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GUIDANCE FOR GOVERNMENTS

Local content policies

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The IGF supports more than 60 nations committed to leveraging mining for sustainable development to ensure that negative impacts are limited and financial benefits are shared.

It is devoted to optimizing the benefits of mining to achieve poverty reduction, inclusive growth, social development and environmental stewardship.

The IGF is focused on improving resource governance and decision making by governments working in the sector. It provides a number of services to members including: in-country assessments; capacity building and individualized technical assistance; guidance documents and conference which explore best practices and provide an opportunity to engage with industry and civil society.

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PREFACE

At their 2017 Annual General Meeting, IGF member governments identified the need for guidance on local content policies to help them better manage their resource wealth. It's a subject of critical and immediate interest, but not a new one. Since the beginning of modern mining, countries have struggled, with mixed results, to translate new investment into greater benefits to host states and communities. For resource-rich economies dependent on mining, "getting it right" can mean economic diversification, skills upgrading and higher levels of employment.

But getting it right is challenging. This guidance aims to help governments in the essential task of deciding what (if any) local content policies are appropriate to their unique settings, what supporting policies and partnerships are needed, and how those policies can be successfully implemented.

I am pleased to welcome this guidance, the latest in the IGF "guidance for governments" series of knowledge management products, and look forward to working with our members and other key stakeholders to make sure it is helpful to them in their critically important pursuit of greater sustainable development from mining.

Greg Radford
Director, IGF

ACKNOWLEDGEMENTS

This guidance is the product of many contributors. The main authors are Aaron Cosbey and Isabelle Ramdoo. Several authors contributed background papers that formed the basis of the guidance's chapters: Perrine Toledano and Nicolas Maennling on downstream linkages; Somine Dolo on horizontal linkages; Emily Nickerson and Jeff Geipel on local procurement; and Tim Grice, with research assistance from Jemima Welsh, on direct employment.

The case studies that accompany the guidance were written by Somine Dolo and Guire Togo on horizontal linkages, Jeff Geipel, Tim Grice, Nicolas Maennling, Martin Odendaal, Guire Togo and Perrine Toledano. The guidance was reviewed by Jane Korinek, Catheryn McCallum Emyr Williams and Kathleen Sexsmith.

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Publication was managed by Katherine Clark. Tom Penner served as editor and Elise Epp was the designer.

Any faults or omissions are the sole responsibility of the main authors.

EXECUTIVE SUMMARY

1. WHY ARE LOCAL CONTENT POLICIES IMPORTANT?

Too many resource-rich countries remain challenged by undiversified economic structures with weak industrial bases, high unemployment and economies vulnerable to commodity cycles. Many of them are reviewing or revising mining and investment codes and contracts, looking to local content policies to help exploit mining's powerful potential for inclusive economic development.

But there is no simple template; each country has different resource endowments, different skill sets in their local suppliers and labour force, different infrastructure assets and challenges, and different investment environments. The history of practice of local content policies yields more cautionary tales than best practices.

While it is important to underscore the risks associated with failed policies, there have also been successes, and lessons can be drawn from both. The mixed record of the past suggests that countries need to invest heavily in getting it right. This guidance aims to help in that process.

2. WHAT DO WE MEAN BY LOCAL CONTENT POLICIES?

Local content policies cover a broad array of approaches, ranging from mandatory targets to soft requirements, to supportive policies in areas such as education and capacity building. This guidance covers policies with five different sorts of objectives:

- Increasing mining operation procurement of local goods and services
- Increasing mining operation hiring of locals
- Increasing the spillover benefits of mining investment into non-mining sectors
- Increasing the local processing (beneficiation) of the products of mining operations
- Increasing the capacity of local actors as mining sector operators, including state-owned enterprises.

3. WHO IS THIS GUIDANCE INTENDED FOR?

This guidance is primarily aimed at government policy-makers. However, it should also be useful to any stakeholder interested in the successful implementation of local content policies—particularly mining companies, but also intergovernmental organizations, development banks and development agencies that aim to support mining-based development and non-governmental organizations and researchers focused on mining-related issues.

4. HOW SHOULD IT BE USED?

As noted above, local content policies are highly context-specific; there are no one-size-fits-all solutions. IGF's guidance on local content policies will help policy-makers ask the right questions to guide them toward workable made-in-country solutions, and will help in the process by highlighting the many lessons of history—positive, negative and mixed—and by pointing to the many helpful resources in this area. This guidance is part of a suite of guidance products developed by IGF and, like the others, can be used as a stand-alone resource. It can also be used as a basis for IGF's Mineral Policy Framework assessment and country- or regional-level in-depth training programs.

The guidance outlines four steps governments should follow in creating and implementing local content policies

5. STEP 1: ENSURING A FIT WITH NATIONAL DEVELOPMENT OBJECTIVES

The first step for governments developing local content policies in the mining sector is to create a picture of the role that the sector plays in national development plans. Local content policies can then serve as part of the overall approach to ensure that mining investment plays its full potential role in achieving the objectives those plans entail.

6. STEP 2: TAKING STOCK

The second step for governments, having clarified their objectives, is to take stock of their current situation. This crucial step helps to highlight what opportunities might exist, what targets are reasonable, what gaps need to be addressed, what parallel initiatives might be needed, what leverage governments might have with investors and, ultimately, what types of local content policies might be feasible, given their objectives and their particular circumstances.

The sectoral context is important: governments need to survey the political, socioeconomic and geological contexts in which investors and mining companies operate. They also need a good understanding of the opportunities—what types of skills, goods and services and what infrastructure will mining companies need? And they need to assess the gaps: to what extent are suppliers and workers able to fill those needs, and what are the shortcomings?

Finally, governments need to assess the business environment, identifying the main obstacles to mining exploration, establishment, construction and business start-up. They also need to gauge internal capacity, including resources in the ministry responsible for mining, interministerial coordination mechanisms, and consultative mechanisms with the private sector, suppliers, workers and affected communities.

As important as policy design is, even more fundamental is asking whether local content policies are the right tool to meet policy objectives in the first place. If the stocktaking exercise reveals that current domestic capabilities and skills are very low, if internal capacity for monitoring is thin, if profitability of the resource is questionable, then it may be more appropriate to focus in the short term on other policy areas such as infrastructure and basic education. Local content policies can be planned for the medium term when the prerequisites for success are more promising.

7. STEP 3: CRAFTING THE POLICIES

This guidance covers five broad types of local content policies, each aimed at different but related objectives. The first two steps—clarifying objectives and taking stock—should help make it clear whether local content policies are the most appropriate instrument and which type of policies governments should focus on. What follows should help them to decide what sorts of tools are most suitable within the chosen policy areas.

There is a logical sequence to the choice of many policy instruments. Countries embarking on their first efforts at local content policy, or with poor existing linkages, should focus first on measures to boost direct employment in the mining sector. The skills training efforts necessary for this goal are a foundation for other forms of local content policy as well.

If local industrial capacity is sufficiently strong, they should also focus on boosting local procurement, and if capacity and markets exist they may want to explore downstream value addition.

Horizontal linkages through skills and capabilities are challenging, and will usually be pursued where there is already some success in local content via direct and upstream linkages.

Horizontal linkages through shared infrastructure are not so dependent on skills and capabilities. While they can be complex and fraught with governance issues, they can be pursued at any time, including in parallel with other efforts.

7.1 LOCAL PROCUREMENT

Policies of this type aim to boost the amount of local goods and services purchased by mining operations. Carried out successfully, they can significantly increase mining's contribution to national GDP. Indeed, they typically hold much more potential than taxes and royalties. Local procurement can eventually be a gateway to economic diversification, with suppliers maturing into exporters and moving horizontally into non-mining sectors.

Defining "local" is key to the implementation of local procurement policies. There are three basic approaches, each with its strengths and weaknesses:

- **Geography**: Local can mean registered, incorporated, or carrying out business activities in any of various geographic delineations—national, regional, state or provincial, or in communities close to the mine site.
- **Value addition**: Local can mean that a substantial amount of value was added in country. Unlike the geographical definition, this means the goods cannot simply be imported and resold by locals. However, measuring local value added can be challenging.
- **Ownership**: Local ownership focuses on participation, which can mean some proportion of locals in management, or as owners of equity, or as employees. This requirement can be subject to gaming.

There is a wide variety of policies for encouraging local procurement. On the demand side, they focus on creating a demand for local procurement of goods and services. These can range from mandatory specified percentages to voluntary incentives for achieving targets. On the supply side, the focus is on building the capacity of local suppliers to bring them up to global standards on price, quality and reliability. Both types of policies are typically needed; supplier development helps to ensure that demand-side policies do not require more than local firms are able to supply.

7.2 LOCAL DIRECT EMPLOYMENT

Policies of this type aim to enhance the amount and quality of local employment by mining operations. Carried out successfully, they can create new local jobs, grow and develop the skills of the national workforce, and support efforts to progress gender equality and social inclusion.

There are two types of local employment policies. Regulatory approaches, which typically result in prescriptive, "stick"-based policies, are generally mandatory and rely on strong compliance mechanisms. These include:

- Mandated local employment percentages, often different for different types of jobs
- Requirements to conduct training of locals, or support training facilities
- Required succession, or localization, plans
- Visa restrictions on foreign workers
- Mandated employment of Indigenous people, women or disadvantaged groups.

Facilitative approaches, which typically result in incentive-based, "carrot" policies, offer support and incentives for the development and employment of local workers. For example:

- Preferences in the awarding of mining contracts
- Non-binding requirements to hire locals (e.g., "to the extent possible")
- Fiscal incentives for local hiring.

Governments occupy a unique position in being able to influence both the supply and demand sides of local employment in the mining sector. A government can regulate that a company complies with local content requirements; it can also facilitate education and training measures to prepare the local labour force to fulfil these requirements. In almost all cases both types of measures are imperative; simple regulation and blanket policies without parallel efforts to ensure adequate skills are available are not a recipe for success.

7.3 HORIZONTAL LINKAGES: DEVELOPMENT BEYOND THE MINING SECTOR

Policies of this type aim to foster the development of other (or new) economic sectors using the skills, capabilities and infrastructure developed by the extractive industry value chain. Carried out successfully, they can lead to economic diversification away from reliance on the extractive sectors. They can also set the stage for economic vitality after mine closure.

Horizontal linkages can develop via two distinct channels. Infrastructure-led linkages develop when infrastructure developed for the resource sector (e.g., roads, rail, ports, water treatment, electricity, and Internet) benefits another productive sector. This type of policy seems straightforward, but requirements to build multipurpose infrastructure impose costs on the affected operations, and negotiations and governance are often complex.

Capabilities-led linkages generally develop from upstream linkages, as technology or skills developed in supplying the resource sector are then used elsewhere. Policy options in this area include supplier development programs aimed at equipping suppliers to serve a diverse client base, and broader capacity building/education initiatives that equip entrepreneurs to evolve, such as national systems of innovation.

7.4 DOWNSTREAM LINKAGES: BENEFICIATION OF MINING PRODUCTS

This type of policy aims for economic diversification, but does so within the mining sector by encouraging processing or value added for the products of mining. For certain commodities, such as petroleum and steel, downstream linkages are driven by national security concerns.

Policies to encourage downstream linkages include incentives in the form of subsidies (e.g., tax breaks, concessional loans, land grants, infrastructure), conditioned on establishment of processing operations. They also include prescriptive measures such as export duties, quotas and bans of unprocessed minerals, designed to incentivize the local use of inputs. There are also some negotiated agreements on processing, as well as preferences given in the bidding process to vertically integrated firms.

Here as much as anywhere, it is critically importance to take stock, understanding the markets and trends for the processed goods through an exercise that includes market analyses, a comparative advantage review and cost-benefit analyses of new downstream sector development. The success of downstream policies will depend on whether the country can become competitive in the downstream sector over the medium term.

A number of critical prerequisites will determine the success of efforts to create downstream linkages, including: location and good infrastructure; (often) reliable and inexpensive energy access; a competitive labour force, and proximity to high-value raw materials. There are only a handful of successful examples of state-led efforts to create downstream linkages in the mining sector.

7.5 BUILDING DOMESTIC CAPACITY: FOSTERING NATIONAL MINING FIRMS

This type of policy aims to foster more mining activity in the hands of nationals, whether private sector actors or state-owned enterprises (SOEs). There is a presumption that national firms will tend to act more consistently in the national interest, including by fostering the sorts of linkages described above. SOEs are often given explicit social development mandates to accompany their economic goals.

The policy options of this type include:

- Joint venture requirements: requirements that any foreign investor in a particular sector must operate as an equity joint venture with some local partner.
- Creation/promotion of SOEs as sole actors: involving a high level of government involvement in the sector; may entail suppression of anti-competition laws, forced mergers of existing SOEs and forced closure of smaller competitors.
- Expropriation of private firms: involving the transfer of ownership and control of an existing private sector operation to the state, or by force of law to some third party.

Any government involvement in ownership must navigate a delicate balancing act between imposing the kind of sovereign control that seeks domestic benefits, and granting the kind of independence necessary for commercial success. Several of these strategies face potential conflicts with trade and investment law.

8. STEP 4: MONITORING, REVIEW, ENFORCEMENT

Once designed, local content policies must be administered and enforced, and progress must be measured against explicit benchmarks in the form of plans or targets. They therefore must include a built-in independent monitoring and enforcement mechanism, which ensures that various stakeholders (including public institutions) can be made accountable. Such a mechanism needs common reporting requirements for mining companies, and strong systems for collecting data on the results of the interventions.

The mechanism should include a review function, such that failure is not simply met with punishment, but also involves consultation and critical assessment of the policies themselves for potential revision and improvement. It should also be mandated to propose the phasing out of certain support measures when industries become competitive enough to sustain on their own, or if, after a given timeframe, it is clear that the support measures will not have their desired effects.

9. CROSS-CUTTING CONCERNS

9.1 THE CHALLENGE OF TECHNOLOGICAL EVOLUTION

In the coming years, automation will change the face of the mining industry. One of the biggest impacts will be a drop in employment per unit of value, as automation is brought to bear on low- and mid-level skilled jobs. The immediate implications, and the primary reasons for uptake, are that mine sites will be more efficient, will have lower greenhouse gas emissions and will suffer fewer workplace accidents.

But because the mine of the future will have fewer employees, it will also have lower spending on domestic procurement for those items that are linked to employees, such as food and housing. New technology may also mean fewer opportunities for local maintenance and servicing of capital.

Governments need to be aware of this as they plan local content strategies. Less employment ultimately means more difficulty in capturing national-level benefits from procurement spending, from the horizontal linkages that evolve from supplier development, and from direct employment.

9.2 THE CHALLENGE OF INTERNATIONAL TRADE AND INVESTMENT LAW

By their nature, local content policies underscore preferential treatments for local suppliers against foreign goods and services providers. Such measures may contravene countries' obligations under trade and investment treaties.

Some of the most prominent of those obligations are found in prohibitions on performance requirements. The World Trade Organization's rules on trade-related investment measures prohibit any advantage conditioned on the use of local content requirements, and many modern investment agreements (e.g., bilateral investment treaties, investment chapters in free trade agreements) go further, prohibiting requirements for technology transfer and joint ventures. The WTO also prohibits using local content requirements as a condition for subsidies. A number of other common subsidies, such as targeted (specific) tax preferences, may also be WTO-illegal.

While governments must be conscious of their international commitments, there has never been a WTO case brought on local content policies in the extractive sectors sector (there have been cases over export bans that were aimed at in-country beneficiation). There are many tools available to governments that do not conflict with trade rules, and a great deal of scope to pursue local content objectives in such a way as to minimize the prospects of trade and investment disputes.

10. IN CLOSING

IGF's guidance on local content policies is a guide to the questions that policy-makers need to ask to help them decide on how best to proceed in this area. While it includes a large number of brief case studies to illustrate the lessons of history, each country's solution will be unique, and dictated by its objectives and circumstance. The aim is to help governments, companies and citizens collaborate to ensure mining provides governments significant, gender-equitable, inclusive and sustainable development.

TABLE OF CONTENTS

ABBREVIATIONS

B-BBEE	Broad-based Black Economic Empowerment
BEE	Black economic empowerment
BITs	Bilateral investment treaties
CCSI	Columbia Center on Sustainable Investment
CDAs	Community Development Agreements
CSR	Corporate social responsibility
EPCM	Engineering, procurement and construction management
EPZ	Export processing zone
EU	European Union
FTA	Free trade area
FDI	Foreign direct investment
GDP	Gross domestic product
GVC	Global value chains
HDSA	Historically disadvantaged South Africans
IBA	Impact and Benefits Agreements
ICMM	International Council on Mining and Metals
ICT	Information and communications technology
IFC	International Financial Corporation
IFF	Illicit financial flows
IGF	Intergovernmental Forum on Mining, Minerals, Metals and Sustainable Development
ILO	International Labour Organization
IPR	Intellectual property rights
JV	Joint ventures
LCP	Local content policies
LPRM	Local Procurement Reporting Mechanism
MCC	China Metallurgical Group Corporation

METS	Mining Equipment, Technology and Services
M&E	Monitoring and evaluation
MNE	Multinational enterprise
MOU	Memorandum of understanding
NSDP	National supplier development programs
NSI	National systems of innovation
ODA	Overseas Development Assistance
OECD	Organization for Economic Cooperation and Development
OEM	Original equipment manufacturer
PPP	Private–public partnership
R&D	Research and development
RECs	Regional economic communities
RVC	Regional value chains
SDP	Supplier development programs
SEZ	Special economic zone
SMEs	Small and medium-sized enterprises
SOE	State-owned enterprises
STEM	Science, technology, engineering and mathematics
TRIMS	Trade-related Investment Measures
TVET	Technical and vocational education and training
UNIDO	United Nations Industrial Development Organization
VDP	Vendor development program
WTO	World Trade Organization

1.0 INTRODUCTION

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In their efforts to move away from commodity dependence and diversify their economic base, resource-rich countries have implemented various types of policies. For a long time, many governments opted for revenue optimization measures, which on their own—and in the absence of matching investments in other productive sectors—have not yielded significant structural transformation outcomes. As a result, many resource-rich countries remain challenged by undiversified economic structures with weak industrial bases, high unemployment and economies vulnerable to commodity cycles.

In an attempt to find more sustainable and inclusive economic solutions, over the last decade countries have shifted toward policies aimed at fostering stronger linkages between mineral resources and the rest of the economy. Local content policies feature prominently among the set of policy options increasingly used by governments, particularly as they review or revise their mining and investment codes and contracts.

An estimated 90 per cent of resource-rich countries (developed and developing countries included) employ some sort of local content policy. In countries where there are only a few other strong sectors, success is critically important. While there appears to be broad agreement on the need to respond to the objectives at which local content policies are aimed, it remains unclear which policies work best, produce results and minimize unintended consequences.

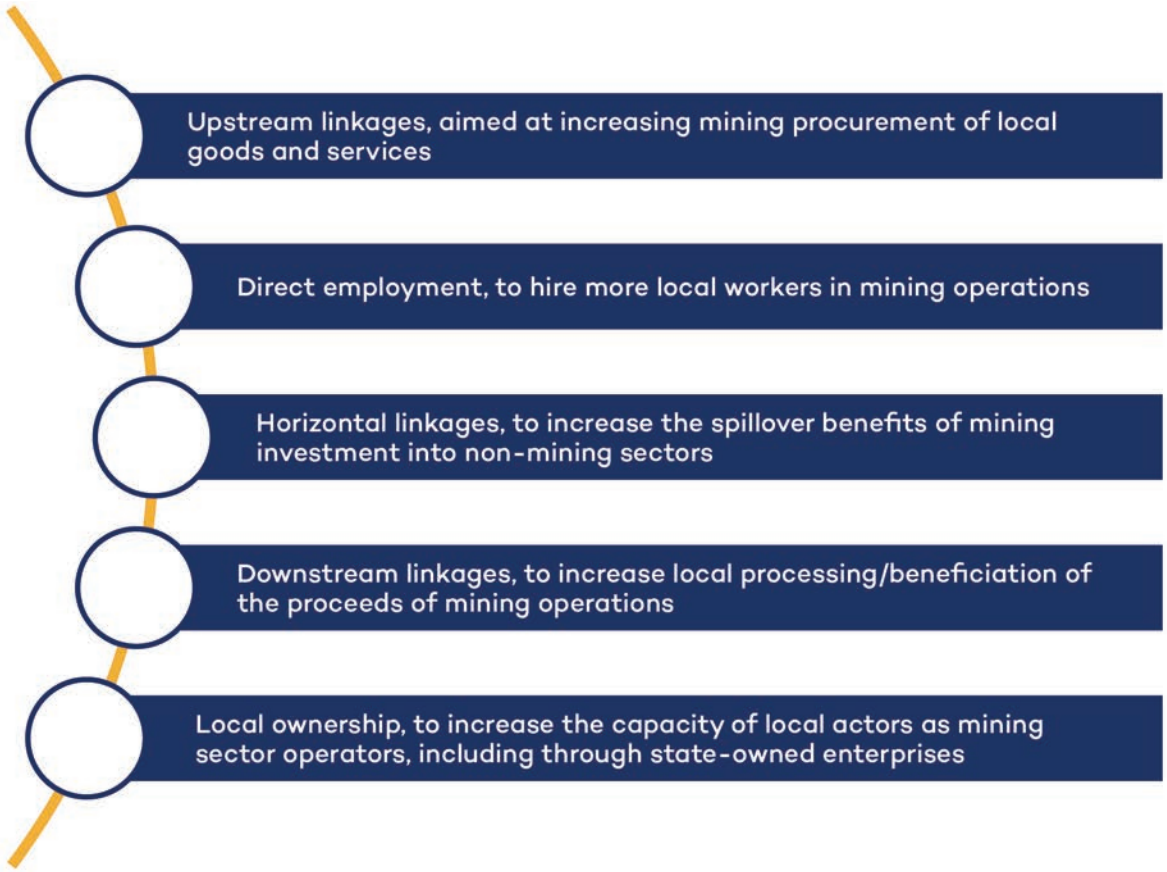
Local content is not a silver bullet, and there is no simple template for success. Each country has different resource endowments, different skill sets in their local suppliers and labour force, different infrastructure assets and challenges, and different investment environments. As well, the success of such policies depends heavily on the success of other policies and regulations, such as education, science and innovation policies, infrastructure development, finance policies, support for entrepreneurs and trade and investment policies. Responsibility for those critical issues is scattered across many ministries and requires effective coordination and coherence.

The history of practice of local content policies yields more cautionary tales than best practices. While it is important to underscore the risks associated with failed policies, success stories should be highlighted, and lessons can be drawn on the conditions for success and failure. The mixed record of the past suggests that countries need to invest heavily in getting it right.

“Local” is defined in this guidance to mean within the mining operation’s host nation. It is also sometimes used to mean “in the vicinity of the mining operation,” but where that meaning is intended it is explicitly noted.

“Content” is defined broadly in this guidance. Policies to foster local “content” are often narrowly focused on local procurement and employment of locals. While these types of policies are central to increasing the local sustainable development benefits of mining investment, they don’t cover other important policies that governments are trying to achieve or are contemplating, such as fostering downstream linkages, horizontal linkages and national ownership.

This guidance therefore considers five types of local content policies, aimed at strengthening:

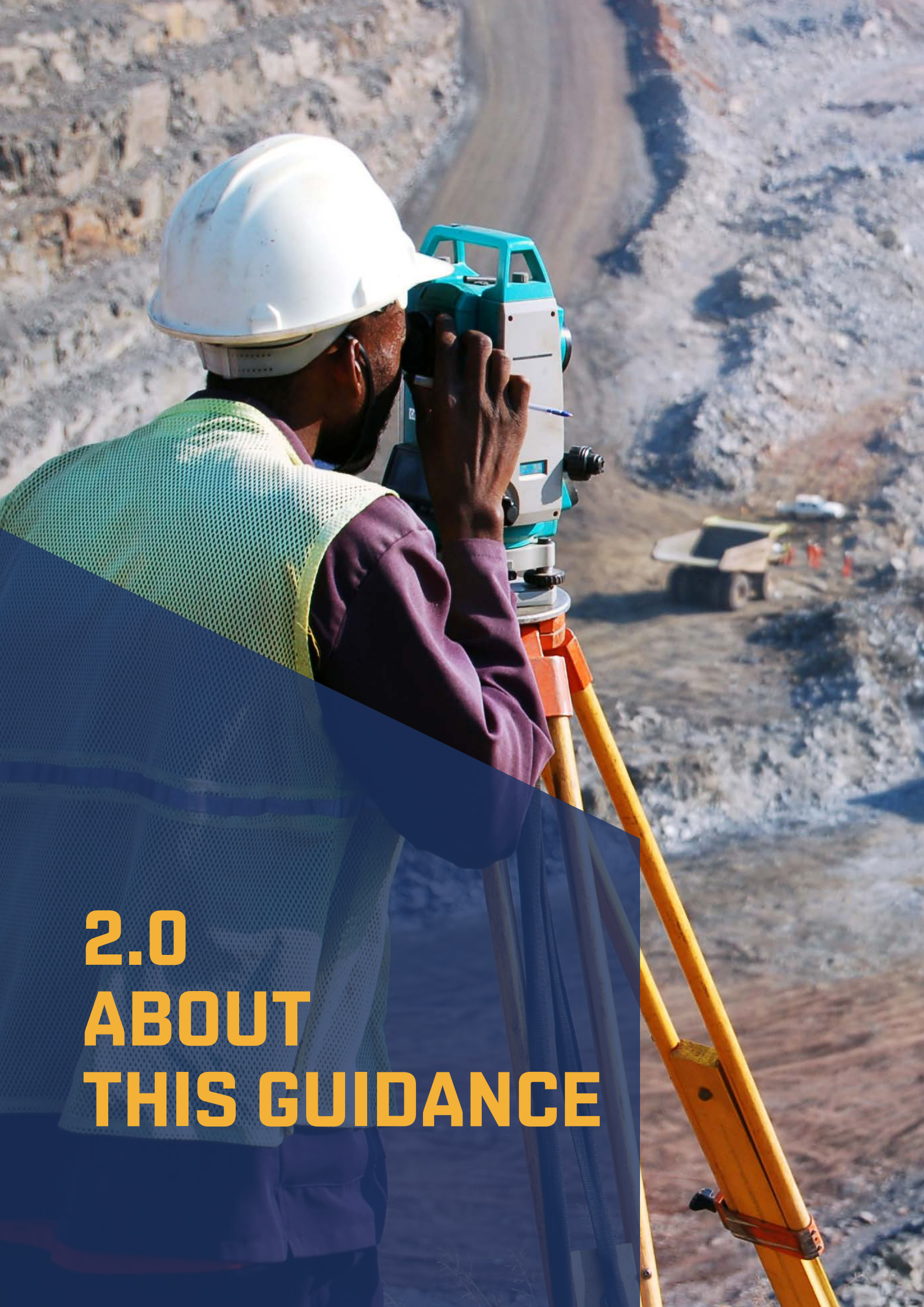


The guidance also covers three cross-cutting themes:

Ensuring goals are achieved in a gender-equitable way that takes specific actions to promote sustainable livelihoods for women

Exploring the relationship between local content policies and countries' obligations under trade and investment law

Exploring the implications of technological advances for the successful application of local content policies



2.0 ABOUT THIS GUIDANCE

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2.1 WHY A GUIDANCE ON LOCAL CONTENT?

In light of the challenges described above, and their increasing interest in policies that build on mining investment to secure more sustainable development benefits, IGF members at the Annual General Meeting in October 2016 requested a guidance on local content policies.

The guidance is aimed at supporting governments in making informed decisions if the latter decide to implement local content policies. As noted above, local content policies are highly context-specific, and there are obviously no one-size-fits-all solutions.

This guidance is meant to help policy-makers ask the right questions to guide them toward workable made-in-country solutions. To do so, the guidance is informed by several case studies, which highlight many lessons of history—positive, negative and mixed—and points to the many other helpful resources in this area.

This table summaries the dos and don'ts of this guidance.

What this Guidance DOES NOT do	What this Guidance DOES
It **does not advocate** for or against local content.	Instead, it provides structured information on the objectives that a tool like local content can realistically help governments to meet.
	It covers five types of local content policies, to help inform **decision making.**
It **does not promote** the use of one form of local content over another.	Instead, it provides a **step-by-step approach** to decision making, based on various types of available instruments (rules vs. incentives; mandatory vs. regulatory; government-led vs. private initiatives, etc.).
	It contains **decision trees** to guide policy formulation, based on certain key necessary prerequisites.
It **does not direct countries** to adopt specific types of measures.	Instead, it **informs decision makers** about the risks and challenges as well as opportunities associated with various types of instruments.
	It helps policy-makers **ask the right questions** to define their own solutions.
It **does not rate the efficiency** of one measure against another.	Instead, it **takes stock of success stories and failures** so that countries can draw lessons to avoid policy ineffectiveness.
	It **provides guidance** on monitoring, enforcement and review.

2.2 WHO IS THIS GUIDANCE INTENDED FOR?

This guidance is aimed at government policy-makers. However, it should also be useful to any stakeholder interested in the successful implementation of local content policies (particularly mining companies) but also intergovernmental organizations, development banks and development agencies that aim to support mining-based development and non-governmental organizations and researchers focused on mining-related issues.

2.3 HOW SHOULD THIS GUIDANCE BE USED?

This document is part of a suite of guidance produced by IGF and, like the others, can be used as a stand-alone resource and as a basis for IGF's country- or regional-level in-depth training and capacity-building programs.

The guidance outlines four steps governments should follow in creating and implementing local content policies. Once Step 4 is completed (monitoring and enforcement), there may be a need to review the policy and go back to Step 2 and/or 3 again to address gaps and design new policies.

Within these four steps, readers may want to focus on specific types of policies. For example, if readers are primarily interested just in local procurement, there is no need to read each of the five types of policies described in Section 4 under the heading "Crafting the Policies." In this section, each of the five subsections is written as stand-alone guidance and can be used as such. It is, however, important to go through Section 3 of the guidance, which provides details on how to use the four steps.

3.0 STEP 1: ENSURING A FIT WITH NATIONAL DEVELOPMENT OBJECTIVES

3.0 STEP 1: ENSURING A FIT WITH NATIONAL DEVELOPMENT OBJECTIVES

The first step for governments developing local content policies in the mining sector is to clarify the role the sector plays in national, regional and local development plans. Local content policies need to be part of the overall approach to ensure mining investment plays its full potential role in achieving those plans' objectives.

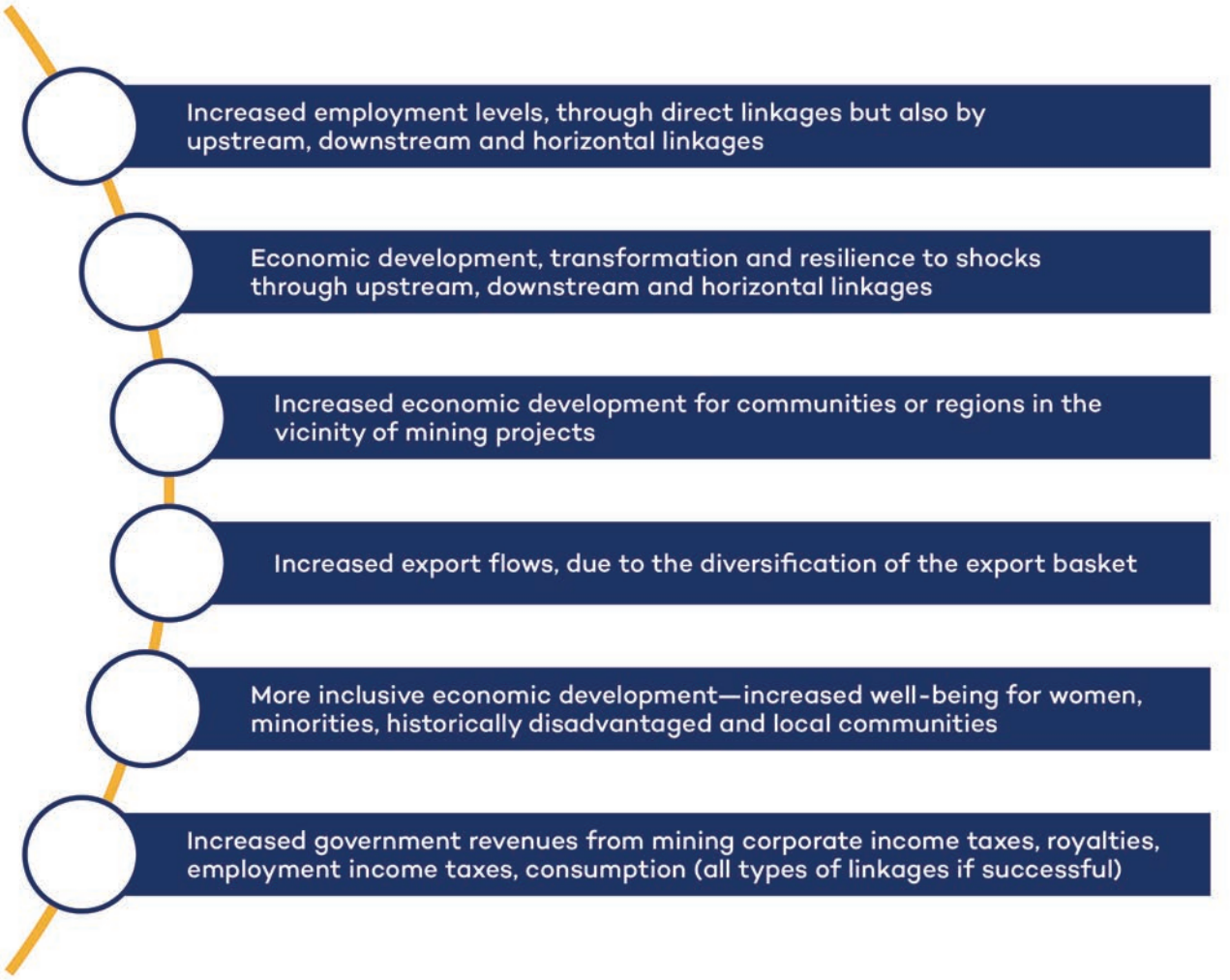
- ✓ In **nascent producing states** it is important for governments to assess their domestic landscape to determine where and how the mining sector fits in relation to broader development plans. The scope of local content must be based on a good understanding of the size of mineral reserves and on the sustainability of their future demand.
- ✓ In more **mature producing countries**, governments need to assess the state of their mineral endowments and reserves, to determine whether the sector will be able to provide sufficient demand for labour and linkages over time. Similarly, they need to assess the depth and breadth of their current linkages and decide, as part of the overall long-term economic strategy, which ones they want to promote. Finally, if local content policies have been unsuccessful in the past, governments need to draw lessons from their past experience and address the bottlenecks that may have prevented previous policies from delivering successful outcomes.

3.1 WHAT OBJECTIVES CAN LOCAL CONTENT POLICIES SERVE?

Local content policies can serve a number of national development objectives. Different objectives will necessarily call for a different mix of policies. There may even be trade-offs between the different policy outcomes. This dynamic underlines the importance for policy-makers to clearly articulate the national development objectives they expect to achieve through the use of such policies. This will help governments decide whether local content policies are the most appropriate ones to address their concerns, and if so, which policies to pursue.

Being clear on objectives, and communicating them, also helps ensure all stakeholders have realistic expectations about the results—an important goal in its own right.

Objectives achieved by successful local content policies can include:[1]



Properly carried out, local content policies can also serve the interests of mining companies, including reinforcing companies' social licence to operate, relieving shortages of skilled labour, shortening supply chains by cultivating a network of competent reliable local suppliers and increasing profitability.

But it is important to note that none of these good outcomes can be taken for granted. Getting it right is a difficult and long-term proposition and demands a number of prerequisites. Section 4.3 outlines the fundamental prerequisites that a country needs to have in order to ensure that any policy designed to stimulate local content is not held back. In addition, the case studies that underpin this guidance provide a number of examples of local content policies that did not achieve their objectives.[2]

[1] However, note that some types of local content policies may force mining companies toward less profitable choices, resulting in lower tax take. See the discussion below, in particular regarding downstream linkages and infrastructure-led horizontal linkages.

[2] Similar cautionary tales are highlighted in a McKinsey survey of local content policies in 27 "resource-driven" countries, which found that over two thirds lacked even basic necessities such as appropriate phase-in time for targets, and government support to the private sector for achieving targets. See Dobbs, R. et al. (2013). ***Reverse the curse: Maximizing the potential of resource-driven economie***s. McKinsey Global Institute, p. 14. Retrieved from https://www.mckinsey.com/industries/metals-and-mining/our-insights/reverse-the-curse-maximizing-the-potential-of-resource-driven-economies

4.0
STEP 2:
TAKING STOCK

4.0 STEP 2: TAKING STOCK

Once governments have clarified their objectives, the **second step** is to take stock of their current situation. This section provides some strategic questions to guide governments in getting a deeper understanding of the context in which the mining sector operates. It also highlights the opportunities for value creation and points to the potential pitfalls of local content, if ill-designed.

GUIDING QUESTIONS FOR STOCK-TAKING
What opportunities exist across the mining value chain?
What opportunities exist with other economic sectors?
What targets can reasonably be met by local stakeholders given the current situation?
What gaps need to be addressed?
What initiatives from other sectors are needed?
What leverage does governments have with investors?
What types of local content policies might be feasible given government's objectives, constraints and opportunities?

At this stage a gender-sensitive analysis of gaps and potential opportunities is critical, to ensure women and men stand to benefit equally from the development strategy.

4.1 UNDERSTANDING THE SECTORAL CONTEXT

The political, socioeconomic and geological context in which investors and mining companies operate will determine the extent to which governments can negotiate with new and existing operators and roll out plans for deeper and broader linkages.

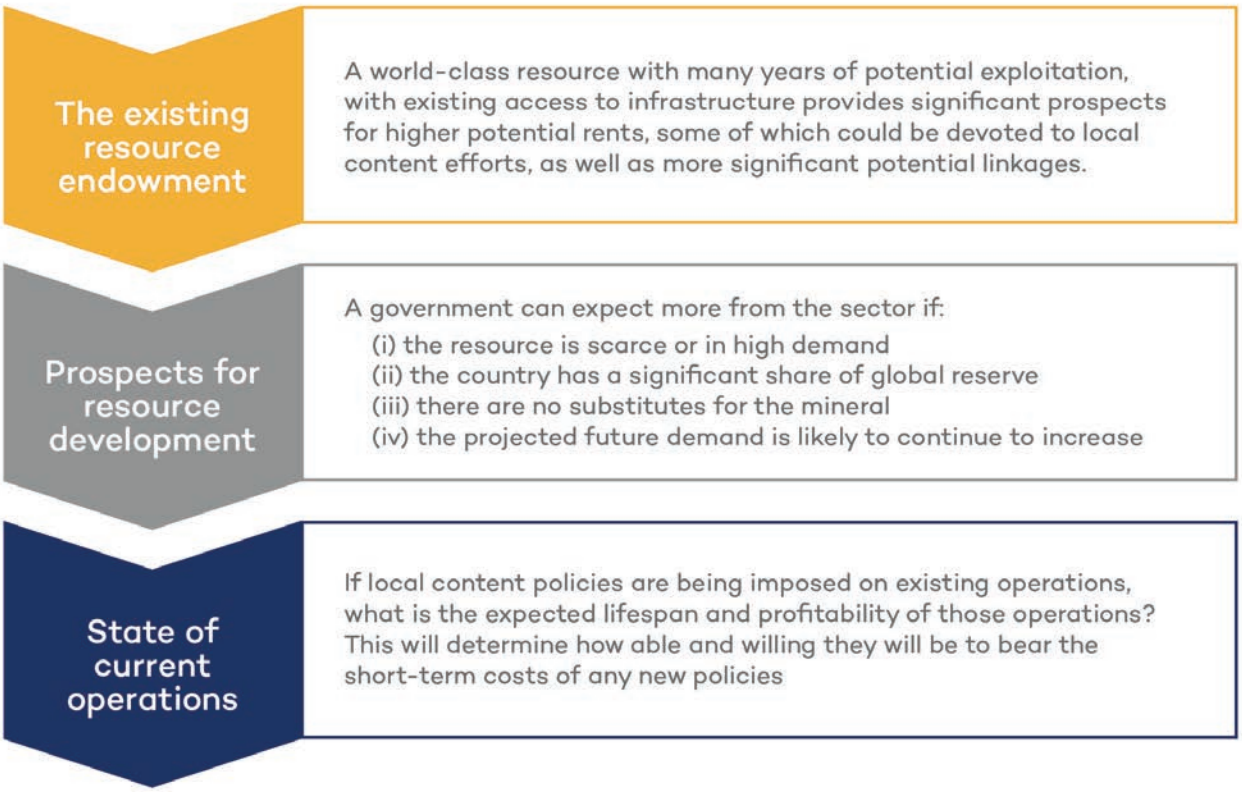
Although outside the scope of this guidance, it is necessary to acknowledge the need for fundamental good **governance principles**, such as the rule of law, transparency, sound financial management and sound and robust institutions. Furthermore, it is necessary to understand the **political economy** dynamics at play in a country, as these dynamics can render well-intentioned policies irrelevant or ineffective. Relevant to our context, are:

- ✓ The power relations at play between governments and key players, such as mining industries, local "elites," local communities
- ✓ (Vested) interests of various groups of stakeholders (mining industries; local manufacturers; importers and intermediaries; exporters etc.)
- ✓ Incentives for change or to maintain the status quo
- ✓ Political pressure, in particular during electoral cycles, to distribute rents or to build long-term development

On the socioeconomic front, it is necessary to understand:

- ✓ The historical context in which the mining industry has developed over time, including the legacy and footprint left on Indigenous and/or local communities. Policies aimed at correcting those situations can help move the relationship with the mining industry forward.
- ✓ The existing socioeconomic conditions that have affected the contribution of the mining sector so far as well as the gaps that need to be addressed. For more details see Sections 4.2 and 4.3.

From a **geological perspective**, taking stock involves gaining a solid understanding of:



In less-advanced countries, mining companies will have better information than governments on the above subjects. To overcome this challenge, governments must ensure they have precise geological information and must invest in market intelligence and knowledge of the sector, to improve their negotiating positions with companies.

4.2 APPRECIATING CURRENT OPPORTUNITIES AND FUTURE CHALLENGES

This section outlines key strategic issues to consider when taking stock of the current opportunities and future challenges.

a) Governments must have a sound understanding of the various **skills and competencies** required by the mining industry. This includes:
   - ✓ Knowing what skills are available locally at different levels of competencies
   - ✓ Being able to forecast the **quantum** of labour force required at various stages of the mine life cycle
   - ✓ Being able to plan **when** certain specific skills will be needed.

If current domestic competencies and skills are very low, in the short term, governments should first prioritize basic education to prepare the labour force and domestic businesses to take up opportunities with the mining sector.

Understanding and forecasting labour demand is a gradual process, informed by ongoing dialogue and collaboration with mining industry stakeholders. It is critical to keep track of the needs for skills development, upgrading or re-skilling of the domestic labour pool. It also allows governments and firms to make important gender equity contributions by ensuring women's skills and employment eligibility are equal to men's.

b) Similarly, governments must have a good knowledge of the **goods and services** required by the mining sector. This includes:
   - ✓ The current procurement needs of the mining sector
   - ✓ The future demand by mining companies i.e., spending projections for existing and potential mining operations[3]
   - ✓ An understanding of the scope to use the proceeds of the mining industry for downstream value addition.

This will allow them to make better-informed decisions when designing their local content policies.

c) The state of a country's **infrastructure network** is critical for the development of mining projects. It can weigh more or less heavily in the negotiating balance between governments and mining companies, including on how much governments can require in terms of local content efforts. In this context:
   - ✓ Where infrastructure is available, governments must ensure that sufficient spillovers are created when mining projects use existing infrastructure.
   - ✓ If infrastructure is not available, governments also need to know mining companies' infrastructure plans. As discussed in Section 5.3, it is necessary to explore the possibility of adapting those plans to provide shared infrastructure that both the mine and other economic sectors could use, such as roads, railways, water services or the Internet.

d) It is increasingly clear that **technological changes** are likely to have a significant impact on the future of the mining sector. Increased automation and rapid advances in the use of robotics and automation in the mining sector will significantly alter the demand for some goods and services and for some types of labour (as discussed in Section 7.1).

   In that regard, it is critical for governments to keep up-to-date with these future scenarios in their strategic thinking when designing local content strategies. This is necessary to:

[3] Some consulting firms have proprietary models that produce these sorts of projections, and there has been progress on public models in recent years as well. See for example, BGR model Extractives and Development.

- ✓ Manage expectations and minimize disruptions due to changing needs of the industry and of the labour market
- ✓ Avoid policy redundancy
- ✓ Design training tools for re-skilling or retraining of labour that are flexible to foster labour's employability in other economic sectors
- ✓ For goods and services, design local content policies that allow industrial capabilities to be redirected other economic sectors (as discussed in Section 5.3).

(e) Finally, the above requires two important mechanisms:

(i) Internal capacity to monitor progress and to adjust policies

(ii) An effective relationship and regular communication between bureaucrats, the private sector and local communities. In that regard, governments are advised to create a dedicated platform for communication and consultation, if one does not already exist. This purpose of this platform is to have a structured engagement with relevant stakeholders:

a) With local communities, regular consultations to share information, listen to (and address) concerns and report on results are critical to managing expectations.

b) It is necessary to consult the business community prior to the design of regulatory measures to build trust, allow the latter's voices to be heard and considered, create a sense of ownership of the policies, and thereby increase the chance of success of implementation. A regular consultative process also allows governments to design policies that can realistically be implemented, including by the local private sector and hence design appropriate accompanying and supportive measures to help them address challenges.

4.3 PREREQUISITES: OTHER KEY ELEMENTS OF THE SCAN

This section provides a checklist of other critical elements governments need to take into account for effective local content policies.

Industrial capabilities (see Section 5.1 for further discussions)	• Assess the capacity of local firms to supply the mining industry durably, at competitive prices and on quality • Identify gaps and obstacles facing domestic firms, including those faced by women-led businesses • Support competitiveness of domestic businesses
Human resource capabilities (see Sections 5.2 and 5.3 for further discussions)	• Assess the state of human resources and educational infrastructure that can underpin skills upgrading, based on consultations with investors and industry • Identify gaps between existing capacities and requirements of the mining and other economic sectors • Identify educational and/or training institutions with potential to bridge the gaps
Business environment	• Identify the main obstacles to mining exploration, establishment, construction and start-up for (i) local businesses to invest and operate domestically and diversify (ii) for mining operations to run profitably.
Internal capacity	• Assess capacity of ministry responsible for mining to take stock, as well as design, review and implement policies while monitoring progress • Establish a gender-balanced platform for consultation and communication between the mining industry and suppliers, led by industry actors with participation from government • Set up an interministerial institutional mechanism to coordinate local content policy efforts, with ministries responsible for mining, industry, trade, education, finance, planning, environment, transportation and infrastructure

4.4 POSSIBLE RISKS OF ILL-DESIGNED POLICIES

As some of the case studies referred to in the guidance show, local content policies can be well-intentioned but flawed in their conception and implementation, with consequences that aggravate the economic challenges of the countries involved. While this guidance is aimed at preventing such outcomes, it is important for governments to be aware of the potential pitfalls and the likely unintended consequences of poorly-designed local content policies.

POLICY WEAKNESSES	POSSIBLE NEGATIVE IMPACTS
Lack of clear objectives and measurable targets	Can lead to weak implementation, ineffectiveness; difficult to monitor, enforce
Unrealistic mandatory targets, timetables	Can lead either to negative impact on mining investment, or widespread non-compliance/cheating of the system
No sunset clause, no conditions on industrial support	Risks having support perpetuated for industries that will never be competitive, creating entrenched interests that drain public coffers
Lack of capacity building to complement targets	Targets alone, without "supply-side" measures to build the skills and capacity needed to meet them, risk being perennially unattainable
Limited industrial/ technological capacities	Companies unable to meet local procurement targets. Threatens competitiveness of industry; leads to cost inflation as local operators are unable to deliver on quality, price and time
Limited human resource capacity	Companies unable to meet local employment targets. Can compromise productivity of mining companies; can affect ability of local industries to participate in the value chain
Inability to take into account technological changes	Poorly adapted policies in the long term, due to change in circumstances. Reduces local benefits; can endanger FDI inflows and harm industries

As important as policy design is, even more fundamental is asking whether local content policies are the right tool to meet policy objectives in the first place. If the stocktaking exercise reveals that current domestic capabilities and skills are very low, if internal capacity for monitoring is thin, if profitability of the resource is questionable, then it may be more appropriate to focus on other policy areas in the short term, such as infrastructure and basic education. Local content policies can be planned for the medium term when the prerequisites for success are more promising.

REFERENCES

For further details on the challenges of getting it right, refer to IGF case studies on local content policies

FORTHCOMING IGF EXPERT PAPERS

- ✓ Columbia Center on Sustainable Development (CCSI). (2018). *Fostering downstream linkages in the mining sector*. (IGF Local Content Series volume 1).
- ✓ Dolo, S., Odendaal, M. & Toto, G. (2018). *Horizontal linkages: Spillover effects in the mining sector*. (IGF Local Content Series volume 2).
- ✓ Grice, T. (2018). *Direct local employment in the mining sector*. (IGF Local Content Series volume 3).
- ✓ Geipel, J & Nickerson, E.. (2018). *Local procurement policies in the mining sector*. (IGF Local Content Series volume 4).
- ✓ Ramdoo, I. (2018). *Designing local content policies in mineral-rich countries* (IGF Local Content Series volume 5).

OTHER RESOURCES

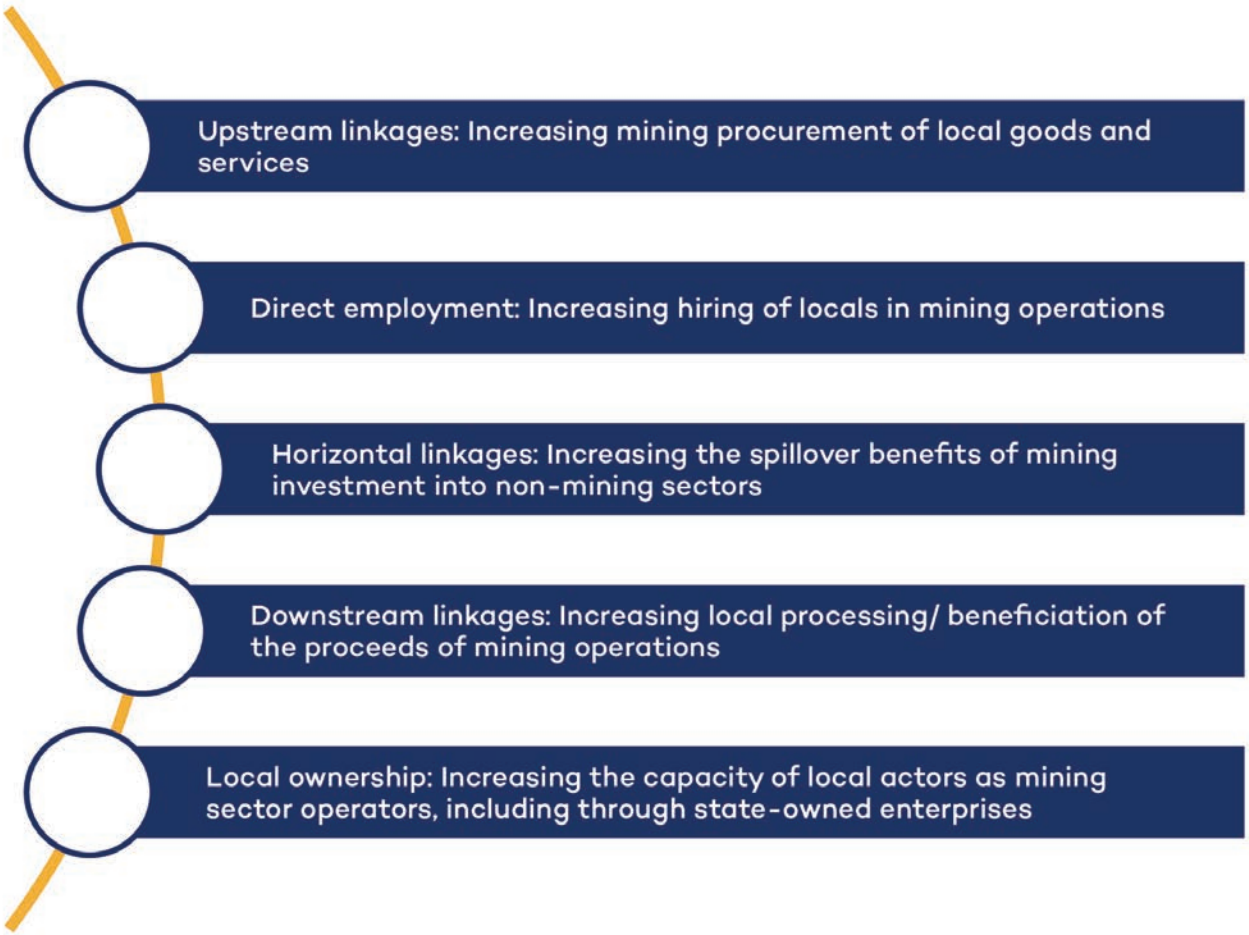
- ✓ World Bank. (2015). *Doing Business 2016. Measuring regulatory quality and efficiency*. Washington D.C. Retrieved from http://www.doingbusiness.org/reports/global-reports/doing-business-2016
- ✓ World Bank. (2016). *Doing Business 2017. Equal opportunity for all*. Washington D.C. Retrieved from https://openknowledge.worldbank.org/handle/10986/25191
- ✓ World Bank. (2017). *Doing Business 2018. Reforming to create jobs*. Washington D.C. Retrieved from http://documents.worldbank.org/curated/en/803361509607947633/Doing-business-2018-reforming-to-create-jobs

5.0 STEP 3: CRAFTING THE POLICIES

5.0 STEP 3: CRAFTING THE POLICIES

Once Steps 1 and 2 completed, **Step 3** provides guidance for governments to decide **what sorts** of tools are most suitable within the chosen policy areas outlined in the above diagram.

As already mentioned in Section 3.1, this guidance covers five types of local content policies, each aimed at different, but related, objectives.



There is a logical sequence to the choice of policy instruments:

- ✓ Countries at *various levels* of development have different policy objectives and are likely to have a preference for some tools over others:
  - *Less advanced countries* may want to foster job creation and the development of manufacturing capabilities, upstream and downstream;
  - *More advanced countries* may want to put more emphasis on fostering technology and innovation.

- ✓ Countries embarking on *their first efforts* at local content policy may want to focus first on measures to boost direct employment in the mining sector. The skills training efforts necessary for this goal are a foundation for other forms of local content policy as well.
- ✓ *Local industrial capability* is another determinant of the sequence of policy choice:
  - If supplier capacity is sufficient, countries may also want to focus on boosting local procurement.
  - If manufacturing capabilities and markets are available, others may want to promote downstream value addition.
  - In the absence of strong business linkages and viable entrepreneurs, countries may want instead to build those capabilities in the short term and plan for fuelling such efforts in the medium term, when sufficient capabilities would have been built locally.
- ✓ Infrastructure-led horizontal linkages[4] are not so dependent on skills and capabilities as the other forms of linkages. While they can be complex, and fraught with governance issues (see Section 5.4), they can be pursued at any time, including in parallel with other local content efforts.
- ✓ Policies to foster national mining firms, either state-owned enterprises or national champions in the mining sector, are also a special case. While there are successful examples, this is a very difficult and long-term prospect. The challenges are discussed in more depth in Section 5.5.
- ✓ Efforts to ensure the gender-inclusive nature of these policy processes should be seen as cross-cutting and taken into account from the beginning stages of policy design.

5.1 LOCAL PROCUREMENT

Policies of this type aim to boost the amount of local goods and services purchased by mining operations. Carried out successfully:

- ✓ They can significantly increase mining's contribution to national GDP by being a gateway to economic diversification, with suppliers maturing into exporters and moving horizontally into non-mining sectors (see Section 5.3).
- ✓ They potentially hold more potential than taxes and royalties (see examples below).
- ✓ If women and other marginalized groups are included among local providers, procurement can be integrated into a socially inclusive development strategy.

EXAMPLES FROM INTERNATIONAL PRACTICES

In 2016, Anglo American reported that its global spending on payments to governments totalled 15 per cent of total spending, while payments to suppliers based in host communities accounted for 23 per cent of its total spending.[5]

In 2016, BHP Billiton reported that it paid 18 per cent of its total spending in taxes to government and 22 per cent to local suppliers.[6]

[4] There are two types of horizontal linkages: capabilities-led and infrastructure-led. The latter happen when infrastructure that would have been developed for the mining sector (e.g., roads, rail, ports, water services, electricity and Internet) benefits other sectors as well. The former happens when the technology or skills developed in the mining sector become the basis for economic activity in non-mining sectors.

[5] Anglo American. (2017). *Delivering change, Building resilience: Working in partnership* (Sustainability Report 2016). Retrieved from http://www.angloamerican.com/~/media/Files/A/Anglo-American-PLC-V2/documents/annual-reporting-2016/downloads/2016-sustainability-report.pdf

[6] BHP. (2017). *Sustainability Report 2017*. Retrieved from https://www.bhp.com/-/media/documents/investors/annual-reports/2017/bhpsustainabilityreport2017.pdf

5.1.1 DEFINING "LOCAL"

The way a country decides to define "local" will determine the policy options available to increase local procurement. This guidance highlights three common elements generally used in the definition of "local." These include a geographical coverage, the amount of in-country value derived from domestic factors of production and level of ownership desired, in terms of capital or in terms of the ability to participate in corporate decision making.

The table below provides the main elements governments may consider in deciding on the breadth of the "local" dimension. The case studies referred to provide addition insights from international experience.

ELEMENTS OF LOCAL	DEFINITION	CHARACTERISTICS	EXAMPLES	RISKS
Geography	**Narrow definition**: Proximity to the mine site or mining region	Prioritizes benefits for the communities affected by the mine site Prevailing in community agreements and corporate social responsibility local content strategies	Impact Benefit Agreements in Canada; Community Development Agreements in Mongolia and Australia	May forego opportunities for broader supply chain development May hold back economies of scale by preventing local firms from supplying multiple mines
	Broad definition: *For businesses*: defined as businesses registered, incorporated or carrying out activities in various geographic delineations—national, regional, state or provincial	Businesses based anywhere in the country	In Zambia, for example, "local" refers to Zambian citizens or citizen-owned companies.	Without proper rules of origin for manufactured products, risks of "fronting" or increased number of intermediaries
Value addition	The portion of the value of a good that was carried out in country, as opposed to being derived from outside the country	Aimed at maximizing economic diversification, local manufacturing and employment	Kazakhstan issues certificates to "national manufacturers" when goods totally manufactured in country, or when substantial processing is conducted in country.	Difficult to measure, given that many goods are the product of long and complex value chains, and few countries do it Lack of rules of origin will not yield intended results.
Ownership **Note:** Some states use this definition to also benefit marginalized, Indigenous or historically disadvantaged people.	Ownership of the firm's equity	Citizens of a country must own a minimum share equity of mining firms.	In Zambia ownership is defined both in terms of equity and management. The law requires at least 50.1 per cent of equity be owned by Zambian citizens; and that Zambian citizens must have significant control of the management of the company.	Risk of capture by elite members of society if not well managed

ELEMENTS OF LOCAL	DEFINITION	CHARACTERISTICS	EXAMPLES	RISKS
	Local participation in management	Citizens of the country must be part of senior management or must be on the Board.	Ghana requires that total expatriate staff should not exceed 10 per cent of senior staff within three years and 6 per cent after three years from when the Regulation was passed (2012).	If local capabilities are not available, risk of affecting decision making If not well managed, risk of fronting
	Local share of employees	A defined percentage of the firm's employees must be citizens of the country.	South Africa, Ghana, Ecuador, Kazakhstan have compulsory requirements to employ specific percentage of local staff.	If skills are not sufficiently available, may affect productivity

RESOURCES

- ✓ For the importance of "defining local": Case studies on Botswana, Ghana, Zambia
- ✓ For "value added" definition of local: Cast study on Kazakhstan
- ✓ Ownership quotas to historically disadvantaged people: Case study on South Africa

OTHER RELEVANT REFERENCES

- ✓ For a comprehensive definition of "local," see World Bank. (2015). *A practical guide to increasing mining local procurement in West Africa*, p. 20. Washington D.C.: World Bank. Retrieved from https://openknowledge.worldbank.org/bitstream/handle/10986/21489/AUS63240WP0P130I0Guide0Eng0Feb02015.pdf?sequence=1&isAllowed=y
- ✓ Columbia Center on Sustainable Development. (n.d.). *Local content laws & contractual provisions*. Retrieved from CCSI profiles: Local Content Laws and Contractual Provisions
- ✓ Organisation for Economic Co-operation and Development (OECD). (2018). *Local content policies in mineral-exporting countries*. Retrieved from https://www.oecd-ilibrary.org/content/paper/4b9b2617-en
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- ✓ Yerkebulanov, Y. (2015). Kazakhstan: Procurement and national suppliers. Retrieved from http://www.gratanet.com/uploads/user_7/files/Kazakhstan_Procurement%20and%20National%20Suppliers.pdf

For a public model to predict firm demand, see BGR model Extractives and Development.

5.1.2 TAKING STOCK

Section 4 above summarizes the general steps needed to take stock before pursuing local content policies. When considering **local procurement** policies in particular, governments must pay systematic attention to:

- **Demand-side considerations**: They must have a comprehensive understanding of what goods and services mining investors and contract service providers will need in the coming years.
- **Supply-side considerations**: At the same time, they must assess suppliers' capabilities, shortcomings and potential, including whether there are specific gaps among women-owned supplying companies.

There are a number of consulting firms and development agencies specializing in predictive modelling of mining spending, which can supplement thin government resources in this area if necessary. As well, there are a few public domain models being developed.

More complex is a good assessment of supplier capacity—an exercise that must assess not only current readiness, but also the potential for upgrading to become viable suppliers to international mining companies. Here again, there are external resources in the form of specialized consultants that can support government efforts where needed.

5.1.3 CHOOSING THE POLICIES

There are a wide variety of policy instruments to encourage local procurement. On the **demand side**, these instruments aim at encouraging mining companies to procure goods and services from local businesses (including from businesses led and owned by women and minorities).

On the **supply side**, instruments aim at providing support to local suppliers, so they are able to compete with global standards on price, quality, volume and reliability, as well as access mining procurement markets and get financing to develop their businesses.

Demand-side and supply-side policies are complementary, as they address different challenges faced by local suppliers. For example:

- ✓ While necessary to encourage local purchasing, demand-side policies in and of themselves are not sufficient to deal with the underlying problems of supplier quality, reliability and cost. Unaddressed, they may increase the costs of the mining operation and negatively affect profits.
- ✓ Similarly, supply-side policies alone are not enough to encourage mining companies to make changes to their established network of suppliers to integrate local ones.

5.1.3.1 DEMAND-SIDE POLICY OPTIONS

1. Mandated Target Percentages for Local Procurement of Goods and Services, Included in Mining Laws/Policies, Empowerment Laws or Contracts/concession Agreements

Types of measures/ instruments

- ✓ Mandatory quantitative targets (quota) to source a percentage share of goods and services from domestic sources

Strengths

- ✓ Act as a target-setting exercise between industry and government
- ✓ Strong driver of mining company action

Challenges

- ✓ Arriving at realistic targets requires reliable procurement data, market analysis and assessment of local capabilities.
- ✓ Data on procurement needs and forecasts for future needs are not always available.
- ✓ Arbitrary target setting poses risks for governments and mining companies: setting them too low will not bring meaningful changes, and setting them too high will have negative impacts on the competitiveness of the mining sector.
- ✓ To be effective, suppliers of goods and services may require support and interventions such as R&D, access to finance and loans, and training in mining sector procurement requirements.
- ✓ Mandatory targets may introduce distortions and inefficiencies and invite cheating the system if they are not matched by the capacity of local suppliers to deliver.
- ✓ Quantitative performance requirements are not compatible with international trade rules and may not be compatible with international investment rules.

Key Elements of Success

- ✓ Consultations with industries is necessary to avoid arbitrary setting.
- ✓ Measures should be time-bound and phased in over several years to allow mining companies to adjust their practices and suppliers to build capacity.
- ✓ Monitoring and enforcement are key.

Learning From International Experience

The 2017 revised Mining Charter in South Africa requires 70 per cent procurement of mining goods and 80 per cent procurement of services from Black Economic Empowerment (BEE) entities. It also requires that 100 per cent of analysis of mineral samples be done by South African-based companies. This is broken down as follows:[7]

- ✓ At least 21 per cent of procurement spend on total mining goods[8] must be sourced from "South African Manufactured Goods" (defined as goods where at least 60 per cent of the value added is realized in South Africa) from "Black-Owned Companies" (50 per cent +1 vote shareholding controlled by Black persons).
- ✓ At least 5 per cent of total mining goods procurement spend sourced from South African Manufactured Goods from Black-Owned Companies which are owned and controlled 50 per cent + 1 vote by female Black Persons and/or "youth" (defined as Black Persons between the ages of 18 and 35 years).
- ✓ At least 44 per cent of total mining goods procurement spend must be sourced from "South African Manufactured Goods from BEE Compliant Manufacturing Companies."[9]
- ✓ At least 65 per cent of total spend on services must be sourced from Black-Owned Companies.
- ✓ At least 10 per cent of total spend on services must be sourced from Black-Owned Companies which are owned and controlled 50 per cent + 1 vote by female Black Persons.
- ✓ At least 5 per cent of total spend on services must be sources from Black-Owned Companies which are owned and controlled 50 per cent + 1 vote by youth.

Targets were reviewed upwards from the previous levels. Results from an assessment of the previous Charter are mixed: in itself, it has not been sufficient to meet its primary goal of deeply transforming the ownership structure of the mining industry. The revised Charter and the targets are currently being disputed in court by mining companies, because they are seen as too restrictive, unrealistic and costly to implement, with serious risks of deterring future investments and affecting current ones.

[7] Mondaq. (2017). *South Africa: What you need to know about the 2017 Mining Charter*. Retrieved from http://www.mondaq.com/southafrica/x/604298/Mining/What+You+Need+To+Know+About+The+2017+Mining+Charter

[8] In the previous Mining Charter, this was understood as capital goods and consumer goods.

[9] Defined as companies that manufacture goods, that have a minimum Broad-Based Black Economic Empowerment (B-BBEE) level 4 on the Department of Trade and Industry B-BBEE Codes and that are 26 per cent Black-Owned.

2. Mandatory Targeted Lists of Types of Goods and Services to Be Locally Sourced

Types of measure/ instruments:

- ✓ Specific list of goods and services to be sourced locally defined by law
- ✓ Requirements for companies to submit procurement plans, with commitments on each product on the list

Strengths

- ✓ Arguably easy to measure
- ✓ Allows companies and countries to work on the basis of goods and services where capacities exist in the country, and therefore where outcomes is likely to be positive

Challenges

- ✓ Choosing the "right products" is challenging.
- ✓ Approach often targets "low hanging fruits" or products already produced or easiest to produce, which are not necessarily big-ticket items, and may not have a significant impact at the national level.
- ✓ If plans are not part of broader national development plan, they can be a mere box-ticking exercise.
- ✓ The sustainability of local suppliers depends on sufficient and significant demand from the mining sector and other industries well into the future.

Key Elements of Success

- ✓ Local suppliers must be able to produce the listed products and meet the requirements of the industry in terms of price, quality and delivery.
- ✓ Measures should ideally be time-bound and should be subject to monitoring, as for mandated targets.
- ✓ To be effective, the industries targeted in the list of goods and services may require support and interventions such as R&D, access to finance and loans, and training in mining sector procurement requirements.

Learning From International Experience

The 2012 Local content regulation LI 2173 (revised in 2015) in Ghana requires that 19 items be sourced from domestic firms. The country adopted a phased approach, with an initial list comprising of eight products, and with lead times to allow mining companies to adjust their procurement sourcing and industrial capacity to improve to meet the mining sector's requirements for product cost, quality and quantity.

The monitoring exercise of 2017, however, revealed that local suppliers faced a number of supply-side constraints in meeting technical and quality standards. As the list increased from 8 to 19 products, SMEs in particular could not deliver on some products, due to their lack of technological expertise in some areas. The mining industry met with local suppliers to identify their challenges and find practical solutions to deal with technical problems. As a result, mining industries' local purchases of problematic input (electrical cables) went from 36.1 per cent to 73.5 per cent of their total planned local purchase.

3. Mandatory Requirements to Provide a Local Procurement Plan

Types of Measures/Instruments

- ✓ Plans are typically submitted as part of yearly reporting requirements under the mining law or specific local content regulations.
- ✓ They can be overall local content plans that include both procurement and employment.

Strengths

- ✓ Provides information to governments regarding breadth and depth of local sourcing (procurement and employment); can provide a monitoring mechanism for progress.
- ✓ Arguably, can be a tool for governments and companies to discuss supply-side constraints and bottlenecks to be addressed to improve local content.

Challenges

- ✓ The plans themselves rarely engage a shared responsibility between governments and mining companies, so that the burden of results delivery falls essentially on mining companies.
- ✓ If penalties for non-compliance are too severe, risk of deterring investors.

Key Elements of Success

- ✓ Plans need to include clear and specific deliverables to be achieved within a given timeframe to allow performance assessment and monitoring.
- ✓ There must be a mechanism to revise and adapt multi-year plans, as needed.
- ✓ There needs to be an enforcement mechanism, with penalties for non-achievement, and a review mechanism to assess the reasons for non-compliance (see Section 5).
- ✓ Enforcement mechanisms must include a clause for flexibility to account for unforeseen circumstances and unpredictable supply from local enterprises. Mining companies should not be held responsible if, in spite of their good faith efforts, local suppliers cannot deliver in time, in the required quality and at competitive prices.

Learning From International Experience

Local procurement plan requirements vary in detail and in the aspects that need to be included. In some countries, like **Australia**,[10] they can be used as a less prescriptive tool than targets, which companies can use to lay out their plans for increasing local content as they see most viable.

In other countries, they can also be used in conjunction with mandated targets. This is the case in **Ghana**[11] and **South Africa**[12]). In South Africa, companies report annually through a scorecard.

4. Best Effort Obligations, Which Require Mining Companies to Give Preferential Treatment to Local Suppliers to the Extent Feasible

Types of Measures/Instruments

- ✓ Obligations to procure locally "to the extent possible," or "where local suppliers are competitive with foreign competitors."
- ✓ This type of measure is an important signal of the government's intent and objectives, and a signal that more forceful regulations may be forthcoming if the soft law approach is not effective.
- ✓ A more forceful variation could include requirements for preferential procurement where bids are within a certain percentage of each other on price (for example 2 per cent in Ghana or within 20 per cent of foreign bid price in Kazakhstan).

Strengths

- ✓ These provisions are preferred by mining companies, as they do not oblige companies to meet defined targets. Instead they set out an expectation that firms will respond by increasing local procurement.
- ✓ They can be seen as a first step in assessing the extent to which companies are willing and able to engage in local sourcing.
- ✓ Based on companies' responses, governments can justify whether stronger or more prescriptive policies are necessary to achieve meaningful local content.

Challenges

- ✓ A straightforward best effort obligation is not enforceable and may result in poor compliance.
- ✓ Such policies are difficult to assess because there are no benchmarks.

Key Elements of Success

- ✓ Despite difficulties in assessing results, monitoring and reporting are important, as they allow policy-makers to gauge whether or not mining companies have increased their level of domestic sourcing and therefore decide whether a more forceful regulatory approach is needed.

Learning From International Experience

In **Botswana**, mining companies are required to give preference treatment to materials and products made in Botswana as well as services located in Botswana and owned by Botswana citizens.

Mozambique's 2014 Mining Law sets out local content requirements for the procurement of goods and services for mining activities to promote Mozambican businesses. The law requires preference to be given to goods and services purchased or obtained from Mozambican individuals or entities. For large purchases, companies must go through a tendering process.

[10] Australian Government: Department of Industry, Innovation and Science. (2013). Australian Jobs Act 2013. Retrieved from https://www.industry.gov.au/regulation-and-standards/australian-industry-participation

[11] Ghana: Minerals Commission. (2012). Minerals and Mining (General) Regulations, 2012 (L.I. 2173). Retrieved from https://www.ecolex.org/details/legislation/minerals-and-mining-general-regulations-2012-li-2173-lex-faoc168926/

[12] Republic of South Africa: Department of Mineral Resources (2010). Revised Social and Labour Guidelines. Retrieved from https://cer.org.za/wp-content/uploads/2013/03/SLP-guidelines-2010.pdf

Kazakhstan requires mining investors to enter into bidding agreements with government to establish certain percentage of local content. It also requires companies issuing tenders to give preferences to local suppliers by giving 20 per cent margin of preference in the bidding price.

In the petroleum sector, **Angola** requires companies to give preferences to local goods and services on the condition that the latter are comparable in quality to internationally produced materials and services and that their prices do not exceed that of foreign goods and services by more than 10 per cent.

5. Community Development Agreements (CDAs): These Can Range From Statements of General Principles in a Memorandum of Understanding (MOU), to Legally Binding Agreements.

Types of Measures/Instruments

- ✓ Requirement to negotiate an agreement with locally affected communities
- ✓ Can range from statements of general principles in a Memorandum of Understanding (MOU), to legally binding agreements that include grievance mechanisms

Strengths

- ✓ They are negotiated between mining companies and local communities and therefore reflect the interests of stakeholders party to the agreement. They can be tailored to community needs and expectations to a degree that national-level regulations cannot match.
- ✓ CDAs are a particularly strong vehicle for integrating and mandating gender equity considerations.

Challenges

- ✓ In many cases, such as the majority of IBAs in Canada, these agreements are confidential and only available to the mining company and signing community. This leaves little room for external oversight and for the monitoring of results, and restricts sharing of best practice.
- ✓ These agreements are beneficial to the local community but may not be sufficient to respond to the wider macroeconomic aspiration of diversification. For example, domestic suppliers living outside the community cannot access procurement markets or employment contracts.
- ✓ As such, while CDAs ensure a social licence to operate and create community-level benefits, their overall economic impact may be limited.
- ✓ The ability to negotiate and enforce these agreements hinges on the community and their networks.[13] This can leave many communities vulnerable, where they lack critical insights and data required to formulate and successfully negotiate the provisions included in such negotiations.

Key Elements of Success

- ✓ The agreements should be structured to allow for revision over time, such as ratcheting up requirements as capacity of the suppliers increases.

Learning From International Experience

Countries such as Canada, Australia, Mongolia and Brazil require mining companies to consult with host communities, notably by entering into community development agreements (CDAs) if they want to obtain a licence to operate.[14] Many CDAs include local procurement requirements. In some cases, having such an agreement is a legal requirement to mine, such as in Mongolia. In others, such as Canada, an IBA is a **de facto** requirement because, while not required, no new mining project is likely to be approved by regulators without one.

[13] O'Faircheallaigh, C. (2013). Women's absence, women's power: indigenous women and negotiations with mining companies in Australia and Canada. *Ethnic and Racial Studies, 36*(11), pp. 1789-1807; O'Faircheallaigh, C. (2013). Community development agreements in the mining industry: an emerging global phenomenon. *Community Development* 44(2), pp. 222-238.

[14] These agreements have many names, including Impact Benefit Agreements (IBAs) in Canada, which are with Indigenous communities, and Mining Cooperation Agreements (MCAs) in Mongolia.

5.1.3.2 SUPPLY-SIDE POLICY OPTIONS

1. Supplier Development Programs (SDPs)

Types of Measures/Instruments

- ✓ Measures and programs to help develop the capacity of local suppliers, primarily through access to markets, mentorship, training and skills development and access to finance.
- ✓ Often driven by mining companies, but can be required by, supported by or jointly administered by governments or state institutions.

Strengths

- ✓ SDPs respond to the concern of suppliers, who encounter difficulties in:
  - Meeting with mining companies on a regular basis
  - Hearing about potential opportunities for new products and services
  - Testing their innovations with mining companies
- ✓ Support business management and technical skills
- ✓ Support suppliers to access finance for working capital and investments[15]
- ✓ Help suppliers to access certifications of conformity in processes or health and safety requirements, to increase the likelihood to successfully supply the mining company in future and potentially also expand their client base beyond the mining sector.
- ✓ One of the key, but non-obvious, outcomes to successful industry-led supplier development programs is simply increased "proximity," i.e., bringing the companies and suppliers together.
- ✓ Help to identify and address skills gaps among suppliers owned by women or that provide significant employment to women; this can make a significant contribution to gender-equitable development.

Challenges

- ✓ Without appropriate accompanying measures, local suppliers may not be able to meet the requirements of companies in terms of technical standards and time for delivery.

Key Elements of Success

- ✓ The activities should be tailored to the existing gaps in local business capacity, as identified in Step 2 Taking Stock.
- ✓ Mining company and supplier involvement is important, including in the design of such programs since:
  - Mining companies have a better understanding of the capacity needs of suppliers and therefore can help ensure an appropriate suite of capacity-building activities.
  - Local suppliers know what they can produce and what challenges they face.
- ✓ Government should ensure that programs build skills beyond strictly what is needed to supply a particular mining company or operation. As noted in Section 5.3, these programs should build suppliers' capacity more broadly, allowing them potentially to diversify their clients beyond simply the mining sector. This also supports their post-mine viability.
- ✓ Any such programs should be guided by a gender advisor to make recommendations on the specific capacity-building needs of women.

Learning From International Experience

Supplier development programs can be developed as national initiatives aimed at the broader diversification agenda of the government (as in the case of **Ghana**) or included as part of the priorities of the Commission or government body responsible for local procurement in the mining sector, as in Botswana.[16, 17]

[15] International Finance Corporation (IFC). (2011). *A guide to getting started in local procurement*, p. 36–37. Retrieved from http://www.eisourcebook.org/cms/files/attachments/worldbank/9point2-Guide-to-Getting-Started-in-Local-Procurement.pdf

[16] Review full details of the programme and results here (Program Implementation Status, November 2015): https://www.slideshare.net/ThapeloLippe/psdp-ii-v4

[17] Private Sector Development Program. (2015). A Government of Botswana initiative supported by the European Union and the Centre for the Development of Enterprise and Business Botswana, slide 5-6. Retrieved from https://www.slideshare.net/ThapeloLippe/psdp-ii-v4

They can also be part of the local procurement plans that mining companies are required to submit and implement, as in **South Africa** where companies must describe income generating projects the mine would undertake.[18, 19]

They may form part of partnership programs among governments, mining companies and suppliers as in the State of Para in **Brazil**, where partnerships have helped build the capacity of local SMEs to supply large firms in the region in many sectors, including mining.[20]

They may also be a joint effort of government and international financial agencies, as in **Ghana**, where IFC partnered with Newmont to launch a three-year linkages program in 2007. In many of the most prominent cases of supplier development in mining, finance for suppliers and/or training has been provided by official development assistance (ODA), rather than by host country governments directly.

Supplier development programs bring selected suppliers closer to the mining company and can provide them with important information on the company's needs. In the World Class Suppliers program in **Chile**, for example, suppliers work with the mining company to shape and test innovations to respond to the company's stated needs.

In **Australia**, where suppliers are very strong, one of their main comparative advantages is their proximity to the mining companies, with whom they have typically worked for many years.

In Canada, Vale has put in place a "test mine" for suppliers to test their innovations in a facility that was taken out of regular service. All of these initiatives help suppliers form a closer relationship so that they can better respond to the needs of mining companies and therefore have a better chance of success in bidding for tenders.

2. Building Suppliers Networks and Facilitating Engagements

Types of Measures/Instruments

- ✓ These measures are closely related to suppliers' development and are meant to help SMEs overcome barriers beyond quality, reliability and price that prevent them from winning contracts.
- ✓ Governments may mandate mining companies to:
  - Unbundle contracts, so that suppliers can bid on portions of a larger project
  - Post all contracts on public supplier portals so that potential bidders can easily see and respond to opportunities
  - Create online portals aimed at connecting suppliers with potential buyers (see below)
  - Grant longer timeframes for SME bidding, allowing for their administrative and technical challenges
  - Train suppliers in the tender process, either as part of supplier development programs or as a separate exercise, or government-led programs with the same goal
  - Give scoring preference to local suppliers in the bidding process
  - Build tendering capacity in local suppliers by explaining the reasons for failed bids

Strengths

- ✓ Measures taken to build suppliers networks and facilitate suppliers' engagements have the advantage of bringing together SMEs that may lack the scale and breadth together to bid on large contracts that cover a broad variety of goods and services. Where the tender may call for supply of an entire housing complex, for example, a given supplier may only be able to handle the plumbing and electrical work.
- ✓ Similarly, such support may alleviate the administrative burden of bidding, which may stretch the resources of SME suppliers.

Challenges

- ✓ All these measures have a cost to the procuring firm, adding administrative and other complexities.
- ✓ Local suppliers may face important supply-side constraints that cannot be addressed by these measures alone. Complementary incentives and support are needed to build the latter's capabilities.
- ✓ The shift to local suppliers takes time. Mining companies may already be engaged in long-term contracts with large international suppliers for critical supplies, in particular if procurement is done at the global corporate level.

[18] Full details and guidance can be downloaded on the South African Government's website here https://cer.org.za/wp-content/uploads/2013/03/SLP-guidelines-2010.pdf

[19] Republic of South Africa: Department of Mineral Resources. (2010). *Revised social and labour guidelines*, pps. 18–22. Retrieved from http://www.dmr.gov.za/Portals/0/social%20and%20labour%20plan_guideline.pdf

[20] IBRAM & ICMM (2013). *The mining sector in Brazil: Building institutions for sustainable development.* Mining partnerships for development.

Key Elements of Success

- ✓ Local suppliers must be able to use the portals to be able to respond on time to tendering process. They must be conversant with online tools. This is not always obvious for small suppliers with difficulties accessing the Internet, for example.

Learning From International Experience

Successful experiences regarding suppliers' development are mainly driven by the industry. In **Brazil**, in states where Vale operates, the company has strengthened its partnerships with local partners, and in particular with business associations and local industries. Considered as a strategic priority, Vale has invested in programs for the development of its suppliers, through programs to support qualification of suppliers.

In **Chile**, BHP Billiton established a world-class supplier development programs to support existing suppliers so they can compete globally. This was done through collaborative efforts with governments, local suppliers and training institutions. Local suppliers were encouraged to develop innovative solutions to manage various areas of the firm's operations, such as water, energy, acid mist control etc., which would then be used by the company. Successful companies were then supported in exporting their services abroad.

3. Providing Access to Finance

Types of Measures/Instruments

- ✓ These measures aim to address the barriers suppliers face if they cannot obtain financing at reasonable interest rates. Lack of finance—particularly in developing countries—makes it challenging to start a formal business and to upgrade operations to meet the quality and reliability standards of international mining clients.
- ✓ Measures can be administered by government directly, by mining companies or funded by government and administered through others, such as the Chambers of Commerce.
- ✓ Special guarantee schemes for micro and SMEs to reduce risks for financial institutions.
- ✓ Concessionary interest rates for smaller local suppliers.
- ✓ Requirement for mining firms to provide expedited payment procedures that take into account the tight cash flow situation of SME suppliers, including provisions for upfront payments.
- ✓ Encourage banks to extend credit to suppliers when awarded contracts with mining companies.
- ✓ Training programs to development solid and fundable business plans.
- ✓ Training in basic bookkeeping and accounting, so SMEs can provide the required documents to the banks when needed.

Strengths

- ✓ Can address gender discrimination on credit markets, which often inhibit women from equitable access to the financing they require to upgrade their businesses
- ✓ Can address the imbalance between local suppliers and foreign companies in their capacity to access finance

Challenges

- ✓ Insufficient coordination with procurement departments may lead to misallocation of resources to sectors that are not important as suppliers to mining companies.

Key Elements of Success

- ✓ Governments need to do their due diligence in granting such loans. They are not intended to be granted to firms with poor prospects, but rather to firms with a strong business case but poor access to credit.
- ✓ Instruments need to be designed to respond to specific challenges of local firms (such as risk guarantees, collaterals).

Learning From International Experience

Anglo American established an enterprise development fund in 1989, known as Anglo Zimele,[21] to empower black entrepreneurs through the creation and transformation of small and medium enterprises (SMEs) in South Africa. Anglo Zimele provides access to finance to local firms, through six distinct funds, inluding:

[21] See African Natural Resources Centre/African Development Bank. (2016). *Anglo American Corporation's Zimele Enterprise Program: A case study*. Retrieved from: https://www.afdb.org/fileadmin/uploads/afdb/Documents/Publications/anrc/Anglo_american_corporations_Zimele_enterprise_program.pdf.

(i) Small Business Start-Up Fund, which provides loan finance, supports entrepreneurs and small businesses in the communities around the mining operation. In addition, small business hubs provide training and coaching in business skills.

(ii) Supply Chain Development Fund, which works with the company's procurement departments to incorporate local SMEs into the supply chain. The fund provides loan, equity financing and technical assistance. To access the funds, interested SMEs must submit a business plan based on a set of investment criteria. SMEs are also provided with capacity building in the form of training programs and/or on-the-job training; technical support assistance from business development officers in management, marketing, operational and financial aspects.

(iii) A Junior Mining Fund, co-funded by a public entity, Khula Enterprise Finance Limited, to assist small-scale, black-owned mining companies with equity and loan finance and technical support during the high risk exploration and pre-feasibility phases of projects, in order to make them commercially bankable for the exploration phase.

This flagship program has been very successful, and the Zimele Model is often referenced as a good practice in the industry.

4. Setting up Suppliers' Portals

Types of Measures/Instruments

- ✓ Suppliers' portals are mechanisms to connect mining companies and local suppliers while addressing the information and knowledge gaps about business opportunities. They can be government initiatives or led by the Chambers of Mines as a service to members.
- ✓ Governments measures to exploit their potential include:
  - Creation of an online database regarding contract and tenders
  - Mandatory requirements to post procurement opportunities on suppliers' portals
  - Training for suppliers to use such portals
  - When suppliers cannot meet pre-qualification standards, training requirements to upgrade capabilities of suppliers
- ✓ Companies can also set up their own dedicated suppliers' portals, that can include pre-qualification systems to collect key information on suppliers. Pre-qualification systems can declare suppliers compliant with such relevant standards as occupational health and safety requirements and other technical specifications.

Strengths

- ✓ Mining companies can overcome challenges in purchasing local goods and services due to a lack of knowledge of relevant suppliers; suppliers' portals expand the reach of their advertising for contracts.
- ✓ Portals can identify suppliers by geographical location, to allow mining companies meet their obligations under CDAs or CSR.
- ✓ They provide information to suppliers about procurement opportunities with mining companies.
- ✓ Pre-qualification systems built into portals are a good way to identify specific technical challenges faced by local suppliers and plan training programs accordingly.
- ✓ Help suppliers to identify and connect to sub-contractors.
- ✓ Allow suppliers to submit expression of interests on time and to the right service.
- ✓ Can feature opportunities targeted at specific groups, such as women and minority-owned businesses.
- ✓ Along the whole process, from a mining company's open contract to a supplier's expression of interest to awarding of the contract, supplier portals can be a useful vehicle to improve transparency (as an example, see how Open Contracting Partnership is applying this vehicle for public sector contracts).
- ✓ Supplier portals can help suppliers, including those with low capacity, find markets, in effect providing marketing support to businesses that may not have the resources and competencies to do so on their own.
- ✓ When supplier portals are open to other sectors beyond mining, it helps registered businesses diversify their customer base and decrease their dependency on mine site buyers, facilitating increased potential for horizontal linkages.

Challenges

- ✓ Setting up such platforms is costly and cannot be financed by government or companies alone. Need strong partnerships and a way to self-finance the initiative in the long run to ensure sustainability;
- ✓ Given the number of stakeholders involved, may be difficult to clearly define responsibilities when there are challenges;

Key Elements of Success

- ✓ Effectively finding, classifying and pre-qualifying businesses requires significant time and financial resources. Managers of supplier portals need to have the appropriate expertise to evaluate the multitude of different suppliers to provide the confidence mining companies will need to desire to use them.
- ✓ Resources need to be committed for the long term; this is not a one-off exercise and needs to be continuously monitored and updated.

Learning From International Experience

Under the umbrella of the Australian Industry Participation (AIP) framework, a Supplier Access to Major Program was developed in 1997 to create linkages between Australian suppliers and project developers. This program provided funding to the Industry Capacity Network Limited to "assist in identifying capable and competent Australian suppliers for major projects," including through the management of a national database of industry capabilities, project opportunities and the provision of business and market information. For example, with regards to contracts, a comprehensive list of open, awarded and close listings was published on the portal for submission of expression of interest. Project funding closed in December 2014, and the project is estimated to have earned Australian firms over AUD 4 billion in contracts.

SUMMARY OF DEMAND AND SUPPLY-SIDE POLICY OPTIONS

TYPES OF DEMAND-SIDE POLICY OPTIONS

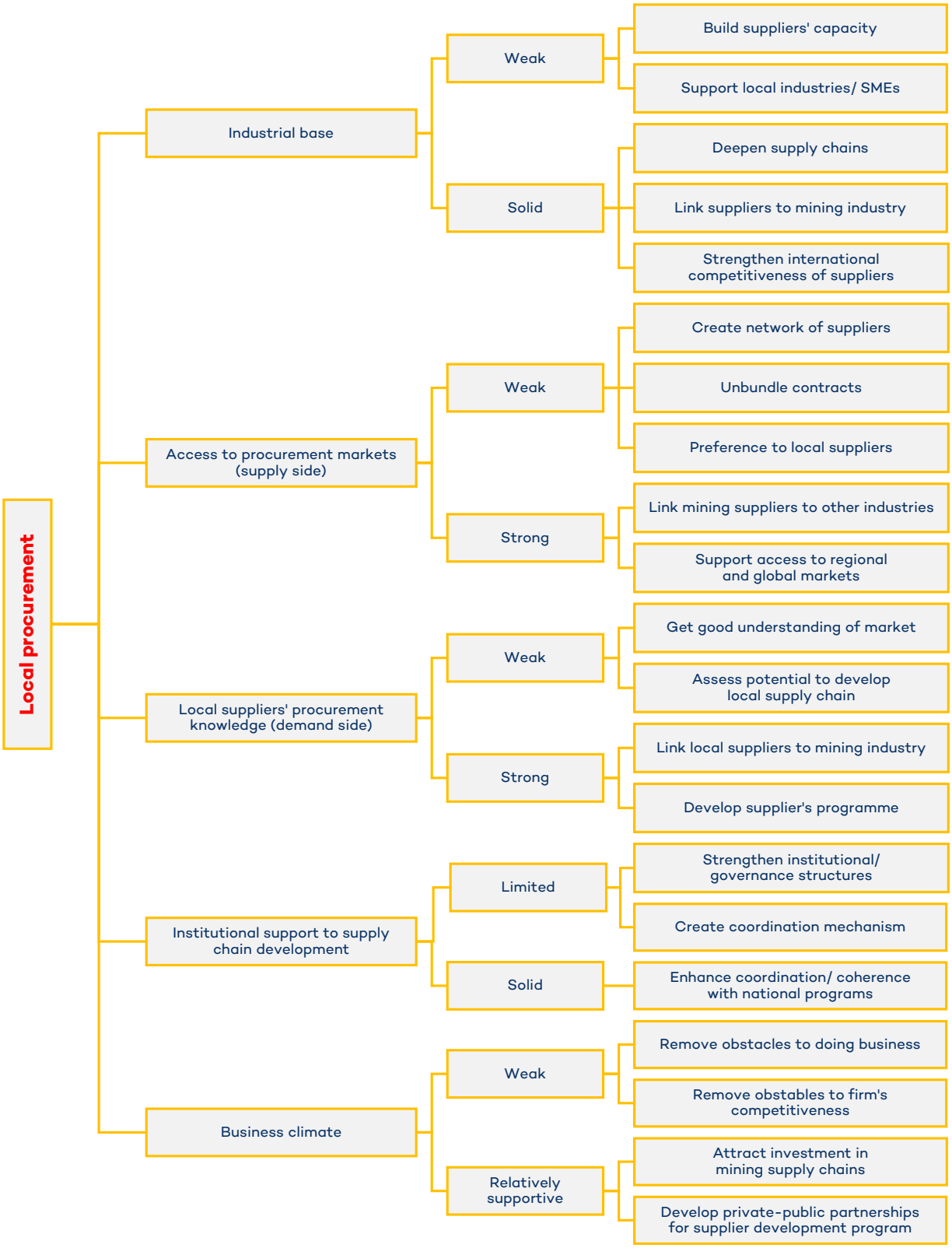
"Hard" regulatory measures	• Mandatory procurement targets • Targeted list • Specific sectors reserved for nationals • Obligations to negotiate community development agreements
"Soft" regulatory measures	• Mandatory local sourcing plans • Obligations to publish tenders, create databases; suppliers portals etc. • Preference to local suppliers on condition of price, quality and standards

TYPES OF SUPPLY-SIDE POLICIES

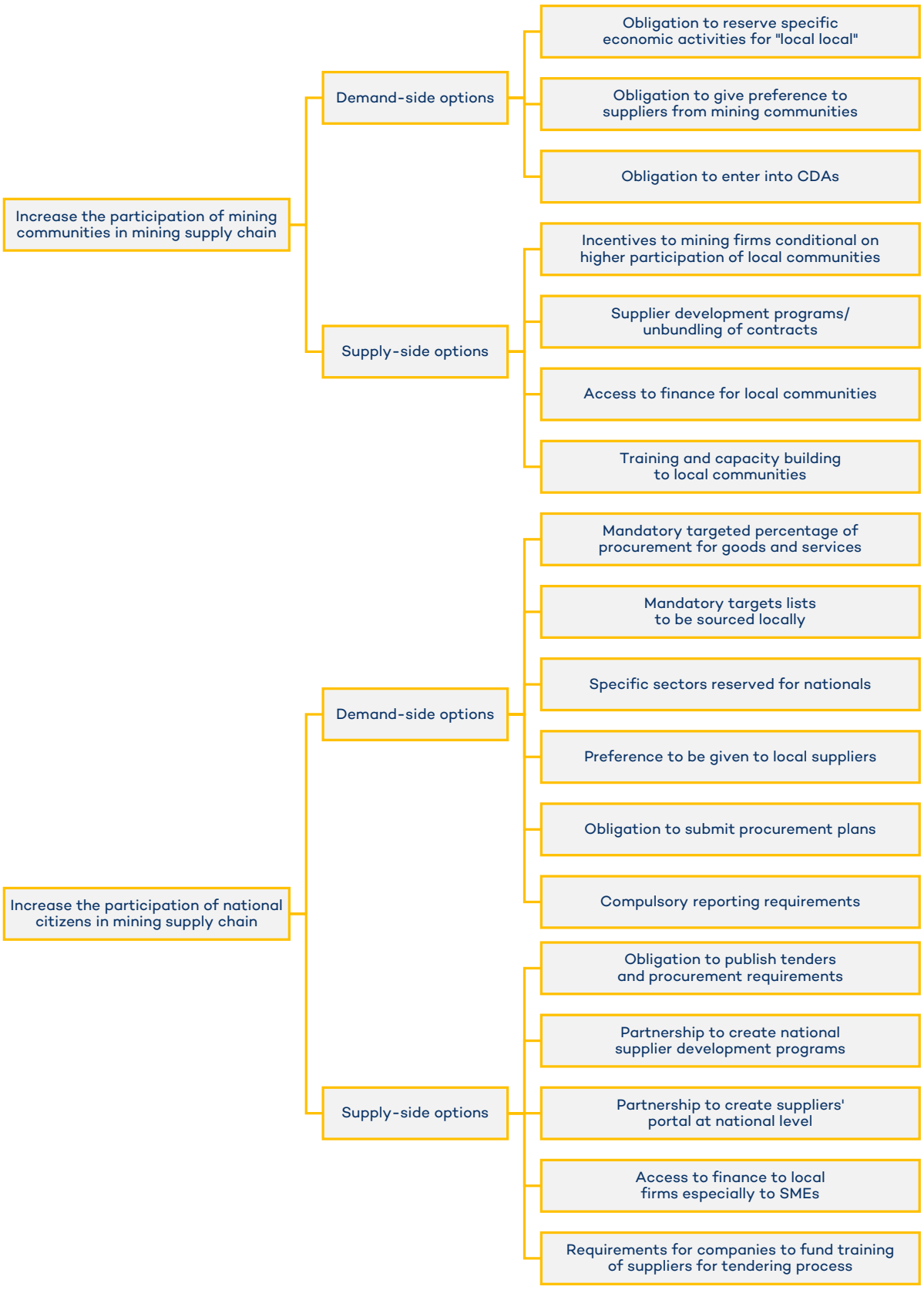
Incentives	• Mandatory procurement targets • Targeted list • Specific sectors reserved for nationals • Obligations to negotiate community development agreements
Partnerships	• Mandatory local sourcing plans • Obligations to publish tenders, create databases; suppliers portals etc. • Preference to local suppliers on condition of price, quality and standards

5.1.4 CHOOSING A POLICY OPTION

Based on Step 2 in Section 4, prior to choosing the policy option, Governments need to assess the ability of local suppliers to take up procurement opportunities with the mining sector. The **companion tree** below outlines the key steps necessary to ensure the conditions are right for local procurement policies to be effective.



Based on the above, we provide a "**decision tree**" template to facilitate decision-making processes and the selection of a particular instrument (or set of instruments) provided the conditions identified in the companion tree are met.



5.1.5 POLICY COORDINATION AND COHERENCE

While designing local content policies, it is important to ensure the following:

Policy Coordination

- ✓ **At the government level**: Coordination between the Ministry responsible for mineral resources and in particular ministries responsible for planning, finance, education, infrastructure, trade and industry, environment and technology. Advisable to establish a high-level inter-ministerial coordination committee (see Section 3.5).
- ✓ **Multistakeholder coordination**: Government, mining companies and suppliers must also have a regular platform to discuss to ensure policies respond to the reality of local suppliers and needs of companies.

Policy Coherence

- ✓ Local procurement policies should be aligned with other policies such as trade and investment. While governments require mining companies to buy from local manufacturers, at the same time, they often allow companies to import their inputs duty and quota free. Local suppliers may not have duty concession on their inputs.
- ✓ Local procurement requirements can also contradict international trade commitments. Some mandatory measures contravene the rules of the WTO or bilateral investment treaties (BITs). Others go against free trade agreements at the bilateral or regional level.
- ✓ Similarly, mining companies are able to negotiate more favourable fiscal incentives due to their large investment. Those may not be available to other domestic investors, putting local suppliers at a disadvantage.
- ✓ Further, while governments want to encourage local industries to supply to large mining firms operating domestically, incentives provided generally encourage firms to produce for the export market (e.g., export-processing zones (EPZs), Special Economic Zones and Free Zone schemes). This deprives mining companies of some of their best potential local suppliers (because if they operate in free zones, those with the capacity and scale to produce for the domestic market cannot sell locally).

5.2 LOCAL DIRECT EMPLOYMENT

Local direct employment policies aim to enhance the amount and quality of local employment by mining operations. Carried out successfully, they can:

- ✓ Create new local jobs
- ✓ Grow and develop the skills of the national workforce
- ✓ Support efforts to further gender equality and social inclusion.

From the firms' perspective, local direct employment policies can, if successful:

- ✓ Lower project costs by reducing and/ or eliminating the need to import labour
- ✓ Earn and maintain the social licence to operate for mining projects, if the measures are taken to boost employment for communities close to the mine site.

Increased local employment can also support efforts to further gender equality and social inclusion, if dedicated efforts are made to ensure those outcomes, and it can increase governments' income tax revenues.

Along with local procurement policies, local direct employment policies are typically the basis for any first foray into local content policy by governments. This is because local direct employment policies help build the foundational skills and capabilities on which other policies—such as those aiming at horizontal and downstream linkages—can be based.

Governments occupy a unique position in being able to influence both the supply and demand sides of local employment in the mining sector. While a government can mandate a company to comply with employment requirements, it can also facilitate education and training measures to prepare the local labour force to fulfill these requirements.

For local employment requirements to work, governments must ensure that adequate skills are available through appropriate education, training, mentoring and other programs such as those described Section 5.2.3.

However, governments must avoid over-inflating expectations about mining being a "solution" to unemployment and remain realistic when setting targets so as not stifle foreign investment or encourage shortcuts, fronting and superficial policy commitments.[22] If regulatory bar is too high compared to available skills, the competitiveness and profitability of operations may be at risk. Moreover, building or retaining domestic industry competitiveness requires participation in the international exchange of human capital.

For a range of reasons, it may not be economically feasible to develop highly specialized skills locally. Demand for specialized skills may be too small or irregular compared to the cost of skill development, or there may be a lack of viable opportunities for specialized skills to transfer into the domestic market post-extraction.[23]

Furthermore, governments must be mindful that increasing automation will reduce the number of low- and medium-skilled workers required in mining operations (see Section 6.1).

[22] Esteves, A.M., Coyne, B., & Moreno, A. (2013). *Local content initiatives: Enhancing the subnational benefits of the oil, gas and mining sectors* (Policy Paper). New York, NY: National Resource Governance Institute (NRGI). Retrieved from https://resourcegovernance.org/sites/default/files/Sub_Enhance_Benefits_20151125.pdf

[23] Roe, A., Beare, M., Travis, N. Sindou, E. (2016). *Extractives industries and their linkages with the rest of the economy*. UKAid. Retrieved from https://www.cabri-sbo.org/uploads/files/Documents/keynote_paper_2016_extractives_and_linkages_cabri_revenue_management_in_the_extractives_sector_in_africa_english.pdf

5.2.1 DEFINING LOCAL

Defining clear parameters for "local" is important prior to crafting local employment policies. As with Section 5.1, the table below highlights the main parameters governments may consider in deciding on the breadth of the "local" dimension of employment.

Core elements of local	Definition	Characteristics	Examples	Risks
Geography	**Narrow definition**: Population close to the mine site or mining region	Prioritizes employment of people from communities affected by mining projects Prevailing in community agreements and corporate social responsibility local content strategies	Mining Acts in the Philippines and Papua New Guinea require mining firms to give priority to employment of people living in local or neighbouring communities.*	Discriminates against non-local nationals
	Broad definition: Residents or citizens of a country	Opportunities to be given to any citizen of a country	For example, this is the case in Nigeria, Ghana, Angola and Indonesia	Narrows the available talent pool as compared to a national definition, making it harder to achieve targets
Ethnic or social sub-groups	**Indigenous and historically disadvantaged**	Provides opportunities for particular groups of people to rebalance the distribution of benefits	In Australia, Canada and South Africa, local employment is often intended to address the needs of Indigenous or historically disadvantaged communities.	Skilled nationals may outcompete "local locals" for positions.
	Policies in support of gender equality and social inclusion	The mining industry affects women differently to men. Aims at: ✓ Mitigating negative impacts such as social disruption or violence ✓ Providing business opportunities and increased earnings	Programs such as Women in Hard Hats in Queensland, Australia,** have focused on creating direct employment pathways for women.	Possibility that the regime will benefit local elites, rather than those at whom it is targeted

** Section 136(d) of the Revised Rules and Regulations of the Philippine Mining Act of 1995 stipulates that priority should be given to Filipinos living in 'local' or neighbouring communities or the province where a mine is located. (Sec. 136(d) of the Revised Implementing Rules and Regulations of R.A. 7942, otherwise known as the Philippine Mining Act of 1995 ["AO 2010"]).*

*** See Williams, T. (2011). MP's praise for women in hard hats. Daily Mercury. Retrieved from* https://www.dailymercury.com.au/news/ministers-praise-for-women-in-hard-hats/861489/

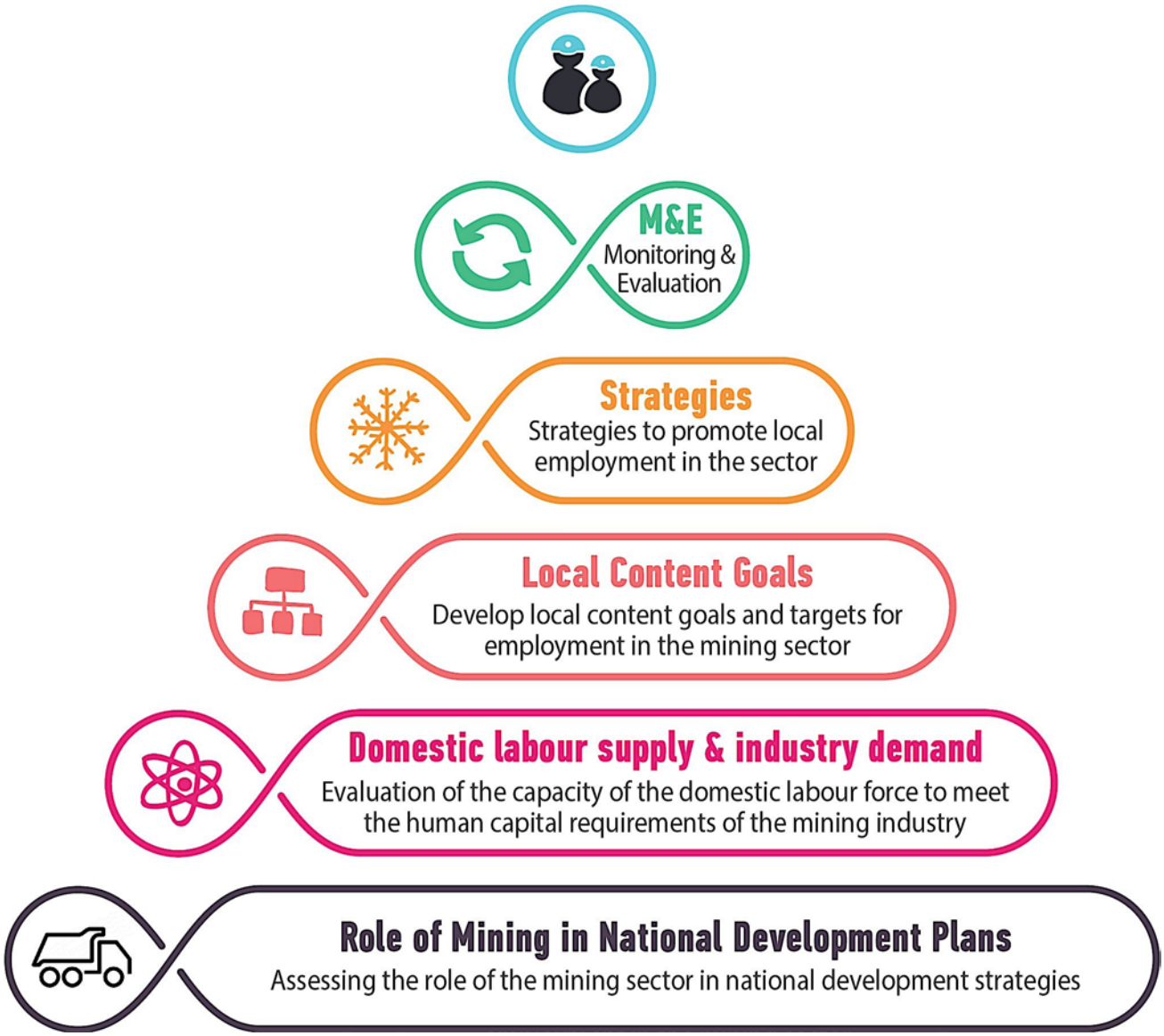
RESOURCES

- ✓ IGF case studies
- ✓ CCSI profiles: Local Content Laws and Contractual Provisions
- ✓ Local content policies in mineral-exporting countries (Korinek/Ramdoo, OECD)

For more information on how greater gender diversity in mining can foster innovation and raise retention and productivity rates, see International Finance Corporation (IFC). (2013). Investing in Women's Employment: Good for business, good for development. Washington, DC: World Bank Group. Retrieved from https://www.ifc.org/wps/wcm/connect/5f6e5580416bb016bfb1bf9e78015671/InvestinginWomensEmployment.pdf?MOD=AJPERES

5.2.2 TAKING STOCK

The diagram below summarizes the key stages for developing a local employment policy for the mining sector.



One of the most important stages is assessing the mining sector's current and future demand for labour—what types and skill levels—and comparing this with the characteristics of the local labour force.

Governments first need to understand the **demand side** of the equation:

- ✓ The various skills and competencies required by the mining industry
- ✓ The timing and quantum of labour force requirements.

For most countries, understanding and forecasting labour demand in the mining industry is a gradual process, informed by ongoing dialogue and collaboration with mining industry stakeholders.

Matching supply with demand involves:

- ✓ Working with the education and training sector to determine present labour force capacity
- ✓ Setting up targeted and specialized education and training programs that fill in gaps to align with sector and project requirements
- ✓ Managing expectations about the levels of human capital development that can be achieved in the short, medium and long terms. To this end, agencies that are established to coordinate the planning and development of domestic labour can be helpful in providing independent verification of sector-wide supply and demand.

Unrealistic expectations about the skills and competencies of the domestic labour force can result in a mismatch between the local supply of human capital and the requirements of the mining sector. This is a particular risk for highly technical and specialized positions such as metallurgists and mining engineers.

5.2.3 CHOOSING THE POLICIES

There are two broad approaches to local direct employment policies:

1. Regulatory approaches, which are prescriptive, mandatory and rely on strong compliance mechanisms
2. Facilitative approaches, which are incentive-based and offer support for the development and employment of local workers.

Most resource-rich countries adopt a combination of both regulatory and facilitative approaches, with a gradual transition from regulatory to facilitative strategies as a country builds capacity and global competitiveness.

Approaches may differ across countries that are at different stages of sector development and with the levels of skills availability:

- ✓ If a country has only just discovered mineral reserves or is in the early stages of project construction, more time is available to develop the domestic labour force and develop commensurate regulatory requirements.
- ✓ If, however, extractive activity is already well underway, then implementing strict regulations for direct employment can bottleneck operations, especially if there is an absence of skilled domestic workers and existing training institutions. In these cases, it may make sense to gradually phase in local content requirements as requisite local skills are brought online.

5.2.3.1 REGULATORY POLICIES

1. Mandated Local Employment Percentages

Types of Measures/Instruments

- ✓ Local employment quotas, such as mandated minimum percentages for particular roles, or to the mining project as a whole.
- ✓ For administrative or labour roles, local employment policies often specify 100 per cent local workers.
- ✓ For more technical, specialist or management roles, it is common for local employment policies to prescribe percentages, with restrictions on how many foreign nationals can be employed within a particular project.
- ✓ Less common, but potentially extremely impactful, is the implementation of quotas for female representation among more skilled positions.

Strengths

- ✓ Clear targets for local employment help to define compliance parameters.
- ✓ Quotas are relatively easy to monitor and can help manage stakeholders' expectations.
- ✓ For communities, quotas guarantee participation of local people in extractives project.

Challenges

- ✓ Quotas only work well when there are sufficient numbers of skilled workers within the national labour force to satisfy the requirements of both the government and the project as a whole.
- ✓ Unless specific quotas are established for high-level or skilled positions, companies may employ local people, particularly women, for unskilled positions and create few or no pathways for employee progression and skill development.
- ✓ High quotas can create unrealistic expectations, leading mining companies to add more unproductive positions and, in the worst cases, reduce or relocate investment.
- ✓ If the domestic labour supply is unable to meet the demand of the mining industry, high quotas can create suboptimal outcomes[24] and run the risk of deterring investment.
- ✓ Unrealistic quotas or requirements are open doors for "fronting" i.e., nationals may be listed as shareholders, executives or management, without real participation in the strategic decision-making process. They may have lower salaries than—or roles and responsibilities that are different from—their expatriate peers.
- ✓ Particularly stringent frameworks can diminish the country's standing as an investment destination (particularly relevant for nascent producing countries).

Key Elements of Success

- ✓ To be effective, quotas need to be accompanied by supply-side strategies that raise skill levels.

Learning From International Experience

Kazakhstan has different minimum targets for Kazakh nationals depending on the level of expertise: in management positions, the minimum requirement is 70 per cent; in technical and specialist roles, this is increased to 90 per cent. There is also an overall 90 per cent minimum target of national workers by headcount. (Decree 45/2012 on Expatriate Workforce Quota and Work Permit Use).

To avoid negative impacts on mining operations, **Ghana** has adopted the strategy of imposing quotas which gradually increase over a 10-year period. This gives companies time to develop support and succession plans to accommodate the introduction of local workers.[25]

[24] Tordo, S. et al. (2013). *Local content policies in the oil and gas sector* (World Bank Study). Washington, DC: World Bank. Retrieved from http://documents.worldbank.org/curated/en/549241468326687019/Local-content-in-the-oil-and-gas-sector

[25] Ministry of Energy. (2010). *Local content and local participation in petroleum activities* (Article 5.4). Republic of Ghana. Retrieved from http://www.eisourcebook.org/cms/December%202015/Ghana%20Local%20Content%20Policy%202010.pdf

2. Requirements to Conduct Training of Locals, or Support Training Facilities

Types of Measures/Instruments

- ✓ Governments may mandate companies to train local staff, as part of the conditions to obtain a licence, in mining contracts or in concession agreements.
- ✓ Companies may be required to fund training schemes that may be undertaken by the state or other education and training providers.
- ✓ Governments may require training plans and requirements to include gender equality and inclusion.
- ✓ Training plans can also be a voluntary component of a company's human resources and corporate social responsibility frameworks.

Strengths

- ✓ A way for host governments to encourage necessary up-skilling while reducing pressure on national education system to prepare a project-ready workforce, outsourcing costs to private sector.
- ✓ If provided in areas needed across various industries, these requirements are a way to ensure skills developed in the local workforce are transferable in the long term.
- ✓ When companies are wholly responsible for funding and conducting training programs as part of the terms of project engagement, host governments benefit directly from a transfer of industry-level expertise to the domestic workforce.
- ✓ On-the-job, context-specific training by mining companies is arguably more effective for skills transfer than theory-based learning processes.

Challenges

- ✓ Unless training-to-employment pathways are guaranteed, local people could face uncertainty over whether training will in fact enhance their employment prospects.
- ✓ For companies, additional costs, often incurred over the whole life cycle of a mining project (as workers are upskilled to take on higher positions and succession plans are needed to replace expatriates).

Key Elements of Success

- ✓ There should be some level of government involvement and coordination to ensure that training increases access to formal accreditation, standardized certificates or credentials that can improve prospects of employment in other sectors and operations. Otherwise firm-level training may just lead to site-specific expertise that is not easily transferable.[26]

Learning From International Experience

In **Norway**, foreign companies are required, at their own expense, to permit employees of the state-owned oil company (Statoil) to participate in any internal training programs.[27]

In **Malaysia**, a contractor must commit to training staff of the national oil company (Petronas) through on-the-job schemes or within their own training institutions.[28]

South Africa's Liquid Fuels Charter specifies that licensees must make contributions to the "Upstream Training Trust" (UTT) to fund skills development through project funding, human capital development, workplace integration, student bursaries, tertiary level support and career awareness.

[26] Canadian Council for Aboriginal Business and Mining Shared Value, an initiative of Engineers Without Borders Canada (2016). *Partnerships in procurement: Understanding Aboriginal business engagement in the Canadian mining industry*, p. 17. Retrieved from https://www.ccab.com/wp-content/uploads/2016/11/Partnerships-in-Procurement-FullReport.pdf

[27] Requirement provided in Article 2 of the 1988 and 1991 Model Training Agreements concerning Petroleum Activities.

[28] Provision contained in Article 26 of the Petroleum Sharing Contracts.

3. Required Succession, or Localization, Plans

Types of Measure/Instruments

- ✓ Mining companies required to submit plans for replacing expatriates with local staff over time, demonstrating how they intend to train local people to take over these positions within a given timeframe.
- ✓ Governments may use a company's succession plan to determine whether to allow or extend work permits for foreign nationals.
- ✓ Governments often require mining companies to train local staff so they can replace foreign workers.

Strengths

- ✓ Existing local employees are provided with career pathways and development plans.
- ✓ On-the-job, context-specific training arguably more effective for skills transfer than theory-based learning processes.
- ✓ Enables knowledge sharing and peer collaboration.
- ✓ Prevents labour bottlenecks—gives companies time to develop local skills gradually.
- ✓ Allows companies to begin project (phases) and manage transitions concurrently.

Challenges

- ✓ Susceptible to workload transfer into the hands of community elites
- ✓ Unless monitored effectively, plans can be a guise for non-compliance (training programs with little managerial commitment to workload transfer)
- ✓ Increased administrative costs for companies
- ✓ Double (or increased) wage bills for companies

Key Elements of Success

- ✓ Success requires a monitoring and enforcement mechanism, strong collaboration across industries and institutional oversight to ensure accreditation and recognition of certificates.

Learning from international experience

In **Nigeria**, for each of its operations an operator "shall submit to the Board a succession plan for any position not held by Nigerians and the plan shall provide for Nigerians to understudy each incumbent expatriate for a maximum period of four years," at the end of which, the position shall become "Nigerianized."

In **Tanzania**, under the 2014 Draft Local Content Policy, applicants for mining licences must prepare and submit a succession plan detailing how a national citizen could acquire the skills necessary to undertake the job that an expatriate is brought in to perform. The government of Tanzania uses this plan to determine whether or not to extend the working permit of the foreign national.

4. Visa Restrictions on Foreign Workers

Types of Measure/Instruments

- ✓ Limit on the number of working permits for foreigners.
- ✓ Restrictions on the amount of time foreign workers can be employed on a given project or within certain positions.
- ✓ Award or renewal of work visas for foreign workers can be conditional on a mining company fulfilling obligations to hire a minimum number of local people overall or in certain positions.
- ✓ Often combined with requirements for succession or localization plans.

Strengths

- ✓ Increased likelihood of company compliance with quotas if visas for foreign workers dependent on minimum levels of local employees.
- ✓ Leads to transfer of specialist and technical skills to the local population, especially when work visas are tied to succession plans.
- ✓ Companies may provide training in specific and critical skills, to avoid operation efficiency challenges when foreign workers leave.

Possible Challenges

- ✓ Presence of foreign nationals can cause social tension if cultural practices conflict and local people see jobs going to "outsiders."
- ✓ There is the risk that companies will "cheat" the system by mischaracterizing the availability of skills in the domestic workforce.
- ✓ Administrative costs in processing visa applications and checking availability of skills in the domestic workforce.
- ✓ Visa restrictions can hold up operations if companies require specialist foreign skills quickly.

Key Elements of Success

- ✓ Strong institutions for assessment of domestic skills, to verify claims for exemptions from restrictions

Learning From International Experience

In **Tanzania** (petroleum), the government determines whether to extend a foreign worker's permit depending on the company's succession plan.

In **Angola** (petroleum), authorization to hire foreign nationals is granted only when a firm can show that the requisite number of qualified Angolan nationals cannot be recruited.

In **Philippines**, foreign workers can only be hired in positions that require highly specialized training and experience in exploration, development or utilization of mineral resources. Each foreign employment position can only last for a period of five years, during which time Filipino citizens must be trained as understudies for these positions.

5. Mandated Employment of Indigenous People, Women or Disadvantaged Groups

Types of Measure/Instruments

- ✓ Obligation to include a percentage of Indigenous people, historically disadvantaged people or women in employment and training programs.
- ✓ Obligation to provide procurement opportunities for Indigenous people, historically disadvantaged people or women in employment and training programs, including by reserving some activities.
- ✓ Community Development Agreements or Impact and Benefits Agreements provide for specific conditions of operations in Indigenous communities.

Strengths

- ✓ A first step to rectifying ingrained injustice or disadvantage, promoting greater workforce diversity.
- ✓ Results can achieve progress on broader national objectives to redress long-ingrained social and cultural inequalities.
- ✓ Offers a chance for companies to consider how their practices could be improved to facilitate such things as gender equity and safer, collaborative workplace cultures.
- ✓ Genuine engagement with disadvantaged demographics can increase a company's "social licence to operate."
- ✓ Aligns industry with UN Sustainable Goals (Goal 8) and ICMM's Mining with Principles (Principle 3). Can contribute to a positive industry reputation.

Challenges

- ✓ Can generate resentment on behalf of other (perhaps more skilled) members of local workforce who are overlooked in favour of representative individuals.
- ✓ System can be abused by wealthy and politically connected group members who use legal and political advantages to serve their own interests. This can mean that benefits do not extend to those who are actually disadvantaged.
- ✓ Can be seen as tokenism, especially if neither government nor private sector take responsibility for program outcomes.
- ✓ Potential for significant capital outlays if extensive training required by agreement (e.g., for individuals with no prior sector experience).

Key Elements of Success

- ✓ Social inclusion policies should seek to address the contextual factors obstructing access to opportunities. For example, quotas for women should be supported by policy provisions requiring companies to implement strong anti-discrimination and anti-harassment mechanisms.

Learning From International Experience

In **Canada**, Impact and Benefit Agreements (IBAs) set out terms of engagement and responsibilities of governments/firms and Indigenous communities in mining projects. Consider especially the Diavik Diamond Mine – integrated approach to Indigenous training, employment and procurement; and Voisey's Bay, Labrador – establishment of the First Nation-controlled Joint Education and Training Authority (JETA) to manage the "Innu, Inuit and Métis Human Resources Development Strategy."

In **Australia**, Argyle aims to have Indigenous people comprising at least 40 per cent of its workforce during operations. Its agreement states that Argyle will maintain a recruitment and training program designed to meet this target, and will also facilitate skills training to assist local community members to obtain "more skilled jobs."

In **South Africa**, there are requirements for the promotion and inclusion of HDSA (Historically Disadvantaged South Africans) (including women) in employment and training programs. There is also a requirement to employ at least 10 per cent women in mining activities.

6. Mandated Reporting Standards

Types of Measure/Instruments

- ✓ Mandatory reporting and measurement requirements on procurement, employment, localization plans and training of staff (ex-post).
- ✓ Holders of a mining licence must submit an annual operations plan for the forthcoming year, specifying their training, employment and employment plans (ex-ante).

Strengths

- ✓ Can increase company compliance; as a result more likely to meet community expectations for local workforce.
- ✓ Enables easier monitoring and evaluation of company compliance and sector performance.
- ✓ Easier to keep track of demand in order to manage supply.
- ✓ Enables comparison across projects/sites/companies.
- ✓ Provides a framework through which companies can assess their own progress and plan recruitment.
- ✓ Provides a framework for companies to engage with stakeholders to develop shared strategies, in particular to improve the supply of skills.

Challenges

- ✓ Administrative costs to review reports and tabulate data across projects.
- ✓ Requires significant levels of bureaucratic competencies to evaluate claims by companies that their operations cannot employ more local people.

Key Elements of Success

- ✓ Reporting by itself is not always effective; stakeholder discussions through meetings and forums are often required for best outcomes.

Learning From International Experience

In **South Africa**, all companies to submit an annual plan to the regional manager, who is a member of the Regional Mining Development and Environment Committee. The plans must show how they complied with requirements set out in the Mining Charter in support of the Broad-Based Black Economic Empowerment policy. A scorecard assists companies in monitoring progress, including on training and employment equity. Weights are assigned to different requirements, and the value of the scorecard determines a company's level of compliance.[29]

In **Zambia**, all licence holders must submit to the Director of Mines an annual operations plan for the coming year and an annual report for the preceding year, that provide details on the numbers of Zambians employed and all training programs.

In the **Philippines**, Community Relations Offices set up by contractors and permit holders must undertake monthly reporting against the Social Development and Management Plan, as well as provide the Regional Office with quarterly progress reports.

[29] Columbia Centre on Sustainable Investment. (2017). *Local Content: South Africa – Mining and petroleum.* New York, NY: CCSI. Retrieved from http://ccsi.columbia.edu/files/2014/03/Local-Content-South-Africa-Mining-and-Petroleum-CCSI-Feb-2015.pdf

5.2.3.2 FACILITATIVE APPROACHES

1. Preferences in the Awarding of Mining Contracts

Types of Measure/Instruments

- ✓ Host governments apply higher preference weightings in the awarding of licences to companies that put forward commitments to contribute to local employment and skills development.

Strengths

- ✓ A way of incentivizing, rather than regulating, companies to prioritize local development considerations.
- ✓ May generate sector competition for best practice in local employment, local procurement, if skills and capabilities are available to meet demand.
- ✓ Awarded on basis of improving performance rather than meeting a minimum threshold.

Possible Challenges

- ✓ Company's strategy may present the (comparatively) best targets in terms of numbers but have no stipulations on the nature of employment opportunities (e.g., casual work only as opposed to stable employment).
- ✓ Competition could lead companies to set unrealistic targets that are largely unachievable (in some cases knowingly), leading to unmet expectations, fines or delays in project execution.
- ✓ Requires companies to do their own research about extractives sites and local communities (i.e., the supply base). May be challenging if companies are new to the country/area.

Key Elements of Success

- ✓ These incentives work best if companies know they will be competing against others for exploration or mining licences.
- ✓ While companies' commitments may not always be clearcut in the bidding process, clear and mutually agreed targets, with designated timeframes, need to be set before the commencement of a project. These targets should be supported by an effective and gender-sensitive monitoring, evaluation and enforcement mechanism.
- ✓ Criteria should be specific on both the numbers and the type of employment in question, to avoid commitments that are filled with only casual unskilled work as opposed to stable skilled employment.

Learning From International Experience

In **Brazil**, local employment and training commitment one of three determinants in awarding contracts. Studies by the World Bank[30] and Gholzani (2010)[31] on Brazil's bidding process have indicated that changing the weightings applied to local content requirements can affect the level of local content commitments in concession agreements.

2. Non-binding Requirements to Hire Locals

Types of Measures/Instruments

- ✓ Best endeavour provisions for the employment of local people "where possible."
- ✓ Governments can provide information on local education and training certifications to support companies finding appropriate staff.

Strengths

- ✓ Flexible provision—specifics of strategy adaptable to contextual variables, for example the absence of specialist skills in the local communities.
- ✓ Governments (and mining companies) have more time to determine local capabilities.
- ✓ Governments have time to assess whether stronger or more prescriptive policy mechanisms are necessary in the future.
- ✓ Arguably more effective at preventing a supply bottleneck than a system of quotas.

[30] Tordo, S. et al. (2013). *Local Content Policies in the Oil and Gas Sector* (World Bank Study). Washington, DC: World Bank. Retrieved from http://documents.worldbank.org/curated/en/549241468326687019/Local-content-in-the-oil-and-gas-sector

[31] Gholzani, K. (2010). *Clients metrics for measuring local content: Brazil experience*. 14th African Oil, Gas and Minerals, Trade and Finance Conference and Exhibition, São Tomé and Príncipe, November 24.

Challenges

- ✓ Subjective nature of non-binding stipulations makes compliance and monitoring difficult.
- ✓ Increased uncertainty about employment opportunities.
- ✓ Can be less useful for those (particularly developing) states that require a more regulatory approach to standardize expectations and manage compliance effectively.
- ✓ Lack of explicit accountability.
- ✓ Difficult to draw lessons from experience.

Key Elements of Success

- ✓ Although flexible and less constraining, there is a need to have an effective monitoring mechanism so that there is a real impact on level of local employment.

Learning From International Experience

In **Australia**, policy aims to give "full, fair and reasonable" opportunity in employment and tendering to Australian firms and individuals (no hard targets prescribed).

In the **Philippines**, companies must give preference to Filipino citizens in all positions for which they are qualified.

In **Botswana**, holders of mineral concessions must employ Botswana citizens to the "maximum extent possible consistent with safety, efficiency and economy."

In **Zambia**, holder of a mining right/licence must give maximum preference to the employment of Zambian citizens.

3. Fiscal Incentives

Types of Measure/Instruments

- ✓ Tax incentives
- ✓ Tax deduction for compulsory training levies or financial contribution for training
- ✓ Subsidized financing

Strengths

- ✓ Generates competition for best practice.
- ✓ Voluntary measures mean that companies can choose whether or not to take action. Benefits awarded on basis of good practice rather than compliance with regulation.
- ✓ Incentives serve as way of levelling the playing field for capital outlay.

Possible Challenges

- ✓ Can deter investment in other sectors.
- ✓ Could lead to rent-seeking behaviour, through fraudulent declarations to tax authorities, or by those who have conflicts of interest in training programs.
- ✓ Opportunity cost to host governments of foregone taxes.
- ✓ Can distort competition if incentives favour large corporate investors/companies to the detriment of smaller ones.

Key Elements of Success

- ✓ When companies receive support from public money, it is important to have an accountability mechanism to ensure that in return for the financial support, there are results for the labour force.

Learning From International Experience

Thailand gives companies a 150 per cent tax deduction for those training expenses recognized by the Ministry of Labour.[32] Incentives of this kind can work well when there is uncertainty what the domestic environment can provide in terms of skills, and the implementation of quotas seems unfeasible.

In **Papua New Guinea**, businesses whose annual payroll exceeds PGK 200,000 are subject to a 2 per cent training levy, calculated on the taxable salary/wages, including benefits, of all personnel. Qualifying training expenses can also be claimed to offset the training levy. The amount of the levy payable is reduced by expenses incurred in the training of citizen employees.

In **Angola** (petroleum), Financial contributions to human resource development are tax deductible.

[32] United Nations Conference on Trade and Development (UNCTAD). (2001). *World Investment Report 2001: Promoting Linkages*. New York and Geneva: United Nations. Retrieved from http://unctad.org/en/Docs/wir2001_en.pdf

4. Support for the Creation of Education and Training Facilities and Programs

Types of Measure/Instruments

- ✓ Direct financial or in-kind support provided for the creation of education and training facilities or programs for the mining sector.
- ✓ Facilities can be independent educational institutions, or company internship scheme or skills development program.
- ✓ Can be affiliated with existing educational institutions or established as a dedicated centre for mining excellence.
- ✓ A training and development investment may be agreed as condition of the awarding of a mining licence.

Strengths

- ✓ Cross-sector collaboration improves program relevancy and broadens scope of impact.
- ✓ Platform for multistakeholder collaboration and integrated cross-sector coordination and allows for a more sophisticated overall understanding of the contextual factors at play in facilitating direct local employment.
- ✓ Government can influence companies' investment into specific projects that serve local economic and development needs.
- ✓ Joint schemes mean shared responsibility among stakeholders for program success (as opposed to government playing merely a regulatory or monitoring role).
- ✓ Provide important opportunities to promote gender equity by creating specific measures around skills upgrading for women, who often face training gaps.

Possible Challenges

- ✓ Other stakeholder is left to take up the slack if partner fails to comply with project agreements (also company concern).
- ✓ Joint schemes susceptible to misunderstandings between stakeholders about roles, responsibilities and expected outcomes (also government concern).

Key Elements of Success

- ✓ Programs of this nature require governments to work in collaboration with mining companies, technical training colleges, the tertiary sector and other training providers to assess current gaps in the education and training landscape and agree on what are typically multistakeholder education and training partnerships.

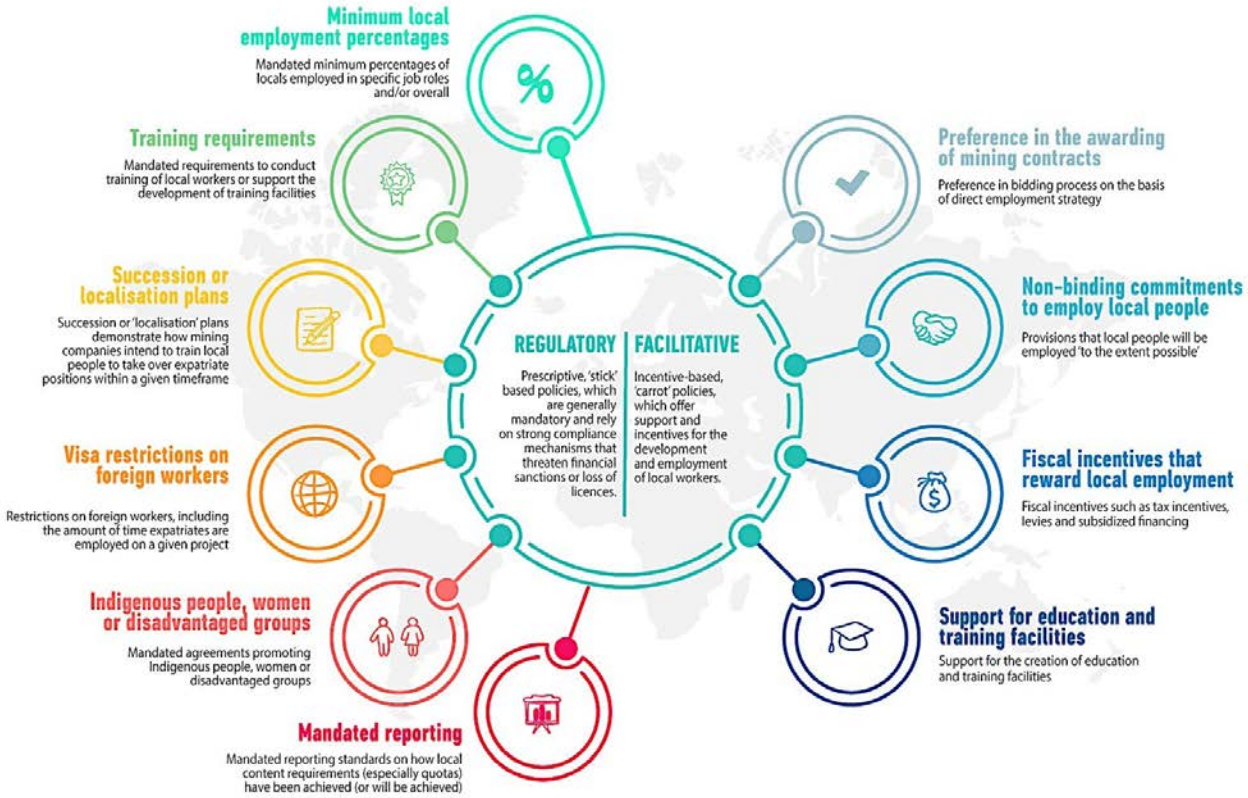
Learning From International Experience

In Nigeria (petroleum), the Institute of Petroleum Studies offers certified and internationally recognized programs for direct local employment. It works in collaboration with other postgraduate institutions in the United Kingdom and United States, and is jointly funded by the Nigerian National Petroleum Corporation (state-owned entity).

In Canada, state commitment of CAD 25 million to the "Innu, Inuit and Métis Human Resources Development Strategy" (IIMHRDS) for maximizing Indigenous employment and career progression through training programs.

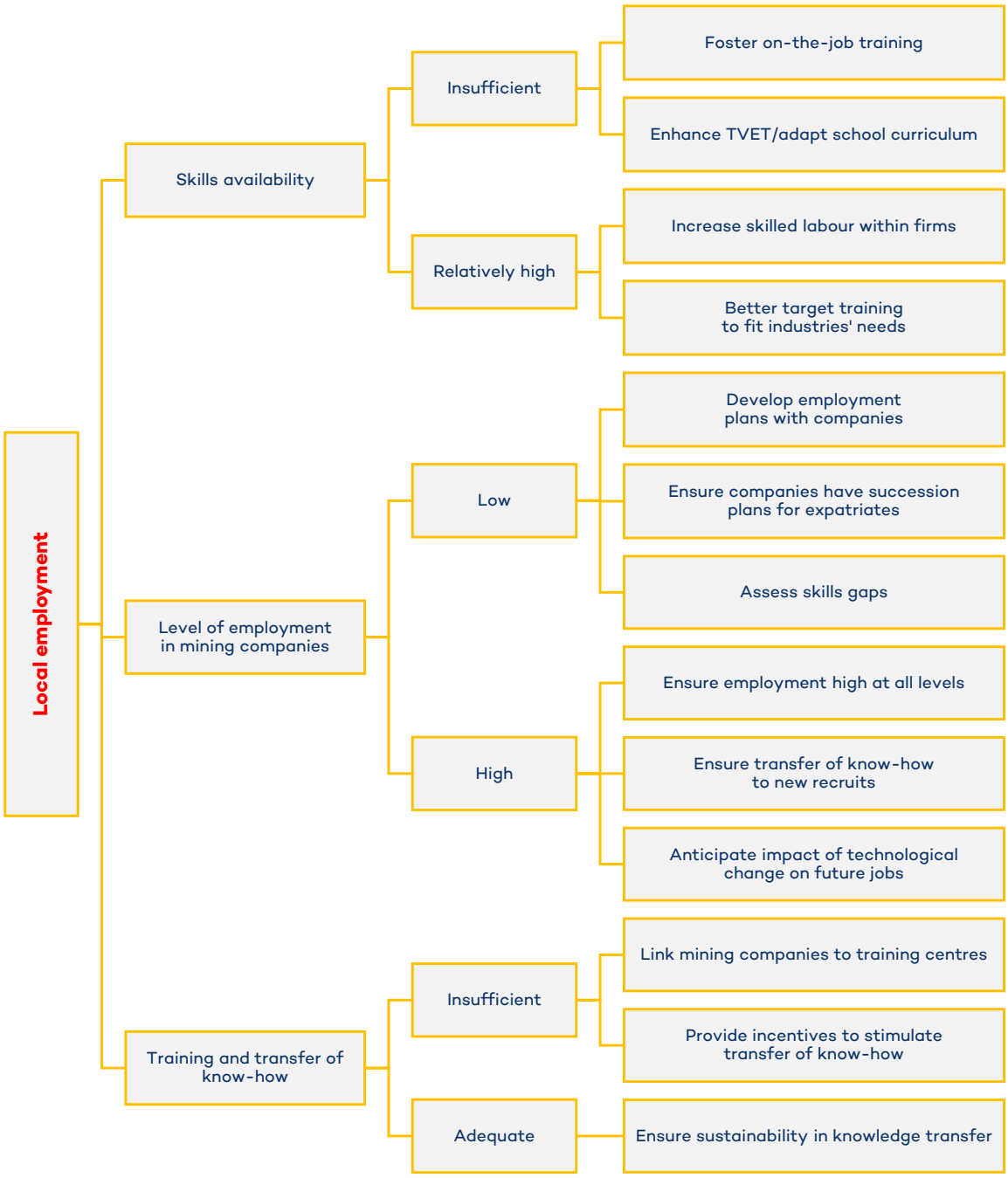
In Chile, Programa Mujer is supported by Chile's Ministry for Women's Affairs. Recruitment drive for women (with no prior experience) to undertake roles of involving the operation of heavy machinery in the mining industry. Large-scale training and evaluation program. Government offers certification to companies who meet a certain set of criteria with respect to gender equality.

SUMMARY OF POLICY OPTIONS FOR PROMOTING LOCAL EMPLOYMENT

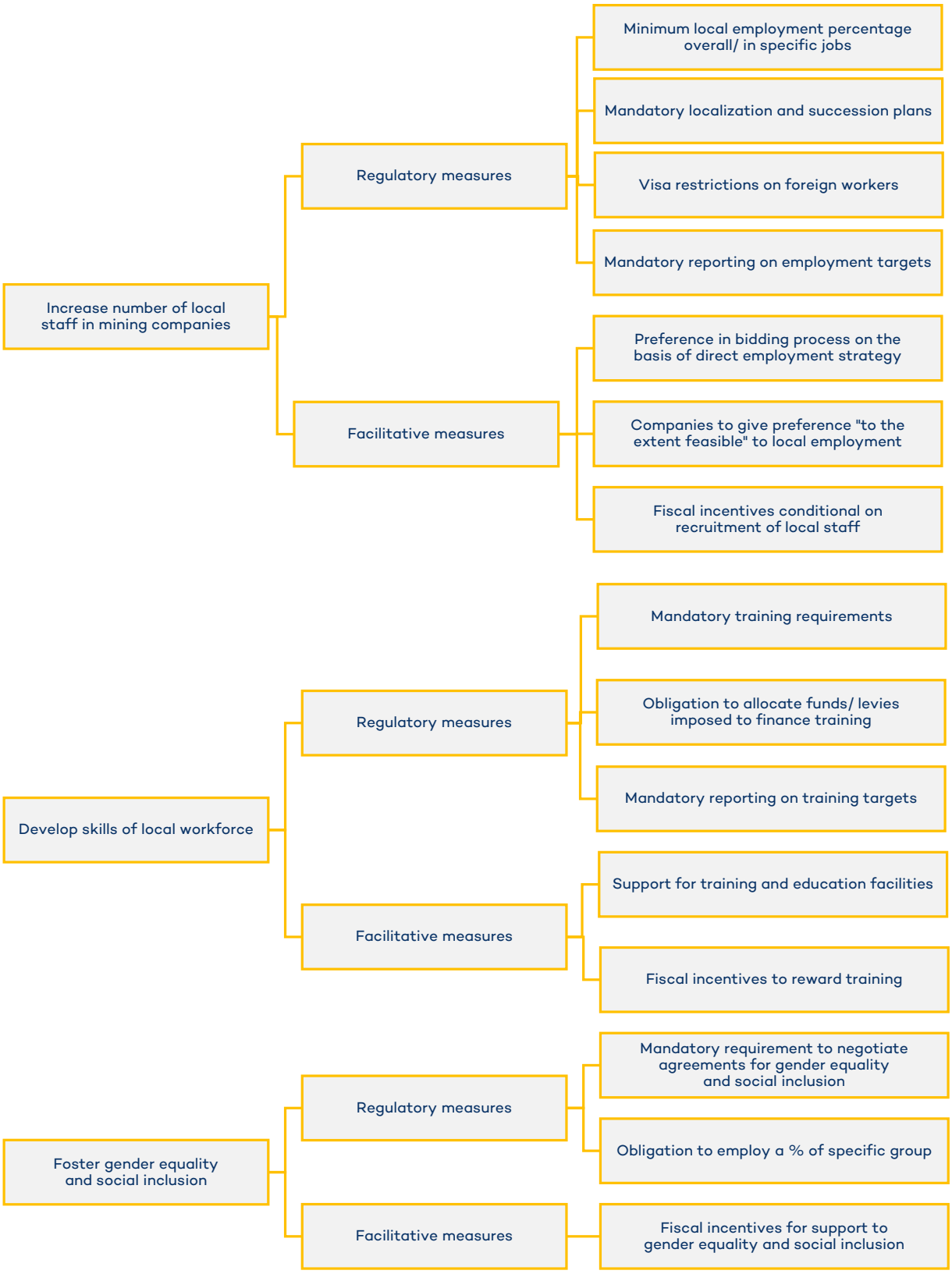


5.2.5 CHOOSING A POLICY OPTION

Based on Step 2 in Section 4, prior to choosing the policy option, governments need to assess the capabilities of the local workforce to take up employment opportunities with the mining sector. The **companion tree** below outlines the key steps necessary to ensure the conditions are right for local procurement policies to be effective.



Based on the above, we provide a "**decision tree**" template to facilitate decision-making processes and the selection of a particular/ or set of instruments, provided the conditions identified in the companion tree are met.



5.2.6 POLICY COORDINATION AND COHERENCE

Policy coherence is a long-term proposition. It is important to acknowledge that education, science, technology and innovation policies are cross-cutting policy areas, which serve many more objectives than those envisioned in local content policies. It is therefore difficult for the mining sector to drive government policy in these areas. Nonetheless, the main types of policy coherence relevant to this type of policy tool are:

- ✓ Between local employment policies and education, science, technology and innovation policies. In particular, local employment policies must take into account potential workers' levels of education when designing requirements for mining companies and must provide supply-side support to improve basic skills when those are not available.
- ✓ The ability to build on existing national science and technology policies, or national systems of innovation, which are capable of producing skilled professionals that can be specifically trained to apply their knowledge to the mining sector.
- ✓ Since women and girls are systematically under-represented in science and technology fields globally, any such efforts should be undertaken with a strong gender equality agenda.
- ✓ Between direct employment policies that restrict entry of foreign workers and immigration policies on work permits and visas.

5.3 HORIZONTAL LINKAGES: DEVELOPMENT BEYOND THE MINING SECTOR

Policies of this type aim to foster the development of other, or new, economic sectors using the skills, capabilities and infrastructure developed by the extractive industry value chain. Carried out successfully, they can:

- ✓ Lead to economic diversification away from reliance on the extractive sectors, insulating the economy from the cyclical volatility of commodity prices, and steering the economy toward structural transformation and industrialization.
- ✓ Set the stage for economic vitality after mine closure.
- ✓ Aim for spillover benefits of mining investment that are not dependent on the mining sector.
- ✓ Overall help foster faster economic growth and more job creation.

Horizontal linkages can develop via two distinct channels:

Infrastructure-led linkages	Capabilities-led linkages
• Develop when infrastructure built for the resource sector (e.g., roads, rail, ports, water treatment and other water-related infrastructure, electricity and Internet) benefits another productive sector and the national and regional community (shared use infrastructure). • Requirements to build multipurpose infrastructure may impose additional costs on the affected operations. • Negotiations over ownership, maintenance, cost sharing and risk sharing are complex, and more so when more than one country is involved, as in the case of international transportation infrastructure.	• Develop from upstream linkages, as inputs, technology or skills developed in supplying the resource sector are then used elsewhere, through the adaption of core extractive industry capabilities (e.g., geology, engineering or capital equipment) • Develop through non-core capabilities obtained to serve the extractive sector, which are then applied to the rest of the economy. The ICT sector in Nigeria, for example, originally emerged to serve the oil sector but then expanded to serve other sectors.

REFERENCES

IGF case studies for Tanzania, Mozambique, Guinea.

For more on shared use infrastructure, see

Banerjee, S., et al. (2014). *The power of the mine. A transformative opportunity for Sub-Saharan Africa*. Washington D.C.: World Bank. Retrieved from http://documents.worldbank.org/curated/en/429771468008719026/pdf/922210PUB097810ed0until0Feb09020150.pdf

Ghebrihiwet, N. (2016). *FDI technology spillovers in extractive industries: Lessons from practice* (Research Memorandum 2016-2), Vrije Universiteit Amsterdam, Department of Economics. Retrieved from http://dare.ubvu.vu.nl/handle/1871/54324

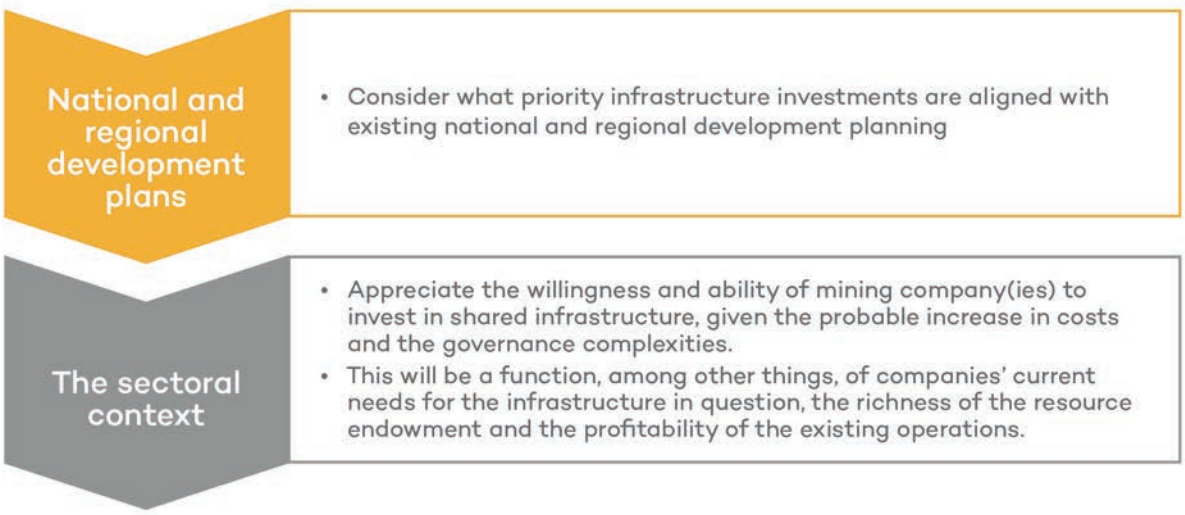
Ramdoo I. (2015). *Synergising and optimising mineral infrastructure in regional development strategies* (A paper prepared for the E15 Expert Group on Trade and Investment in the Extractives Sector). Geneva: The E15 Initiative.. Retrieved from http://e15initiative.org/wp-content/uploads/2015/09/E15-Extractive-Ramdoo-Regional-Development-Strategies-FINAL.pdf

Toledano, P., Thomashausen, S., Maennling, N., & Shah, A. (2014). *A framework to approach shared use of mining-related infrastructure*. Columbia Center for Sustainable Investment. Retrieved from http://ccsi.columbia.edu/files/2014/05/A-Framework-for-Shared-use_March-2014.pdf

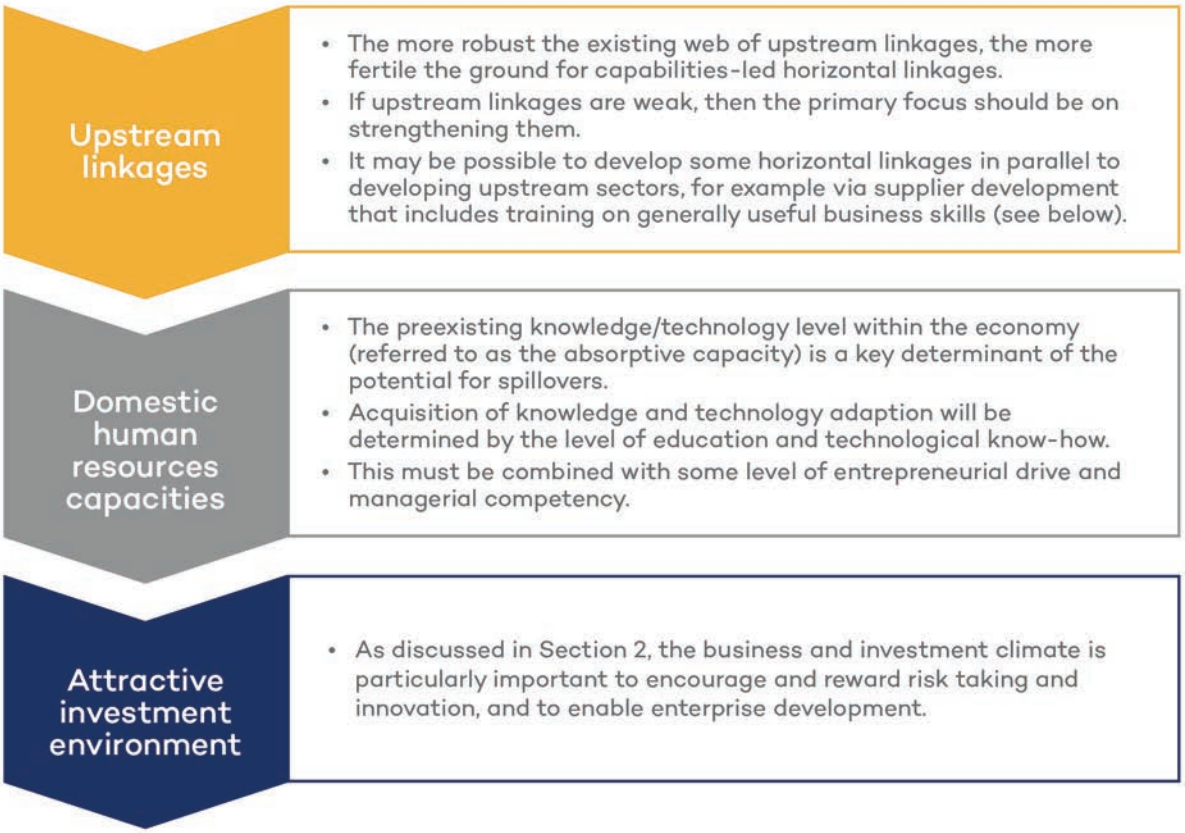
5.3.1 TAKING STOCK

Section 2 above summarizes the general steps needed to take stock before pursuing local content policies.

When considering **infrastructure-led** horizontal linkages policies, governments must pay particular attention to:



When considering capabilities-led infrastructure linkages, governments must pay particular attention to:



5.3.2 CHOOSING THE POLICIES

There are relatively few examples of government policies explicitly targeting capability-led horizontal linkages. Policy-makers seem to have deprioritized horizontal linkages because:

- ✓ Upstream and direct employment linkages are more appealing, as they offer more direct, measurable and attributable outcomes.
- ✓ It is assumed that upstream linkages will lead to development of, or spillovers into, lateral sectors.

However, as many case studies referred to in this guidance highlight, upstream linkages do not automatically foster those spillovers. To better leverage those, the following section provides guidance on policies that governments may consider to accelerate and deepen the process of horizontal linkages.

5.3.2.1 CAPABILITY-LED HORIZONTAL LINKAGES

1. Supplier development aimed at serving diversified clients

Types of Measures/Instruments (In addition to measures identified in Section 4.1.3.2 [supplier development programs])

- ✓ Training requirements with more specific focus on business administration and management skills, applicable across a variety of sectors. In this particular case, the goal is to foster entrepreneurs in addition to building successful suppliers to mining operations.
- ✓ Requirement to provide a clear plan to develop strong suppliers, specifically in areas that are able to serve mining and other clients (e.g., food services).
- ✓ Companies can be required to make a financial contribution to fund national training programs.

Strengths

- ✓ Capabilities thus developed are transferable to other economic sectors.
- ✓ Specialized skills from the mining sector can apply to high-value manufacturing or services sectors.
- ✓ Can result in intersectoral technology transfers and foster innovation.

Challenges

- ✓ Impact of spillovers is always difficult to measure.
- ✓ In less-advanced economies, supplier development programs aimed at serving other clients may be difficult to scale up due to the amount of resources required and lack of sufficiently large domestic firms in other areas.
- ✓ It is not always easy to convince large firms to participate in such projects if they are not sure that local firms will be able to gain access to markets from the program, or if they are concerned that training will benefit non-mining-sector clients rather than them.
- ✓ Long-term viability of programs is always a question, particularly when governments take over.

Key Elements of Success

- ✓ Depends on strong skills and capabilities, so supply-side efforts are key.
- ✓ Strategic, informed approach is important: best to identify possible sectors into which spillovers could occur.

Learning From International Experience

In **Mozambique**, a supplier development program was established to scale up business linkages, particularly for SMEs, to the aluminum smelter Mozal. Mozlink II (2007–2010) specifically aimed at helping SMEs to "gain skills and technical capabilities to compete effectively, and in a sustainable way, for large contracts in a number of important industries." Besides Mozal, companies such as Sasol (gas), SABMiller and Coca-Cola (beverages) participated in the program. Government provided infrastructure at the Beluluane industrial park with and export-processing zone (EPZ) scheme for local industries. Mozlink II trained about 77 entities, 550 people and provided mentorship to 45 SMEs.

At the end of the program in 2010, beneficiary SMEs generated USD 53 million in incremental sales. Main challenges faced included expectations from SMEs that they would get guaranteed contracts through the program (which did not always materialize); the lack of interest from other large companies; difficulties of SMEs in accessing finance to expand their business, and the long-term sustainability of the project once it was handed over to a public institution. While valuable, the program created very few cross-sectoral linkages. Knowledge and horizontal linkages remained small, essentially due to structural weaknesses of industries in Mozambique.

2. National systems of innovation

Types of Measures/Instruments

- ✓ Governments can help create a national system of innovation (NSI): a network of institutions, including public research institutes, academia and the private sector, that aims to advance skills and knowledge to produce research and innovation.[33]
- ✓ Governments play the role of coordinator, financial supporter and regulator.
- ✓ Grants and tax incentives for research and development (R&D), innovation in the private sector, academia, dedicated research institutes.
- ✓ Active coordination to link researchers with potential consumers of innovation (e.g., mining sector).
- ✓ Streamlining of intellectual property legal bureaucracy to facilitate domestic patenting.

[33] Freeman, C. (1995). The national system of innovation in historical perspective. *Cambridge Journal of Economics, 19*, pp. 5–24. Retrieved from http://www.ie.ufrj.br/intranet/ie/userintranet/hpp/arquivos/101120164328_Freeman1995TheNationalSystemofInnovationinHistoricalPerspectiveCamb.J.Econ.524.pdf

Strengths

- ✓ Promotes horizontal linkages by advancing skills, knowledge and absorptive capacity, all of which can be applied to the mining sector and beyond.
- ✓ Can initiate a strong relationship between the mining sector and higher education institutions, with specific focus on mining-related science and technology.

Challenges

- ✓ Diversification via the creation of an NSI and a knowledge-driven economy are long-term efforts with slow incremental gains. Results are not likely to be seen in the short term.
- ✓ Monitoring is difficult.
- ✓ Programs will succeed only if there is systematic collaboration from academia, mining industry and other sectors. In particular, governments need to have a good understanding of future plans of the mining sector and of other industries/ services-related activities, to be able to provide targeted and appropriate incentives.
- ✓ Such programs are expensive and require long-term funding, including from industry.

Key Elements of Success

- ✓ Need highly skilled labour force, high-quality education system, and research and technical institutions able to lead R&D and innovation.
- ✓ The creation of an NSI is a much larger exercise than the pursuit of horizontal linkages in the mining sector; it aims at transformation across a wide spectrum of sectors.

Learning From International Experience

Australia managed to develop strong linkages between its extractive sector and other parts of the economy, thanks in part to the knowledge capabilities developed by capital equipment companies and mining services firms. Government played a key role in explicitly acknowledging the importance of mining equipment, technology and services (METS) and by systematically supporting policies on skills development and innovation. It partnered with mining companies to develop specialized competencies in high-tech scientific areas.

While horizontal linkages were not specifically targeted, they emerged as a result of strong partnerships, with clearly defined responsibilities among government, academia and the private sector. In Australia, a functioning NIS, based on the existing skilled labour force and high-quality education system, was a critical success factor. This enabled the diffusion of knowledge and technology, initially developed for and by the mining industry, into non-mining sectors. Importantly also, the strategy helped Australian METS providers become globally competitive and access international markets.

5.3.2.2 INFRASTRUCTURE-LED HORIZONTAL LINKAGES

Requirements for Construction of Shared Infrastructure

Types of Measures/Instruments

- ✓ As part of the licensing bidding process, requirement that mining infrastructure be built specifically to be multipurpose and shared for the broader benefit of the nation and region.[34]
- ✓ Governments may require their involvement in the design of mining infrastructure (even if fully funded by the mine) to be able to participate in the decision regarding the latter's trajectory.
- ✓ Potential use of fiscal incentives to mining companies as part of the "trade-off" package.
- ✓ When governments decide to retain ownership of mining infrastructure construction, mining companies may be required to participate financially.

Strengths

- ✓ Well-designed multipurpose infrastructure is the backbone of any economy, because it links producers to markets, provides access to goods and services, connects borders and lowers transaction and trade costs.
- ✓ Open-access, shared and multipurpose infrastructure is important to connect resource-rich regions (especially when they are remote) to other regions of the country or improve connectivity across countries.
- ✓ Helps improve factor mobility and productivity of non-mining business activities, making them more viable.
- ✓ Has a positive impact on personal well-being, as in the case of household electrification.

[34] See Columbia Center on Sustainable Development. (2014). *A framework to approach shared use of mining-related infrastructure*. Retrieved from http://ccsi.columbia.edu/files/2014/05/A-Framework-for-Shared-use_March-2014.pdf

Possible Challenges

- ✓ Implementation of such projects is a long process with complexities depending on a range of factors, such as the type of infrastructure, characteristics of and requirements for the exploitation of the mineral resource.
- ✓ Governance of multi-use and multipurpose infrastructure is inherently difficult. It requires clearly defining responsibilities to coordinate traffic flows, and to assess and calculate risks and returns on investment, including on maintenance and repairs. If the infrastructure spans more than one country, governance is even more complex.
- ✓ Pursuing such policies will add time to the project design and negotiation phase, increasing delays and the risk of abandonment if requirements end up too onerous or markets turn unfavourable.
- ✓ It can sometimes be difficult to reconcile public and private objectives in shared infrastructure. The mine's preferred infrastructure solution may look very different, and cost much less, than the government's preferred solution. In such a case, the mandate to create shared infrastructure can be seen as a straight cost from the company's perspective, and will be taken into account when it assesses the viability of the overall investment.
- ✓ If the deal involves foregone taxes, government may be better off retaining the higher tax revenues and financing the additional infrastructure from the national budget, or through other partnerships.

Key Elements of Success

- ✓ Monitoring infrastructure utilization is key to determining policy and its impact. Data on the many economic variables in infrastructure decision making are not readily available or easily observable. An independent observatory or statistical agency can help policy-makers determine the baseline, set targets and monitor progress.
- ✓ Governments will need to assess the public demand for the infrastructure, to decide whether it is worth the cost of foregone revenues (through a lower tax deal offered to the mining company), and the costs of establishing a regulatory authority to govern shared use.
- ✓ Best practice consists of cost-benefit analysis to assess the extra cost of providing additional capacity and multipurpose features against the demand for the public element of the infrastructure.
- ✓ Infrastructure is not an end in itself when pursuing horizontal linkages: it should be well connected and integrated into territorial development and contribute to stimulating trade, investment and business development.

Learning From International Experience

Following the end of its civil war in 2003, **Liberia**[35] has invested in the rehabilitation of its infrastructure network. The country has important reserves of iron ore and gold and is expected to see large mines enter into operation in the next decade.

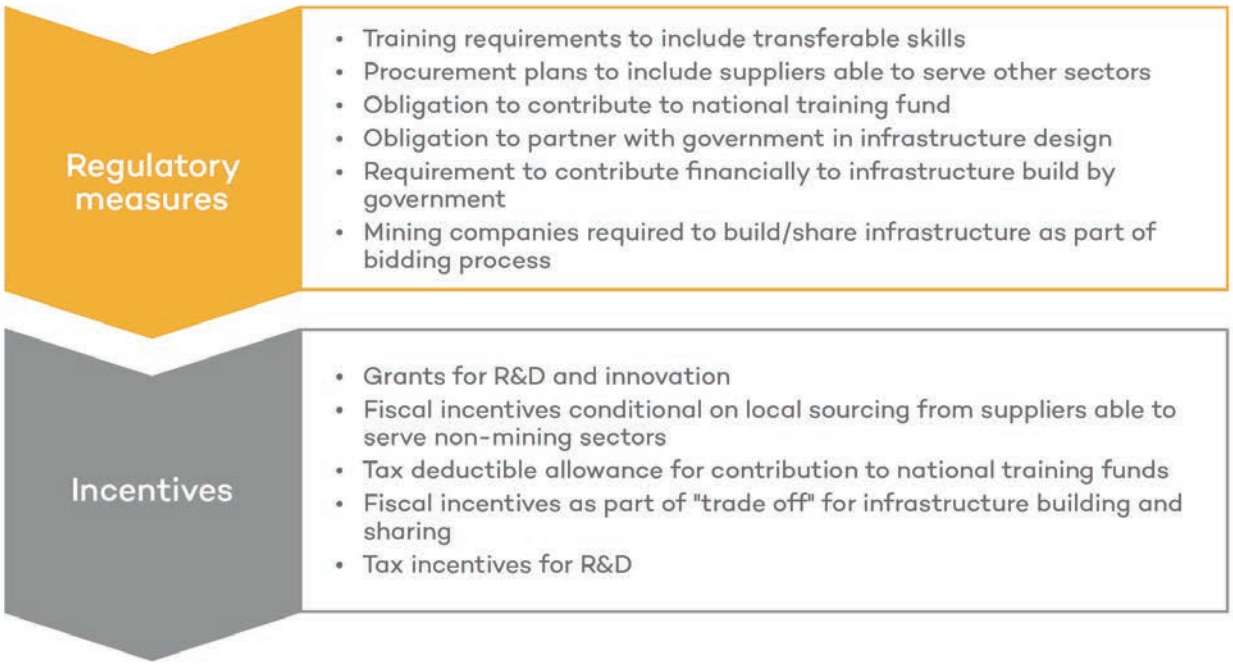
Every mining concession and development agreement includes infrastructure-related development, which contain third-party access provisions in relation to rail, port and/ or power infrastructure, in order to leverage mining-related investments for wider economic use.

So far, this has been done only in the port sector. However, if and when existing mining infrastructure corridors are revamped, the Liberian economy stands to gain from shared use of infrastructure. Additional investment in road infrastructure, for example is likely to benefit the agricultural sector, small businesses and consumers.

Synergies are being built between the power and mining sectors, to provide access to electricity to remote areas where mining companies operate. The government has asked the mining company developing the Putu iron ore project to develop excess capacity for the power plant under construction for the mine to service local communities within a range of 10 km from the mine. For residential users, charges must be calculated on their ability to pay. However, for business users "reasonable rates" should apply.

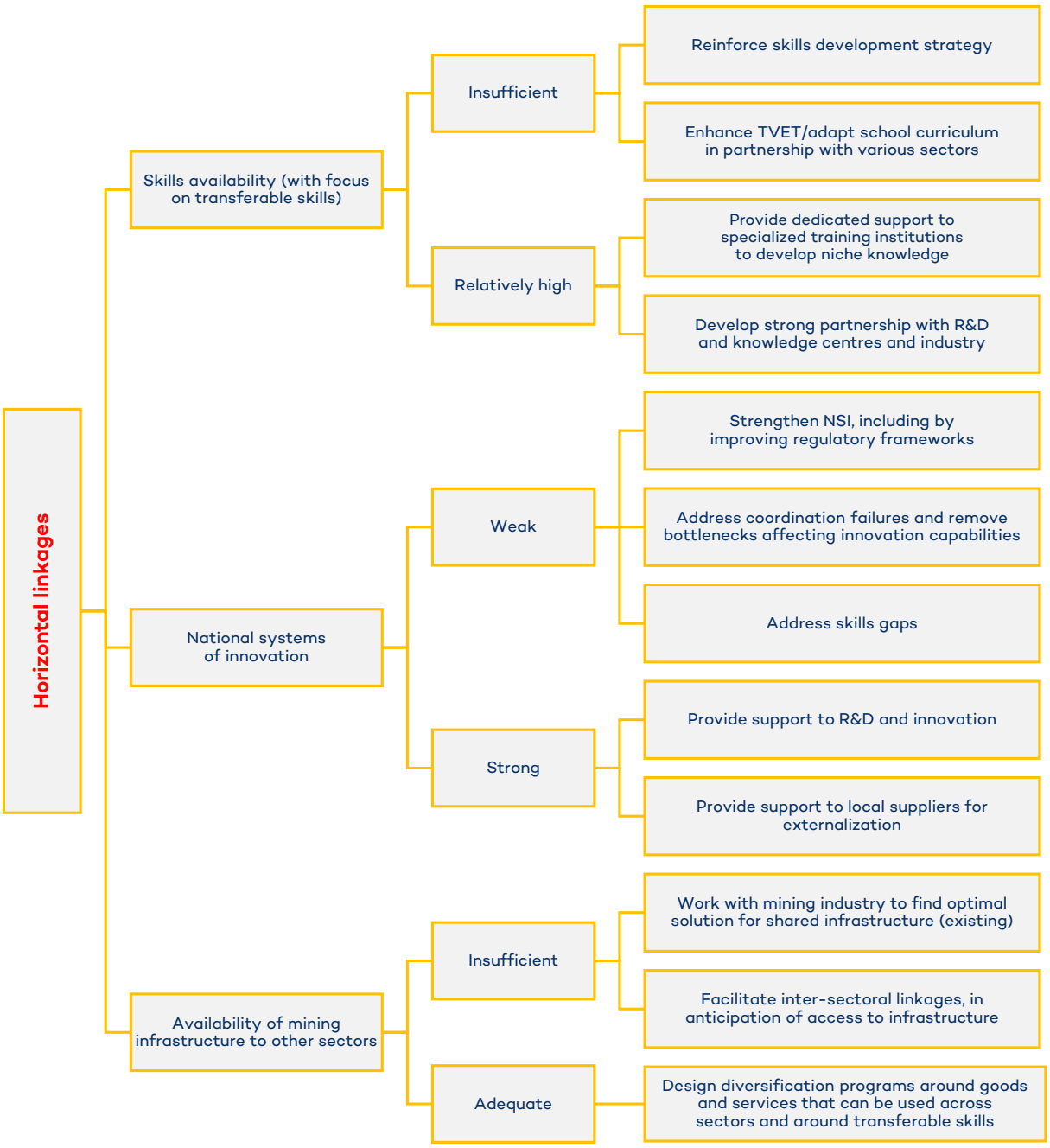
[35] See Columbia Center on Sustainable Development. (2014). *A framework to approach shared use of mining-related infrastructure (case study on Liberia)*. Retrieved from http://ccsi.columbia.edu/files/2014/05/A-Framework-for-Shared-use_March-2014.pdf

SUMMARY OF POLICY OPTIONS FOR HORIZONTAL LINKAGES

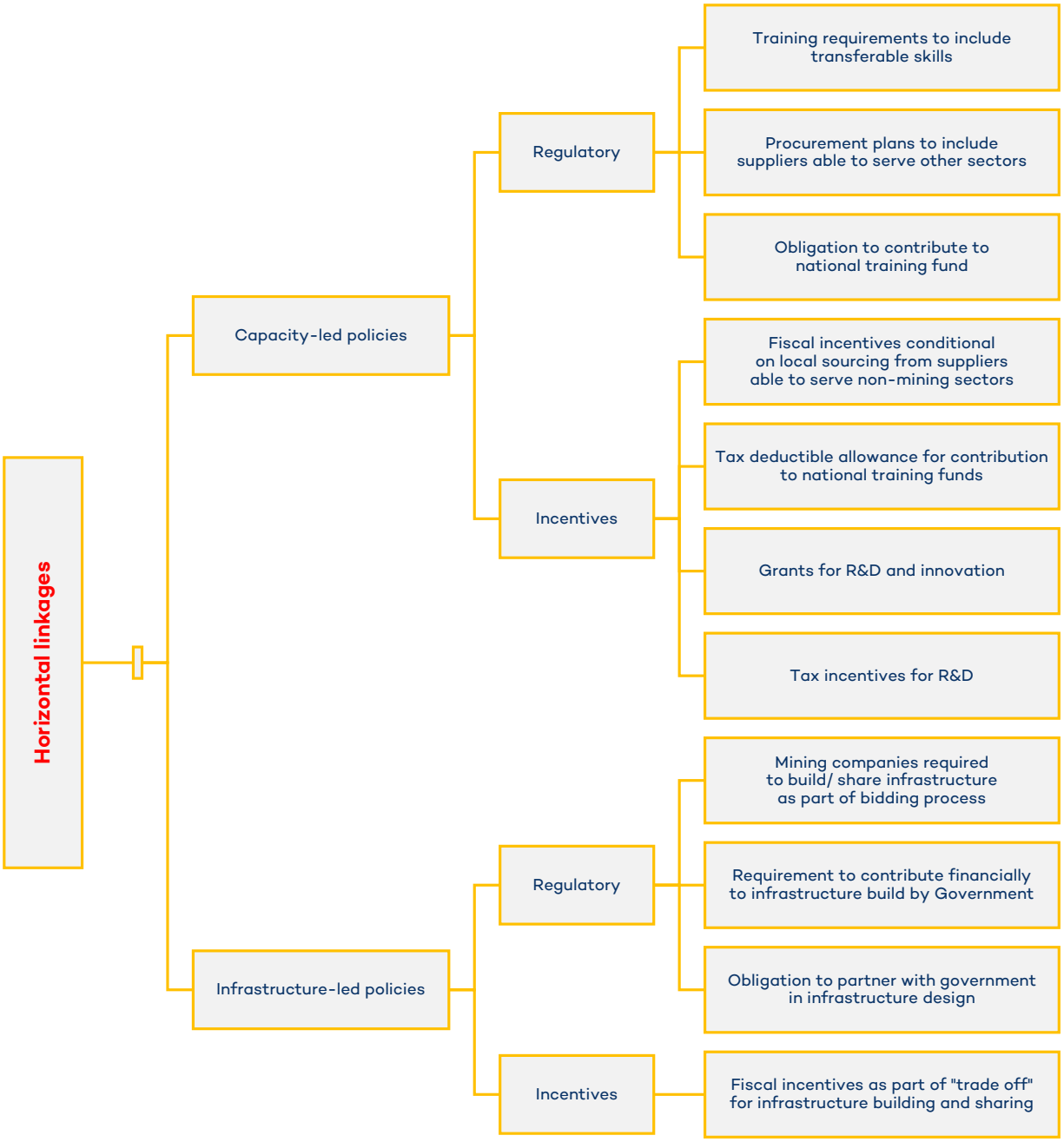


5.3.3 CHOOSING A POLICY OPTION

Based on Step 2 in Section 4, prior to choosing the policy option, governments need to assess the capabilities of the country to roll out efficient horizontal linkages between the mining sector and the rest of the economy. The **companion tree** below outlines the key steps necessary to ensure the conditions are right for horizontal linkages policies are effective.



Based on the above, we provide a "**decision tree**" template to facilitate decision-making processes and the selection of a particular/or set of instruments, provided the conditions identified in the companion tree are met.



5.4 DOWNSTREAM LINKAGES: BENEFICIATION OF MINING PRODUCTS

The **objective** of downstream linkages is to encourage economic diversification but do so *within* the mining sector by encouraging processing or value addition, using the proceeds of the mining sector as inputs in manufacturing industries. Adding value to raw materials is expected to lead to higher export revenues, with positive spillovers on economic growth, improved trade balance, tax revenue generation, employment creation and skills development. For certain commodities, such as petroleum and steel, the desire for downstream linkages may be driven by national security concerns.

It is often assumed that the availability of raw materials at home is a natural advantage to attract investors because it lowers costs for processers, and that expertise from extraction activities can be leveraged for spillovers into downstream processing.

While this may be valid in some cases, the **economics of downstream linkages** is more complex and varies depending on the type of commodities and processing involved:

- ✓ Some minerals and metals are strongly incorporated into global value chains (GVCs). The rationale for downstream processing is therefore largely driven by cost factors, such as transportation, trade regimes (import duties, export duties, quotas or bans) and by communications technologies.[36] In that case, proximity to extraction of raw materials may be less relevant compared to cost of processing, access to cheap energy or proximity to consumer markets. China for example, has developed extensive processing and smelting capacities because it had production scale and developed cost competitive advantages.
- ✓ By contrast, there are other types of minerals, such as the so-called "development minerals" (sand and gravel) which are driven by local consumption due to high domestic demand in the construction, housing or infrastructure sectors. For those materials, costs of transport are high relative to value, and capital investment requirements are lower, making domestic beneficiation for these minerals a more attractive and straightforward proposition.

Policies to promote downstream linkages face a number of challenges, and governments should be cautious in implementing local content policies in that regard. The case studies that survey this type of policy show that becoming and remaining competitive in the downstream sectors is neither assured nor easy.

REFERENCES

- ✓ IGF case studies for Singapore, Australia, Indonesia, Botswana, Nigeria
- ✓ Grynberg R. & Sekakela, K. (2016). *Case studies in base metals processing and beneficiation. Lessons from East Asia and the SADC region* (SAIIA Research Report 21). Retrieved from https://www.saiia.org.za/research-reports/944-case-studies-in-base-metal-processing-and-beneficiation-lessons-from-east-asia-and-the-sadc-region/file

[36] Hausman et al. (2008) find that there is only a very weak correlation between producing raw materials and downstream products. This finding persists when separating out sectors with high transport costs, and for developing and developed countries. Hausmann, R. Klinger, B., & Lawrence, R. (2008). Examining beneficiation (Center for International Development Working Paper No. 162). Retrieved from https://www.hks.harvard.edu/sites/default/files/centers/cid/files/publications/faculty-working-papers/162.pdf

5.4.1 TAKING STOCK

Section 2 above summarizes the key steps needed to take stock before pursuing local content policies. When considering policies to promote downstream linkages, the most important of those are ensuring the existence of several critical prerequisites:

5.4.2 CHOOSING THE POLICIES

The policies described below are broad categories for potential downstream beneficiation strategies. They are not mutually exclusive—in fact, in practice they are often intertwined.

1. Incentives

Types of Measures/Instruments

- ✓ Subsidies: tax reductions/exemptions; energy or water subsidies; concessional loans.
- ✓ Providing industry-specific infrastructure such as industrial parks to cater to first-degree downstream industries.
- ✓ Vertically integrated companies that build downstream processing plants might be granted tax reductions/exemptions on the upstream fiscal regime where the government take, or the government's share of the profits, is usually higher.[37]
- ✓ Import tariffs and restrictions that protect domestic players from global competition.

Strengths

- ✓ Incentives are a preferred option for investors.
- ✓ They address the specific project economics of downstream projects that are capital-intensive and often exposed to a drop in margins due to global competition and frequent supply overcapacity[38] (See IGF case studies on Australia and Singapore).
- ✓ They may be granted in exchange for infrastructure investments that governments do not have the financial capacity to make (see IGF case study: Mozambique)

Challenges

- ✓ It is difficult for governments to judge when to phase down incentives to continue to attract investment.
- ✓ Governments often lack industry-specific know-how of what constitutes a reasonable return on an investment in a downstream project, which is also investor-specific. Beyond what is necessary to guarantee investments, incentives are a waste of scarce public resources.
- ✓ Granting project-specific incentives without clear and transparent criteria risks creating an environment conducive to corruption and opaque deals. It also complicates the task of tax administration.

Key Elements of Success

- ✓ Governments should outline clear criteria to grant incentives. Those should not be permanent, otherwise domestic industries will not transition to become globally competitive.

Learning From International Experience

Singapore granted companies investing in the refinery sector exemptions from paying taxes on profits for 5 years, 10 years or even longer time periods. The country also developed an industrial zone for the refinery and petrochemical sectors on Jurong Island, investing in infrastructure necessary to serve the sector.

Australia resorted to protective measures in the form of custom duties and import restrictions to incentivize investments in the steel industry, which shielded the sector from competition from the 1920s, but which ultimately did not produce a globally competitive steel sector. Australia also used bounties (a lump sum paid to steel producers) as direct government subsidies.

In **Mozambique**, the Mozal Aluminum smelter heavily invested in road, power and port infrastructure to make the project viable.

[37] To move downstream, such incentives may not only be provided to the downstream investor, but also be part of the "upstream" fiscal package

[38] In this study the return on capital employed in the cement, paper, aluminium and steel industries is at 5.4 per cent: Rousseau, F. & Caruso, L. (2016). Improving returns in capital-intensive industries. *IndustryWeek*. Retrieved from http://www.industryweek.com/finance/improving-returns-capital-intensive-industries. In this analysis, it is explained that the low margins of the refinery business put off private investments: Seeking Alpha. (2009). Energy trends: Crude oil, products and the refining sector. Retrieved from https://seekingalpha.com/article/155021-energy-trends-crude-oil-products-and-the-refining-sector. In this analysis, margins in the steel sector are between 7.5 per cent and 5 per cent: Arrium Mining and Metals (2016). *The future of Australia's Steel Industry, Submission to the Senate, 16.* Retrieved from http://www.aph.gov.au/DocumentStore.ashx?id=0a0cfc3f-1de6-4b4b-bd6b-3bfa2d66f17d&subId=409465

2. Prescriptive Measures

Types of Measures/Instruments

- ✓ Export restrictions (duties, export quotas, export bans) aimed at discouraging exports of raw materials and forcing mining companies to sell part of their proceeds to local industries (see IGF case studies on Indonesia and Australia).
- ✓ Domestic sales requirements (e.g., mining forms are requested to sell a share of their proceeds to local manufacturers; buy-local policies).
- ✓ Trade-balancing measures (imports should represent a limited proportion of locally produced exports).
- ✓ Market reserve policies (some markets reserved for local production through government procurement; offset agreements; production management through SOEs).

Strengths

- ✓ They can induce existing extractives companies to invest in downstream industries where other policies may fail. This is done by either making exports of raw minerals less attractive (export tax) or by making exports conditional on processing (export ban on unprocessed minerals).
- ✓ Although government may have to give up tax revenues, some of that may be offset through the collection of export taxes and corporate income taxes on downstream activities.
- ✓ If successful, downstream industries can create jobs, as some manufacturing activities are relatively labour-intensive.

Challenges

- ✓ Ongoing mining projects may be at risk, because there is no guarantee that the domestic downstream industry will succeed.
- ✓ Make the jurisdiction less attractive for future mining investments because international market access will be limited.
- ✓ Prescriptive measures are likely to contravene international trade and investment commitments taken by host countries. Governments therefore may be taken to dispute settlement. Investment treaty disputes can be quite costly to governments.
- ✓ The introduction of prescriptive measures requires long timeframes between announcement of the policy and implementation. However, the volatile commodities market may complicate the implementation of these policies.
- ✓ When governments have large reserves of "critical raw materials" essential for high-tech industries, restricting their export may affect the security of supply of resource-dependent countries, as was the case with China's rare earths export restrictions.

Key Elements of Success

- ✓ There should be an economic case for downstream processing—latent comparative advantage that can be manifested by appropriate investments, learning-by-doing. Absent that, any downstream linkages will perpetually imply government support and/or lower profit margins.
- ✓ There should be sufficient time between the announcement of prescriptive restrictions and the date they take effect to allow affected industries to make the necessary investments.

Learning From International Experience

Indonesia imposed an export ban in 2014. The ban distinguishes between two types of minerals: Type 1 minerals include bauxite, nickel, tin, chromium, gold and silver and must be fully processed prior to being exported; Type 2 minerals include copper, iron, lead, manganese, ilmenite, tantanium, and zinc and can be exported as concentrates without further refining until January 2022 under the conditions that the industry 1) develops smelting facilities individually or collectively, and 2) pays export duties that are imposed depending on the degree of concentration. The export duties are increased over time. The inability of domestic investors to meet the beneficiation targets by 2014 forced the government to relax the requirements. The policy reversal, combined with aspects of the reform, spooked investors and punished those few that had in fact complied.

The State of **Western Australia** had imposed similar rules in 1996. It passed two legislative acts that required iron ore exporters to engage in beneficiation beyond stages of just iron ore concentration and pelletization. In response, BHP Billiton and Rio Tinto invested billions in a hot briquetted iron plant in the Boodarie and Hismelt operations respectively, using experimental technologies. Neither of these projects reached economic viability and had to be shut down shortly after completion. Since then, the Australian government has steered away from prescriptive downstream beneficiation policies.

3. Negotiations

Types of Measures/Instruments

- ✓ Negotiated review of contracts to impose requirements for mining companies to sell to local manufacturers.

Strengths

- ✓ Including the downstream requirements in the government's negotiating position is a powerful tool when the government has strong bargaining power.
- ✓ A strong bargaining position might help obtain the "downstream benefit" without foregoing tax revenues.
- ✓ Relying on negotiation also offers the flexibility to adjust the requirements depending on the project economics, allowing marginal projects to go ahead without processing requirements and pursuing downstream policies for the more profitable projects.

Possible Challenges

- ✓ Succeeding in negotiating the downstream package requires technical skills to understand the project economics and strong negotiation skills by the government.
- ✓ As contract negotiations most often happen behind closed doors with significant discretion given to the negotiators, this creates opportunities for corruption.

Key Elements of Success

- ✓ Governments have more leverage to successfully undertake negotiations when:
  - the country boasts a world-class deposit
  - the company has already invested a substantive amount of money
  - the company wants to renew its licence and/or
  - the company relies on the country's deposit for its commercial survival.

Learning From International Experience

Since **Botswana** is responsible for about 60–70 per cent of De Beers's revenues, its government negotiated a sophisticated downstream package with the company as a condition of its mining licence renewal. De Beers was required to move its diamond aggregation business from London to Gaborone and allocate a set amount of diamonds domestically for polishing purposes. 20 years earlier, the government had already tried to negotiate with De Beers to move downstream, but was unsuccessful. What had changed in 20 years was both the criticality of Botswana's world-class deposits for De Beers's survival and the window of opportunity represented by the renewal of the licence.

4. Bidding Process

Types of Measures/Instruments

- ✓ Include the setting up of downstream processing facilities as one of the conditions of evaluation of concession bids.
- ✓ Captive mining policies—governments only award mining contracts on the condition that the mineral extracted will be used in domestic production for a predefined sector (usually mining firm cannot use the minerals for other purposes).

Strengths

- ✓ When market interest for a deposit is high, companies competing to attain the licence can help the government secure the best possible deal (including downstream package)—following the well-known principle of the price discovery enabled by a competitive bidding process.

Possible Challenges

- ✓ There is a risk of companies overbidding to win the tender for an asset and then asking for renegotiation, which may take time and affect the viability of the project, if in the meantime market conditions change.
- ✓ If the bid process does not include objective transparent evaluation criteria, it may also create opportunities for corruption.

Key Elements of Success

- ✓ Good technical expertise is needed to assess the bids and evaluate whether they are feasible.

Learning From International Experience

This approach was chosen by the Government of **Afghanistan** for the Aynak copper deposit. In 2007, Afghanistan, with the support of the international community, tendered the Aynak copper concession for a public bidding process. Several companies applied, and the evaluation also included points rewarding the processing of the copper ore domestically.

China Metallurgical Group Corporation (MCC) won the bid by offering the highest payments to the government, building rail and power infrastructure and smelting the copper domestically. While the bidding process was considered transparent and in line with international best practice,[39] and while the resource is high-grade and plentiful (second largest known deposit in the world), the project has yet to produce a single tonne of copper.

After winning the bid, MCC approached the government to renegotiate terms—including the provision of building the smelter. MCC had clearly overbid to win the tender with the project not being economically viable under the terms promised. While the government could retender the project rather than enter into negotiations, significant time and resources went into the bidding process, and political pressures may make the retendering of the project difficult. Furthermore, the market conditions have changed, and it is questionable whether the government would receive similar bids in another round.

5. Government-led Investments

Types of Measures/Instruments

- ✓ Creation of state-owned entities to invest and manage downstream production

Strengths

- ✓ Government-led downstream interventions give the country control over economic development. While international companies might still be invited to invest in the sector, they may not be able to own production facilities, but rather operate as service providers.
- ✓ May insulate the country from the challenges of dealing with external investors.

Possible Challenges

- ✓ The government's expertise in industrial development is often limited. This is likely to result in a lack of competitiveness, inefficiencies and mismanagement.
- ✓ Such a policy requires large upfront capital investments. Governments will have to allocate resources needed in other areas such as education, health and infrastructure to industrial development, in ventures that may not ultimately be competitive.
- ✓ Creating SOEs that invest and operate in the downstream sector can also create conflicts of interest between the government's commercial, regulatory and development objectives.
- ✓ Risk for corruption and political interference to crowd out private investment in the value chain.

Key Elements of Success

- ✓ To be successful, government-led investments through state-owned companies need to be structured with clear roles, a financing model that promotes a commercial mandate, limited political interference in technical decisions, and in a way that ensures transparency and oversight.

Learning From International Experience

Nigeria has invested directly into the refinery sector since the 1960s to serve the domestic and export markets. By the 1980s, Nigeria owned four refineries and managed them through the National Oil Company and its subsidiaries.

In 2015, Nigeria commissioned one further state-owned refinery to be built. While Nigeria had ambitions to become a net exporter of refined petroleum products, these government-owned refineries have not even managed to satisfy internal demand.

Mismanagement and corruption have led to low production levels (at times below 10 per cent of nameplate capacity), and Nigeria has been forced to import petroleum products while having spent significant resources in building the refineries.

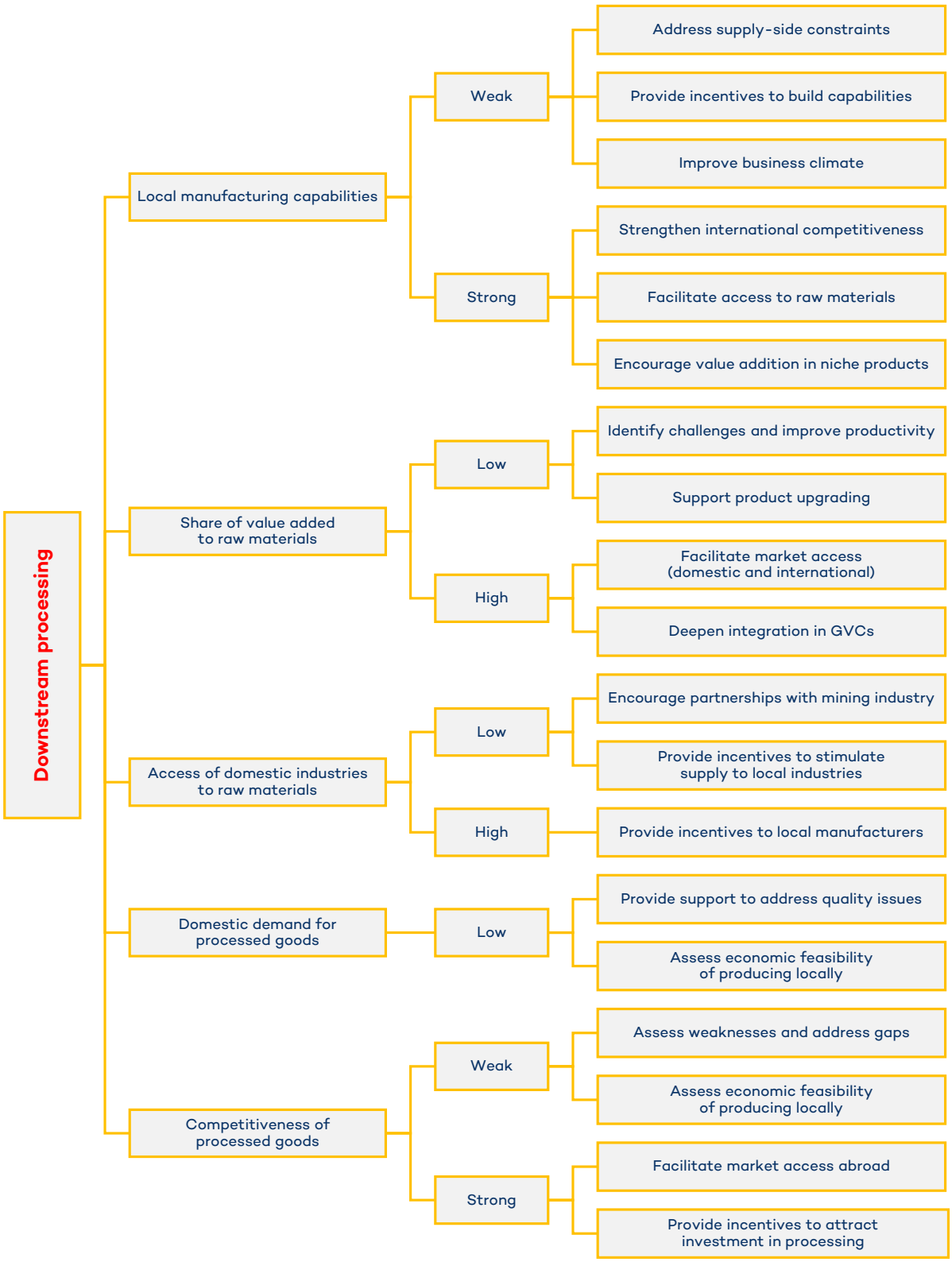
[39] Stanley, M. & Mikhaylova, E. (2011). *Mineral resource tenders and mining infrastructure projects guiding principles, case study: The Aynak Copper Deposit*, Afghanistan. Retrieved from http://siteresources.worldbank.org/INTOGMC/Resources/EITI22weboct17.pdf

SUMMARY OF POLICY OPTIONS FOR DOWNSTREAM LINKAGES

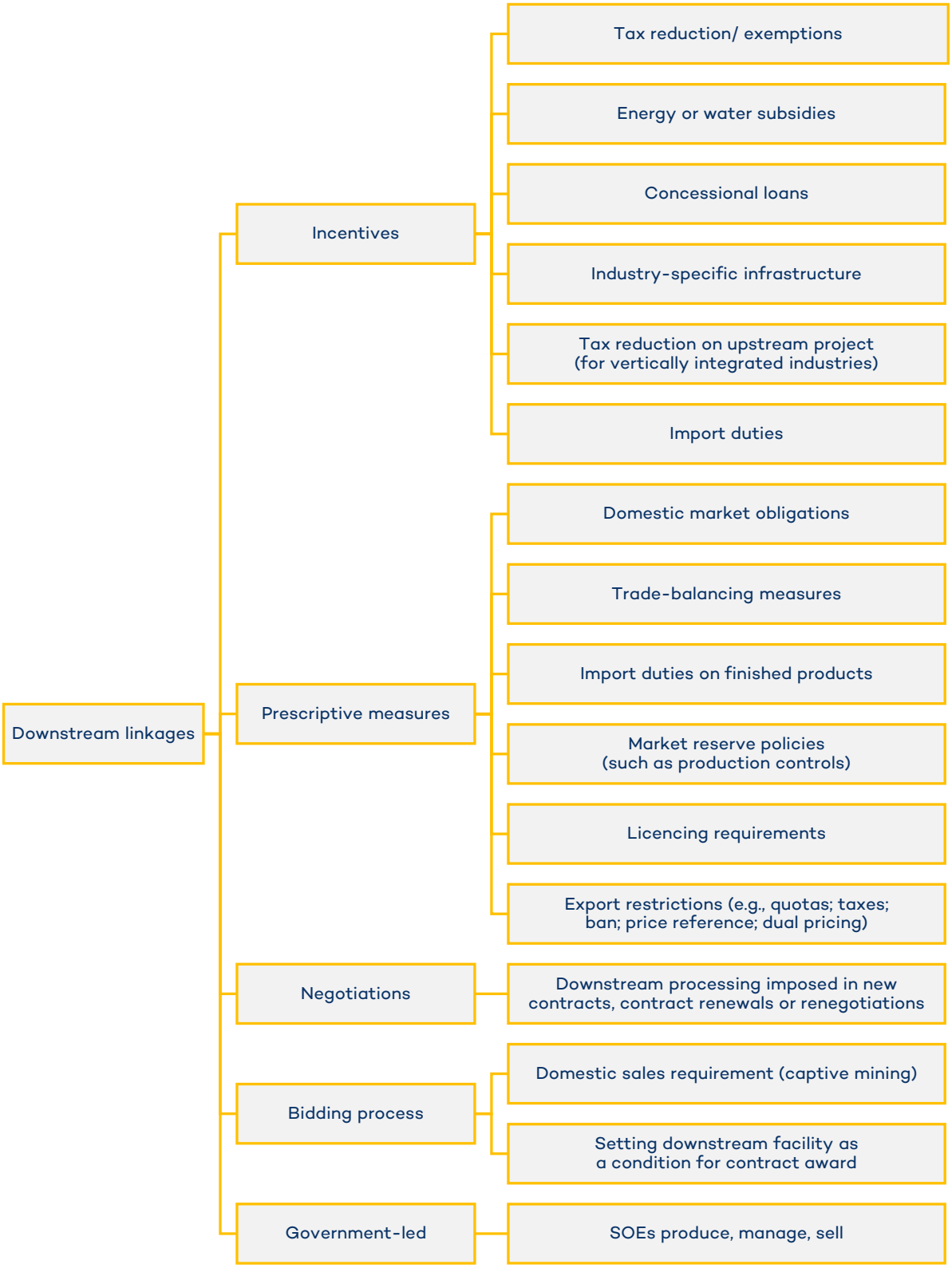
1. Incentives	• Tax reductions/exemptions • Energy or water subsidies • Concessional loans • Providing industry-specific infrastructure • Tax reductions for upstream regimes • Tariff on imports
2. Prescriptive measures	• Export restrictions • Domestic sales requirements • Licensing requirements to control ownership structures, number of firms involved in extraction • Trade-balancing measures • Market reserve policies • Import duties to protect local production
3. Negotiations	• Downstream processing imposed in contract negotiations; renewals; or re-negotiations
4. Bidding process	• Domestic sales requirements • Developing downstream facility as a condition for contract award
5. Government-led policies	• Governments to invest downstream to produce/manage/sell value-added products

5.4.3 CHOOSING A POLICY OPTION

Based on Step 2 in Section 4, prior to choosing a policy option, governments need to assess the capabilities of the country to roll out efficient downstream linkages. The **companion tree** below outlines the key steps necessary to ensure the conditions are right for downstream linkages policies to be effective.



Based on the above, we provide a "**decision tree**" template to facilitate decision-making processes and the selection of a particular instrument (or set of instruments), provided the conditions identified in the companion tree are met.



5.4.4 POLICY COORDINATION AND COHERENCE

The success of downstream policies will depend on whether the country can become competitive in the downstream sector over the medium term. It is therefore important for governments to ensure policy coherence by supporting downstream investment incentives/requirements and by committing resources into supporting infrastructure while investing in education and technical institutions to build up capacity and skills of the related labour force.

Coherence with regional trade and integration strategies is critical. Where there is an active regional economic integration or coordination, it may make sense to develop regional downstream linkages programs, where a processor sources inputs from the region and sells to the region, overcoming scale problems that would face individual countries. Complementary regional beneficiation strategies might be a way to help countries reinforce their national strategies.

5.5 BUILDING DOMESTIC CAPACITY: FOSTERING NATIONAL MINING FIRMS

This type of policy aims to increased national participation in mining activities, whether through:

- ✓ Increased ownership from the domestic private sector
- ✓ Increased government participation in management or
- ✓ Creation and expansion of state-owned enterprises (SOEs).

Increasing domestic capacity responds to a number of policy objectives:

A strategic instrument	Industrial development	Empowerment tool
Aims to provide substantial support to build strong national champions (domestic firms and SOEs) so that the latter can "go global" to meet domestic goals of securing access to raw materials for their own industrial development E.g., China, Japan	Key purpose is to build solid internal capacity, notably through transfer of knowledge and technology from foreign investment, and increased participation of local people in companies' decision making. E.g., Norway (technological transfer), South Africa (increased management)	Aims to correct historical and socioeconomic imbalances, including among certain local population groups and indigenous populations as well as women and youth. E.g., BEEE policy in South Africa; Citizens Economic Empowerment in Zambia

5.5.1 TAKING STOCK

Section 4 above summarizes the general steps needed to take stock before pursuing policies to foster local content policies.

When aiming at **increasing the participation of the local private sector**, governments must pay attention to the following:

- ✓ Ensure that local businesses have the requisite capacity (financial, managerial and business network) to partner with mining companies.
- ✓ Providing accompanying policies to build the competitive advantage of local businesses and develop entrepreneurship is key (a) to preserve the sustainability and profitability of the industry and (b) equip domestic firms with the tools to expand and grow their own business networks over time. Accompanying policies may include building technical capabilities; learning incentives and targeted government support.

When promoting **state-owned enterprises**, it is important to pay attention to the following:

- ✓ SOEs can be a powerful strategic instrument of state commercial policies (as in China or Chile), with significant financial and industrial benefits for a country. However, they can also be instruments of rent capture, patronage and corruption, which can deter both local and foreign private investment.
- ✓ Institutional oversight is key to ensure transparency, accountability and regular reporting.
- ✓ The success of SOEs is closely liked to the ability of governments to allow the company to behave in a commercial manner, away from political interference (e.g., CODELCO in Chile).
- ✓ It also requires strategic implementation of other policies, such as trade and investment policies, in order to create favourable conditions for production.

5.5.2 CHOOSING THE POLICIES

1. Joint Venture Requirements

Types of Measures/Instruments

Governments can require that any foreign investor in a particular sector must operate as an equity joint venture with some local partner. In practice, policies are usually expressed as:

- ✓ Mandatory requirements for increased domestic ownership, through:
  - Equity participation (minimum participation for local companies; state participation; listing on stock exchanges)
  - Substantial control through board and management representation
  - Skills transfer
- ✓ They may also be structured more indirectly, as a regime of incentives and disincentives that makes it more attractive to enter a market in the form of a joint venture than as a wholly owned subsidiary.[40]

Strengths

- ✓ If implemented successfully, joint venture requirements can be used:
  - To address the problem of lack of capital
  - To decrease foreign dominance in a given sector
  - As a way to create national champions or
  - To carve out space for domestic players in sectors considered vital to the interests of the host country.

More recently, they have been aimed at building competitive capacity in domestic partners, who are ideally exposed to modern technologies, improved management practices, and global marketing channels and experience.

Challenges

- ✓ Joint venture requirements are not well received by investors. Organically developed, joint ventures are established through the identification of a partner of choice, with shared objectives and complementary strengths. However, forced joint ventures through regulations, in particular in countries with under-developed partners, does not necessarily bring value to foreign partners.
- ✓ Further, they may exacerbate the development risk of projects (especially in megaprojects), that include large amount of capital funding and technical capabilities needed to develop projects.
- ✓ Domestic (junior) partners in a joint venture may lack the capacity to negotiate favourable terms.
- ✓ Forced joint ventures may generate a lack of trust between local and foreign partners, with the effect that foreign partners may not be willing to invest in cutting-edge technologies.[41]
- ✓ Large mining projects often come with high risks. Insufficient risk-sharing mechanisms may scare off investors.

[40] Boateng and Glaister (2003) found that, even after extensive investment regime liberalization, Ghana retained enough incentives in its regulations to significantly influence investors to engage in joint ventures. Boateng, A. & Glaister, K.W. (2003). Strategic motives for international joint venture formation in Ghana. *Management International Review, 43*(2), 107–128.

[41] United Nations Conference on Trade and Development (UNCTAD). (2003). Foreign direct investment and performance requirements: New evidence from selected countries. Geneva: UNCTAD, p. 27. Retrieved from http://unctad.org/en/Docs/iteiia20037_en.pdf

Key Elements of Success

- ✓ Existence of strong and competitive local private sector, which can bring value to partnerships with foreign firms.
- ✓ High level of trust.
- ✓ The joint venture partner should be able to share financial and development risks and provide some "guarantees" (including through state support).
- ✓ Parent local companies should share strategic goals and commercial interests with foreign partners.
- ✓ Strong regulatory frameworks, in particular intellectual property rights.

Learning From International Experience

China heavily used joint venture requirements in its drive to foster globally competitive national champions in the manufacturing and heavy industries sectors, starting as early as the late 1970s.[42]

Norway and the **United Kingdom** adopted joint venture strategies in the early phase of development of their hydrocarbon sectors. During the initial phase of petroleum development in the 1960s, **Norway**'s policy was geared toward building its absorptive capacity of receiving new technology, through joint ventures between local and foreign firms. Later, in the 1970s, priority moved to building the competence of its domestic firms, while in the 1980s, it shaped its public policy in order to participate as a national industry in oil production.[43]

In **Libya**, foreign companies are required to enter into joint ventures with local entities. Foreign companies are only allowed to hold a maximum of 49 per cent equity stakes. In the mining sector in **Kenya** (according to the Mining (Local Equity Participation) Regulation 2012), licences are granted conditional on local equity participation of at least 35 per cent in respect of the mineral rights.

2. Stimulating Technological Transfer and R&D

Types of Measures/Instruments

- ✓ Investors are required to bring some level of technology to their operations in country, or undertake some level of R&D in country.
- ✓ R&D requirements modelled as conditions for benefits such as tax breaks.
- ✓ Incentives provided to local universities to conduct R&D.
- ✓ Financial incentives for R&D to support competitiveness of world-class domestic companies in mining value chains.

Strengths

- ✓ Build up expertise in domestic firms (most relevant in the manufacturing sector).
- ✓ An important means for generating spillover effects that contribute both to domestic capacity in the mining sector, and also to domestic capacity in non-mining sectors (horizontal linkages).[44]

Challenges

- ✓ There is not much evidence for the effectiveness of technology transfer requirements.
- ✓ There are major challenges in monitoring such requirements.
- ✓ Difficult for governments to specify which technologies particular firms in particular sectors and countries should be using in the first place.[45]

Key Elements of Success

- ✓ They should be used as part of a broader strategy to build national systems of innovation as such requirements are rarely effective in and of themselves. (See Section 5.3.2)
- ✓ A monitoring mechanism is necessary to measure impact of such measures on domestic expertise and capacity to innovate.

[42] United Nations Conference on Trade and Development (UNCTAD). (2003). *Foreign direct investment and performance requirements: New evidence from selected countries*. Geneva: UNCTAD, p. 27. Retrieved from http://unctad.org/en/Docs/iteiia20037_en.pdf

[43] Pearson, M. (1991). *Joint ventures in the People's Republic of China*. Princeton, NJ, USA: Princeton University Press.

[44] Gholzani, K. (2010). *Clients metrics for measuring local content: Brazil experience*. 14th African Oil, Gas and Minerals, Trade and Finance Conference and Exhibition, São Tomé and Príncipe, November 24.

[45] Gholzani (2010).

Learning From International Experience

In **Brazil** concessionaires in the petroleum sector are required to spend 1 per cent of gross revenues on R&D. At least 50 per cent of these resources must be channelled to universities or R&D institutes for activities related to the petroleum sector. In **the Philippines**, contractors must allocate a minimum of 1.5 per cent of their operating costs to support the development of mining technology and geosciences.

Sweden provides significant financial support to its research institutions specialized in mining-related activities and has developed strong partnerships to connect businesses with R&D. Similarly, **Finland** provides substantial loans and grants to its public research institutions to support domestic companies in becoming global leaders in specific sections of mining value chains.

3. Creation and Promotion of SOEs

Types of Measures/Instruments

- ✓ SOEs as a monopoly over exploration and production (i.e., total national control, as in Saudi Arabia and Mexico before 2013).
- ✓ Obligation to give the state free carried interest in operation
- ✓ Some policies used to create SOEs include refusing entry to foreign investment in the sector or expropriation of existing foreign investment.

Strengths

- ✓ SOEs are often given explicit social development mandates to accompany their economic goals. This is perceived as a way of redistributing the benefits of mineral resources to the population.
- ✓ There is a presumption that national firms will tend to act more consistently in the national interest, including by fostering the sorts of linkages described above.
- ✓ Significant state participation in the sector may allow for influence over the conduct of the sector in ways that can form part of an overall industrial policy strategy. However, that strategy might be more difficult to effect in the context of a less significant domestic presence in the sector.

Challenges

- ✓ In the absence of proper supervision and management, SOEs can significantly slow project development, reduce the revenue to the state, and create conditions for rent capture, patronage and corruption.
- ✓ SOEs may suffer the risk of under-investments in the long run if they run constant deficits due to mismanagement or if profits are used only in the pursuit of social goals.
- ✓ A risk with respect to SOEs as major players in the domestic market is that they may become too powerful to be effectively monitored, particularly when dealing in high-value commodities and in states with limited administrative resources.
- ✓ Risk of conflicts of interest.

Key Elements of Success

- ✓ Insulation against political interference is critically important to the commercial success of SOEs.
- ✓ At the same time, SOEs must be accountable—a goal that can be furthered by transparency in various areas, such as payments and financial flows,[46] contract dealings,[47] use of taxation and production flows.[48]
- ✓ Expropriation and barriers to entry of investment may both run up against investment law commitments;[49] states need to know what they have signed and how it circumscribes their options (see Section 6.2 and 7.2).

[46] Cobham, A.,with Janský, P. & Prats, A. (2014). *Estimating illicit flows of capital via trade mispricing: A forensic analysis of data on Switzerland* (Center for Global Development Working Paper 350 (January)). Retrieved from https://www.cgdev.org/publication/estimating-illicit-flows-capital-trade-mispricing-forensic-analysis-data-switzerland

[47] For an excellent example of this sort of transparency see the case of Guinea, where, as of 2013, all mining contracts (existing and prospective) are posted publicly on line. See Guinée Resource Contracts. (n.d.). *Un référentiel de Resource Contracts de Guinée*. Retrieved from http://www.contratsminiersguinee.org

[48] One study tracking commodity trade from developing countries to Switzerland (a major commodities trade hub) estimated that the trade flows involve a loss to exporters of between USD 8 billion and 120 billion annually, some portion of which is surely lost by corruption in SOEs operating beyond the control or oversight of their host governments. See Cobham A., Jansky P. & Prats A. (2014). *Estimating illicit flows of capital via trade mispricing: A forensic analysis of data on Switzerland* (Center for Global Development Working Paper 350). Retrieved from http://www.eurodad.org/files/pdf/1546150-estimating-illicit-flows-of-capital-via-trade-mispricing-a-forensic-analysis-of-data-on-switzerland.pdf.

[49] States that are bound by investment treaties (bilateral or multilateral investment treaties, or investment chapters in trade agreements) are typically obliged to expropriate only for a public purpose and are committed to paying fair compensation. They may also be obliged not to restrict entry of foreign investment, depending on the nature of their commitments. See section 7.2.

- ✓ It is critical that SOEs are able to invest in technologies and infrastructure to remain productive. This may lead to divergent incentives between the SOE and government, but is ultimately a trade-off between short- and long-term benefits. Short-term underinvestment will have negative long-term competitiveness—and eventually revenue—consequences.

Learning From International Experience

In Brazil, Chile and Norway, effective SOEs have developed strong commercial capabilities and helped manage oil, gas and mining projects in line with the countries' development objectives.

Chile is the world's leading copper producer. It has relied on tax revenues from mining companies and the SOE Codelco, along with good governance and strategic direction to achieve remarkable social and economic improvements over the last four decades. Codelco has developed appreciable capacities as an operator, and today represents almost 10 per cent of world copper production, making it one of the largest copper producers. The company is an important taxpayer, contributing over 13 per cent of total government revenues in 2010.[50] Income generated from Codelco has been used to support the development of upstream mining linkages, R&D, skills development, diversification projects, health, pensions, disability support and innovation. This approach allowed the government to directly address its socioeconomic priorities through government spending rather than requiring the state-owned enterprise to pursue secondary objectives, which can often reduce its ability to achieve its primary goal.

4. Measures to Increase the Participation of Disadvantaged Groups

Types of Measures/Policy Instruments

- ✓ Ownership requirements specifically aimed at disadvantaged groups, women and youth
- ✓ Direct support to businesses owned by disadvantaged groups

Strengths

- ✓ To correct historical and socioeconomic imbalances
- ✓ Provides opportunities to historically disadvantaged groups, women and youth, that would otherwise not be available

Challenges

- ✓ Regulations in and of themselves are not sufficient to empower local population.
- ✓ Long-term efforts and results might not be immediately visible.

Key Elements of Success

- ✓ Accompanying measures are needed to ensure that there is a fundamental change in ownership over time.

Learning From International Experience

South Africa's revised Mining Charter of 2017 provides the following for broad-based black socioeconomic empowerment.

- ✓ Obligation for new mining right holders to have a minimum of 30 per cent black person shareholding, allocated as follows:
  - a minimum of 8 per cent to black employee share ownership plans
  - a minimum of 8 per cent to mine communities, through a community trust
  - a minimum of 14 per cent to BEE entrepreneurs (BEE allocation thresholds).
- ✓ Obligation for new prospecting right holders to have a minimum of 50 per cent plus 1 black person shareholding.
- ✓ Local procurement obligation equivalent to 80 per cent of total spend on services and 70 per cent of total spending on mining goods, to be sourced from prescribed categories of South African-based companies. There are specific quotas for women-led and youth-led businesses.

Critics of the previous Mining Charter contend that it did not succeed in fundamentally changing ownership in the industry but has instead benefited a handful of elites. The new law has increased the targets, hoping for a different result. However, there is no indication of what other measures the government will take to help black entrepreneurs be more successful.

[50] Korniek, J. (2013). *Mineral resource trade in Chile: Contribution to development and policy implications* (OECD Trade Policy Papers No. 145). Retrieved from http://dx.doi.org/10.1787/5k4bw6twpf24-en

SUMMARY OF POLICY OPTIONS FOR DOMESTIC MINING SECTOR CAPACITY

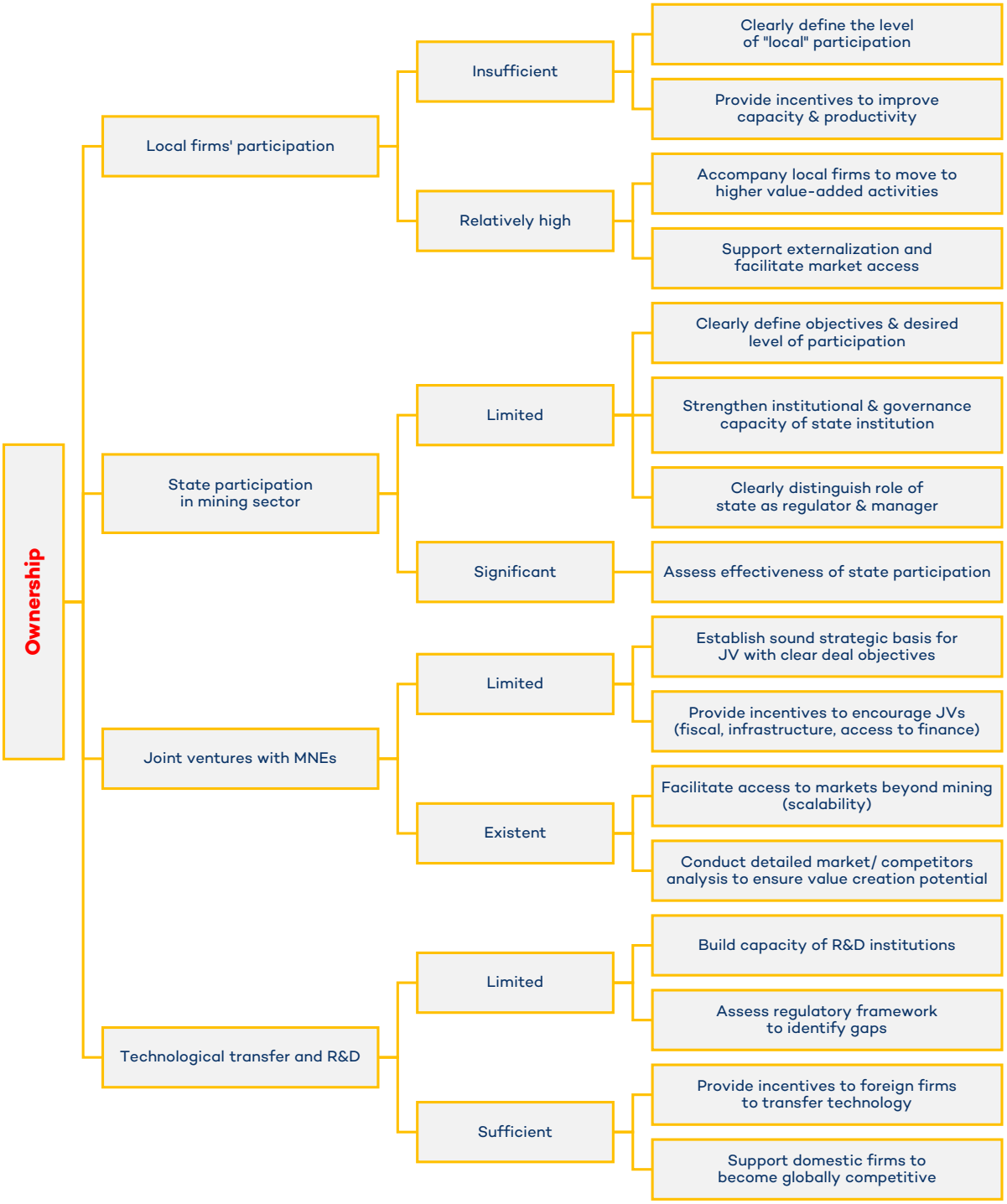
Policies aiming to give domestic mining firms greater capacity include the following:[51]

Each of these policy tools has strengths and weaknesses. Generally, any government involvement in ownership or promotion of state-owned enterprises must navigate a delicate balancing act between imposing sovereign control that seeks domestic benefits and ensuring that such policies do not crowd out international investors or impair their commercial success.

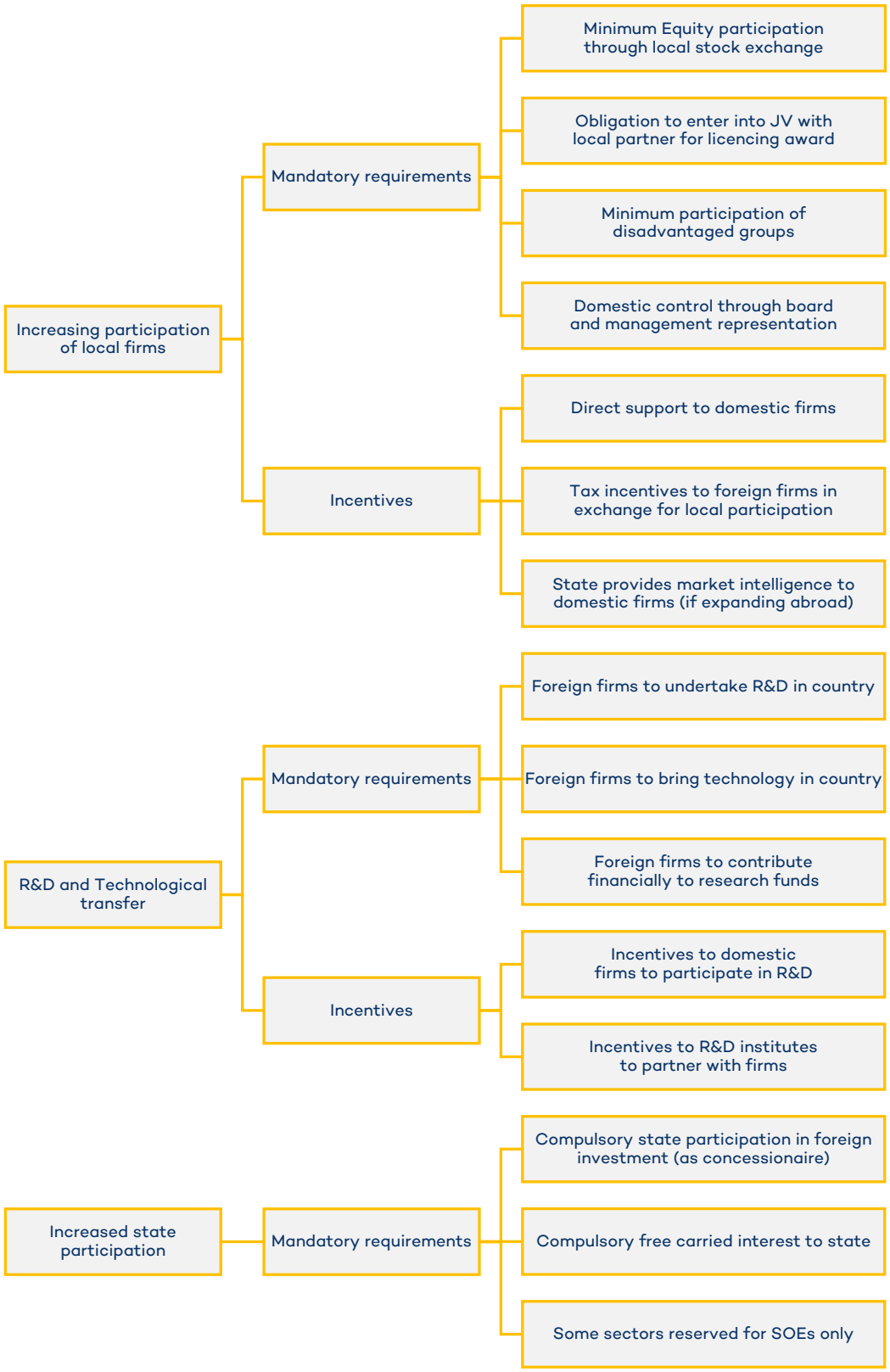
[51] It is important to make the distinction between joint ventures in the oil and gas sector with those in the mining sector. The oil and gas sector regularly uses joint ventures to mitigate exploration risks because the initial costs associated with oil and gas exploration, such as hiring a rig and sinking wells, are significantly higher. This is not the case in the mining sector. The rise of joint ventures in mining addresses a different risk, one which is linked to the development of the project, largely associated with the amount of capital required to develop deposits. Development risk includes technical risk, sovereign risk and, in particular, financial funding risk.

5.5.2 CHOOSING A POLICY OPTION

Based on Step 2 in Section 4, prior to choosing the policy option, Governments need to assess the capabilities of the country to stimulate the broader participation of domestic industries. The **companion tree** below outlines the key steps necessary to ensure the conditions are right for policies to be effective.



Based on the above, we provide a "**decision tree**" template to facilitate decision-making processes and the selection of a particular instrument (or set of instruments), provided the conditions identified in the companion tree are met.



6.0 STEP 4: MONITORING, REVIEW, ENFORCEMENT

6.0 STEP 4: MONITORING, REVIEW, ENFORCEMENT

Therefore there must be a built-in independent monitoring and enforcement mechanism, which ensures various stakeholders, including public institutions, can be made accountable.

Key elements of an enforcement mechanism are:

- ✓ Clear reporting requirements for mining companies:
  - For mandated prescriptive obligations or non-mandatory targets, such as minimum percentages of local employment, firms should be required to report regularly against those benchmarks, using a standardized reporting template.[52]
  - For facilitative measures, such as incentives to purchase local goods and services, or to conduct local R&D, firms should be required to report regularly on their achievements in these areas, again using a standardized reporting template.
  - If firms are obliged to submit plans for increased local content, as is common, the format for these reports should also be standardized.
- ✓ Strong systems for collecting data on the results of the interventions.
- ✓ The content of the reporting requirements should be tailored to the nature of the policies chosen.
- ✓ For all relevant reporting areas, gender-disaggregated data should be collected to ensure proper monitoring and follow-up of gender-equitable development strategies.

Common reporting frameworks allow governments to:

- ✓ Gather and aggregate data from across many operations.
- ✓ Obtain a holistic picture of the sector's progress toward local content goals.

  For example, in the case of a requirement to purchase locally "where feasible," country-wide reporting data gives bureaucrats some basis to assess claims by individual mining companies regarding their ability or inability to purchase locally.
- ✓ Use information collected from mining companies as subtle pressure to improve companies' performance on local content.

There are various options for governments to collect data, but in general it is ideal to have companies only have to report once to one agency, and for all stakeholders to be able to find the data in a centralized accessible place. In some cases, this will be in the mining ministry or a trade and industry ministry, and some countries may choose to set up an independent local content unit to collect data. For example, Ghana's Minerals Commission, set up under the Ministry of Lands and Natural Resources, has as part of its mandate, "review agreements relating to minerals; collect, collate and analyse data on the operations of mining companies for decision making and for dissemination."

[52] This is important to guarantee compliance with the policies and accountability of various stakeholders and ensure regular dialogue with the industry (mining and contractors). One such template is the Mining Local Procurement Reporting Mechanism (LPRM), which provides a common framework to collect information on local procurement and encourages companies to gradually increase the level of detail they use in reporting, eventually breaking down spending into general categories of goods and services. (See http://miningsharedvalue.org/mininglprm/)

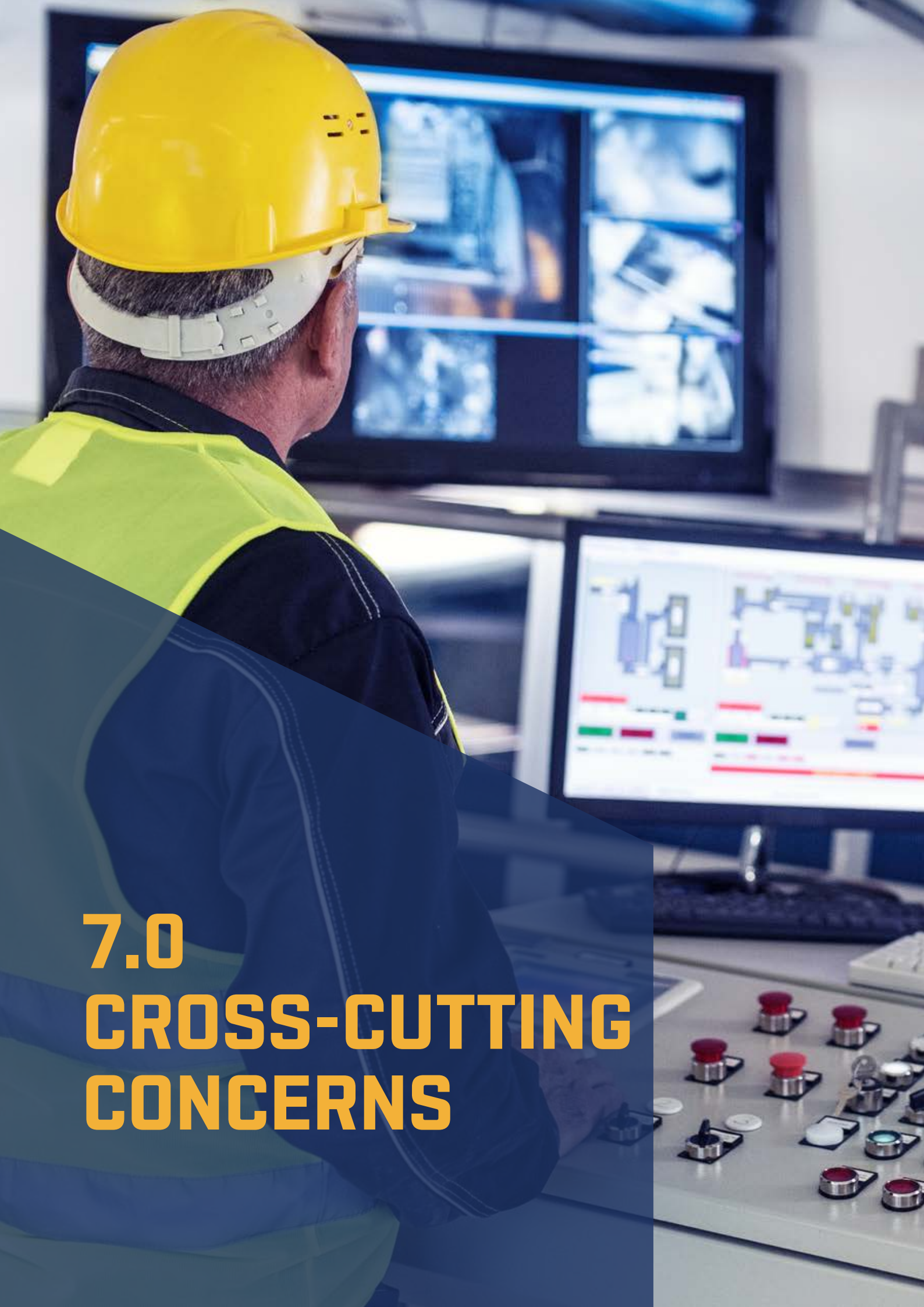
The **independent review function,** which should include gender expertise, is meant to ensure that:

- ✓ Failure is not simply met with punishment.
- ✓ There is a process of consultation and critical assessment of the underlying causes of failure, and of policies themselves, for potential revision and improvement.
- ✓ There is periodic revision of the local content policies and supporting policies, in light of practice.
- ✓ There is room for questioning whether the measure was "fit for purpose" in the first place, before imposing penalties on companies for non-compliance.

The review mechanism should be mandated to:

- ✓ Propose the phasing out of certain support measures when industries become competitive enough to be self-sustaining.
- ✓ Propose change in policies if, after a given timeframe, the desired effects are not reached.

Although it may be difficult to implement, this sort of performance-based conditional support is critical for the success of local content policies.



7.0 CROSS-CUTTING CONCERNS

7.0 CROSS-CUTTING CONCERNS

7.1 THE CHALLENGE OF TECHNOLOGICAL EVOLUTION

In the coming years, automation will change the face of the mining industry.[53]

+	−
Implications for mining companies ✓ Mine sites will be more efficient. ✓ They will have lower greenhouse gas emissions. ✓ They will suffer fewer workplace accidents. **Implications for governments** ✓ New job opportunities for workers skilled in information technology. ✓ Better-paying jobs.	**Implications for mining companies** ✓ Rise in fiscal pressure to compensate for lower spending on procurement and job losses. ✓ Impact on social licence to operate. **Implications for governments** ✓ A drop in employment per unit of value with inequitable impact. ✓ Impact on local employment with pressure on low- and medium-skilled jobs. ✓ Lower spending on domestic procurement for items that are linked to employees (e.g., food; housing). ✓ Fewer opportunities for local maintenance and servicing of capital.

7.1.1 WHAT ARE THE IMPLICATIONS FOR GOVERNMENT POLICIES AND LOCAL CONTENT?

The likely impacts of technological evolution increase the importance of governments investing in appropriate education and skills training, since otherwise new jobs will be occupied by skilled foreign workers.

Governments need to be aware of this as they plan local content strategies. Lower employment ultimately means more difficulty in capturing national-level benefits from procurement spending, from the horizontal linkages that evolve from supplier development and from direct employment. And it likely means inequitable social impacts—since women are often concentrated in unskilled jobs, they are likely to feel a disproportionate burden of the costs of automation.

The solutions obviously do not lie in trying to forestall technological progress. This would make the affected operations less competitive internationally, and the health and safety benefits of new technologies are undeniable.

[53] Cosbey et al. (2016). *Mining a mirage? Reassessing the shared-value paradigm in light of the technological advances in the mining sector.* IISD/CCSI. Retrieved from https://www.iisd.org/sites/default/files/publications/mining-a-mirage.pdf. See also the estimate of over 50 per cent job vulnerability in mining, in Michael Cui et al. (2017). *Human + machine: A new era of automation in manufacturing. McKinsey & Company.* Retrieved from https://www2.deloitte.com/content/dam/Deloitte/global/Documents/Energy-and-Resources/deloitte-norcat-future-work-in-mining.pdf.

But it does raise the following question: if mining activity is extracting the sovereign mineral resources of a country, at potential environmental and social cost, what benefits can it bring to the table to compensate for the reduced well-being brought by reductions in employment and the associated GDP contributions?

The answers are not obvious and will vary from case to case. Possibilities include:[54, 55]

Increased rates of taxation and royalties, presumably based on increased profitability. However, the challenge is to translate these into benefits as palpable as the previous benefits of employment, including for local communities.

Hypothecated taxes that are earmarked for education, skills development, women's empowerment, SME support, or other local content-related initiatives.

Demands for the provisions of shared infrastructure in areas such as transport, electricity, water and the Internet. The complexities of this sort of policy are discussed in Section 4.3.2.

More emphasis on capabilities-led horizontal linkages to foster cross-sectoral spillovers, as discussed in Section 4.3.

Different modes of ownership, including state-owned exploitation of the resource, potentially with investors operating under production-sharing agreements. The difficulties of the state's role as active owner is discussed in Section 4.5.

Change focus from local content policies to other polices fostering local community benefits. Mining companies may be mandated to engage in corporate social responsibility activities, such as building schools or hospitals or to contribute to local- or government-administered development funds.

[54] Brazil's 2015 Model Contract for concession holders in the petroleum sector mandates a tax at 1 per cent of gross revenues that is directed to funding research, development and innovation (Article 24).

[55] Toledano, P., Thomashausen, S., Maennling, N., & Shah, A. (2014). *A framework to approach shared use of mining-related infrastructure. Columbia Center for Sustainable Investment*. Retrieved from http://ccsi.columbia.edu/files/2014/05/A-Framework-for-Shared-use_March-2014.pdf

LEARNING FROM EXPERIENCE: CONTRIBUTIONS TO LOCAL DEVELOPMENT FUNDS

Senegal's 2016 Mining Code requires a local development fund contribution of 0.5 per cent of sales—a model also recently followed by Ghana, Mali and others. This is essentially a hypothecated tax directed toward local community development.

Compared to the benefits of mining-related employment and procurement, such schemes, however, raise critical governance questions. If the fund is locally administered, who governs its disbursement? If it is administered by the national government, how to ensure that local priorities are best served? If the company is mandated to undertake what amounts to development assistance, how to ensure that it follows the decades of hard-learned lessons on aid effectiveness—an area of non-core expertise?[56]

7.2 THE CHALLENGE OF INTERNATIONAL TRADE AND INVESTMENT LAW

By their nature, local content policies underscore preferential treatments for local suppliers against foreign goods and services providers. Such measures may contravene countries' obligations under trade and investment agreements.

Some of the most prominent of those obligations are found in investment law prohibitions on performance requirements, but there are important trade-law related obligations as well:[57]

Multilateral trading system (WTO)	Investment laws
✓ Trade-related investment measures (TRIMS) agreements prohibit any advantage conditioned on the use of local content requirements. ✓ Use of local content requirements as a condition for subsidies is prohibited. ✓ A number of other common subsidies, such as targeted (specific) tax preferences, may also be illegal. ✓ Export bans (quantitative restrictions) are prohibited. ✓ While some exceptions exist that allow for export restrictions, they are tightly circumscribed, and definitely do not cover restrictions created to foster domestic competitiveness of the processing sector.	✓ Many bilateral investment treaties and investment chapters in comprehensive trade agreements prohibit local content requirements, and some go further than WTO rules prohibiting requirements for technology transfer and joint ventures. ✓ Expropriation allowed, if done for a public purpose, but must be accompanied by full compensation for the affected property owners. ✓ Those agreements may also prohibit restricting investment in the mining sector to create national champions or SOEs as sole actors. The question hinges on whether the agreement commits parties to *pre-establishment* national treatment, which obliges them to treat prospective investors no worse than existing investors in any given sector.

[56] See, for example, the OECD-brokered Paris Declaration on Aid Effectiveness (2005) and the Accra Agenda for Action (2008). Retrieved from http://www.oecd.org/dac/effectiveness/34428351.pdf

[57] Nikièma, S.H. (2014). *IISD Best Practices Series: Performance requirements in investment treaties.* Winnipeg: IISD. Retrieved from http://www.iisd.org/sites/default/files/publications/best-practices-performance-requirements-investment-treaties-en.pdf.

While governments must be conscious of their international commitments, there has never been a WTO case brought on local content requirements in the extractives sector (there have been cases over export bans that were aimed at in-country beneficiation). The fact of having a potentially WTO-illegal measure on the books is only a problem if it gets taken to dispute settlement and is finally judged illegal in the dispute settlement process.

There are, moreover, many tools available to governments that do not conflict with trade rules, and a great deal of scope to pursue local content objectives in such a way as to minimize the prospects of trade and investment disputes. For example, instead of mandating hard targets for local procurement, governments can simply require companies to report on whether they have achieved such targets, with the understanding that achievement is expected.

It is best practice to consult with the legal divisions of trade ministries when preparing and implementing local content provisions. A note of caution, though: often trade policy advisors will be ideologically opposed to industrial policy efforts such as local content policy. Where this is so, they will be less focused on helping to find flexibilities within trade and investment law to facilitate the aims of local content policies, and more focused on explaining why that law is a barrier.

8.0
IN CLOSING

8.0 IN CLOSING

IGF's guidance on local content policies is a guide to the questions that policy-makers need to ask to help them decide on how best to proceed in this area. While it includes a large number of brief case studies to illustrate the lessons of history, each country's solution will be unique, and dictated by its objectives and circumstance. The aim is to help governments, companies and citizens collaborate to ensure mining provides governments significant, gender-equitable, inclusive and sustainable development.

GLOSSARY

Capacity refers to economic actors' ability to "hold, receive or accommodate,"[58] based on their current levels of technical or technological aptitudes, financial means and skills. It is about "amount" or "volume." The relevant question related to capacity is "Do we have enough?" and the related question, "How much is needed?"

Capability[59] refers to a feature, faculty or process that can be developed or improved. Capability is a collaborative process that can be deployed and through which individual competences can be applied and exploited. The relevant question for "capability" is not "Who knows how?" but "How can we get done what we need to get done?"

Captive mining policies are policies implemented by governments to award mining contracts on the condition that the mineral extracted will be used in domestic production for a pre-defined sector (usually mining firm cannot use the minerals for other purposes).

Collaterals refer to securities pledged for the payment of a loan.

Commodity cycles: Commodity prices tend to go through multiple-year periods of boom and bust, known as commodity cycles or super-cycles. One potential driver of these cycles is the interaction of large, unexpected demand shocks and slow-moving supply responses, due to the nature of the mining sector. Extended swings tend to have durable impacts on the terms of trade of commodity-dependent countries.

Corporate social responsibility is a voluntary business initiative where companies take responsibility for the social and environmental impacts of their business operations. Practices include environmental efforts such as reducing carbon footprints, philanthropic activities such as foundations for social causes and donations, or ethical labour practices. In the mining industry, it often takes the form of support to local communities including through economic development activities.

Community development agreements are formalized contractual agreements between mining investors and affected communities, which set out details of how the benefits of a mining project will be shared with local communities. In some countries, these are required by law.

Demand-side policies are, according to macroeconomics theory, attempts to increase or decrease aggregate demand in order to affect output, employment and inflation. In relation to local content, demand-side policies are understood to mean measure taken by governments to stimulate spending on domestically sourced inputs, including through fiscal measures as an incentive for companies to do so.

Employment: The Guidance refers mainly to **direct employment**, that is, local people directly employed by the mining company. However, it is important to mention that the linkages create opportunities for:

- ✓ *Indirect employment*, that is, job opportunities through upstream and downstream linkages; and
- ✓ *Induced employment* thanks to economic activities resulting from the spending of direct and indirect employees of the mining industry, such as through consumption.

Domestic market obligations are policies aimed at providing preferences for the allocation of mineral resources to meet domestic needs through production and export restrictions.

[58] See http://innovationsthatwork.com/images/pdf/June08newsltr.pdf
[59] See http://innovationsthatwork.com/images/pdf/June08newsltr.pdf

Domestic sales requirements are measures restricting the exportation or sale for export by an enterprise of products, whether specified in terms of particular products, in terms of volume or value of products, or in terms of a proportion of volume or value of its local production.

Due diligence refers to an investigation or audit of a potential investment or product to confirm all facts, such as reviewing all financial records, plus anything else deemed material. In the mining sector, due diligence refers also to the ongoing, proactive and reactive process through which companies can ensure that they respect human rights and do not contribute to conflict.[60]

Hypothecated taxes (also known as tax ring-fencing) are levies or special taxes whose revenues are earmarked for a particular expenditure purpose.

Employability refers to the capability of gaining and maintaining employment but also to the ability to obtain new employment. It refers to a set of achievements, understandings and personal attributes that make individuals more likely to gain employment over their careers through continuous learning.

Equity participation refers to the ownership of shares in a mining company. It may involve the purchase of shares through options or by allowing partial ownership in exchange for financing.

Export Processing Zone or industrial parks are special zones designated by a government to provide tax and other incentives to export firms.

Export restrictions are trade policies aimed at discouraging exports to safeguard domestic production of unprocessed materials for local industries. Export restriction measures include among others, export bans/ prohibitions, export taxes; export quotas; minimum or price reference for exports; and dual pricing schemes.

Free carried interest refers to equity interest granted to the state by the company holding a mining licence.

Global value chains refer to the international fragmentation of production, where firms source parts, components, and services from producers in several countries and in turn sell their output to firms and consumers worldwide.

Inclusive economic growth refers to a situation where the benefits of a growing economy extend to all segments of society, including increased well-being for women, minorities, historically disadvantages groups and local communities

Impact Benefit Agreements are formal contracts outlining the impacts of the project, the commitment and responsibilities of both parties, and how the associated Indigenous community will share in the benefits of the operation through employment and economic development.

Infrastructure:[61] Shared use or open access infrastructure refers to the opportunity to have mining-related infrastructure meet more than one economic objective for the broader benefit of the national and regional community.

Multi-user infrastructure refers to an arrangement where the infrastructure asset is shared between different uses with different characteristics, such as non-mining users and miners.

Multi-purpose infrastructure refers to an arrangement where the infrastructure asset is shared between different users with similar characteristics (for example bulk miners).

[60] See https://www.oecd.org/corporate/mne/GuidanceEdition2.pdf

[61] For a review of various frameworks for shared use of infrastructure, see http://ccsi.columbia.edu/files/2014/05/A-Framework-for-Shared-use_March-2014.pdf.

Joint venture is a business arrangement in which two or more parties agree to pool their resources for the purpose of accomplishing a specific task. Participants are responsible for profits, losses and costs associated with it.

Knowledge-driven economy is one in which the generation and use of knowledge and technology plays a central role in the creation of wealth. It is directly based on the production, distribution and use of knowledge, information and technology.

Latent comparative advantage[62] is the potential to be competitive in a firm's chosen sector—a potential that is frustrated by market failures and barriers such as increasing returns to scale, the potential for learning by doing, or capital market imperfections. These sorts of obstacles offer a rationale for government support to enable the firms in question to eventually become competitive in domestic and international markets.

Linkages: This Guidance document refers to the following types of linkages:

Downstream linkages mean adding value through increased local processing and beneficiation of the proceeds of mining operations. Downstream linkages are expected to encourage economic diversification, lead to higher export revenues (compared to raw materials exports), improve the trade balance, generate more tax revenue and create employment.

Fiscal linkages are payments such as royalties and taxes made by mining companies to governments in order to extract and sell the resources.

Horizontal linkages refer to the use of skills, capabilities and infrastructure developed by the extractive industry value chain for the development of other, or new, economic sectors. The Guidance emphasizes (i) capabilities-led linkages, that is, the transfer of technology or skills developed in the mining sector in economic activities in non-mining sectors; and (ii) infrastructure-led linkages, that is, the shared used of infrastructure from the mining industries (e.g., roads, rail, ports, water services, electricity and Internet) for the benefit of other sectors.

Upstream linkages are related to procurement of goods and services required by the mining industry to operate.

The breadth of linkages[63] refers to the extent of linkages into and out of the commodities sector. On the input side, it refers to the share of the inputs of the commodity producer that is acquired locally. On the output side, it refers to the proportion of commodity production that is processed by local firms.

The **depth of linkages** refers to the extent to which a company's operations are connected to, and stimulate, the domestic economy. This can occur through purchase of goods and services with high domestic value added, the employment of locals, domestic processing of extracted materials, or spillovers of knowledge and capacity into other sectors.

Local content policies refer to policies designed by policy makers to (i) stimulate the use of domestic factors of production, such as local labour and locally sourced goods and services, (ii) to facilitate transfer of technology and knowledge to local industries and (iii) increase the participation of domestic actors through increased state participation, local capital ownership and business partnerships. Local content policies can also be driven by international firms, to promote shared value and gain the social licence to operate.

[62] For a full discussion see Lin. J.Y. (2013). https://www.cairn-int.info/article-E_EDD_272_0055--industrial-policy-revisited-a-new.htm.
[63] For a discussion on the breadth and depth of linkages, see Morris, M., Kaplinsky, R. & Kaplan, D. (2012). One thing leads to another: commodities linkages and industrial development. *Resources Policy 37*(4), pp. 408-416.

Local content requirements are governmental measures setting out certain minimum levels of locally made components to be incorporated in goods and services produced domestically. They can be in the form of weight, value or volume.

Local ownership refers to increasing the capacity of local actors as mining sector operators, including through state-owned companies

(Local) Procurement refers to the purchasing of goods or services from a local supplier. Local includes host communities, Indigenous and previously disadvantaged communities, as well as at provincial, national and regional levels where appropriate.[64]

Market intelligence refers to information relevant to an industry's markets, collected and analyzed specifically for the purpose of accurate and confident decision making in determining market opportunities, market penetration strategy and market development metrics.

Market reserve policies refer to markets that may be reserved for local production or may be managed internationally. They can take the form of: (i) government procurement contracts and tendering processes, where preferences are given to locally manufactured goods or to local service suppliers; (ii) production management through state-owned enterprises in the extractive sector; (iii) production controls and (iv) offset agreements.

Mining concession agreement is a grant of rights, land or property by a government, local authority, corporation, individual or other legal entity.

National champions refer to companies designated in some countries to act as promoters of strategic industries, new technologies or new processes from whom other companies will be able to learn. They sometimes already enjoy pre-eminent positions in their sectors or are specifically aided to achieve such positions by governments. National champions generally benefit from preferential treatments and support measures. The impact of those firms on the domestic economy may be considerable if they are competitive but can also become highly dependent on domestic support, if too heavily protected and inefficient.

National System of Innovation refers to a network of institutions, including public research institutes, academia and the private sector, that aims to advance skills and knowledge to produce research and innovation.

Operational expenditures refer to recurring costs to run a mine. They include direct and indirect costs to mine, process and sell the ore.

Offsets refer to measures used to encourage the development of local industry or to improve the balance of trade by means of local content requirements, licensing of technologies, investment requirements, countertrade or similar requirements. Governments are attracted to offsets as a form of infant industry development.

Policy coherence refers to the systematic promotion of mutually reinforcing policies across government departments to create synergies toward achieving agreed objectives and to avoid or minimize negative spillovers in other policy areas.

Policy coordination describes a situation where various government departments and ministries work together on whether and how to align their various programs and strategies to avoid duplication, inconsistencies and conflicting actions.

[64] See International Finance Corporation (IFC). (2012). *A guide to getting started in local procurement*. Retrieved from https://www.ifc.org/wps/wcm/connect/03e40880488553ccb09cf26a6515bb18/IFC_LPPGuide_PDF20110708.pdf?MOD=AJPERES

Policy reversal refer to a situation where policies are announced and designed but then, due to changing circumstances or political orientations, are repealed and/or replaced with policies likely to have the opposite effect.

Political economy refers to the way political forces influence economic decisions and outcomes. Political behaviours are shaped by historical factors, interests, ideas and institutions, while economic interests are driven by rational use of resources and utility maximization.

Good governance refers to highly desirable attributes of decision-making and decision-implementing processes. The main attributes are participation by all who may be affected, respect for the rule of law, transparency, accountability, equity and inclusiveness and efficiency

Rents are defined in orthodox economic terms as a surplus value obtained as a differential between the price at which a resource is sold and the latter's cost of production (including normal profit). If rents are generally an economic feature, they remain a fundamentally political feature because they create, structure and entertain incentives for rent-seeking behaviours and encourage competition among rent-seekers.

Resource endowments refer to the amount of mineral resources a country possesses and can exploit.

Revenue optimization refers to the strategic management of mineral revenue.

Royalties are payments made to mining companies to national governments or owners of mineral resources in exchange for the right to exploit the resources. They are either specific levies based on the volume of mineral extracted or ad valorem levies, based on the value of minerals extracted.

Shared value refers to a management strategy adopted by mining companies to bring value for themselves, to their host communities, as well as regions and countries where they operate.

Social licence to operate refers to the ongoing acceptance of a company's standard business practices and operating procedures by its employees and the local community.

Structural transformation refers to the reallocation of economic activity, from low productivity and labour-intensive economic activities to higher productivity and skill-intensive activities.

Subsidies are financial or in-kind assistance by governments or public bodies to producers or exporters of goods and services. They can take the form of financial contributions, direct transfer of funds, potential transfer of funds (grants, loans, equity infusion etc.), government revenue foregone or not collected, government provisions of goods and services (other than infrastructure), payments to funding mechanisms to perform these functions, or income or price support if they confer a benefit. There are two types of subsidies. *Domestic subsidies* are benefits not directly linked to exports, paid for many reasons including the need to support production structures, raise the income of a sector, promote regional development, develop export markets etc. *Export subsidies* are benefits contingent on exports conferred on a company by governments.

Sunset clause is a provision in an agreement under which a measure taken by a government expires once a certain period of time has elapsed.

Supplier development program refer to programs and policies put in place to generate new capabilities or competencies in suppliers. By developing the capacity of suppliers, mining companies can generate competitive advantages.

Supply-side policies are aimed at enhancing the productive capacities of an economy while improving the quality and quantity of factors of production. They include supportive and facilitative measures to improve labour and capital markets, as well as to increase the competitiveness of businesses and suppliers.

A **state-owned enterprise** is a legal entity created by the government in order to partake in commercial activities on the government's behalf. These may include production, commercialization and trading activities.

Sustainable development has been defined in many ways, but the most frequently quoted definition is from *Our Common Future*, also known as the Brundtland Report: "Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs."

Technological changes refer to the overall process of invention, innovation and diffusion of technology or processes.

Trade-balancing measures refer to policies requiring that imports should represent a limited portion of locally produced exports, either in terms of volume or value.

Transferable skills are skills and abilities that are acquired, transferred, relevant and helpful across different areas of life: socially, professionally and at school. They are "portable skills."

Value addition refers to the portion of the value of a good that is carried out in-country, as opposed to being derived from outside the country.

Vertical integration is a strategy where companies acquire business operations within the same value chain, spanning from extraction or harvest of raw materials, through processing, to marketing and retail. It can be upstream or downstream in nature and can help companies reduce costs and improve efficiencies by decreasing transportation costs and reducing turnaround time.

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