further information

AfDB
Pietro Toigo
Chief Macro-Economist
African Natural Resources Center

Email: p.toigo@afdb.org

BMGF
Rodrigo Salvado
Senior Program Officer
Development Policy and Finance

Email: rodrigo.salvado@gatesfoundation.org

Jessica Brinton
Policy Outreach Associate

Email: jessica.brinton@gatesfoundation.org

For media inquiries
Email: media@gatesfoundation.org

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LOVE LOVE LOVE LOVE

Key policy messages

This report frames a complex chain of policy decisions that are needed to transform discoveries of oil, gas, and mineral resources into improved human development outcomes. The following **seven key policy messages** have emerged from the research, policy dialogues, and individual consultations that shaped this work:

1. **Define – and commit to – clear human development goals linked to natural resources.** In most cases, countries facing new oil, gas, and/or mineral discoveries have already articulated – and costed – the human development ambitions included in their national plans. Regardless of whether they are new or existent, a sustained focus on concrete and achievable goals is crucial for keeping policy-makers on track as they work through the sequence of policy decisions involved in natural resources management.

2. **Make use of the multiple channels to convert natural resources into human development outcomes.** Revenues received from natural resources allow for increased public spending in areas directly related to human development, including health, education, and social protection – but can also support growth and diversification for sustained spending over the long term. Industry activities such as employment, procurement, infrastructure spending, and social investment offer additional opportunities that governments can leverage to fast-track their national development goals.

3. **Have realistic expectations on the timing and magnitude of the new natural resource revenues and communicate them properly.** Although potentially significant, projections for Ghana, Liberia, Mozambique, Sierra Leone, Tanzania, and Uganda show that new revenues will not be transformational and will cover only part of the significant gaps in human development financing. This means governments will have to manage and adjust their own expectations and those of their citizens in order to avoid public pressure for early spending and other risky policy choices.

4. **Define what human development interventions are best (and possible) given the priorities and revenue projections.** Both capital investment (e.g. building schools and hospitals) and recurrent spending (e.g. cash transfers, salaries for doctors and teachers) are desperately needed across sub-Saharan Africa. However, they have different spending profiles and require tailored revenue management tools. Understanding the characteristics of natural resource revenues and priorities in country plans can help with prioritization of spending.

5. **Manage macroeconomic risks and resist spending revenues before they arrive.** Development needs are urgent and the political pressure to spend is real, yet natural resource revenues take time to come on line. Bringing forward anticipated revenues through borrowing is a common temptation, but it is risky due to volatility in prices and unexpected challenges when projects are starting up.

6. **Leverage private sector investments at project sites.** In mining projects – and to a lesser extent in oil and gas ones – the size of company spending compares with and may even surpass that of government revenues. Governments can make further progress on human development outcomes by building on industry spending in employment-related training, procurement and infrastructure, and partnering with companies to align social investment spending.

7. **Engage with companies in the broader economy.** It is common practice to impose mandatory 'local content' requirements on extractives firms. However, this may be less productive than creating enabling environments and improving local business capacity to take advantage of industry needs, such as by meeting international certification standards and supplying goods and services at competitive quality and cost.

Introduction

There are pressing human development needs across Africa. While some countries have made significant progress toward achieving the Millennium Development Goals, many others have not yet managed to reap the full developmental benefits of natural resource wealth. Evidence and experience suggest that the contribution of the minerals sector to Africa's socioeconomic development will remain uncertain unless deliberate steps are taken for these major assets to become a significant part of a broad-based development process.

New natural resource discoveries – oil, gas, and minerals – provide a substantial opportunity to fast-track human development progress. Updated estimates indicate that revenues from recent discoveries could contribute between nine and 31 per cent of additional government revenues for countries such as Ghana, Liberia, Mozambique, Sierra Leone, Tanzania, and Uganda over the first ten years of production. If it is smoothed, Mozambique's projected natural resource revenues could fund around half of the country's need for financing in health over the next decade. In Ghana they could potentially meet about a third of the country's combined health and education funding gaps over the same period.

However, realizing this potential is not easy and requires navigating a series of complex policy choices to establish a strong link between natural resources and improved living standards. This report aims to help policy-makers navigate through this sequence. It starts with estimates of how much revenue these natural resources might provide, when these revenue streams can be expected, and how they could be used for human development. It also goes beyond revenues to explore how industry activity itself can be leveraged to support improved human development outcomes. Human development must be kept front and center throughout this chain of policy decisions.

Box 1: Defining and measuring human development progress

Many definitions of human development have been proposed and used by theorists and organizations to compare countries' progress across time and with each other. The Oxford Poverty and Human Development Initiative (OPHI) states that, 'Human development is a process of enlarging people's choices. The most critical ones are to lead a long and healthy life, to be educated and to enjoy a decent standard of living.'

OPHI's Multidimensional Poverty Index combines a series of different human development metrics such as the proportion of households with a child of school age who is not in school, an under-five child who is lagging behind on weight-for-age, or access to electricity and improved sanitation and drinking water. Another commonly-cited measure is the United Nation's Human Development Index, which combines national income per capita with simple proxy measures for health (life expectancy) and education (years of schooling).

Despite their differences, what all of these definitions have in common is that monetary measurements – such as national income per capita, or the number of people living on a dollar a day – alone do not capture all outcomes worth caring about for societies and individuals. Such is the premise of this report: how natural resources can be leveraged to fast-track the human development agenda and thus enable broad-based, equitable, sustained growth.

Source: *Paper 1 – A framework: Human development and the links to natural resources.*

The present report is organized as follows: Section 1 discusses the main channels through which governments can harness the potential of natural resources and their relevance as the projects evolve.

Section 2 provides context for the opportunity by analyzing the likely timing and scale of revenues to come on stream from new natural resource production in Ghana, Liberia, Mozambique, Sierra Leone, Tanzania, and Uganda – six countries that have recently discovered significant reserves of oil, gas, or mineral resources and have significant human development needs.

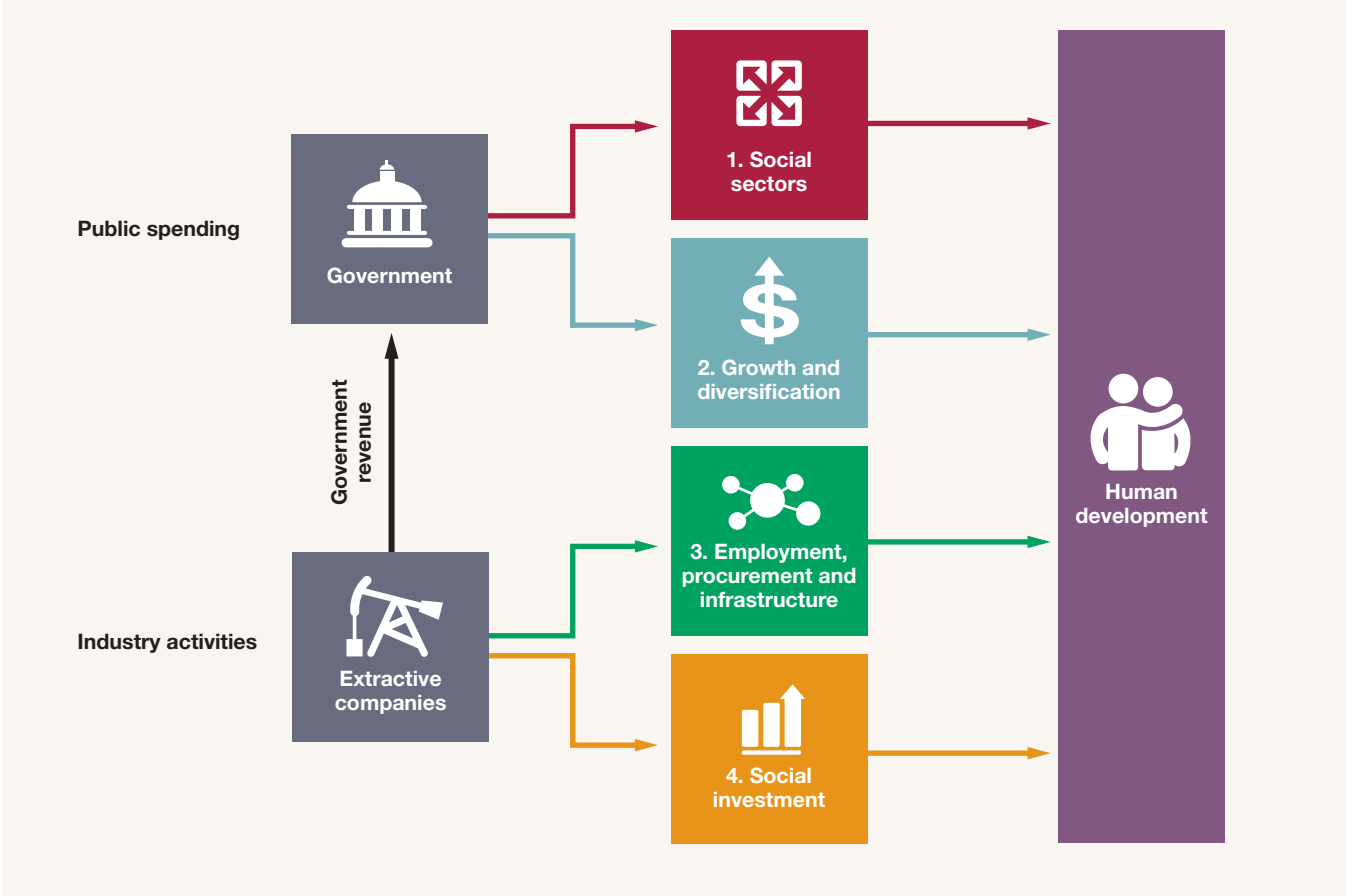
Section 3 analyzes the scale of anticipated natural resource revenues vis-à-vis the financing gaps on health, education, and social protection and introduces a diagnostic framework for guiding public investment in human development. Section 4 analyzes how company investments in local content can help accelerate the development of local economies and offers insights on how governments can steer companies' social investments. A guide to the eight papers on which this report is based completes the document.

1. Four channels for converting extractives resources into human development progress

Governments have four distinct channels for harnessing the opportunity of natural resources to achieve human development goals. Two channels result from the additional revenue that government receives from industry, which can be used for public spending (outlined below as the 'public spending' channels). The other two result from the opportunities that industry activities themselves generate (the 'industry activity' channels).

It is important to note that the four channels, which are summarized in Figure 1 and outlined below, are not mutually exclusive – a human development-focused approach to extractives management should harness the potential of all four channels.

Figure 1: Extractive activities and human development: The main channels



Source: *Paper 1 – A framework: Human development and the links to natural resources.*

Public spending: Extractives projects raise revenues for governments through taxation, royalties, and profit shares. The effectiveness of this spending in boosting human development will depend on fiscal policy decisions and the robustness of mechanisms to assess the relative merits of different spending options, given unique local contexts. Within an appropriate macroeconomic framework, new natural resource revenues allow for additional public spending in two important areas that enhance human development in both the short and long terms:

#1 – Public spending in social sectors: Governments can spend natural resource revenues on interventions that directly target human development – in health, education, and social protection. Prioritizing social sector spending is essential to ensure that economic development is broad-based and benefits the poorer population segments.

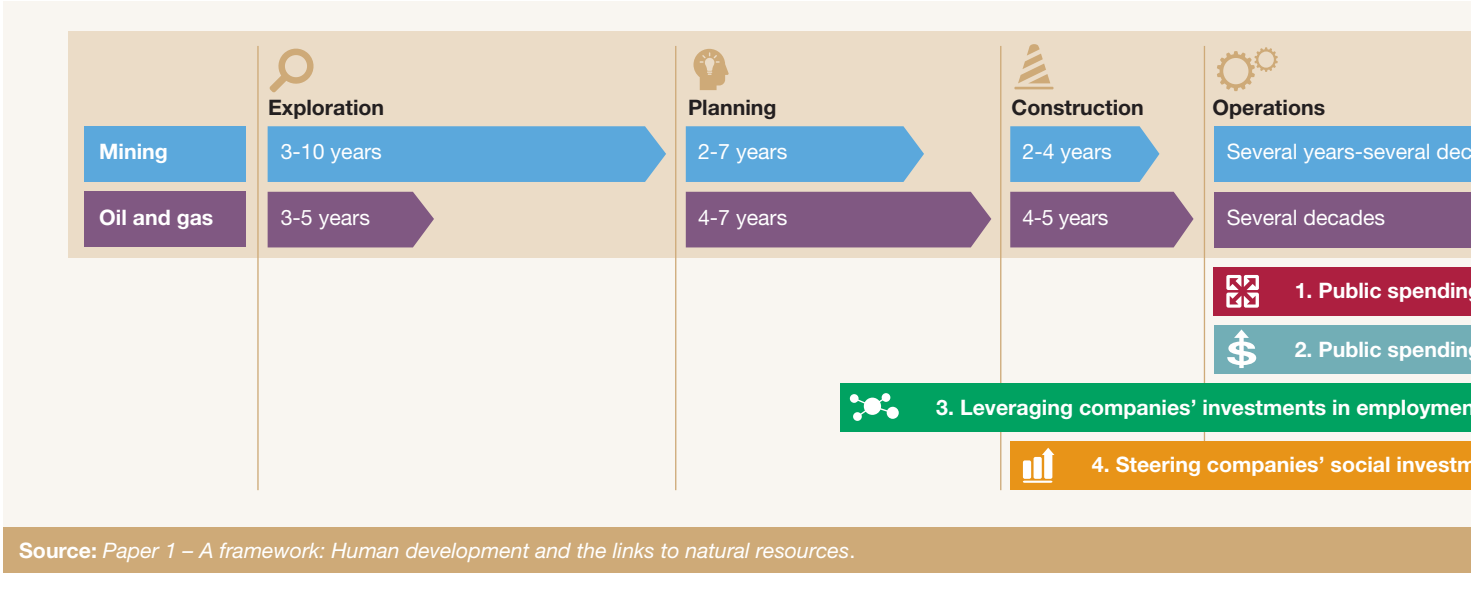
#2 – Public investment in growth and diversification: Governments can also use additional natural resource revenues to invest in support for diversification and economic growth by strengthening non-natural-resource sectors of the economy. A healthy and growing non-natural-resource economy is essential if social sector spending to improve human development is to be sustained.

Industry activities: Governments also have opportunities to leverage activities undertaken by the industry itself. Public policy decisions can help harness these opportunities by:

#3 – Leveraging companies' investments in employment, procurement, and infrastructure: During construction and operations, complementary investments in infrastructure, as well as strategies to encourage employment of local people and procurement from local firms, can leverage industry spending to boost local and national economies and improve incomes. This is especially true in the mining sector. Investments in skills and enterprise development and the creation of an enabling environment will be particularly important to support local job creation for enhanced human development.

#4 – Steering companies' social investments: Extractives companies typically make 'social investments' to gain local support, such as building schools and hospitals or funding local business development initiatives. While relatively small, such investments can still be meaningful as they tend to be targeted to specific, and sometimes vulnerable or remote, populations. Interventions often directly target improvements in health, education, or incomes for local populations and have the potential to enhance human development for these populations.

Figure 2: Extractives project lifecycles and the four channels



Source: *Paper 1 – A framework: Human development and the links to natural resources.*

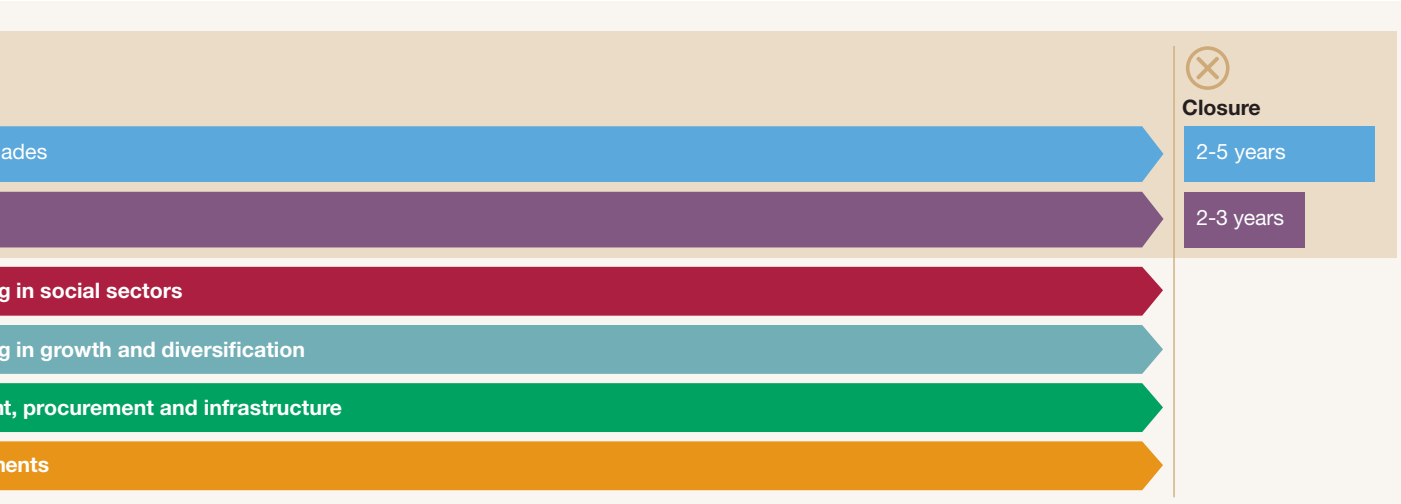
Each channel is important, but their relative importance varies across a project's timeline. As shown in Figure 2, government revenue typically starts to accrue only when the operations stage is reached. Well before this, there is scope to invest in training and skills development to leverage industry activities to boost human development. However, policy preparations and decisions in all channels need to start early in the project cycle.

The focus of this report is on channels #1 (public spending in social sectors) and #3 (leveraging of companies' investments in employment, procurement, and infrastructure). As Box 2 shows, channel #2 – public spending on growth and diversification – is fundamentally important, as broad and inclusive growth in the non-natural-resource economy is essential to sustain strong human development outcomes. However, the challenge of nurturing economic growth is explored at length in other reports and is not the focus of the current one. Channel #4 is outlined at the end of the document but, being relatively small and with more localized impacts, receives relatively less attention.

Box 2: Indonesia and Nigeria – contrasting experiences in non-natural-resource growth and economic diversification

Indonesia and Nigeria experienced oil booms at around the same time. Nigeria became increasingly dependent on the oil sector, and its agricultural sector suffered badly because of decreased international competitiveness – one of the symptoms of Dutch disease. Meanwhile, Indonesia countered the risk of Dutch disease by using its oil and gas revenues to invest in rural infrastructure (including schools, roads, and irrigation) and to subsidize fertilizers, boosting agricultural productivity and creating jobs. It took Nigeria until 2008 to reach the level of human development that Indonesia had achieved by 1980, from comparable starting points before the discovery of oil.

Source: *Paper 1 – A framework: Human development and the links to natural resources.*



2. Timing and magnitude of newly discovered natural resources in Africa

This section analyzes the magnitude and timing of future revenues from oil, gas, or mineral resources in Ghana, Liberia, Mozambique, Sierra Leone, Tanzania, and Uganda. These six countries were chosen as examples of countries that have recently discovered new sub-soil natural resources; where investment has either recently started or looks likely to start; and where policy frameworks in the relevant sectors are still being developed.

Results show that the anticipated revenues are potentially substantial, although not transformational or comparable to the Gulf States. In terms of higher government revenues and export earnings, they are big enough to challenge macroeconomic stability and provide an opportunity to improve human development outcomes. As presented in the graphs on pages 10-11, across the six countries the mid-point projection estimates show that over the first ten years of production revenues will be in the range of:

- 2 per cent to 6 per cent of GDP per year;
- 9 per cent to 31 per cent of existing government revenues per year; and
- US$ 20 to US$ 52 per capita per year.

Price fluctuations will impact the amount and timing of revenues available. To illustrate some of the uncertainty attached to these revenues, this report's projections show high and low price scenarios together with mid-point price projections. In these scenarios, revenues instead vary between 0 and 11 per cent of GDP per year, or 0 to 48 per cent of existing government revenues per year, across the six sample countries during the first ten years of production (Sierra Leone is where the percentage could drop as low as zero, as production is not expected to be economically viable in the low price scenario). The projections further show that higher-than-expected prices could result in an earlier peak in government revenue.

Significant differences exist in the relative importance of estimated revenues across the six countries, as seen in particular in Mozambique and Tanzania. In the case of Mozambique, over the first ten years of production, revenues are projected to be US$ 21 to US$ 82 per capita per year. This would add between 2 and 8 per cent to GDP per year. Another way of looking at it is that government revenues would increase by between 7 and 28 per cent per year. In Tanzania, revenues are not likely to add more than 13 per cent to existing government revenues during the first ten years of production; in per capita terms this could be between US$ 15 and US$ 32 per capita per year.

There is a large amount of diversity in the timing of revenues across the sample countries. Some countries, such as Ghana and Sierra Leone, are already receiving revenues from recently developed reserves; others, such as Tanzania, will have to wait for at least a decade before their revenues arrive. Assuming investment actually goes ahead, it can take more than a decade from discovery to when production starts, and a further seven to 12 years for production to reach its peak. In Liberia, natural resource revenues are estimated to remain high as a percentage of GDP for an extended period; in Uganda the projections show high estimated revenues but for only a short period; while Tanzania has lower projected revenues but these extend over several decades.

Relative to the size of the sample countries' economies, the opportunities created from oil and gas and from mining are similar. In absolute US$ terms, the oil and gas projects are much larger than the mining ones, although the small size of the economies with mining projects means they are of comparable size relative to GDP.

Risk and uncertainty

It should be stressed that these are ballpark estimates of orders of magnitude, not forecasts. Magnitudes will be of the right order but inevitably the specific numbers will be wrong, as any attempt at long-term projection is subject to uncertainties. The uncertainties that will shape the scale and timing of these revenues include:

- **Volatile and unpredictable commodity prices.** After the prices of many commodities more than doubled between 2000 and 2013, despite a dip during the financial crisis, the sharp drops in oil and iron ore prices during the second half of 2014 were a surprise to most analysts. Even if demand continues to increase in the long term, uncertainties about supply, as well as the time delays between new investment and production, mean that prices are fundamentally unpredictable. The lower prices go, and the longer they remain low, the greater the chance of projects being cancelled.

- **Unforeseeable shocks.** The recent Ebola epidemic, which badly affected two of the sample countries, is a reminder that unforeseeable shocks can make project execution difficult – for example, in the case of Ebola, by leading to restrictions on the movement of goods and labor. Such shocks can also increase production costs, which could make some deposits unprofitable.

- **Potential discovery or development of additional reserves.** Much remains unknown about the extent of Africa's sub-soil assets, and as a project proceeds the extractives company often learns more about the geology and is able to identify further deposits. Advances in technology may also extend a project's life by bringing down the cost of accessing harder-to-reach deposits.

- **Investors' confidence in the stability, coherence and transparency of institutional and policy frameworks.** In several projects considered in these projections, the contractors have yet to make their 'final investment decisions'. If investors fear unpredictable changes in the legal or regulatory 'rules of the game', the decision to invest will be at best delayed and at worst never taken, and projected revenues could yet fail to materialize.

These risks and uncertainties point to the need for careful and effective management of public expectations. When new natural resources are discovered, the public can easily expect to feel rich imminently, leading to pressure on politicians to meet their expectations by spending money in visible ways before new revenues have materialized. Lessons from other countries show that it takes time to build the capability to invest in long-term outcomes. Realistic expectations need to be fostered on the likely effects of new natural resource discoveries on public finances, the timescale over which revenues will begin to materialize, and the program of legislative, regulatory, and administrative strengthening that will be needed to turn natural resource revenues into higher living standards.

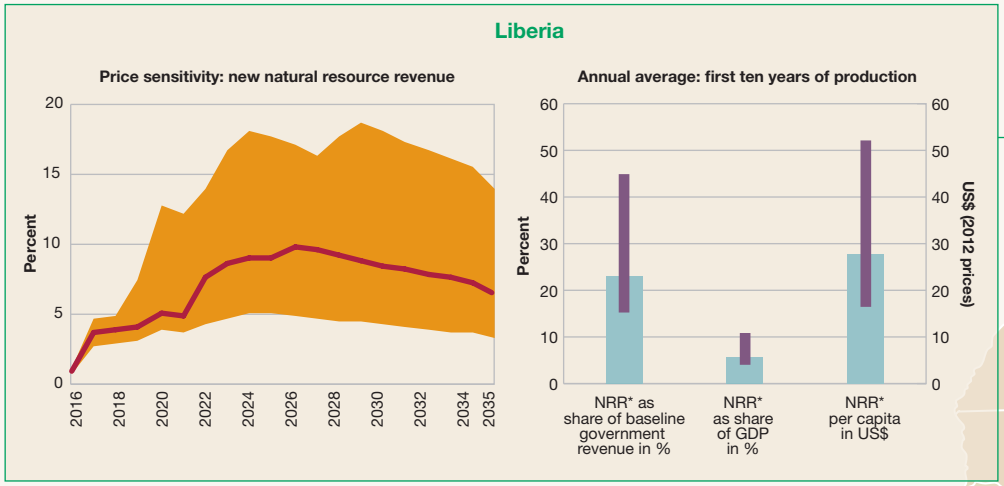
Timing and magnitude of natural resource revenues

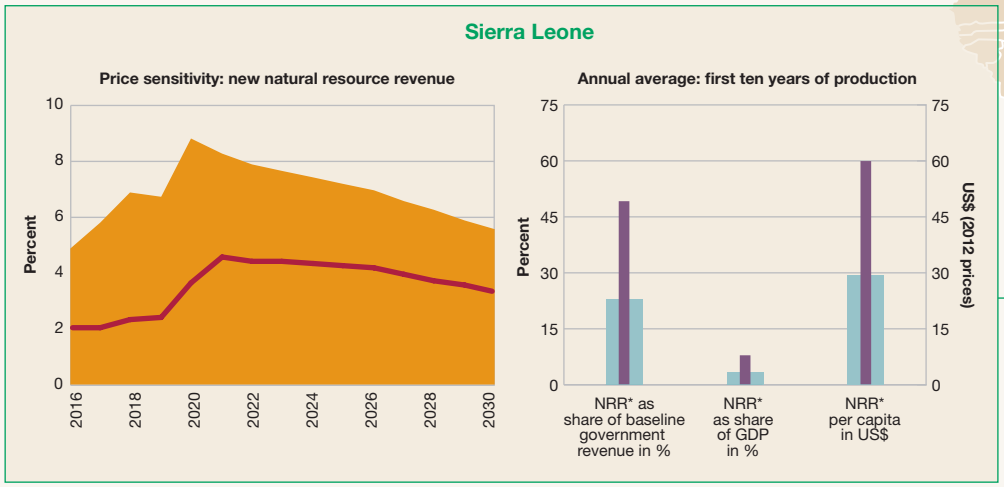
How to read the graphs

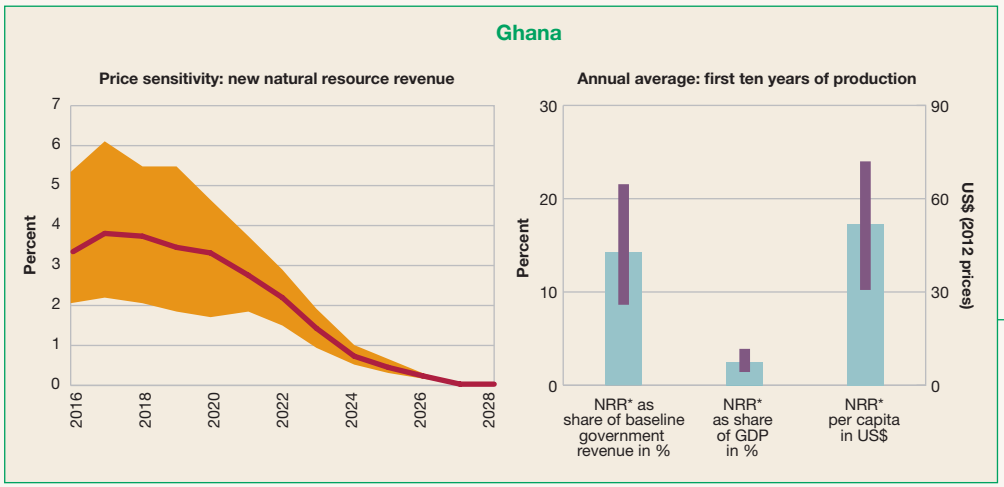
The bar graphs show low, mid-point, and high price scenario estimates for natural resource revenue over the next ten years, in dollar terms and as percentages of GDP and existing government revenue.

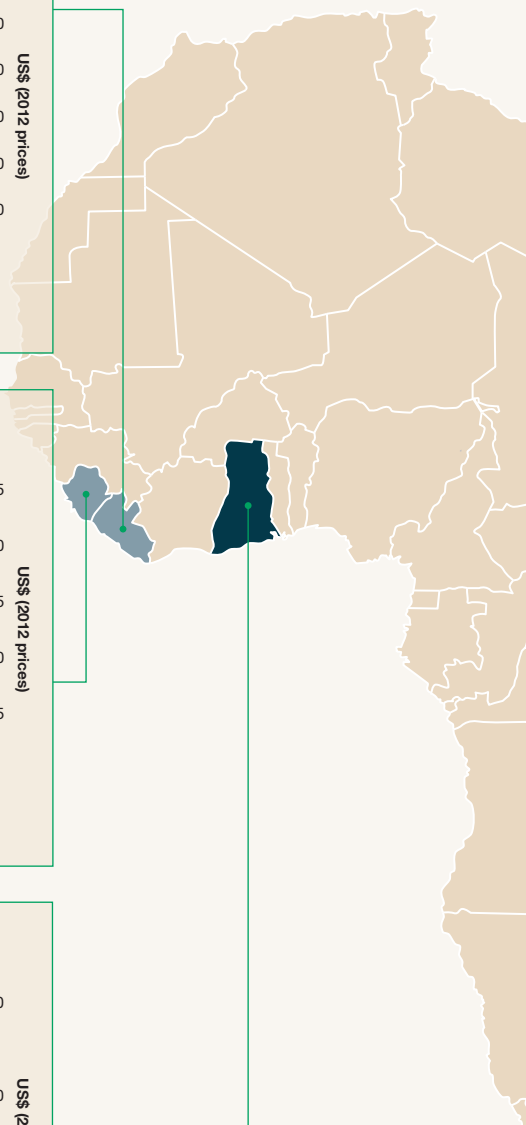
The line graphs show when the natural resource revenue is expected to come on stream. For example, in the case of Uganda under the mid-point price scenario, revenue is expected to start coming in around 2019, peak around 2026, and slowly decline until being exhausted around the late 2040s.

The source of natural resource revenue is color-coded: Oil Iron ore LNG









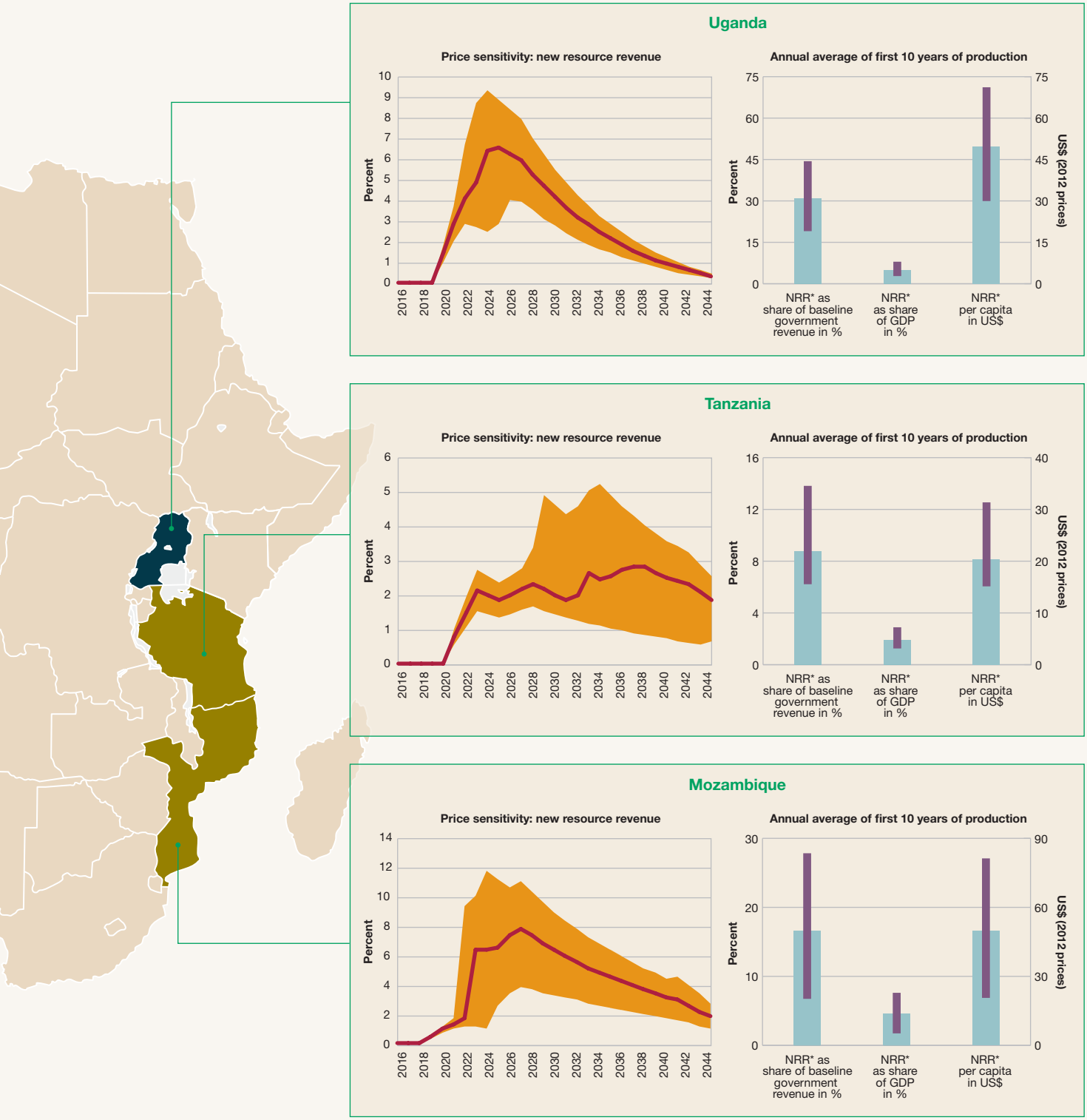
*NRR = Natural resource revenue.

Price assumptions

The mid-point price scenario estimates are based on assumptions of constant prices of oil, gas, and iron ore. These are: for oil, US$ 80 per barrel of crude oil; for LNG, US$ 11.50 per million British thermal units (mmbtu) Free-on-board in East Africa with deliveries to Japan for LNG; and for iron ore, US$ 90 per dry metric ton.

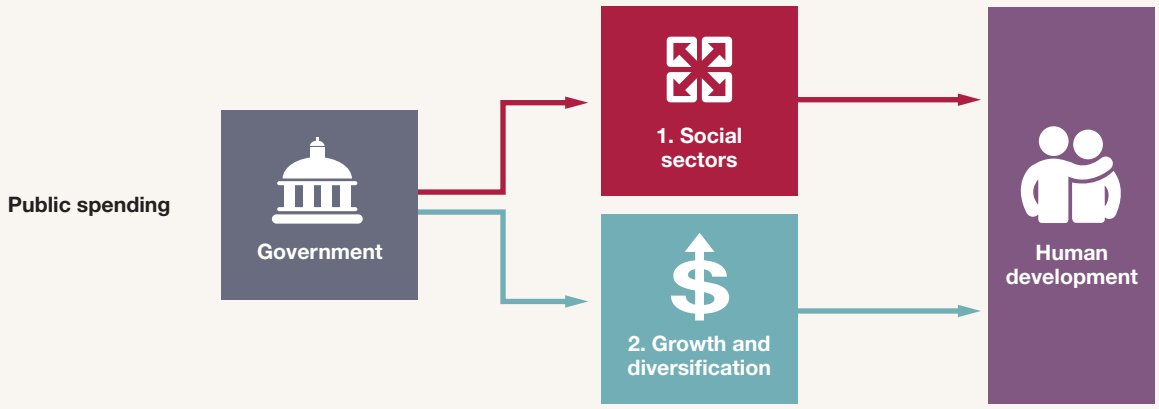
The high and low price scenarios reflect variations in the mid-point price of +/- 25 per cent.

The price assumptions are color-coded: Mid-point estimates High and low price scenarios



For further details on the data sources and assumptions used in the calculations, see *Paper 2 – Timing and magnitude of new natural resource revenue in Africa*.

3. From natural resources to human development via public spending



How can governments approach decisions about spending on social sectors – health, education, and social protection? This section provides the rationale for investing natural resource revenues in human development and compares the profile and magnitude of the expected revenues presented in Section 2 with the current health and education gaps across the six sample countries. It then places government spending choices in the context of the macroeconomic impact of new natural resource revenues. Policy-makers need to manage their country's macro-economy to capture the opportunity for improved human development through spending natural resource revenues on health and education: getting the macro-policy wrong risks having the opportunity evaporate.

Governments should spend a proportion of new revenues on health, education, and social protection because this will:

1. **Fast-track national development agendas and plans.** All six sample countries have incorporated the ambition to move toward universal health coverage and universal basic education targets within national development plans and sector strategic documents. Box 3 provides an illustration for Ghana. Most of the sample countries have also started to develop national cash transfer programs and wider social protection strategies, although – as explored below – they face large financing gaps.
2. **Create a better-educated, healthier and more productive workforce.** Beyond the short-term boost to human development outcomes that can come from spending on health, education, or social protection, such spending is expected to contribute toward broad-based economic development in the longer term.
3. **Address poverty and vulnerability, reduce inequity and inequality, and build more cohesive and politically stable societies.** The provision of adequate health, education, and social protection services can be a powerful lever to address all these objectives.

A guiding framework for spending natural resource revenues in social sectors

One of the risks for governments facing new natural resource revenues is the tendency to view them as a windfall. This can distract from results-driven questions ('what do we want to achieve?') and instead focus government attention on expense-driven questions ('what should we spend on?').

Box 3: Putting the framework to work – The case of Ghana

New natural resource revenues in Ghana could potentially cover substantial investments in the health or education sectors over the medium to longer term. The profile of the revenues appears to be gradual, which means absorptive capacity is not a high concern. What does the framework suggest about possible spending choices?

Ghana has a mature health system, with reasonable access in most areas. One option for new natural resource revenues is to extend the coverage of the National Health Insurance Fund to poorer households. Another is to tackle the growing burden of non-communicable diseases by investing in promotive and preventive care – for example, increasing the capacity of community-based services like the Community-based Heath Planning and Services to educate communities and stimulate behavior change.

Alternatively, Ghana could invest in education. While significant gains in enrolment, attendance, and completion have been made over the past two decades, quality remains a major concern. Revenue could be used to cost and implement the country's existing Education Strategic Plan 2010-2020, with a focus on inequality, or invest in higher-quality teacher training.

Source: *Paper 4 – How to use natural resource revenues to improve health and education in Africa*.

Decisions regarding public expenditure on health and education should always be based on the specific needs of the sectors and on broader national development goals. When taken in the context of new extractives discoveries, they also require alignment with the scale, timing, and predictability of the flows. For example, the expected scale of revenues will determine whether major investments or marginal improvements are a more realistic aim. Similarly, the strength of existing systems will influence policy choices about prioritizing access or quality. To guide policy-makers' decisions within each social sector, the implications of these and other key questions are summarized in a diagnostic framework presented on the following pages.

> *"One option for new natural resource revenues is to extend the coverage of the National Health Insurance Fund to poorer households."*

Diagnostic: Policy Questions

Investing natural resource revenues in health and education

Revenue characteristics

For health and education: What is the average scale of expected annual natural resource revenue as a proportion of public health and education expenditure?

- High (> 60 per cent) – Can fund major new investments.
- Medium (20-60 per cent) – Can fund core inputs and system strengthening.
- Low (< 20 per cent) – Can fund marginal improvements.

For social protection: What is the average scale of expected annual natural resource revenue as a proportion of GDP?

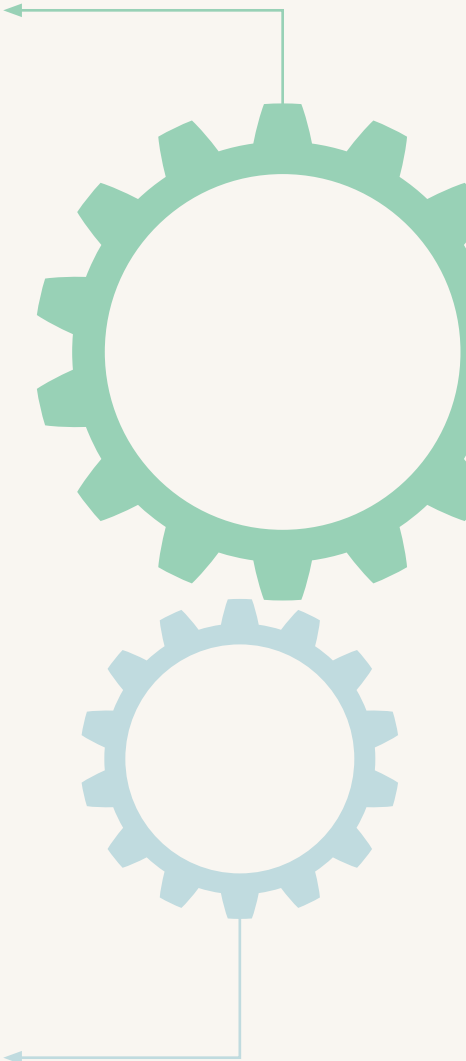
- High (> 5 per cent) – Could fund extensive system of social protection.
- Medium (1-5 per cent) – Could fund a basic social protection system, possibly through a national flagship cash transfer program.
- Low (< 1 per cent) – Could fund cash transfer program pilot, or regionally targeted smaller program.

How long will the natural resource revenues last?

- Short term (<10 years) – Cannot fund recurrent expenditures.
- Medium/long term (>10 years) – Can commit to longer-term investments and recurrent expenditures.

Is the government able to smooth out the volatility of natural resource revenues?

- Yes – Can take on recurrent expenditures.
- No – Better suited to capital investment and discrete reforms or system strengthening.



Funding and earmarking

Are other funding sources for health, education, and social protection likely to decline over the period of expected natural resource revenue?

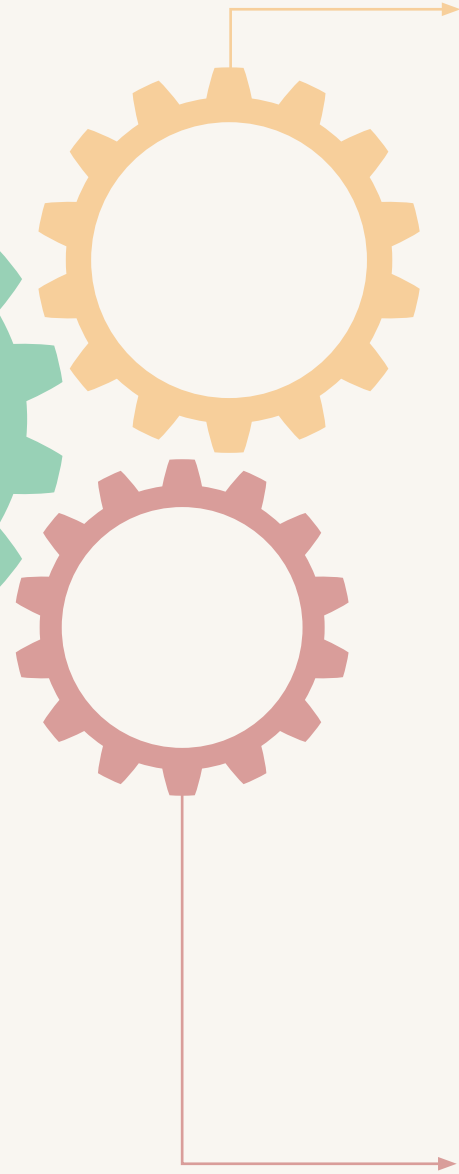
- Yes – Natural resource revenues can substitute for current sources and fund existing commitments.
- No – Natural resource revenues are supplementary and can focus on currently neglected areas.

Are funds for recurrent costs of health, education, and social protection systems regular and reliable?

- Yes – These funds can be invested in existing systems, channeling natural resource revenues to front-line providers.
- No – Consider reforming funding of existing systems.

Is there a willingness to earmark funds?

- Yes – Natural resource revenues could be put within a health, education, or social protection fund to fund priority areas.
- No – Each year, the sector needs to present its case for additional funding.



Government planning

Is there a medium-term expenditure framework, national health financing strategy, social protection strategy, or education sector strategic plan?

- Yes – Fund priority areas in plans that are not supported by existing resources.
- No – Conduct assessment to establish priorities.

Are the private, not-for-profit, and informal sectors' contributions well aligned with public health, education, and social protection policies?

- Yes – Natural resource revenue can fund or extend public provision.
- No – Natural resource revenue can fund pilots to change incentives for the non-state sector and test new regulatory approaches.

Characteristics of health, education, and social protection systems

Are health, education, and social protection systems established and universal or rudimentary and patchy?

- Established and universal – Focus on improving quality, efficiency, and equity.
- Rudimentary and patchy – Focus on getting full coverage of basic services for health and education, integrating fragmented programs, and developing a national flagship program for social protection.

Do health, education, and social protection systems have sufficient capacity (physical, technological, and human) to operate effectively and efficiently at scale, adapt to new needs, and be resilient to shocks?

- Yes – Funds should go to improving and extending range of services.
- No – Systemic investments are needed.

Is financial protection for health- and education-related expenditures currently adequate? (For example, household stipends or school grants exist, or less than 20 per cent of total health expenditure is paid out-of-pocket.)

- Yes – Check for inequities and focus on improving quality of care and efficiency and equity of access and utilization.
- No – Fund extension of universal health and education coverage.

Do effective accountability mechanisms exist for local communities to engage with the health, education, and social protection systems and to ensure that the systems respond to their needs?

- Yes – These mechanisms can be used to monitor natural resource revenue use.
- No – Some part of the natural resource revenue expenditure should be earmarked to support local planning and monitoring mechanisms.

Do demand-side constraints (e.g. financial barriers such as transport costs) prevent individuals from using existing health and education services?

- Yes – Consider using natural resource revenues to establish basic social protection (e.g. a national cash transfer program) to increase uptake of services.
- No – Use natural resource revenues to address health and education supply or address gaps in social protection provision.

For further details, see *Paper 4 – How to use natural resource revenues to improve health and education in Africa*. This framework assumes a willingness to invest in health and education.

Public spending on health, education, and social protection will improve human development outcomes only if decisions are careful, thorough, and properly budgeted. The link could be broken in many ways: a new hospital is built, with no money left over to pay nurses; more children are enrolled in school, but receive a low-quality education from poorly trained teachers; a cash transfer program fails to target those who are most in need; money is funneled through an implementing organization that is prone to corruption.

Spending money effectively depends on identifying and rectifying systemic weaknesses, and on having high-quality mechanisms to decide among competing options for specific projects and programs. Characteristics of existing systems which determine their capacity to absorb new funds productively include: the level of harmonization or fragmentation of institutional and policy frameworks; the capacity to train and support new workers; and existing systems for monitoring. Systematic and thorough project and intervention appraisals have been shown to improve the quality of spending decisions. The high quality of mechanisms for making spending decisions is a key reason why Botswana's use of natural resource revenues is regarded as relatively successful (see Box 4).

Box 4: Botswana – A successful project appraisal strategy

One of the major contributors to Botswana's success in translating diamond revenues into rapid economic growth – and ultimately human development – was a firm insistence on the good-quality appraisal of each public spending project. The writing of sound appraisals, and the recognition and rejection of weak or inadequate appraisals, was a required capability for officials to advance their careers in the Ministry of Finance.

In addition, the public spending program in Botswana was careful to provide for the recurrent costs of maintenance of new public assets. There was a rule of thumb that an amount equal to 18 per cent of the capital cost needed to be budgeted in order to operate any asset—whether a school, medical facility, road, or bridge. When they went and checked later, planners found that the actual ratio required was a bit higher and so they cut back the spending program.

Source: *Paper 1 – A framework: Human development and the links to natural resources.*

How much health, education, and social protection can natural resource revenues buy?

In all sample countries, the scope for reducing funding gaps in health, education, and social protection out of natural resource revenues is substantial – although not enough to close the gaps entirely. According to our projections, if smoothed over 30 years, Mozambique's natural resource revenues could fund either a basic social protection program, most of its education needs, or around a half of the country's need for financing in health over the next decade. In Ghana they could potentially meet about a third of the country's combined health and education funding needs over the next decade. In the same time period, Liberia could more than cover a basic social protection program, or alternatively fill about a third of the combined health and education financing gap. Education and health financing gaps in Sierra Leone, Uganda, and Tanzania are large relative to projected revenues, but smoothed natural resource revenues could still cover part of the funding gaps in social sectors (see the graphs on pages 18-19).

Natural resource revenues are larger than other innovative sources of additional domestic funding for social sectors. Projected natural resource revenues are of a significantly larger order than other 'innovative' sources of funding for health and education, including taxes on remittances, mobile phone levies, or borrowing using domestic bonds. Natural resource revenues also represent a potential buffer against a predicted decline in aid donor resources for these sectors.

The finite nature of natural resource revenues deserves consideration given the recurrent nature of most social sector spending. Although social sector spending can be seen as an investment that will ultimately translate into a stronger economy, there is a case for focusing natural resource revenues on one-off investments in, for example, systems strengthening while the government finds other solutions to finance recurrent costs.

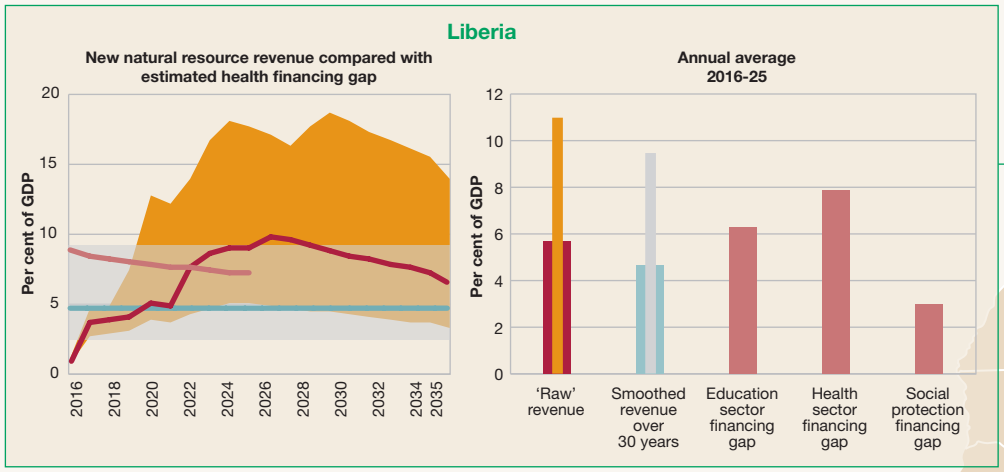
Social sector financing gaps and natural resource revenues

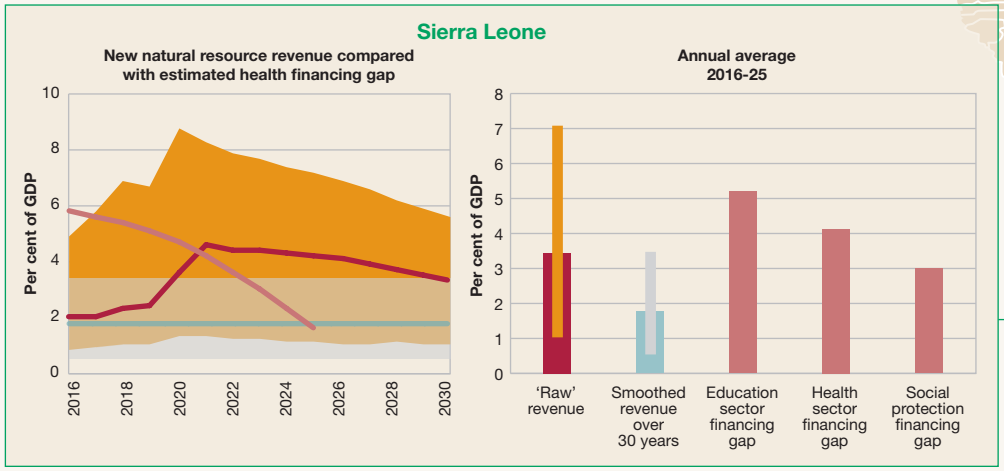
How to read the graphs

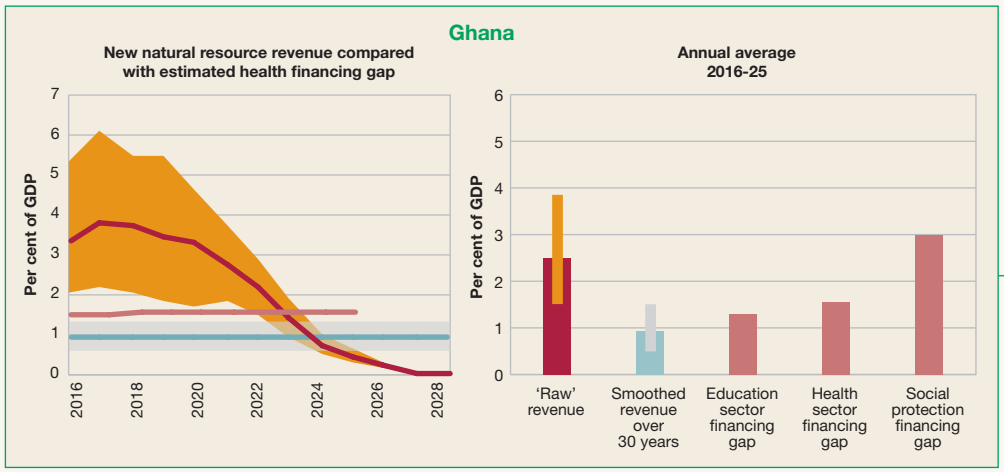
The line graphs show health financing gaps over the next decade compared to: (1) a 'raw' revenue scenario that assumes the projected natural resource revenue is left unmanaged and is allocated directly into the budget to be available for spending; and (2) a smoothed revenue scenario that assumes the government manages projected natural resource revenues to create a perfectly smooth stream of funds (as a share of GDP) over the next 30 years.

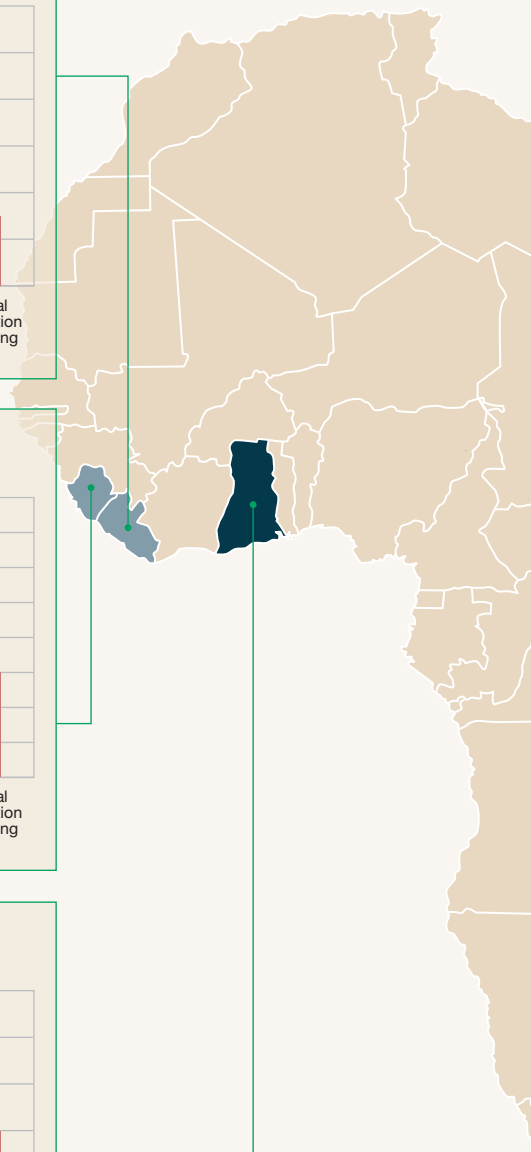
The bar graphs show low, mid-point, and high price scenario estimates in the 'raw' and smoothed revenue scenarios over the next ten years as a percentage of GDP compared with financing gaps in health, education and social protection. For example, in the case of Uganda, if revenues are smoothed over the next 30 years, mid-point price scenario estimates of the country's natural resource revenue are expected to cover almost half of the estimated education financing gap or one-quarter of the health financing gap over the next decade.

The source of natural resource revenue is color-coded: Oil Iron ore LNG





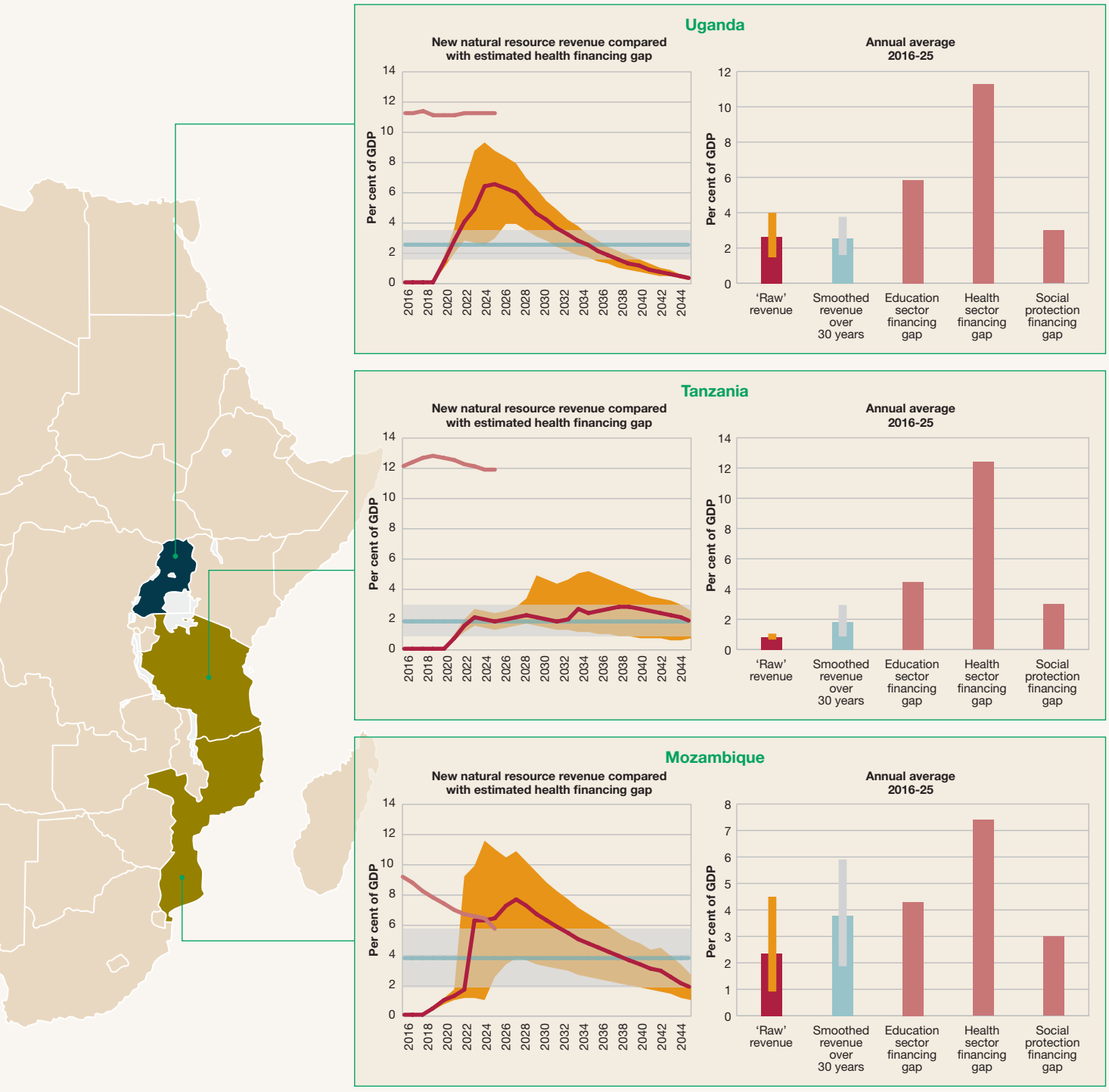




Price assumptions

The mid-point price scenario estimates are based on assumptions of constant prices of oil, gas, and iron ore. These are: for oil, US$ 80 per barrel of crude oil; for LNG, US$ 11.50 per million British thermal units (mmbtu) Free-on-board in East Africa with deliveries to Japan for LNG; and for iron ore, US$ 90 per dry metric ton. The high and low price scenarios reflect variations in the mid-point price of +/- 25 per cent. The price assumptions are color-coded:

- Smoothed revenue (high and low price scenarios)
- Smoothed revenue (mid-point price scenario)
- 'Raw' revenue (high and low price scenarios)
- 'Raw' revenue (mid-point price scenario)
- Financing gap



For further details on the data sources and assumptions used in the calculations, see Paper 4 – How to use natural resource revenue to improve health and education in Africa and Paper 5 – How to use natural resource revenues to enhance demand for public services through social protection.

Implementing social protection programs in countries with new natural resource discoveries

Social protection programs are one spending option available to policy-makers in countries with new natural resource discoveries. The pathways from effectively chosen interventions in the health and education sectors to improved human development are relatively well understood. Basic social protection programs – the most high-profile example being cash transfer programs – are a policy area in which there have been more recent innovations and where the potential fit with new natural resource revenues needs greater attention.

Such programs can affect human development outcomes in the short and long term by tackling demand-side barriers. Enabling vulnerable households to spend more has immediate effects on poverty and inequality, and psychosocial as well as monetary impacts on beneficiaries. In the long term, social protection programs can boost not only economic productivity but also health and education outcomes, by tackling demand-side barriers – that is, the reasons why people might not use health and education services – through the channels summarized in Figure 3. Improving access to health and education services often involves addressing these demand-side barriers in parallel to ensuring the supply of services.

Box 5: Designing cash transfers to promote health and education

Who should receive the transfers? Certain socioeconomic characteristics of households statistically predispose them to spend additional income in certain ways – for example, transfers could be targeted at households with girls of school age.

Should the transfer be explicitly conditional on desired behaviors? Conditional cash transfers – with conditions such as school attendance or ante-natal check-ups – have been shown to improve health and education outcomes but they are expensive and complex to administer, as they rely to a greater extent on the supply of social services. Unconditional cash transfers, which are simpler and cheaper, have also been shown to be highly effective.

Can desired behaviors be nudged? Simply giving a transfer a certain name, such as ‘child support grant’, can increase the likelihood of it being used in the desired way. So can the choice of responsible institution – for example, because Morocco’s Tayssir program was administered through schools, beneficiary households regarded it as being for educational purposes and over two years it reduced the school dropout rate by 76 per cent.

Can impact be maximized through communication? The payment can be handed out along with leaflets, SMS messages, or informational sessions giving suggestions about how to use it.

What should be the size of the transfer? In many countries the level of the transfer is set at a meaningful but modest percentage of the average expenditure of the poorest households – around 20 to 40 per cent is common. Best practice internationally is to set the benefit level in relation to the desired impacts (e.g. enough to cover the direct, indirect, and opportunity costs of accessing schooling).

How should the transfer be paid? Evidence shows that delivering transfers via electronic cards rather than physical cash may increase a household’s propensity to save. There is also some evidence that paying child benefits to a female household member is linked to an increased chance of the money being spent on children’s health and education.

When should the transfer be paid? To enhance effects on schooling, payments could be given just before the start of the school year – at a level that could help to purchase school books and uniforms – or at the start of each term, at a level that would compensate for lost household earnings if the child goes to school instead of work. It should also be considered that evidence points to the importance of the regularity and predictability of payments.

Source: *Paper 5 – How to use natural resource revenues to enhance demand for public services through social protection.*

The design of cash transfer programs can directly improve health and education outcomes, and the flexible nature of cash transfer programs means they can be designed to target specific human development outcomes (see Box 5). In countries with new natural resource discoveries and large human development needs, this is one reason why they may be more suitable than a 'direct dividend' model of distributing natural resource revenues (see Box 6).

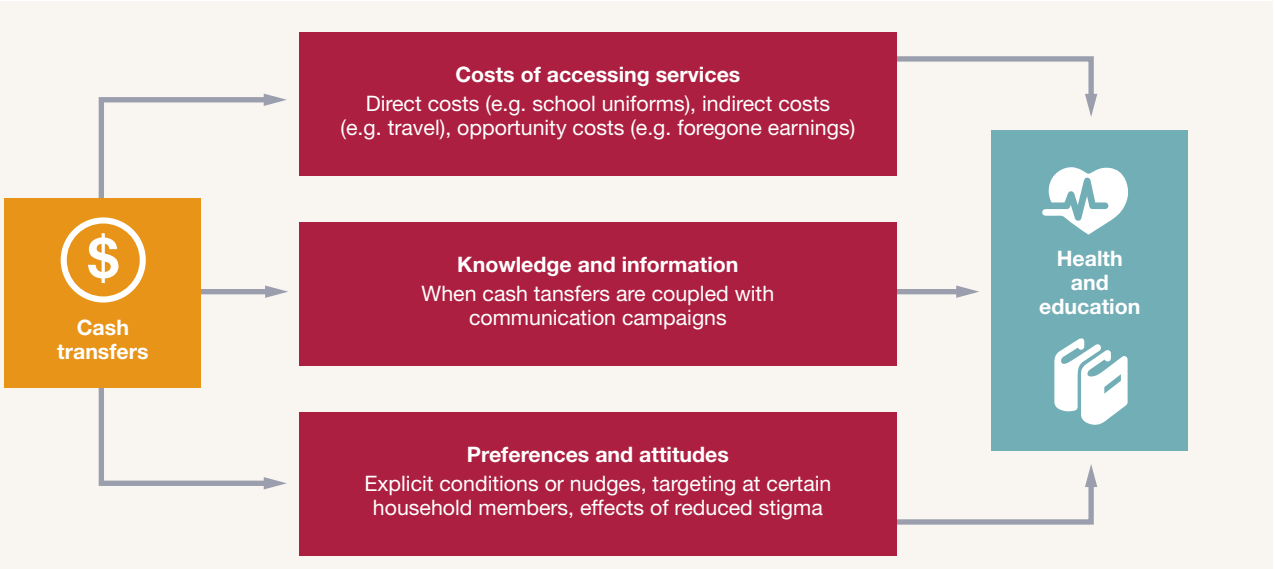
> *"In the long term, social protection programs can boost not only economic productivity but also health and education outcomes, by tackling demand-side barriers."*

Box 6: Should a 'direct dividend' model be considered?

Should new natural resource revenues simply be divided up equally and paid directly to each citizen of a country, and thereafter taxed by government? The idea has been tried in Alaska, but there are reasons to doubt its suitability for this report's sample countries. Such payments would be relatively small – in the region of US$ 13 to US$ 32 per family per quarter (after tax payments to government), according to the report revenue projection analysis. If the aim is to improve human development, there is a strong argument for a more targeted pro-poor approach, building on existing systems to concentrate benefits on the poorest segments of society.

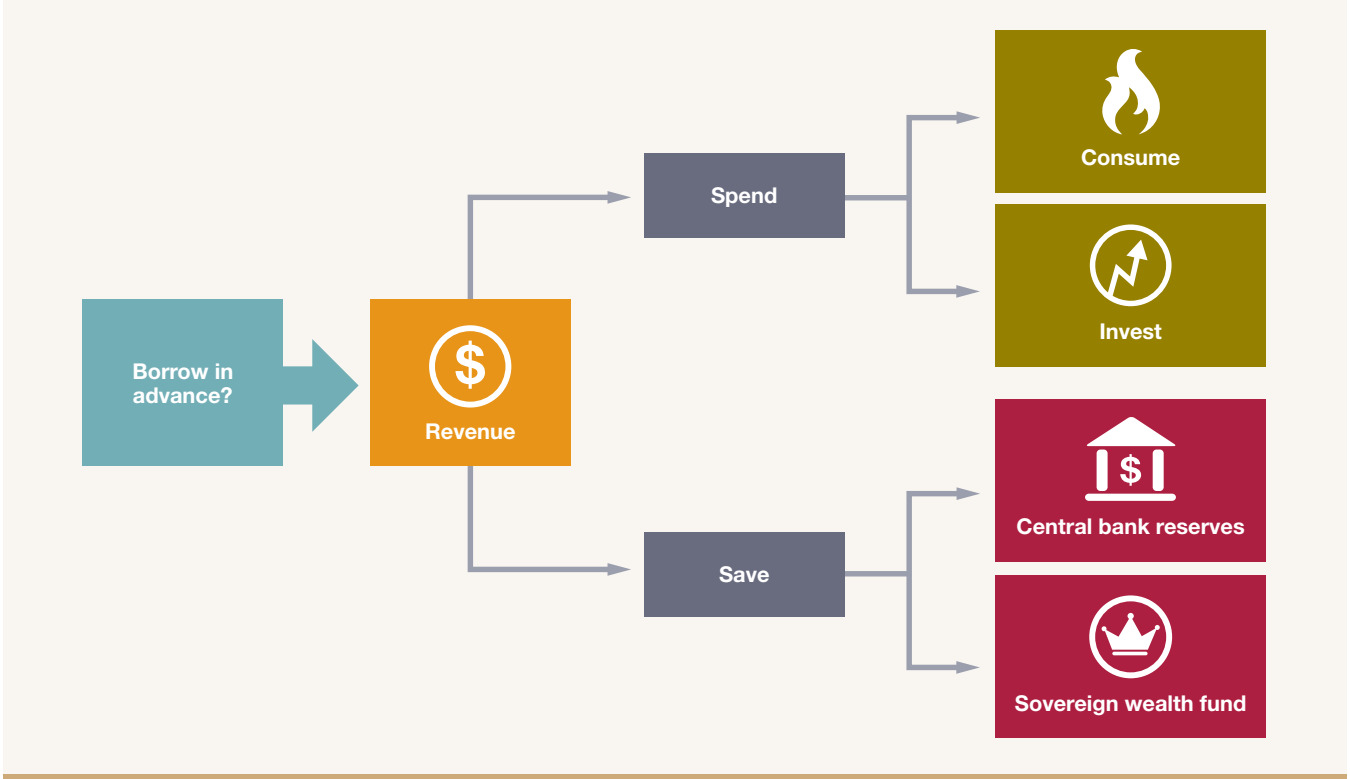
Source: *Paper 5 – How to use natural resource revenues to enhance demand for public services through social protection.*

Figure 3: The channels from cash transfers to better health and education



Source: *Paper 5 – How to use natural resource revenues to enhance demand for public services through social protection.*

Figure 4: Fiscal policy choices



Source: *Paper 3 – Natural resource revenues and macroeconomic policy choices.*

Macroeconomic considerations: managing revenues to maximize human development progress

Opportunities to dedicate new natural resource revenues to human development outcomes depend on first navigating the macroeconomic challenges presented by new natural resource revenues. Significant new natural resource revenues can cause inflation or over-strengthened exchange rates, thereby threatening the growth of the non-natural-resource economy. The institutional architecture associated with managing these risks – such as robust public finance institutions, sovereign wealth funds, spending rules, and local content policies – needs to ensure that money can be available for the public spending priorities explored above. The key macroeconomic decisions faced by government are summarized sequentially in Figure 4 and explored further below.

Should governments bring forward natural resource revenues through borrowing?

Countries expecting new natural resource production could face pressure to bring forward revenues by issuing sovereign bonds. Borrowing enables a government to increase public spending without waiting for natural resource production to start. But the benefits of such an approach need to be carefully and cautiously assessed against the future burden of debt repayment. The sustainability of new debt will depend on the cost of borrowing, the country's existing debt service burden, and the organizational capability to make spending productive: it does not make sense to borrow money only to waste it.

Ultimately, borrowing makes sense only if it will generate enough economic returns to at least cover the future interest payments. However, past experiences show immense political pressure to borrow and spend less wisely. The risk is that giving in to the pressure to borrow creates the risk of future generations missing out, as illustrated by the recent experience of Zambia (see Box 7).

Public spending to improve human development outcomes will likely generate economic returns in the longer term, but shorter-term returns are less certain. Therefore, if policy-makers decide to spend borrowed funds on social sector investments, they need to assure themselves that these investments will generate sufficient returns to cover interest payments – even in the short term.

Box 7: Zambia – The dangers of borrowing against future natural resource revenues

In 2012, Zambia borrowed US$ 750 million over ten years, ostensibly to fund infrastructure projects in energy and transportation, and based on the expectation that copper production would continue to drive economic growth. However, part of the money was diverted to increase public sector wages, which rose by 40 per cent in two years. Then, in 2014, copper prices fell by 30 per cent. Zambia's currency depreciated, leading to market concerns about its ability to service its debt and a downgrade in its credit rating. When Zambia sought to borrow an additional US$ 1 billion in 2014, it had to pay an interest rate three percentage points higher than had been the case in 2012. This increase in annual interest costs was equal to the annual costs of implementing sector-wide reform in education.

Source: *Paper 3 – Natural resource revenues and macroeconomic policy choices.*

How much should the government spend and save?

In economies with urgent needs for improved human development, the economic and political arguments for a sharp and immediate increase in spending will be strong. However, governments need to consider the capacity of their economies to absorb the new money productively. Spending too much too quickly can drive up prices, leading to inflation and the risk of Dutch disease (see Box 8).

The risk of Dutch disease is a threat to economic growth and, ultimately, also to human development progress. There is an extensive body of economic literature on how to moderate the risks of Dutch disease. The consensus is that governments need to avoid ramping up spending too fast, identify shifts in the equilibrium of the real exchange rate and implement macroeconomic policies to manage it, and avoid volatility, for instance by introducing and enforcing clear fiscal rules. However, this sort of policy package is hard to apply consistently in practice, not least because it is difficult to tell whether any given appreciation in the real exchange rate is due to the economy becoming stronger or due to its lacking absorptive capacity. Developing the skills and capacities of individuals and firms, as discussed in Section 4, can have the added benefit of increasing the economy's absorptive capacity, and thereby reducing the risks of Dutch disease.

Box 8: A short introduction to Dutch disease

When a country starts to export newly exploited natural resources, it experiences a sudden influx of foreign currency in return. To the extent that it is spent domestically, this influx of foreign currency will drive up both the nominal exchange rate and/or local prices, and, as a result, also drive up the real exchange rate – a measure of how many units of a good produced in one country can be exchanged for an equivalent good produced abroad. This makes it harder for other, non-natural-resource sectors of the economy to compete internationally. In consequence, a country's economic gains from its natural resources may be offset by losses in other sectors. The phrase 'Dutch disease' was coined by The Economist in the 1970s to describe this phenomenon in the Netherlands, where the manufacturing industry experienced a decline after the discovery of natural gas.

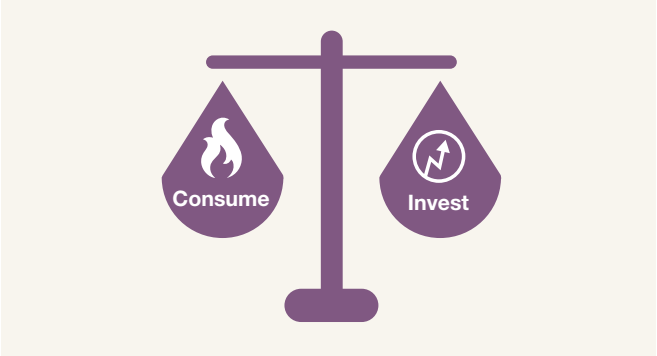
Source: *Paper 3 – Natural resource revenues and macroeconomic policy choices.*

Should saving be done through the central bank or a sovereign wealth fund?

If governments choose to save some portion of new natural resource revenues, they can do so broadly in two ways – through the central bank or by setting up a sovereign wealth fund. The simplest way for a country to save the revenues it receives in return for its natural resources is to increase the reserves of those currencies held by its central bank. Alternatively, a government can seek to protect returns by building the institution of a sovereign wealth fund.

When the expected revenues are large enough to justify saving for the long term the advantage of a sovereign wealth fund is that dividends from investments can potentially generate a permanent income stream for government and therefore for future generations. The disadvantages are that setting up and running a sovereign wealth fund involves considerable fixed costs, and it can be difficult to insulate long-term investment decisions from short-term political considerations. The benefits are likely to outweigh the costs only when the expected revenues are large enough to justify saving for the long term. When expected revenues are relatively small and the aim is only to smooth expenditure over the medium term, a sovereign wealth fund is unlikely to be appropriate.

How to spend: the balance between investment and consumption



As noted above, a country's success in transforming natural resource revenues into economic and human development will be determined by how good it is at identifying efficient investments. Central to this process is proper budgeting for the recurrent operations and maintenance spending that one-off capital investments will need to remain productive – for example, when considering whether or not to build a hospital, accounting for the salaries of staff, the cost of drugs, and the maintenance of buildings is essential for the hospital to deliver better health.

A common temptation is to use new natural resource revenues for immediate consumption by increasing public sector wages. Whether this is wise hinges on three main considerations:

- Is there a sustainable increase in national wealth that can be reflected in higher consumption?
- What is the current wage bill relative to GDP, public revenue, and any new natural resource revenue?
- Are some wage increases justified in terms of needing to recruit the high-caliber staff required to manage natural resources or to make the complex policy decisions needed to make the most of new natural resource revenues for strong human development?

Recent experiences in Zambia and Ghana offer cautionary lessons. Both countries increased their wage bills dramatically, with little impact on future revenue-raising capacity, and have since seen their fiscal positions deteriorate sharply as a result. In Zambia the fiscal deficit increased from 2.2 per cent to 4.9 per cent of GDP between 2011 and 2013, equivalent to the costs of running a basic social protection program. In the case of Ghana the decision led to a combination of double-digit inflation and an agreement with the International Monetary Fund that the government will cut spending and put up taxes sharply, which will have a negative impact on human development.

Should spending be earmarked or go through general budgets?

In countries struggling with issues of governance, transparency, and participation, there can be a case for new natural resource revenues being earmarked for specific purposes. A common form of earmarking – used in over 50 countries – is using designated social funds, rather than regular government budgeting mechanisms, to funnel money to social sectors. However, evidence and opinions on the impact and efficiency of such instruments are mixed (see Box 9).

On the positive side, social funds may increase transparency and accountability in the use of revenues and act as a powerful signal of the political priority given to social sector spending. Also, if properly managed they can encourage communities and local institutions to take the lead in identifying and carrying out small-scale investments to reduce social inequities.

On the negative side, politicians and administrators in a position to direct the flow of the resources allocated to social funds can use them as patronage or capture them before they reach their end-beneficiaries. There is also a concern that new social fund structures work in parallel with conventional government structures, leading to inefficiencies and undermining efforts at holistic strategic planning in the sector. There is also a risk of displacement: ministries may reduce national budgetary allocations to the targeted areas and divert these resources to other uses, thus offsetting any funding gains for social sectors – this has been documented in Egypt and Honduras.

Evidence from countries with social funds provides suggestions for good practice, highlighting the importance of governance systems with a clear distinction between fund management and beneficiaries, of clear rules and regulations for fund operations prior to disbursements, and of mechanisms for the independent auditing of activities and procurement practices. Well-targeted and proactive supply-side interventions may help to ensure funds reach vulnerable groups with no or little political influence.

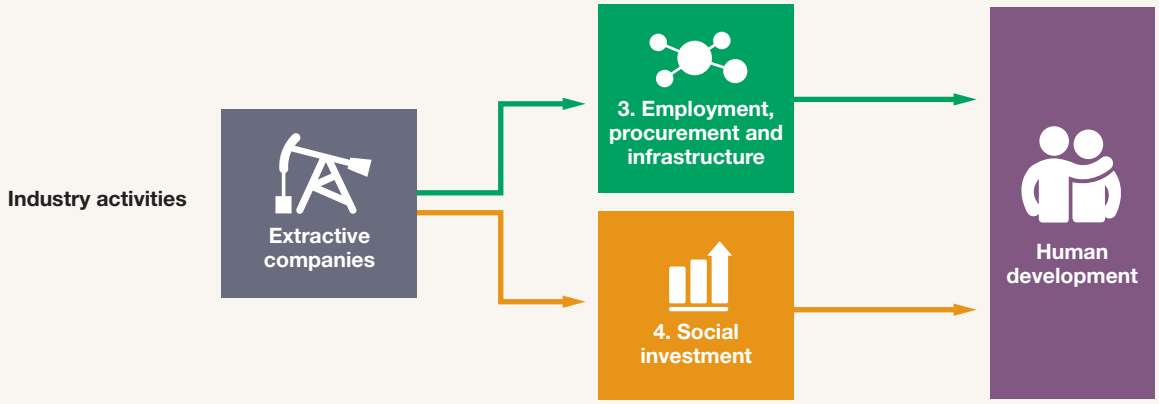
Box 9: Experiences with social funds from Indonesia and Venezuela

During Indonesia's first oil boom, in the 1970s, it lacked democratic and participatory institutions and corruption was widespread. The president earmarked oil revenues for new development programs, including a large-scale push to build primary schools and employ teachers. The regime was largely able to shield the technocrats in charge of this program from political pressures, and so the program contributed to increasing primary school enrolment from 60 per cent in 1973 to more than 90 per cent by 1983.

However, a similar scheme has been less successful in Venezuela. Since 2003, the government has established a series of social and educational programs funded directly by the state oil company and administered by the Ministry of Oil and Energy. The quality of the programs has received wide criticism, and they have arguably suffered as much from rent-seeking and populist pressures as natural resource revenues channeled through the budget.

Source: *Paper 4 – How to use natural resource revenues to improve health and education in Africa.*

4. Fostering human development progress through extractive industries activities



How can public policy decisions leverage extractive industries activities in areas such as employment, procurement, and infrastructure so as to further human development? Such policy decisions are usually referred to as 'local content'. This section provides evidence that such activities can improve human development and briefly explores the potential to leverage companies' social investment projects for the same goal.

In mining, companies' direct spending on employment, procurement, and infrastructure tends to outweigh direct government revenue from extractives projects, as shown in Figure 5. The potential to improve human development through industry activities is greater in the mining sector, where a relatively greater amount tends to be spent on employment and procuring goods and services that can be supplied locally. By contrast, in oil and gas projects commercial spending tends to be skewed more toward the purchase of highly specialized machinery. Despite their smaller share of spending that may be suitable for the domestic market, the larger absolute size of oil and gas projects means that opportunities for local content may still be significant.

Although small in terms of their total spending (i.e. around 1 per cent), companies' social investments can have a large impact as these are often directly targeted to human development in local areas.

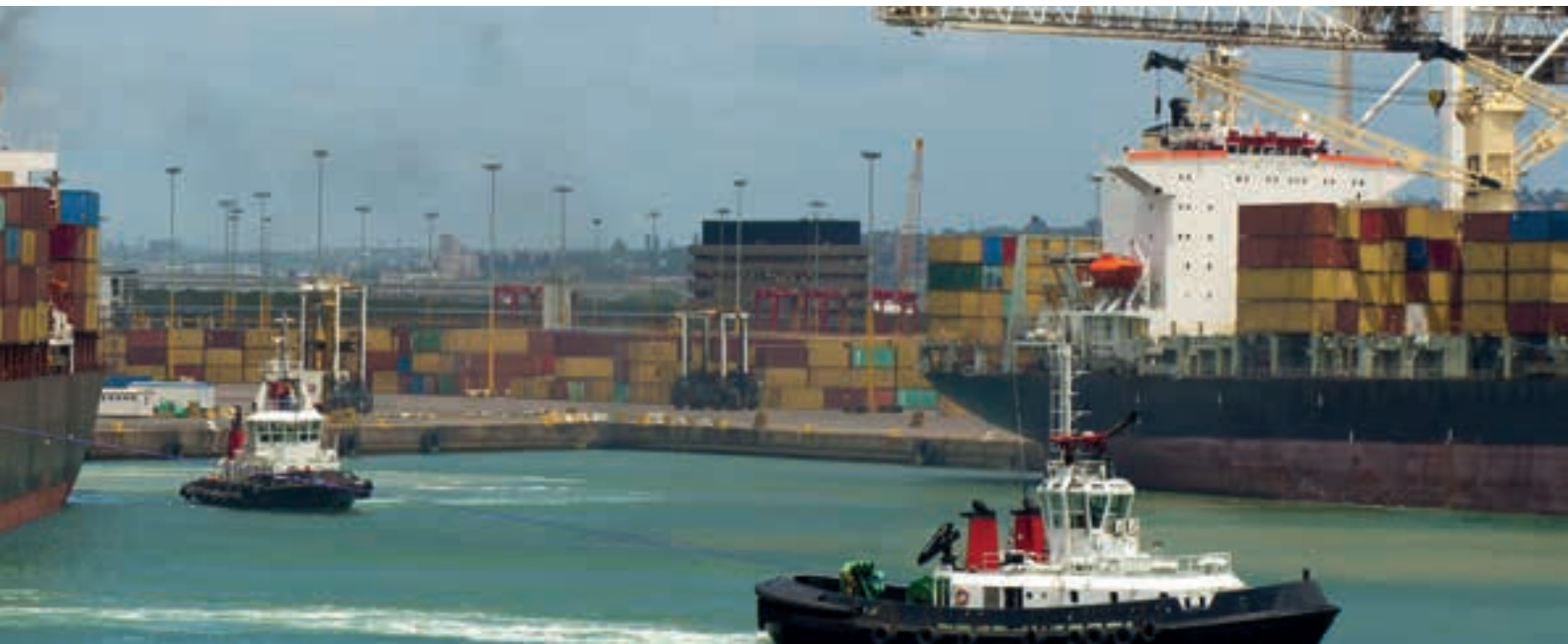
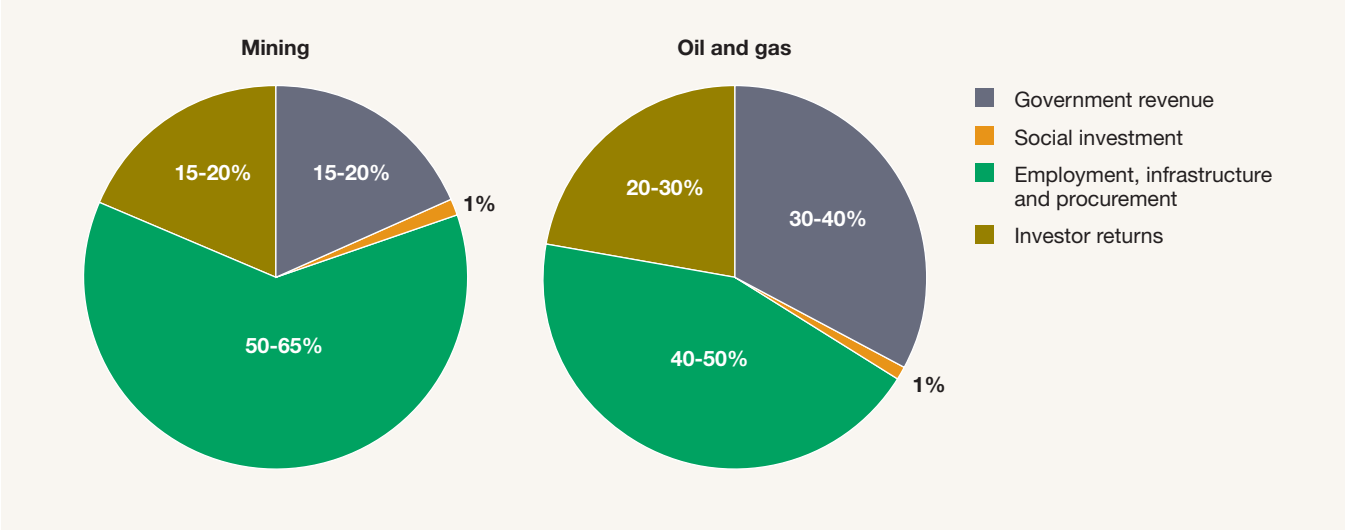


Figure 5: Average distribution of spending in extractive projects



Source: *Paper 1 – A framework: Human development and the links to natural resources.*

The more companies spend on employing local people and procuring goods and services from local firms, the more they can support economic growth and human development. Some skills required by the extractives industries are unique to particular projects, such as geological analysis and the operation of highly specialized machinery. However, many other skills – such as those relating to IT, accounting, project management, construction, catering, security, and transport – can also be applied in other sectors of the economy. If local workers can be trained in these skills, enabling them to gain employment and experience with extractives projects or their suppliers, they can later apply them in other sectors, promoting long-term economic diversification and growth.

To leverage this spending, governments need to act early and plan ahead – building the capacity of local firms as well as training individuals with a view to direct employment. Even when the skills required to provide services and goods to extractives companies are basic, as is often the case in mining projects, local suppliers to extractives projects typically employ more people than the projects themselves – for the workers concerned, this is often their best chance to escape poverty.

> *"There is a strong case for avoiding mandatory local content requirements in favor of an enabling environment for private investment."*

Local content: from mandatory targets to an enabling environment for private investment

There is a strong case for avoiding mandatory local content requirements in favor of an enabling environment for private investment. Common examples of mandatory requirements are to employ a certain proportion of local workers or procure a certain proportion of goods and services in the local community, region, or nation. If mandatory targets are to be imposed, either in legislation or in individual agreements, decisions include:

- **How and by whom will targets be measured and monitored?** Clarity on definitions, baselines, administrative procedures, feedback mechanisms, and the enforcement power of regulatory bodies is likely to minimize problems.
- **Can the approach be phased?** In many cases, significant levels of local content may become realistic only in time and with forward planning, so future targets could incentivize that planning. Conversely, if governments choose to require extractives companies to use local content even when it is more expensive, phasing out this requirement will incentivize local firms to increase efficiency.
- **Can the approach be flexible?** It may be difficult to anticipate how oil, gas, and mining projects' needs will evolve over time and how quickly local firms may become able to meet the needs. This suggests that flexible incentive mechanisms – such as indicative targets, loans, tax breaks, and co-investments – could be more beneficial than rigid requirements.

From the point of view of extractives companies, requirements placed on company spending that lead to added costs are perceived as the equivalent of additional taxes. Accordingly, in a negotiating situation, significant requirements concerning company spending may have to be paid for by concessions in other areas, lowering the revenues that will accrue to government through taxation, profit shares, or royalties.

Most research shows that mandatory local content requirements are often economically inefficient. They can create opportunities for rent-seeking – especially in the oil and gas sector, where expenditure tends to be more concentrated than in the mining sector (e.g. spending on plant equipment ahead of production).

An alternative approach is to focus on developing the enabling environment – institutional, regulatory, political, and attitudinal – for local and national firms. Given the cost and complexity associated with sourcing goods and services internationally, extractives companies will use local firms without mandatory requirements provided they are competitive in terms of cost and quality. A focus on the enabling environment could lead to market-supporting policies such as:

- **Training local businesses.** Governments can work with industry to train local firms in understanding how to do business with extractives companies, including how their bidding processes work, the standards of quality and safety required, and steps to acquire international certification.
- **Acting as a knowledge broker.** Either a specialized office or local chambers of commerce can act as a knowledge broker, informing local firms about opportunities to supply goods and services to extractives companies and compiling a registry of competent and qualified local vendors.
- **Conducting a gap analysis** (see Box 10). Once the most important gaps have been identified, government can take remedial action, particularly in the area of reinforcing public regulatory and planning capacity at the subnational level but also in areas such as access to land and infrastructure.

Box 10: Essential elements when conducting a local content gap analysis

Any analysis of gaps to help develop improved policies ideally needs to start as soon as the natural resource has been discovered, to allow sufficient time for identified gaps to be addressed. For each kind of skill-set, good, or service that will be required, policy-makers need to ask questions about six gaps:

- **Skills gap.** Do local workers have the necessary skills to be candidates for employment in extractives companies? Do local companies have the skills needed to navigate the complex tendering processes of international extractives companies?
- **Capacity gap.** Does the manufacturing sector have sufficient industrial and technological capacity to produce goods and services at the level of scale, complexity, and quality required by international extractives companies?
- **Funding gap.** Do local businesses have access to the funding they will need to reach the scale of production necessary to enter the extractives project supply chain?
- **Information gap.** Are procedures in place to ensure that extractives companies can identify potential local suppliers, and that local firms can find out about potential opportunities to supply goods and services to international extractives companies?
- **Infrastructure gap.** Is the local infrastructure – such as power, water, or transport facilities – adequate for local companies to supply the extractives project?
- **Regulatory and institutional gap.** Is there a coherent and supportive regulatory approach to increasing levels of local content in extractives projects, with the agenda being driven by competent institutions?

Following a gap analysis, policy-makers need to identify where bridging gaps is an achievable ambition. This may be easiest in opportunities such as catering, security, and transport, while it may be unrealistic in areas such as highly specialized machinery.

Source: *Paper 6 – Creating local content for human development in Africa's new natural resource-rich countries.*

Evidence shows that countries that have focused on the enabling approach instead of setting targets have been at least as successful in increasing levels of local content. The example of Chile (see Box 11) illustrates this. Public-private collaboration to develop the capacity of local companies first requires policy-makers to understand why extractives companies may sometimes choose not to use local workers or locally sourced inputs.

Incentivizing skills development

Given the expenses that bringing in international workers entails, extractives companies share the government's interest in developing the skills of local workers. However, the overlap is not perfect. Companies are primarily interested in their specific short-term skills needs, while the government's interest is in developing the long-term skills base of the economy. Companies also face a potential 'free rider' problem in that employees they train may be poached by competitors, although they commonly offset this risk by training more people than they expect to need.

There is potential for government to play a coordinating role. Questions for policy-makers include:

- **Could the government offer tax deductions on skills training by companies, or impose compulsory levies?** Payroll levies on extractives firms at rates between 0.5 per cent and 5 per cent, to help finance pooled investment in training, are common.
- **Who should take the responsibility for defining a national skills development plan linked to the extractives industry?** While this is best done in collaboration with industry, academia, and civil society, the coordinating role could perhaps be assigned to a national natural resource company or a dedicated secretariat housed in the Ministry of Education, working with the Ministry of Labor and other stakeholders.
- **Could there be a role for regional economic communities?** A regional, rather than national, skills market offers greater economies of scale in establishing and financing specialist training institutions. There is potentially a coordinating role for regional economic communities such as ECOWAS (the Economic Community of West African States) and SADC (the Southern African Development Community) in working with members to harmonize curricula to ensure mutual recognition of vocational certifications, and promote labor mobility through ease of obtaining work permits.

The process of accumulating appropriate skills takes a great deal of time, so early action is needed – well ahead of the beginning of production. Different skills are required at different phases of any extractives project, so planning is necessary to identify when training should begin and how many people should be trained. Fortunately, the typically long lead time between discovery and production of natural resources allows in principle for skills gaps in the local economy to be identified and appropriate training programs to be put in place.

Box 11: Developing local content and skills in Chile

Chile has succeeded in using its extractives industries to develop the local economy without explicitly mandating detailed local content requirements. It has done this by creating a strong enabling environment and a culture of public-private collaboration. For example, the Consejo de Competencias Mineras (Mining Skills Council) – an industry association – recently surveyed 23 projects in the feasibility study stage in the copper, gold, and silver mining sectors to identify upcoming human capital gaps and harmonize job descriptions across the industry. The government then used the results of the survey to organize training programs for disadvantaged individuals, notably in maintenance and operations.

Source: *Paper 6 – Creating local content for human development in Africa's new natural resource-rich countries.*

Paying attention to companies' social investments

Over and above any obligations required by government, most extractives companies commit additional resources to social investment, aimed at securing their 'social license to operate'. While often focused on the areas that will be most directly impacted by the project's operations, social investment can also take place at the national level.

Historically, social investment projects have sometimes overlooked issues of sustainability beyond the company's withdrawal at the end of the extractives project. They have also typically focused on particular projects, rarely looking across multiple projects or to the needs of sub-regions or entire countries. The focus has gradually shifted to a broader view, with increasing recognition that sustainability depends on four factors:

- **Participation** – allowing people to make their own decisions;
- **Inclusiveness** – making efforts to involve marginalized groups;
- **Motivation** – working to help people who have business ideas; and
- **Alignment** – coordinating with civil society and government.

Collaborations and alignments between government and companies have been successful in several countries. Governments and companies alike need to consider if and how they might be able to implement complementary actions to maximize the benefits and ensure the sustainability of industry's social investments. For social investment in health and education, this could involve companies building infrastructure and governments covering the recurring costs associated with these (see Box 12). In enterprise development, this could involve government undertakings to reduce red tape on business creation, thereby strengthening company initiatives (see Box 13).

Box 12: A community-owned model for social investment

The Newmont Ahafo Development Foundation (NADeF) is an example of a company ensuring that its social investment activities are aligned closely with government policies. The result of a two-year local consultation process by Newmont Ghana Gold Limited before its Ahafo mine began production, NADeF was set up as an autonomous, community-owned foundation that has full responsibility for deciding how the company's social investment funds are spent.

NADeF's governance structure includes representation from authorities in the districts where the mine operates, whose approval is required before any infrastructure-related project can be approved – for example, NADeF will commit to build a school only if the authorities commit to supply teaching staff on an ongoing basis. The government's involvement across NADeF's project cycle helps to build in sustainability and reduce the risk of wasted resources.

Source: *Paper 8 – Extractive industries and social investments: Principles for sustainability and options for support.*

A recent development is the notion to seek 'shared value' by companies where core industry activities are leveraged for human development. This involves, for example, infrastructure provision, skills development, or supplier development initiatives somewhat different from companies' more traditional social investment activities.

Box 13: Social investment in supplier development

In Chile, Anglo American's 'Emerge' program is a social investment in training and financial support for local businesses. It helps individuals to start enterprises and existing small and medium-sized enterprises to improve their performance. The program is implemented in partnership with Fondo Esperanza, a micro-finance institution, and women own 87 per cent of the businesses supported.

Source: *Paper 6 – Creating local content for human development in Africa's new natural resource-rich countries.*

Conclusion

With several African countries expecting new natural resources to come into production in the coming years, now is the time to focus attention on the potential of natural resources to benefit current and future generations. With the right investments and policy commitments, such countries can utilize their new natural resources to help create more equitable societies with less poverty, healthier and more educated populations, and strong and broad-based economic growth. As this report emphasizes, the appropriate decisions have many facets and will depend on individual country contexts and rely on countries' own assessments and judgments.

The key messages and policy recommendations included in this document are based on extensive research and consultations with governments, academics, and practitioners. This work has been compiled across eight dedicated papers tackling different aspects of linking natural resource revenues to human development outcomes. To access the full papers and more in-depth discussions of the policy choices described in this report, readers are encouraged to consult the dedicated website at **www.NaturalResourcesForHumanDev.org**

Additional resources

Paper 1 – A framework: Human development and the links to natural resources.

Lead authors: Samantha Dodd, Robert Greener; co-authors: Maja Jakobsen, Caroline Slaven, Alan Roe; expert peer reviewers: Alan Roe, Tomas Lievens.

Paper 2 – Timing and magnitude of new natural resource revenues in Africa.

Lead author: Dan Haglund; co-authors: Maja Jakobsen, Chris Hearle; expert peer reviewers: Olle Östensson, Keith Myers.

Paper 3 – Natural resource revenues and macroeconomic policy choices.

Lead authors: Mark Henstridge, Nick Travis; co-authors: Caroline Slaven, Shefali Rai; expert peer reviewer: Alan Roe.

Paper 4 – How to use natural resource revenues to improve health and education in Africa.

Lead authors: Sophie Witter, Rachel Outhred; co-authors: Alina Lipcan, Dita Nugroho; expert peer reviewers: Kara Hanson, Pauline Rose, Tomas Lievens.

Paper 5 – How to use natural resource revenues to enhance demand for public services through social protection.

Lead author: Valentina Barca; co-authors: Luca Pellerano, Maja Jakobsen; expert peer reviewer: Rachel Sabates-Wheeler.

Paper 6 – Creating local content for human development in Africa's new natural resource-rich countries.

Lead authors: Steve Kayizzi-Mugerwa, John C. Anyanwu; expert peer reviewer: Olle Östensson.

Paper 7 – Leveraging extractive industries for skills development to maximize sustainable growth and employment.

Lead author: Hudson Mtegha; co-author: Pietro Toigo; expert peer reviewer: Evelyn Dietsche.

Paper 8 – Extractive industries and social investments: Principles for sustainability and options for support.

Lead author: Catherine Macdonald; co-authors: Maja Jakobsen, Samantha Dodd, Shefali Rai, Xin Long; expert peer reviewers: Bruce Harvey, James Suzman.

Notes

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