



WORKFORCE CONNECTIONS

Key Approaches to Labor Market Assessment



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EXECUTIVE SUMMARY

Workforce Connections has gathered and reviewed existing labor market assessment approaches and related tools from across the workforce and youth landscapes to develop a core suite of tools that can be used to conduct a labor market assessment (LMA). With this document, we aim to share back to the workforce development community of practice the distillation of our knowledge and experience in an accessible, practical, and actionable format. These approaches balance quantitative and qualitative research; focus on the supply, demand, and matching of labor; are participatory; and can be customized to local contexts and priorities.

Structure and areas of inquiry

This document presents a user-friendly, methodological framework for conducting a labor market assessment focused on skills. It is not a detailed, step-by-step guide, but rather, provides a customizable methodological framework for conducting an LMA, presenting overall guidance and some specific tools and approaches, and pointing the user toward additional relevant resources. It can be read cover-to-cover or used as a reference.

The framework consists of six modules. For each module, there is an overarching question and a set of associated tools drawn from a range of fields, including economics, education, training, psychology, and business. In addition, there are focus group guides and questions for use in structured interviews with labor market actors.

For the first five modules, the document presents tools and approaches developed and/or refined under Workforce Connections, and includes references to additional tools. The sixth module illustrates how analytical findings from the previous five might be synthesized and used.

Module 1. Economic Context: Which sectors currently absorb labor and which are likely to see increases in employment in the future? (Approaches presented: Dashboard, Sector Selection, Product Space)

Module 2. Demand for Skills: What are the skill sets required by function in the value chain, currently and in the future, by type of firm, by region? (Value Chain Map with Workforce Overlay)

Module 3. Supply of Skills: What occupations, education levels, and skills levels are possessed by the workforce, and what types of training are offered by which institutions? (Education Stocks and Flows)

Module 4. Systems and Stakeholders: What are the institutional relationships, barriers, and opportunities for supporting change? (Causal Loop Modeling, Social Network Analysis)

Module 5. Policy: What policies impact the labor market and what are the implications for reform? (Enabling Environment for Spurring Employment)

Module 6. Alignment: How does the information gathered fit together? What recommendations can we make to improve labor market functioning?

Who can benefit from using these tools?

These tools provide users with powerful instruments to carry out actionable analysis that gets at the unique nature of labor demand and supply in a given economy, and identifies levers and interventions to improve labor market functioning. In practice, this is generally done by development funders and implementers to understand opportunities for youth across an economy. However, these approaches are customizable to various populations of interest or economic sectors by any actors with an interest in promoting improved labor markets, job creation, increased employment, and so on.

How can this approach help us to understand labor markets?

As each tool and approach in the suite builds on and supports the others, the framework represents a systemic approach to understanding skills demand within a labor market. Specific tools can also be used à la carte.

The approach identifies the nature and magnitude of employer demand for skills, working backwards from market demand for products and services. We identify growth sectors likely to generate jobs in the near future. We then seek to understand how industry structure and value chain relationships within these sectors influence the type and quantity of employment opportunities, including specific occupations, and think about how these may affect demand for skills. Then, by examining the supply side of the market, we can uncover the opportunities and challenges that individuals have in getting market-relevant training and finding good jobs.

Ultimately, we want to learn how well demand and supply are matching up with each other, so that we can diagnose and attempt to address any misalignments. Although we often do find a mismatch between the skills employers are demanding and those that education and training institutions are providing, these tools also help us to uncover issues related to access to training, flows of information, cultural norms and perceptions, intermediation or lack thereof, different time horizons, and policies that lead to misaligned incentives, among others.

The approach and framework can be used to assess labor markets that combine both formal and informal wage labor. It can also assess the role of agricultural workers, the self-employed, and entrepreneurs.

OVERVIEW

Workforce Connections (2013–2018), funded by the U.S. Agency for International Development (USAID) Office of Education, promotes evidence-based learning and peer-to-peer knowledge exchange, with the goal of improving the capacity of USAID and its industry partners to deliver quality workforce development programming. Workforce Connections brings together thinking across relevant disciplines, including economics and youth development.

Workforce Connections has convened a wide range of stakeholders from the workforce development community to share knowledge and experiences. The aim is to reduce fragmentation of funding approaches, build consensus over contextually appropriate and effective interventions, and provide guidance on measurement and evaluation of workforce development initiatives. From the beginning of the project, we have gathered and reviewed existing labor market assessment approaches and related tools from across the workforce and youth landscapes (such as the World Bank’s Jobs Diagnostic¹, the International Labour Organization’s Employment Diagnostic Analysis², GIZ’s Employment and Labour Market Analysis³, and others)—learning from them, adapting them, and innovating, to develop a core suite of tools that can be used to conduct a labor market assessment. With this document, we aim to share back to the workforce development community of practice the distillation of our knowledge and experience at this point in time in an accessible, practical, and actionable format. These approaches balance quantitative and qualitative research, they focus on the supply, demand, and matching of labor, and can be (for the most part) adapted to local contexts. The approaches are largely participatory in nature, have evolved as we have put them to use⁴, and will continue to evolve in the future.

How is the document structured? What are the specific areas of inquiry?

This document presents a user-friendly, methodological framework for conducting an LMA (Figure 1). The framework consists of six modules: Economic Context, Demand for Skills, Supply of Skills, Systems/Stakeholders, Policy, and Alignment. For the first five modules, the document presents tools and approaches developed and/or refined under Workforce Connections, and includes references to additional tools. The sixth module illustrates how analytical findings from the previous five might be synthesized and put to use.

This document is not a detailed, step-by-step guide, but rather, provides a customizable methodological framework for conducting an LMA, presenting overall guidance and some specific tools and approaches, and pointing the user toward additional relevant resources.

1 See <http://www.worldbank.org/en/topic/jobsanddevelopment/publication/jobs-group-jobs-diagnostics-guidance-why-what-and-how>. This process combines a number of existing tools into a multi-sector approach to pinpoint jobs challenges, namely, whether there are sufficient jobs being created, whether there are good jobs, and whether jobs are inclusive and accessible.

2 International Labour Office, Employment Sector. (2012). “Employment Diagnostic Analysis: A Methodological Guide.” Geneva: ILO. Accessed August 16, 2017. http://www.ilo.org/employment/Whatwedo/Publications/WCMS_177130/lang--en/index.htm.

3 Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH (GIZ). (2016). “Guidelines for an Employment and Labour Market Analysis (ELMA).” Berlin: GIZ. Accessed August 16, 2017. <http://star-www.giz.de/starweb/giz/pub/servlet.starweb?path=giz/pub/pfm.web&r=42753>. The GIZ approach relies largely on qualitative research based on existing data and literature. Both the GIZ and ILO guidelines take similar stepwise approaches, inspired by Hausmann, Rodrik, and Velasco’s Growth Diagnostics approach.

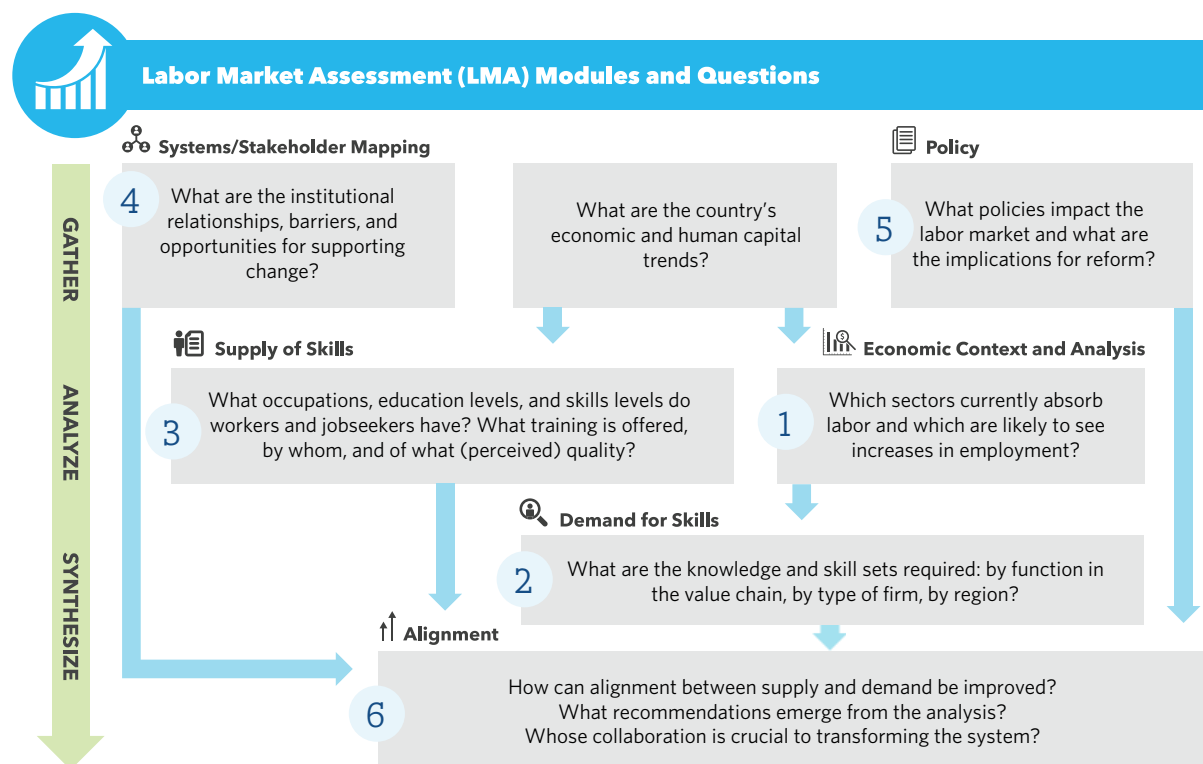
4 Examples of Labor Market Assessments (and other assessments that employ these tools) for Kenya, Zimbabwe, Indonesia, Guatemala, Honduras, and Jamaica may be found at http://www.wfconnections.org/tags/lma_finding

How can this document help users?

By undertaking analysis in the above areas of inquiry, and by utilizing tools developed and/or inspired by a spectrum of disciplines and stakeholders, actors who are **commissioning or carrying out** labor market assessments can ensure that their analysis goes beyond traditional surveys, occupational analyses, or manpower studies. In presenting this set of tools we aim to provide users with powerful instruments to carry out actionable analysis that truly gets at the unique nature of labor demand and supply in a given economy, and identifies levers and interventions to improve labor market functioning. In practice, this is generally done to understand opportunities for youth across an economy, but in actuality, these approaches are customizable to various populations of interest or economic sectors. As each tool and approach in the suite builds on and supports the others, however, the methodological framework shared here represents a systemic approach to understanding a labor market.

It should be noted that we workforce development stakeholders find ourselves in an era when the world of work is undergoing rapid changes, including an overall trend toward automation to which the developing world is far from immune.⁵ The coming decade will bring about major transformations in what we know, how we learn, and how we work, and these are important to consider as automation alters how products and services are produced and distributed. Many of the tools and approaches presented here do attempt to take this into account, but without a doubt, our methods must evolve with these changes, along with the ensuing demands for labor and skills. As new information and evidence continues to be generated, we will continue to learn how to analyze it and incorporate it into our thinking.

Figure 1. Workforce Connections Labor Market Assessment Framework



⁵ Osborne, M., & Holmes, C. (2016). Technology at work v2.0: The future is not what it used to be. Oxford Martin Programme on Technology and Employment. Oxford: Oxford Martin School and Citi GPS. Accessed August 28, 2017. <http://www.oxfordmartin.ox.ac.uk/publications/view/2092>.

Although we will dig more deeply into the topic later on in the document, it is also worthwhile to take a moment here to highlight the systems focus of our methodology. Why take a systems approach? Because each of the modules we've identified here does not actually stand alone: **we cannot address labor demand issues without also looking at supply issues, for example, and we cannot address either without looking at labor market actors, institutions, customs, and regulations.**

This modular labor market assessment framework allows us to look at all aspects of the system, starting with those from which employment and skills demand are derived (Economic Context) and moving into specific Demand for Skills; looking simultaneously at issues relating to the Supply of Skills in an economy; the System and its Stakeholders; and Policy (these last two being areas that relate to and cut across the previous areas). The modules, key questions, and tools and approaches presented are listed below. **A labor market assessment follows a non-linear process, with simultaneous analysis in various areas, so the numbers associated with each module in this document are for ease of organization, rather than being prescriptive.** A typical assessment might begin looking at Economic Context concurrently with Systems/Stakeholders and Policy, before delving into Demand, Supply, and Alignment.

MODULE 1. ECONOMIC CONTEXT: Which sectors currently absorb labor and which are likely to see increases in employment in the future? (Approaches presented: Dashboard, Sector Selection, Product Space)

MODULE 2. DEMAND FOR SKILLS: What are the skill sets required by function in the value chain, currently and in the future, by type of firm, by region? (Value Chain Map with Workforce Overlay)

MODULE 3. SUPPLY OF SKILLS: What occupations, education levels, and skills levels are possessed by the workforce, and what types of training are offered by which institutions? (Education Stocks and Flows)

MODULE 4. SYSTEMS AND STAKEHOLDERS: What are the institutional relationships, barriers, and opportunities for supporting change? (Causal Loop Modeling, Social Network Analysis)

MODULE 5. POLICY: What policies impact the labor market and what are the implications for reform? (Enabling Environment for Spurring Employment)

MODULE 6. ALIGNMENT: How does the information gathered fit together? What recommendations can we make to improve labor market functioning?

The ultimate objective of a labor market assessments is to understand constraints to labor market outcomes. A key component of an LMA is identifying priority skill needs, and that is the main focus of this document. We do this by working backwards, looking at the market demand for products and services. We then identify growth sectors likely to generate jobs in the near future. We then seek to understand how industry structure and value chain relationships within these sectors influence the type and quantity of employment opportunities, including specific occupations, and think about how these may affect demand for skills.⁶ We also know that as countries develop and incomes increase, service sectors expand: people demand more financial products and more complex services from the government and non-formal sector, all with implications for skills demand.

⁶ This section, as well as the section on sector selection, draw from an unpublished Workforce Connections working paper entitled "Untangling the Roots of Unemployment" (2016).

This approach differs from that of traditional labor market assessments that begin with detailed mapping of occupations. Although traditional assessments appear methodologically sound, they can fall into a number of traps (see Box 1) and are typically not viable in emerging economies due to data limitations.⁷ Conscious of developing country conditions, the International Labour Organization has developed useful templates for employer surveys that provide a “snapshot” of immediate hiring needs.⁸ When available, we consult these types of surveys as secondary sources.

BOX 1: COOKS, CASHIERS, AND CLERKS

Concerned about job growth in the state, in 1999 the Governor of Pennsylvania was presented with two conflicting labor market assessments. An external study recommended focusing on a set of emerging technology occupations for accelerated development of high-tech industries. Meanwhile, the Secretary of Labor presented in-house calculations showing that the needs of the state were far greater for “cooks, cashiers and clerks.” In fact, the state officials had simply lumped together the categories that seemed to have the largest absolute volume of projected employment and assumed, therefore, that these had the highest priority for training needs and curriculum development. The consultants who developed the external assessment, on the other hand, had identified specialized occupational categories such as biomedical engineers and quality control technicians using criteria linked not just to jobs, but also to economic growth. Although the state official’s categories appeared more important because they included more jobs; the consultants’ findings were offering a double return on investment—direct return for those trained, plus economic growth stimulus via the development of key skills needed for an emerging sector.

By examining the supply side of the market, we can uncover the opportunities and challenges that individuals have in getting market-relevant training and finding good jobs. Who is in the labor market (and who is not), what education and skills do they possess, and what kinds of training and education are available to them? What are the labor market characteristics, assets, and challenges of particular groups of interest—youth, women, and others?

As noted earlier, labor market assessment is a non-linear process, which must take into account many areas of inquiry before progressing into analysis and recommendations. The labor market assessment framework depicted in Figure 1 can be customized to different areas of focus and degrees of depth depending on client needs, context, and the challenges to be addressed. For each module, there is an overarching question and a set of associated tools that can help arrive at the answer. Tools are drawn from a range of fields, including economics, education, training, psychology, and business; they include frameworks, approaches, and data sources as diverse as value chains, social network analysis, product space, and the global trade share matrix. In addition, there are focus group guides and questions for use in structured interviews with the full range of actors in a labor market system. The conclusions derived from many of these analytical tools are then depicted using infographics.

⁷ For example, in the U.S., the Bureau of Labor Statistics and state government agencies conduct detailed occupational employment projections to forecast the size and growth of employment by occupation. See Hogan, A. and Roberts, B., Occupational employment projections to 2024, <https://www.bls.gov/opub/mlr/2015/article/pdf/occupational-employment-projections-to-2024.pdf>

⁸ Mane, F., & Corbella, T. (2017). Developing and running an establishment skills survey: guide to anticipating and matching skills and jobs: volume 5. ETF, CEDEFOP and ILO: Luxembourg. Accessed June 14, 2017. http://www.ilo.org/wcmsp5/groups/public/---ed_emp/---ifp_skills/documents/publication/wcms_548324.pdf

This approach provides a better understanding of the issues most labor market assessments are trying to get at: the nature and magnitude of employer demand for skills. As noted in the “cooks, cashiers, and clerks” example, seemingly methodical data-intensive approaches often miss the big picture. In contrast, the tools and frameworks described here combine quantitative and qualitative information that allows us to recognize the prevailing patterns of labor market behavior, their drivers, and their expected future directions. Assessments that utilize these approaches offer deeper insights and, therefore, more useful guidance on “what to do”—the question facing donors and policymakers as they work to bring education and training systems into alignment with labor market demand.

How can these approaches help us understand a given labor market?

Fundamentally, this document represents a demand-driven approach to understanding a labor market. We aim to assess the existing and most likely potential economic opportunities in a labor market, and the associated positions and roles—and most importantly the **skills**—that employers are demanding currently, and will be demanding in the future. This is especially important when, as is often the case, employers and education and training providers do not seem to have a common language to talk about skills.

Of course, we also want to understand the supply of workers and skills in the labor market, and learn who is providing what types of training and education. Ultimately, we want to learn how well demand and supply are matching up with each other, so that we can diagnose and attempt to address any misalignments. Although we often do find a mismatch between what employers are demanding and what education/training institutions are providing, these tools also help us to uncover issues related to access to training, flows of information, cultural norms and perceptions, intermediation or lack thereof, different time horizons (that is, employers need workers in the short term, while changes in educational systems take place in the medium to long term) and policies that lead to misaligned incentives, among others. Table 1, below, illustrates the value different stakeholder groups or audiences might derive from various aspects of a labor market assessment.

Table 1. Audience by Module and Key Analytical Output

MODULE 1. ECONOMIC CONTEXT AND ANALYSIS	Tools and approaches in this section help the user understand the key demographic, economic, and human capital trends in a country, and identify the economic sectors that may provide employment opportunities, now and in the future.	<ul style="list-style-type: none"> All actor groups gain an understanding of the key indicators and trends in their country and how these may be driving specific labor market challenges.
MODULE 2. DEMAND FOR SKILLS	Tools and approaches in this section help the user analyze the current and potential demand for specific skills, knowledge, and qualifications within and across economic sectors.	<ul style="list-style-type: none"> Employers can communicate hiring/skills needs, ground-truth their experience of demand within their sector, and see commonalities across sectors. Education and training institutions as well as donors, implementers and researchers can learn where current and potential future demand are the greatest.
MODULE 3. SUPPLY OF SKILLS	Tools and approaches in this section help the user understand the current state of an economy's human capital, how it is changing, and how (and how well) it is being utilized.	<ul style="list-style-type: none"> Employers can visualize the pipeline of talent, learn about additional education and training options, and validate their perceptions of education/training quality. Education and training institutions can see where students are leaving the educational system, how the system is contributing to current labor market dynamics, and how employers view the relevance and adequacy of current educational offerings. Donors, implementers, and researchers (in addition to the above) get a dynamic picture of current and future target populations.
MODULE 4. SYSTEMS AND STAKEHOLDERS	Tools and approaches in this section help the user better understand both the labor market system itself as well as the larger systems within which the labor market is functioning. They can also help to identify the factors which may be contributing to suboptimal labor market functioning, and leverage points and strategies to address those factors.	<ul style="list-style-type: none"> All actors can benefit from visualizing themselves, their behaviors, and the challenges they face as part of a system, and seeing where new or strengthened connections or intermediaries (for example) might improve system functioning.
MODULE 5. POLICY	Tools and approaches in this section help the user identify key policies, regulations, and institutions that may be impacting the labor market.	<ul style="list-style-type: none"> All actors can benefit from a deeper exploration of the range of policies that shape the behavior of, and their own interactions with, the labor market.
MODULE 6. ALIGNMENT	This section provides basic guidance on synthesizing the analysis and examples of how it might be utilized.	<ul style="list-style-type: none"> All actors can benefit from understanding their role in turning the analysis generated by an LMA into action.

Who should use this document? How should it be used?

We hope that this document will be useful not just to implementers and researchers looking to refine their own labor market assessment capabilities, but also to donors looking to ensure quality in the assessments they are funding.

The overall approach and framework presented in this guide can be used to assess labor markets that combine both formal and informal wage labor. It can also assess the role of agricultural workers, the self-employed, and entrepreneurs. It is not best suited for assessing agricultural economies consisting predominantly of small farms or subsistence activities, but some of the specific tools and approaches shared here may be helpful for those working in these contexts, especially since many smallholders also participate in wage labor markets to supplement farm income.⁹ (For more information on applicability to entrepreneurship and agricultural programming, see Box 2.) Furthermore, though the comprehensive framework has been developed to address questions about the labor market, specific tools can be used à la carte in other circumstances: for example, the demand-side tools can be used in economic growth and livelihoods development contexts, while the supply-side tools can be used in educational development programming. We also take the stance that a systems thinking approach can give virtually every initiative the potential to be more successful.

In addition, we recognize the overwhelming need for approaches that can be used at the subnational or local level. Though some of the approaches and tools presented here do rely on national-level data, the majority can be used or adapted for use, with some creativity, at the local level, by defining the borders carefully based on workers' actual or estimated movement and commuting patterns.

This document can be read cover-to-cover or used as a reference. Each section covers a key area of inquiry and describes one or two illustrative approaches and/or tools and how to use them, as well as providing references to additional tools. The document will also be published in an online version that will be updated as new tools are added. Readers and users are encouraged to share additional tools and approaches to be included in the online version.

A note on data

Some of the key macro, national-level data that are relevant to a labor market assessment are available via sources such as the World Bank, UN agencies, the International Labour Organization, and global trade databases. Although subnational, disaggregated, and/or microdata may be available from a national statistical agency or other official national or local sources, in the majority of developing countries such data may often be scarce, incomplete, out-of-date, unavailable to the public, non-representative, and/or even untrustworthy. Since it is exactly these detailed, context-specific data that add the most value to a labor market assessment—especially if there is a focus on a particular region or location—it is important to get creative about finding information. Certainly, some parts of an LMA may be conducted at a desk (such as a basic dashboard or policy assessment). **But more often than not, the most valuable information will be gleaned through talking to international, national, and local experts; wheedling unpublished data from agency or ministry officials; and conducting surveys, in-depth interviews, focus groups, and listening sessions with employers, jobseekers, and others.**

9 Mueller, B., & Chan, M. K. (2015). "Wage Labor, Agriculture-Based Economies, and Pathways Out of Poverty: Taking Stock of the Evidence." LEO Report #15. April. http://pdf.usaid.gov/pdf_docs/PA00KDMT.pdf

BOX 2: USING LMA TOOLS AND APPROACHES IN ENTREPRENEURSHIP AND AGRICULTURAL PROGRAMMING

As **entrepreneurship development** has increasingly been used as a means to increase job opportunities in high unemployment contexts, there is a clear opportunity for the use of LMA tools and approaches to support opportunity identification for entrepreneurship programming. By entrepreneurship, we mean “the starting and/or managing of a business, whether formal or informal. It refers to growth-oriented businesses (firms) that employ others outside the entrepreneur’s family and focus on generating new value.”¹

Tools like the systems-based Causal Loop Analysis and Policy Assessment tools can provide a broad understanding of the economic and other major forces at work in a context, and aid in analyzing the quality of the entrepreneurial enabling environment. These tools can also act as a starting point for program designers in understanding what areas of an economy and which industries may hold opportunities for entrepreneurial interventions.

Demand-focused tools like Sector Selection and Value Chain Analysis can prove useful in identifying where unmet demand for labor or services or employment bottlenecks might exist in a particular sector that developing and supporting entrepreneurial abilities could address. One example can be derived from the tourism industry in Morocco. There, FHI 360 found that while large hotels exist in the value chain due to high levels of government investment, many smaller vendors and services providers who might support a tourism value chain have not developed despite demand. By identifying this sort of gap through a value chain analysis one can see a sector that could use entrepreneurial skill training and other programming to create, build, and support new businesses that will respond to the demand generated by large-scale anchor employers.

Regarding application to **agricultural development** programs, the sector selection and product space analysis can inform the user about relevant export opportunities, while Causal Loop Modeling and Social Network Analysis tools can aid understanding of market dynamics and stakeholder interaction. Value chain mapping was developed for use in this field and is of course still used widely, but the overlay tool presented here can help uncover information about participation by various groups in the chain, including their education level, age, sex, and other characteristics. It is also important to remember that many smallholders—particularly the poorest—depend on mixed livelihood strategies that include both on-farm production and off-farm wage labor. Better data about demand for non-farm or off-farm labor can strengthen value chain selection and intervention strategies and improve the quality of work in rural labor markets.

¹ Feed the Future. (2017). Global Food Security Strategy Technical Guidance Employment and Entrepreneurship. https://feedthefuture.gov/sites/default/files/resource/files/GFSS_TechnicalGuidance_Employment%20and%20Entrepreneurship.pdf

In more developed countries where detailed information on demand and supply is more likely to be available, up-to-date, and accessible on the public Internet, organizations such as Burning Glass¹⁰ and Bluedrop¹¹ are seizing upon opportunities to address misalignments in local labor markets. They are, therefore, increasingly able to provide just-in-time estimates of and responses to skill needs, and offer specific solutions to the issue of matching supply and demand for skills. In the majority of developing countries, however, where data—especially local data—remain scarce, an analyst must start somewhere in gleaning information from the environment, and so we suggest that using these tools and approaches is an important jumping-off point.

¹⁰ <http://burning-glass.com/>

¹¹ <http://www.bluedroplearningnetworks.com/>

A common recommendation emerging from an LMA, unsurprisingly, will be for stakeholders to co-invest in a robust, comprehensive, and sustainable labor market information system.

Timelines and personnel: Some guidelines

As with any pursuit, the cost and timeline of a labor market assessment depend on the resources available. A rapid LMA could be completed in six weeks, while a comprehensive, in-depth assessment covering many regions and sectors, which goes through one or more rounds of validation with stakeholders, might take 8 or even up to 12 months. Of course, it is also possible to select specific tools and approaches from this publication to use à la carte; one might carry out discrete analysis in a matter of days or even hours, depending on the tool.

That said, guidelines for requirements for a basic labor market assessment using the Workforce Connections approach follow:

Estimated time: A total of 2.5–5 months, including

- Preparation, contracting, and research design (2–3 weeks)
- Desk research (1–2 weeks)
- Instrument testing and field work (2–5 weeks, depending on scope of assessment)
- Analysis (2–4 weeks, depending on scope)
- Writing (2–3 weeks, depending on scope)
- Revising and editing (1–3 weeks)

Again, a more complex labor market, more geographical regions or sectors covered, and a greater number of tools and approaches used will require more time.

The core team should ideally include the following personnel:

- Coordinator – to oversee the LMA process, including planning, contracting specialists, managing research, and writing. Should have background in labor market and economic analysis; strong quantitative and qualitative research, analytical, and communication skills; project management experience; field experience; and an advanced degree in economics, statistics, international development, or similar.
- Lead economist – to lead development and implementation of the research plan. Requires extensive international experience in economic analysis and labor market analysis. Should have an advanced degree in economics, business, or a related discipline such as urban/regional planning.
- Economist (local) – to support development and implementation of the research plan. Should have in-depth knowledge of national and local economic and labor market structure and dynamics, familiarity working with key national and local data, fluency in relevant local language(s), and ideally, an extensive network of relevant stakeholders, including government, private sector, and education/training actors. Should have a degree (ideally advanced) in economics or statistics. With sufficient experience, may serve as lead economist.
- Fixer (local) – to coordinate local logistics, set up interviews and focus groups. Should have extensive knowledge of and connections to key local actors and be fluent in relevant local language(s).
- Research assistant (local or international) – to conduct desk research, produce dashboard, graphics and charts, and so on. An undergraduate degree (at minimum) in economics, statistics, international development or similar with strong quantitative, research, and written communications skills is recommended, as is fluency in relevant local language.

Other personnel could include:

- Private sector expert with extensive knowledge of and experience working with local employers or in focus sectors/value chains and ideally both (highly recommended). If not included on the team, a partnership or close collaboration with a chamber of commerce or similar is crucial.
- Education specialist with extensive knowledge of the relevant local education and training system and institutions (secondary, post-secondary, TVET).
- Youth, gender, rural livelihoods, or other specialist as relevant to the assessment objectives.

MODULE 1. ECONOMIC CONTEXT AND ANALYSIS

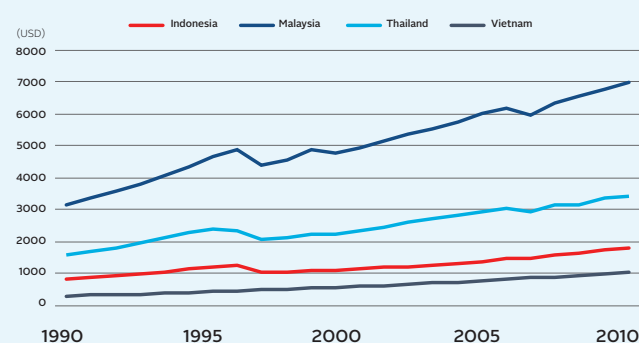
Tools and approaches in this section help the user understand the key demographic, economic, and human capital trends in a country, and identify the economic sectors that may provide employment opportunities, now and in the future.

Why is it important to understand and analyze a country's economic context? How can this process support a labor market assessment?

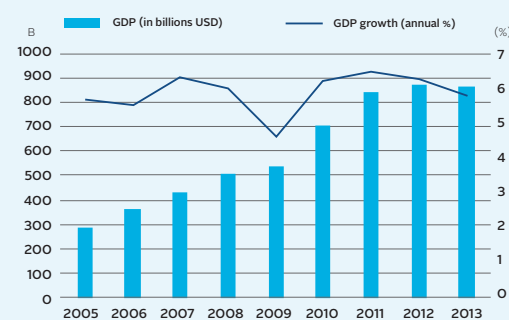
As we have already noted, understanding a country's (or a region's or a state's) economic context is key to understanding employment dynamics. If we know the current and projected structure of employment; in which sectors growth is occurring or expected to occur; and if we understand the nature of the growth (export-driven, technology-driven, and so forth¹²) then we can offer estimates as to what the effect will be on employment. That is, in which sectors, and for which occupations, might we see jobs created as a result of growth? Although this information is valuable on its own, ultimately it can help us to get at the nature of employers' current and future demand for specific skills (to be explored further in the next section).

Figure 2. Indonesia Dashboard

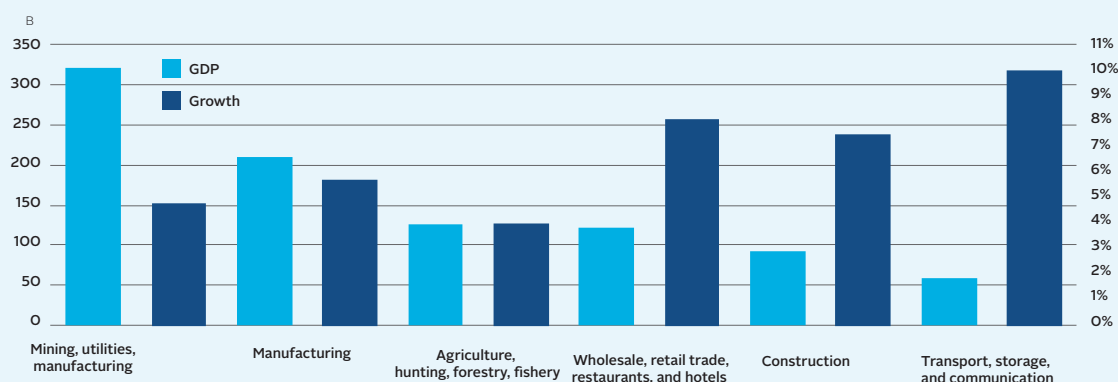
Indonesia's GDP per capita was 1,810 (constant USD) in 2012, 4% of U.S. GDP/capita. (WDI)



After a dramatic decrease in 2008, GDP growth rose but remains variable. (WDI)



Sectoral GDP in 2012 was highest in mining, utilities, and manufacturing while growth was highest in transport, storage and communication. (UN)



¹² Export-driven growth tends to require higher skills because the processes used are usually more sophisticated. Furthermore, technology is likely to be an important part of many if not most export-driven companies and because of that, they are more likely to be affected sooner by automation and changes in how we learn, work, and make things. The World Economic Forum's characterization of economies (as factor-driven, investment-driven, or innovation-driven) may be a helpful starting point.

Approach 1a: Data Dashboard Tool

To succinctly portray a country's economic trends, a labor market assessment might make use of a dashboard as a data visualization tool. A broader picture of country dynamics useful for an assessment might include economic, human capital, and policy indicators.¹³

• Why is this tool important?

The process of putting together such a dashboard (see Figure 2 above) can help identify key data sources to be utilized in the LMA (as well as identify data gaps), and can also raise key questions that need to be answered in the assessment, such as how changes in sectoral GDP are affecting the demand for skills.

• How does this tool help me understand information?

A dashboard can be a way to visually present many different pieces of relevant information in one place. It can show snapshots of data, as well as trends. The viewer should be able to easily and quickly understand the information being presented. Typically, FHI 360 includes information on economics (with subsections on growth, investment, trade, informality, diversification); human capital (demographics, employment, education, labor markets, migration); and policy (relating to the labor market, social welfare, taxes, competitiveness, ease of doing business, entrepreneurship, and so on) in its dashboards, with additional sections as relevant to the assessment.¹⁴

• How do I use this tool?

A dashboard can be used to present information that is valuable to many stakeholders—labor market actors as well as donors and implementers—to get a sense of the context in which the labor market system is functioning. Data are typically drawn from sources such as the World Bank, UN agencies (including the UN Comtrade database, the UNESCO Institute for Statistics, the United Nations Development Program, and the United Nations Department for Economic and Social Affairs), the Observatory of Economic Complexity, the International Labour Organization, the International Organization for Migration, and the World Economic Forum, as well as regional development institutions, national statistical institutes, and relevant studies and reports. Much of the relevant data may also be readily available from the USAID Economic Analysis and Data Services (EADS). The dashboard can be created as an initial step in a labor market assessment via desk research, and shared with stakeholders at the beginning of the LMA to validate contextual findings and identify areas of inquiry, and/or be included in the final LMA product. Of course, an interactive online dashboard will require significantly more resources to produce and maintain than a static dashboard.

• Where can I find more information?

International Labour Organization. Statistics and Databases. <http://www.ilo.org/global/statistics-and-databases/lang--en/index.htm>

International Organization for Migration. <http://www.iom.int/>

Observatory of Economic Complexity. <http://atlas.media.mit.edu/en/>

UN Comtrade Database. <https://comtrade.un.org/>

United Nations Department for Economic and Social Affairs. Population Division. <https://esa.un.org/unpd/wpp/>

United Nations Development Program. Human Development Data. <http://hdr.undp.org/en/data>

UNESCO Institute for Statistics. <http://uis.unesco.org/>

USAID Economic Analysis and Data Services (EADS). <https://eads.usaid.gov/>

World Bank Open Data. <http://data.worldbank.org/>

World Economic Forum. Global Competitiveness Index. <http://reports.weforum.org/global-competitiveness-index/>

¹³ A sample dashboard may be found in Annex I of the Honduras Labor Market Assessment, available online at https://d3n8a8pro7vhmx.cloudfront.net/fhi360/pages/522/attachments/original/1502227509/Honduras_LMA_Report.pdf?1502227509

¹⁴ Future-looking dashboards might include information on, for example, sectoral vulnerability to automation.

Approach 1b: Sector Selection Process

Why select sectors? The simple answer is, in order to know where the jobs will be. Furthermore, if the right skills are developed for the right people in the right market, a virtuous skills-to-investment cycle is generated. For that reason, we do not just want a rough guess at where jobs are likely to appear, we want a deeper understanding of the dynamics that are leading to growth and the ways in which skills are or can contribute to that growth.

Which sectors or industries should be selected for priority consideration? Remembering that tools for selecting sectors have existed for decades and have been used by governments to develop industrial policy, we can learn from their experience.¹⁵ Easy traps to fall into are selecting sectors with the greatest current employment (see Box 3 at right), or the highest past growth. Using past data to plan for future solutions is problematic because the past is not necessarily the best guide for the future. Instead, it makes sense to start with sectors that are experiencing a dynamic transition of some kind. Successful approaches to sector selection have been characterized as searching for latent competitive advantage—identifying sectors for which, even if job growth is not strong today, there is a good basis to believe that job growth could be strong in the near future.

Traditionally, to discover latent competitive advantage, economists consulted data on past sector growth, reviewed market trends (such as growth in market size and share for the relevant sector and country), and tried to assess the size of the performance “gap” with industry benchmarks, including indicators like productivity (always challenging to work with). In cases where data are not available expert opinion interviews are used to fill in the gaps. Although these data sources and tools are still in use, thanks to big data, today we have novel sources and measures that offer a whole new level of insight into countries’ economic growth trajectories.¹⁶

• Why is this process important?

Selecting specific sectors to analyze in a labor market assessment is key to forming a nuanced understanding of economic growth and employment opportunities in a given context. By identifying which sectors are the largest employers, which are the most competitive in export markets, and where there is the greatest potential for growth and employment among target populations, researchers and implementers can tailor their programs to achieve the best outcomes for growth and workforce development.

This process makes it possible to analyze which sectors possess the greatest potential for improvements in employment and growth. The approach ensures that workforce development programs, regardless of their purpose, are geared toward market demand and employment trends.

BOX 3: WHY NOT TARGET SECTORS WITH THE LARGEST NUMBER OF JOBS?

Take the example of Kenya, where industries with the highest employment in 2013 were agriculture, manufacturing, and retail, in that order. The industries with the highest absolute growth in employment from 2009 to 2013, however, were retail, construction, and ICT. Even health care, for which total employment in 2009 was less than a quarter than that of agriculture, added more jobs in the ensuing five-year period. A decision maker in 2009 would have been better off supporting those industries where the delta—the change in employment—was highest, rather than total employment.

¹⁵ See, for example, Lin, J. Y., & Monga, C. (2010). *Growth Identification and Facilitation: The Role of the State in the Dynamics of Structural Change*. World Bank Policy Research Working Paper, and; Rodrik, D. (2004). *Industrial Policy for the Twenty-first Century*. Prepared for UNIDO. Accessed June 14, 2017. <https://sites.google.com/site/biblioeconomicus/-RodrikUNIDOSep.pdf>

¹⁶ These include the databases and visualizations of economic complexity.

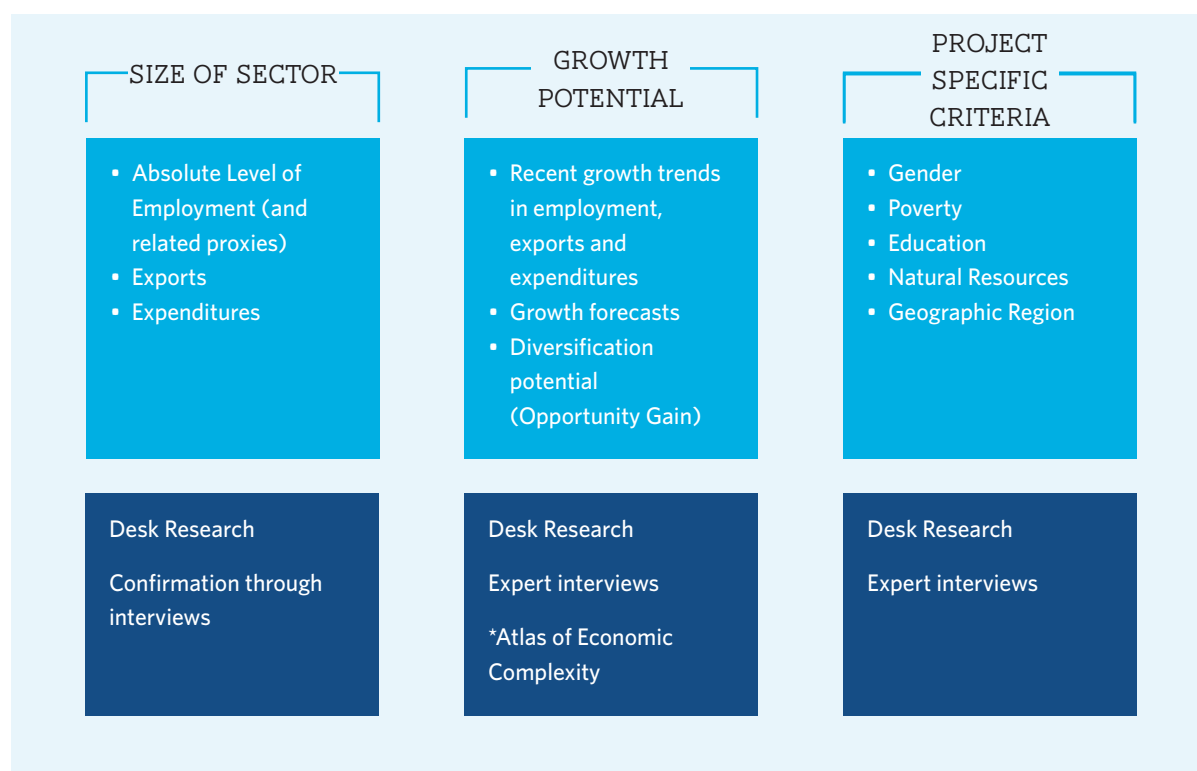
• How do I use this process?

The sector selection process can be a helpful complement to a Product Space Analysis (see Approach 1c below); the latter is employment-neutral and can only look at manufactured goods because of data limitations, whereas the sector selection method provides a look at **services sectors**, which are an increasingly important employer in many countries. Depending on the target population or skill level of interest of the assessment, it may also be important to look at **informal employment**. As data on the informal sector can be difficult to gather, this will require additional legwork but is generally an indispensable step to providing a fuller picture of the potential employment opportunities in developing countries.

Step 1: Develop Sector Selection Criteria (if intensive analysis required)

Selection criteria will vary depending on local priorities. However, there are generally three distinct sets of criteria, as shown in Figure 3: absolute level of employment; potential for job growth, measured by past and estimated future performance in a number of areas, with data gathered through desk research and interviews; and project-specific priorities that reflect donor and government priorities, as ascertained through document review and implementer interviews. Sector selection for a project focusing on women, poverty or the environment will benefit from indicators specific to those criteria. However, it is important to be careful in selecting such indicators. For example, gender segregation occurs both by occupation and sector, and a focus on potential employment for women requires an understanding of these dynamics, and of how social, economic and technological changes might be shifting norms and opportunities. FHI 360's Advance project, focusing on higher education in several countries in Central America and the Caribbean, added an indicator with a long title but a precise definition: "Potential for tertiary education to impact competitiveness and earnings." This qualitative indicator helped to eliminate sectors such as palm oil, which uses well known processing technologies, and was not expected to grow faster with more qualified tertiary skilled employees available. Generally, the sector's potential to generate employment growth is a necessary requirement to become shortlisted. Once shortlisted, the remaining criteria become the major factors in deciding between two sectors whose job growth potential is a "tie."

Figure 3. Sector Selection Categories and Criteria



Source: Workforce Connections/FHI 360

Forecasting Job Growth

Why look at indicators other than current employment? Using past data to plan for future solutions is inherently problematic, because the past is not necessarily the best guide for the future. What if a recent boom in apparel is about to run its course, and future growth in that sector will actually be negative?

Since past job growth is not always the best guide to future job growth, other indicators can be used to provide more insight. For example, growth in exports from a relatively low base can be a leading indicator of expanding capabilities and future potential in a given sector, suggesting it has reached a minimum threshold of competitiveness. Increases in investment, particularly foreign direct investment (FDI) is a more specific indicator of expected growth in a sector, although the capital-intensity of the investment must be taken into account in order to predict the impact on employment. Working with industry experts can yield important insights. For example, automation may be expected to have an impact on the industry's structure during the project period. Information on skill shortages can also be an indicator of potential dynamism.

Some of the most interesting work on underlying growth dynamics comes from the analysis of economic complexity, which is a new way of measuring the mix of capabilities available for an economy to diversify in specific products and sectors. Economic complexity rankings have been shown to significantly outperform educational variables such as years of schooling and educational enrollment, as well as the World Economic Forum (WEF) Global Competitiveness Index, in predicting growth in income.¹⁷ By tracing the historical correlations between growth spurts in exports of a given product and subsequent growth spurts in other products, product space analysis (illustrated separately in Approach 1c) can provide indicators of which manufacturing sectors are most likely to surge in the coming 5 to 10 years, and, as importantly, which are least likely (or most difficult) to grow based on historical trends. This tool—which is based on empirical evidence—can and should be used as a reality check early in the sector selection process. Although the results of a product space analysis are often presented using a product space visualization, for the purposes of an LMA a simple table can be effective in presentations (see Table 2, below).

Step 2: High-Level Review

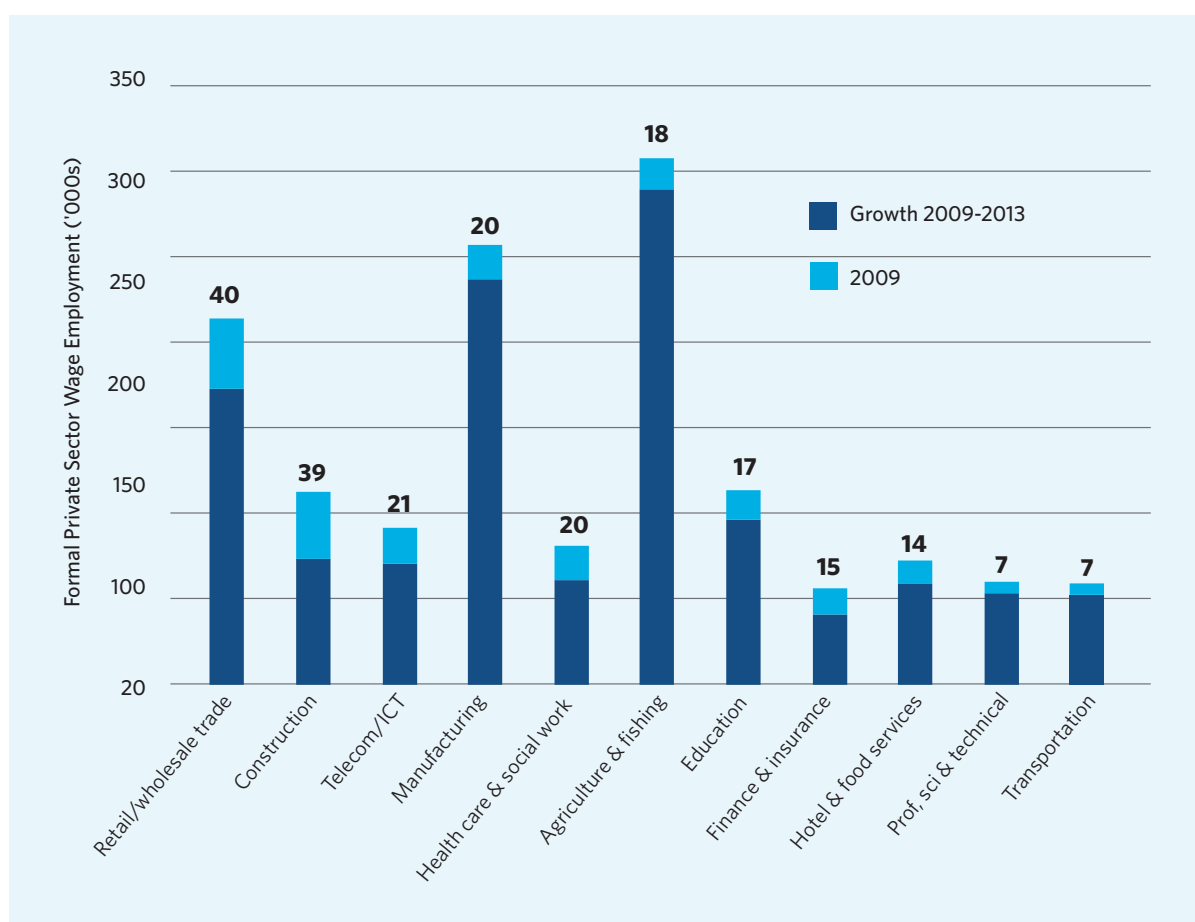
The next step is to look at employment by sector, both absolute levels and growth. Most central statistical agencies publish a statistical abstract with employment data for roughly 20 broad sectors over several years. Figure 4 was generated using such data for Kenya, by calculating the growth in employment between 2009 and 2013, and re-ordering the sectors based on highest to lowest employment growth. Taking the top 10 sectors, the resulting bar chart summarizes most of the high-level information one could need in a single location: which sectors have the largest employment base and which sectors have grown the most in absolute terms over the past five years.¹⁸

In the case of a labor market assessment conducted by FHI 360 for USAID Kenya in 2014, additional research confirmed the conclusions that one can draw from this single chart. For example, even though the data used to generate the chart only covered private sector employment in the formal sector (which only accounts for 1.3 million out of the 14.3 million employed in Kenya), additional investigations found that these 10 sectors are also the best targets for informal employment generation.

¹⁷ Atlas of Economic Complexity, R. Hausmann, C. Hidalgo et al., Kennedy School, Harvard University & MIT Media Lab, 2013.

¹⁸ In this case, absolute growth is preferable to annualized growth rates since it essentially combines the growth rate and the size of the base employment in each sector. Showing decision makers charts with high growth rates for sectors (like electricity) that turn out to be tiny in terms of job creation potential can be an unnecessary distraction.

Figure 4. Formal Private Sector Wage Employment and Growth in Employment in Kenya, 2009-2013



Source: Kenya National Bureau of Statistics. (2013). *Kenya Facts and Figures*.

Step 3: Construction of Matrix for Final Selection of Sectors

The aim is to develop a single table that provides a systematic ranking of all sectors, taking all the criteria into account. This does not need to carry different weights for individual criteria to dictate a specific outcome, but can be unweighted to help decision makers to evaluate the implications of different choices. Alternatively, such a system can help decision makers to see how the rankings change when they apply greater weight to specific criteria.

In practice, such data can seldom be assembled during a short assessment, so construction of a “competitiveness appraisal matrix” (CAM), which combines qualitative and quantitative data, is recommended. This matrix translates each quantitative result into a score, on a scale from 1 to 5. This approach has two distinct advantages: knowledge from local and international experts can be incorporated as a score where quantitative data are not available, and additional qualitative criteria can also be incorporated within a systematic framework, as shown in Table 2. Note that the weight assigned to “growth potential” comprises 50 percent of the total score, while the weight assigned to “current size” contributes only 30 percent.¹⁹ This ensures that the process is forward-looking.²⁰

¹⁹ Weights can and should be adjusted for each country and set of priorities. By changing weights and evaluating the corresponding changes in rankings, one can learn how sensitive the rankings are to different priorities.

²⁰ More information about how to use the CAM can be found in “Sector Competitiveness Analysis Tools: A Reference Guide,” Finance and Private Sector Division, World Bank. June, 2011.

Table 2. Competitiveness Appraisal Matrix for Jamaica²¹

CANDIDATE VALUE CHAINS	CURRENT SIZE	Employment	Exports	GROWTH POTENTIAL	Growth in Jamaica's Exports	Growth in Market Size	5-YR Export Growth Potential	Economic Diversity Index	OTHER CRITERIA	Higher Education Potential Impact	TOTAL SCORE	RANK
<i>Weights >></i>	30	15	15	50	10	15	10	15	20	20	100	
Tourism	4.7	5	5	3.3	4	2	3	4	4.0	4	77.0	1
Food Processing (incl. horticulture)	4.0	4	4	3.2	3	3	4	3	4.0	4	72.2	2
Creative Industries	2.7	2	3	3.5	5	1	5	4	5.0	5	71.6	3
ICT	2.8	1	4	3.2	2	2	4	5	5.0	5	68.6	4
BPO	2.6	2	3	3.1	4	1	4	4	4.0	4	62.4	5
Dairy	2.4	3	1	3.2	3	4	4	1	4.0	4	62.2	6
Coffee	2.3	2	2	3.2	2	4	4	3	4.1	4	62.0	7
Seafood	2.8	4	2	2.9	3	4	3	2	4.0	4	61.7	8
Transportation & Logistics	4.4	4	4	2.0	1	1	3	2	3.0	3	58.9	9
Cocoa & Chocolate	1.2	1	1	3.4	2	3	5	4	4.0	4	57.5	10
Beverages (including juices)	3.4	3	4	2.3	1	4	2	2	3.0	3	55.4	11
Sugar	2.9	3	3	2.7	4	2	2	3	2.0	2	52.2	12
Cassava	2.1	2	2	3.0	4	5	3	1	2.0	2	50.6	13
Apparel	0.9	1	1	1.6	1	3	1	1	2.0	2	29.4	14

Source: FHI 360, Jamaica Labor Market Sector Assessment, 2017

²¹ A sample spreadsheet with live formulas will be available at <http://www.wfconnections.org/>.

Although most data (such as exports) are normally only available according to product-based sectors, for the purposes of the final selection it may be better to represent the sectors as value chains, if this more closely aligns with likely programming options.

Step 4: Stakeholder Consultation and Validation

By the end of the first week of the LMA, a consultation with the client and a broad set of stakeholders (to ensure ready and willing employer counterparts) is an excellent forum for presentation of the sector evaluation matrix, followed by a discussion and final selection of the sectors. Since much of the data collection can be done before the field work begins, ensuring that this selection is finalized during the first week allows the team to spend more of their time conducting interviews on selected sectors.

Not all LMAs will involve an in-depth sector selection process. This will depend on the assessment priorities and whether a recent analysis is available. For example, if the government has already selected specific priority sectors and the client or organization requesting the assessment concurs with the criteria, a “high-level review” (Step 2) is sufficient. If there are valid outstanding questions about where employment growth is likely to come from, then a more intensive analysis is necessary (beginning with Step 1, continuing with Steps 2 and 3, and concluding with Step 4).

The approach taken in this particular process focuses on the selection of high-volume, usually formal export sectors. For programs working in highly localized contexts, such as working with HIV-affected youth households in a particular rural area, additional tools exist for assessing demand in such contexts, for example, local market demand assessments.²² However, doing this big-picture analysis can nevertheless also be informative in understanding implications for highly localized markets.

• Where can I find more information?

Hausmann, R., & Hidalgo, C. A. (2014). *The atlas of economic complexity: Mapping paths to prosperity*. MIT Press. <http://atlas.media.mit.edu/en/>

Microlinks. (n.d.) Value Chain Selection (see bottom of page for a link to a number of relevant resources). <https://www.microlinks.org/good-practice-center/value-chain-wiki/value-chain-selection>

World Bank. (2011). “Sector Competitiveness Analysis Tools: A Reference Guide.” Finance and Private Sector Division, June. http://www.wfconnections.org/983_sector_competitiveness_analysis_tools_reference_guide

BOX 4: SECTOR SELECTION: HOW DO YOU KNOW YOU ARE GETTING A HIGH-QUALITY PRODUCT?

- **Is there a satisfactory distinction between size of sectors and their growth rates?**
- **Have the selection criteria been customized to your particular project, or is it just a cookie-cutter job that could fit any project?**
- **Have indicators been thoughtfully identified that relate to your client’s objectives, or the specific beneficiaries in your target region?**
- **Has the methodology allowed you to incorporate qualitative as well as quantitative data?** If not, you may find that you are “looking for your keys under the streetlight, because that’s where the light is.”
- **Does the tool impose specific weights, or is it flexible enough to allow for sensitivity analysis with varying weights?**
- **In cases where qualitative data were utilized, is the source of the information clear?**

²² See USAID Microlinks Value Chain Selection site, <https://www.microlinks.org/good-practice-center/value-chain-wiki/value-chain-selection>.

Approach 1c: Product Space Analysis

Product space depicts a network map in which products are closer to one another if growth in their exports is correlated, while economic complexity is “a measure of the knowledge in a society that gets translated into the products it makes.”²³ When countries become more economically complex by upgrading or moving to more sophisticated products, economic growth and progress can occur; the more closely related the products are to what the country is already producing, the easier this process is. Having a map of economic complexity at the national level enables policymakers and implementers to look at the current export basket of a particular country and identify the products which, if it diversified into them, might send the country onto its optimal path of greater economic complexity and, therefore, GDP growth. They can then create programs to diversify industries to capitalize on potential linkages, and/or invest in already heavily linked sectors.

• Why is this tool important?

An open source, multi-year export data set called the “Product Space” has yielded a relatively new measure called “economic complexity.” It combines information regarding “who makes what,” with a measure of how complex the products are. The most complex products are sophisticated chemicals and machinery that tend to emerge from organizations where a large number of high-skilled individuals participate. The world’s least complex products, on the other hand, are raw minerals or simple agricultural products. Economic complexity rankings have been shown to significantly outperform educational variables such as years of schooling and educational enrollment as well as the WEF Global Competitiveness Index, in predicting growth in income.²⁴ For the purposes of a labor market assessment or workforce development project, this tool, when combined with others, including Sector Selection, can help inform which sectors and/or skills requirements to focus on, and which to eliminate as “unrealistic” in light of decades of empirical data that the analysis encapsulates.

• How does this tool help me understand information?

The product space analysis allows us to visually map economic complexity at the country level. It highlights the products a country is most successful at exporting, and then maps the product’s relationships to others in order to examine potential growth spillover effects. The theory that stands behind the product space analysis is that if an economy is competitive at producing product X, then it is more likely to be successful in upgrading the production of products related to product X which are depicted as closer on the product space map. For example, countries competitive in the export of fresh fish also tend to be competitive in the export of fresh flowers, because they both depend on the existence of a world-class cold chain. But countries competitive in building wooden fishing boats are not necessarily competitive in modern shipbuilding because of its greater complexity and need for advanced capabilities in engineering, polymers, and steel.

• How do I use this tool?

To create or view existing product space maps, users should consult the [Observatory of Economic Complexity website](http://oecdinsights.org/2016/09/20/economic-complexity-institutions-and-income-inequality/),²⁵ which includes product space maps for 128 countries and for the years 1962-2014. [Harvard’s Atlas of Economic Complexity](http://atlas.cid.harvard.edu/),²⁶ offers an alternative visualization tool.

The product space analysis of Guatemala (Figure 5) contains a Sector Selection overlay in blue and red. Each colored circle is a product in which Guatemala has a revealed comparative advantage (RCA) of 1 or greater.²⁷ The colored circles that are labeled in blue are Guatemala’s top exports by value such as cane or beet sugar, bananas, precious metals and ores, and coffee. These products tend to be on the periphery of the product space, hence not complex or connected. However, “second tier by value” export products labeled in red

23 <http://oecdinsights.org/2016/09/20/economic-complexity-institutions-and-income-inequality/>

24 R. Hausmann, C. Hidalgo et al. (2013). Atlas of Economic Complexity. Kennedy School, Harvard University & MIT Media Lab

25 <http://atlas.media.mit.edu/>

26 <http://atlas.cid.harvard.edu/>

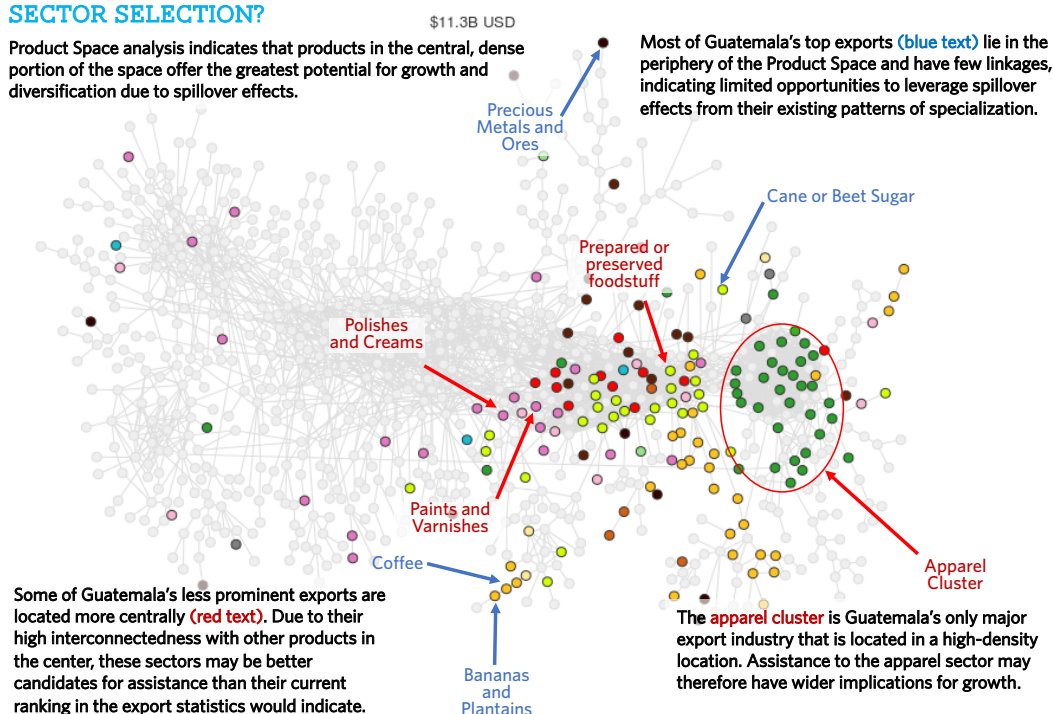
27 The Revealed Comparative Advantage (RCA) is an index used to calculate the relative success a country has had in the export of a certain good. An RCA > 1 indicates that the country’s share of the world export market in that product is higher than its average world market share (across all products). We use products with an RCA of 1 or greater to ensure we are focusing on those sectors in which Guatemala is competitive. The figure does not show all Guatemalan products.

and located closer to the center, such as prepared or preserved foodstuffs, polishes and creams, paints and varnishes, and apparel, not only generate earnings and employment but also have more potential to build skills that are valuable to other less developed sectors. This is because products in the center are more integrated and exhibit greater economic complexity. The product space analysis is telling us that a country's investments in skills should gravitate toward sectors in the center, because they tend to grow faster and exhibit greater economic complexity. But also, trying to shift too quickly toward the center, or to a distant (but apparently related) set of products, is probably a bad idea. If we only paid attention to Guatemala's "top exports," we would miss this important dynamic.

Figure 5. Guatemala Product Space Analysis - Using Big Data to Predict Growth and Identify Skill Needs

GUATEMALA

HOW CAN PRODUCT SPACE ANALYSIS IMPROVE SECTOR SELECTION?



Source: FHI 360, Guatemala Labor Market Assessment, 2017.

• Where can I find more information?

"The Atlas of Economic Complexity," Center for International Development at Harvard University, <http://www.atlas.cid.harvard.edu>

Hausmann, R., & Hidalgo, C. A. (2014). *The atlas of economic complexity: Mapping paths to prosperity*. MIT Press.

Hidalgo, C.A. (n.d.). "The Product Space." <http://www.chidalgo.com/productspace/>

Hidalgo, C. A., Klinger, B., Barabási, A. L., & Hausmann, R. (2007). The product space conditions the development of nations. *Science*, 317(5837), 482-487.

Simoes, A. (n.d.) "The Observatory of Economic Complexity." <https://atlas.media.mit.edu/en/>

Additional economic context approaches with relevance for LMAs

Countless tools exist to analyze economic context, many of them gathered in the World Bank's "[Sector Competitiveness Analysis Tools: A Reference Guide](#)."²⁸ In particular, Workforce Connections uses an adaptation of the Boston Consulting Group's growth-share matrix to analyze a country's relative export performance in a "**trade-share matrix**," and also analyzes sector GDP and investment trends, as part and parcel of a labor market assessment. Where data are available, Workforce Connections uses **location quotient analysis**, which quantifies how concentrated employment currently is in a particular industry or occupation in a region as compared to the nation, identifying what makes a particular region unique in terms of employment, in comparison to the national average.

MODULE 2. DEMAND FOR SKILLS

Tools and approaches in this section help the user analyze the current and potential demand for specific skills, knowledge, and qualifications within and across economic sectors.

Why is it important to understand and analyze the demand for skills in an economy?

How can this process support a labor market assessment?

Once we better understand economic demand, which can give us a sense of in which sectors employment growth may occur, we can begin to ask what the impact on specific occupations—and more importantly, on the demand for certain skills and knowledge—might look like. Compare the following two statements:

- "Country X's food processing sector is expected to create 10,000 jobs by 2020."
- "To keep up with increasing global demand for processed fruits and vegetables (in which Country X is increasing its market share), firms will need to support efficiency improvements in production processes by employing more workers with skills in equipment maintenance and quality assurance. Typically, these skills are gained through a post-secondary certificate or technical tertiary degree program."

Though the former statement is a good starting point, the latter holds more potential for, for example, the designer of a workforce development program, an educational or training institution, or a student or jobseeker. The tools and approaches in this group build on the economic context approaches to support the user in analyzing specific current and potential future skills needs in an economy.

²⁸ http://www.wfconnections.org/983_sector_competitiveness_analysis_tools_reference_guide

Approach 2a: Value Chain Mapping with Workforce Overlay

The value chain approach, developed initially in agriculture marketing and later taught as an economic concept, has been adopted by agribusiness firms, development professionals, and academics. A value chain map shows the range of activities required to bring a good or service from conception to the end user and beyond, that is, design, input provision, production, marketing, and disposal. It helps implementers and policymakers understand how actors in an industry are related to each other, what their functions are, how they are organized into alternative channels of production and distribution, and how products or services move through these channels in a given economy. By identifying the nature of existing employment as well as possible investments in the value chain, a Workforce Overlay to a Value Chain Map adds a layer of analysis to give the user a sense of the current and future demand for skills in a sector.²⁹ It can also help identify opportunities for individuals to upgrade their skills within a sector.

• Why is this tool important?

After we have a good understanding of the economic, demographic, and human capital trends in the country, and after sectors have been selected, a further analytical tool used to get to key information is value chain mapping. Adapted from agricultural economics to broader uses in development, value chain mapping is often the first step for economic growth programs wishing to increase the incomes of a particular group of firms or individuals (for example, smallholder farmers or contract workers).

• How does this tool help me understand information?

Value chain mapping helps implementers and policymakers understand industry structure and dynamics by identifying the (approximate) number and type of firms and diagramming their roles and relationships.³⁰ The value chain map shows how a particular product flows through different market channels at the country level, and helps to identify constraints and opportunities for improving the performance of each channel.³¹ A workforce overlay to a value chain map adds a layer of analysis to identify where training and skills development are needed and how they can be delivered, such as through general education, technical education, vocational training, or on-the-job learning. It can also help identify the best opportunities for youth to upgrade their skills within the highest potential areas of a sector.

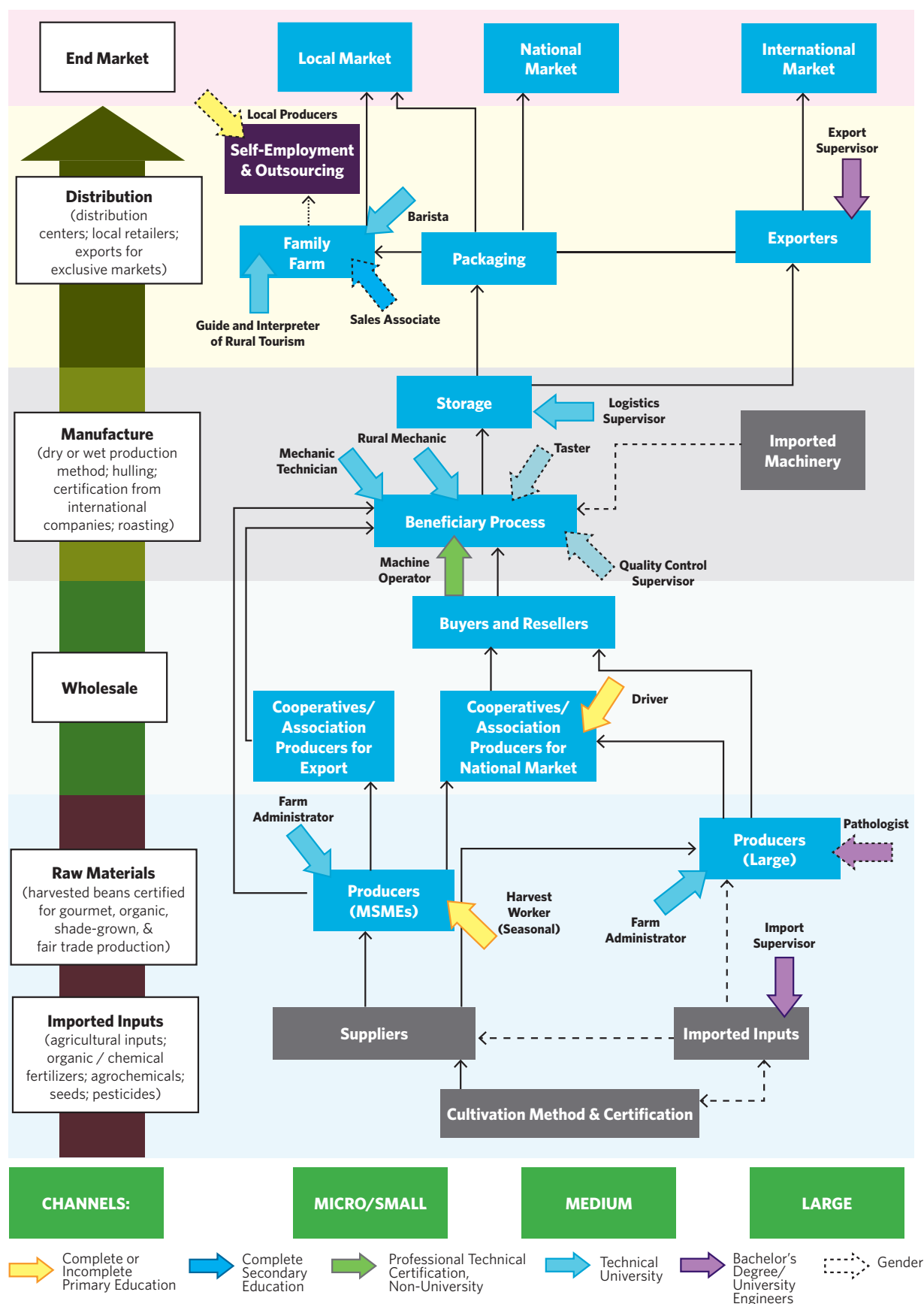
The figure below shows the coffee value chain in Honduras. Even though it is a commodity agricultural sector, this value chain happens to have particularly high growth potential in Honduras. In the value chain map that follows, the colored arrows are used to signify employment opportunities. These entry points have particular skills needs that are identified according to the arrow's patterns and color, indicating the education or training requirements for the position. A gender lens is included: arrows outlined in dotted lines indicate professions that industry experts consider to be particularly suitable for women as well as men (that is, based on observed practice rather than traditional stereotypes).

²⁹ Often, highly specific skills will be identified in this process. If a country or system has highly customizable training, or if the analysis is being carried out in coordination with key education system actors, the specific skills demand may be easier to address

³⁰ Steen, Cynthia, Rich Magnani, & Lara Goldmark. 2005. "Competitive Strategies for Agriculture-Related MSEs: From Seeds to Supermarket Shelves." USAID. MicroREPORT #37, p. 10.

³¹ Ibid. 10.

Figure 6. Honduras Coffee Value Chain with Employment Opportunities



Source: FHI 360, Honduras Labor Market Assessment (2017).

BOX 5: VALUE CHAIN MAPS: HOW DO YOU KNOW YOU ARE GETTING A HIGH-QUALITY PRODUCT?

- **Have interviews been conducted with actors from all parts of the value chain?**
- **Has the value chain been ground-truthed with actor perspectives as it develops?**
- **Have multiple rounds of interviews been conducted with an actor?** This allows them to become familiar with the work, and allows them time to develop insights about the value chain and employment opportunities overlay.
- **Is the purpose and definition of entry points (such as, youth, gender) in the overlay clear to both developers of the value chain and employers?**
- **Do the value chain and overlay provide only information useful to the project and employers/ implementers, and no more?** Excess confusing detail should be avoided.

Value chain maps also help us understand industry structure and firm-to-firm relationships. For example, some channels may be vertically integrated (all functions performed by one firm) whereas others may be partially integrated, and others completely fragmented (many microenterprises selling products directly in an open market). Industry structure is directly related to value chain governance, that is, whether power is concentrated in the hands of one firm or many firms, and whether chains are buyer or supplier driven.³² Consequently, understanding industry structure is critical when identifying potential employer partners to work with on skill building. For example, a lead firm buying products from hundreds of supplier firms will effectively set quality standards in the market, and these quality standards will have implicit skills requirements throughout the value chain. A lead firm is likely to be interested in bringing the quality (and, therefore, the skills) of suppliers up to standard, and may be willing to co-invest in skill-building initiatives. Such a partnership provides what value chain practitioners call “leverage”—a point of entry that allows your intervention to impact large numbers of firms and/or workers.

▪ How do I use this tool?

First, search for existing maps of the value chain for the market you are assessing: there’s no need to re-invent

the wheel. However, the user should validate the map with stakeholders to make sure it is accurate. If maps exist of the value chain from a similar economy, have local stakeholders take a look and provide feedback for adapting it.

In creating a value chain map, the user should answer the following questions:

- What products, services, and processes exist in the value chain?
- Who are the key players involved? Diagram should demonstrate interdependency between actors and processes in the value chain.
- How is the product/service reaching end markets? Diagram should help identify constraints and possible solutions at different levels in the value chain.
- What market channels are available to reach those end markets? Diagram should provide visualization of networks to get a better understanding of connections between actors and processes.

³² Gereffi, Gary, John Humphrey, Timothy Sturgeon. “The Governance of Global Value Chains”. 2005

If no current value chain map exists, then, creating or adapting **an interview instrument such as that attached in Annex A**, follow these steps to develop the value chain map:

1. Map the core processes in the value chain.
2. Identify and map the main actors in the process.
3. Map flows of products or services.
4. Map relationships and linkages between value chain actors.
5. Signal employment entry points, as identified by employers, and based on observed practice with respect to educational requirements and gender.

To create the workforce overlay to an existing value chain map, the analyst could utilize only the interview questions that relate to employment, education, and gender dynamics. Annex A further presents an example of a structured way to talk to employers about their skills needs.

• Where can I find more information?

The Value Chain Development wiki pages on USAID's Microlinks site³³ codify good practice in value chain development and emerging learning in inclusion market systems development, providing a wealth of well-organized background resources and tools as well as extensive in-depth, how-to, and application-specific information. The wiki is appropriate for audiences new to the value chain approach as well as those looking to deepen their knowledge.³³ In addition, the World Bank's "[Sector Competitiveness Analysis Tools: A Reference Guide](#)" provides value chain mapping conventions.³⁴ USAID's Leveraging Economic Opportunities (LEO) project has developed a document on "[Including Wage Labor in Value Chain Analyses](#),"³⁵ providing guidance in the areas of desk research, fieldwork, analysis and interpretation, and application of findings. It includes sample survey instruments, an illustrative scope of work, and an annotated resource list.

BOX 6: EMPLOYMENT FORECASTING TOOLS

In the **United States**, the Bureau of Labor Statistics' 10-year occupational and industrial employment projections (<https://www.bls.gov/emp/>) are complemented by the O*NET skills database (<https://www.onetonline.org>).

In the **European Union**, CEDEFOP, the European Centre for the Development of Vocational Training, has developed a model for forecasting labor demand (and supply) by sector, occupation, and qualification (<http://www.cedefop.europa.eu/en/events-and-projects/projects/forecasting-skill-demand-and-supply>)

Additional demand for skills approaches with relevance for LMAs

Governments and private sector actors around the world have developed a number of tools—qualitative, quantitative, and mixed method—to analyze the demand for skills in the labor market (see Box 6). These efforts have been aided by access to big data and improved technology and techniques. Wage data and online job postings can also provide info about short-term demand. Quantitative tools for developing countries are scarce, however, since models, techniques, and data are not always available. A recent paper published by the Inter-American Development Bank details several of these methods as well as challenges specific to the LAC region.³⁶

33 <https://www.microlinks.org/good-practice-center/value-chain-wiki>

34 P. 147. Retrieved from http://www.wfconnections.org/983_sector_competitiveness_analysis_tools_reference_guide

35 Schweisguth, M. and Bbosa, S. (2016). Including Wage Labor in Value Chain Analyses: A Guide. Leveraging Economic Opportunities Report No. 53. October. Retrieved from <https://www.microlinks.org/library/including-wage-labor-value-chain-analyses-guide>.

36 González-Velosa, C., & Rucci, G. (2016). Methods to Anticipate Skills Demand. Inter-American Development Bank. Retrieved from <https://publications.iadb.org/bitstream/handle/11319/7458/Methods-to-Anticipate-Skills-Demand.pdf>

The [DACUM process](#),³⁷ which helps to create a picture of what a worker does in terms of duties, tasks, knowledge, skills, traits, and use of tools, may also be a useful reference when talking to employers about skills needs.

MODULE 3. SUPPLY OF SKILLS

Tools and approaches in this section help the user understand the current state of an economy's human capital, how it is changing, and how (and how well) it is being utilized

Why is it important to understand and analyze the supply of skills in an economy? How can this process support a labor market assessment?

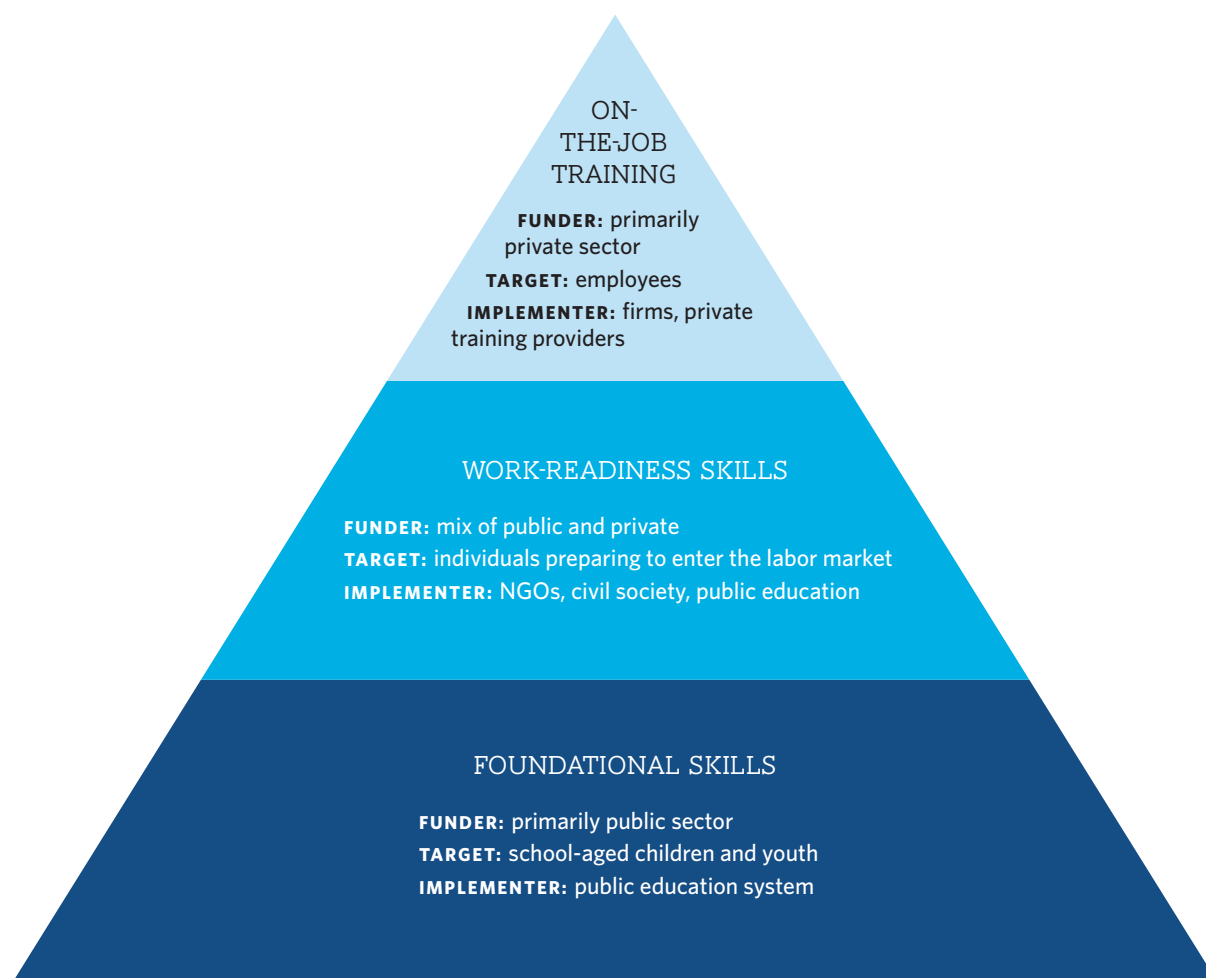
If the goal of a labor market assessment is to understand how a given labor market is functioning, analyzing demand is necessary—but not sufficient. We must also understand the nature of labor supply in an economy. Which sectors and occupations account for what share of employment? In what industries, jobs, and types of employment (part-time, informal) are youth (or other populations of interest) more likely to be working? Are workers' skills well-matched to their current jobs, or to open positions? Are individuals unemployed or out of the labor market because they are holding out for better wages or jobs? Are jobseekers geographically present in the areas with relevant job vacancies, or are they mobile? In attempting to answer these types of questions about students, workers, and jobseekers, we can begin to see not just the rudimentary outlines of the labor supply, but the more nuanced details that might be contributing to under- and unemployment, low labor force participation, informality, and high vacancy rates in certain sectors and for certain jobs.

It is also important to gather and present information on education and training systems, so that we can analyze whether current offerings are aligned with employer demand both in terms of content and quality, accessible financially, and producing sufficient numbers of graduates with the right skills and in the right location.

There are many approaches to defining and classifying skills — e.g. cognitive and non-cognitive; “soft” and “hard” (or technical); inter-personal and intra-personal; transferable vs. industry-specific vs. firm-specific; and so on. As this is the topic of many another publication, we will not attempt to describe all these approaches here.³⁸ This document does not focus on any one type or classification of skill; rather, the methods presented allow an assessment team the latitude to define and measure the supply and demand of skills as relevant to a given context. Regardless, we do note the importance of foundational skills — those skills, such as literacy and numeracy, that allow individuals to convey and receive information, and serve as a basis for supporting additional learning and skills—in helping individuals to adapt to new situations (including, of course, employment). Accordingly, we encourage the user to analyze, where possible, the supply of foundational skills among different populations in a labor market (see the end of this section for potential data sources). Figure 7, on the next page, illustrates one typology of skills, showing foundational skills depicted at the base of the employment skills pyramid.

³⁷ <http://www.dacum.org/index.asp>

³⁸ “Soft skills are a broad set of skills, behaviors, and personal qualities that enable people to effectively navigate their environment, relate well with others, perform well, and achieve their goals.” In Gates, S., Lippman, L., Shadowen, N., Burke, H., Diener, O., and Malkin, M. (2016). Key Soft Skills for CrossSectoral Youth Outcomes. Washington, DC: USAID's YouthPower: Implementation, YouthPower Action.

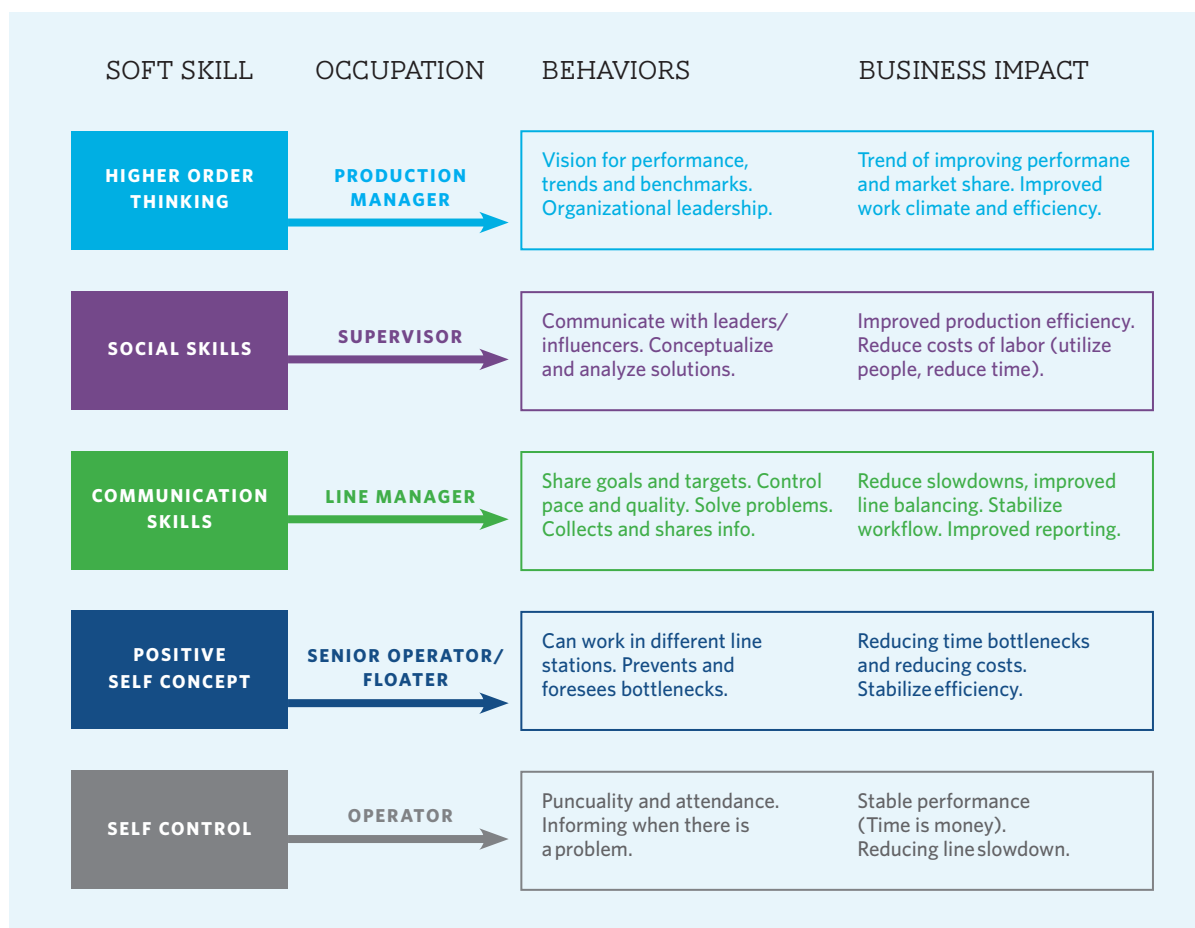
Figure 7. Skills Acquisition Pyramid

Source: *Workforce Connections*

It can also be helpful to analyze and illustrate how specific skills translate into successful behaviors within occupations and the business impact these behaviors can have, to bridge the understanding gap between training institutions and employers. For example, through interviews with sector experts and human resources professionals, a team conducting an automotive industry analysis for Morocco under the USAID Career Center project³⁹, implemented by FHI 360, developed the matrix shown in Figure 8.

³⁹ <https://www.fhi360.org/projects/usaaid-career-center>

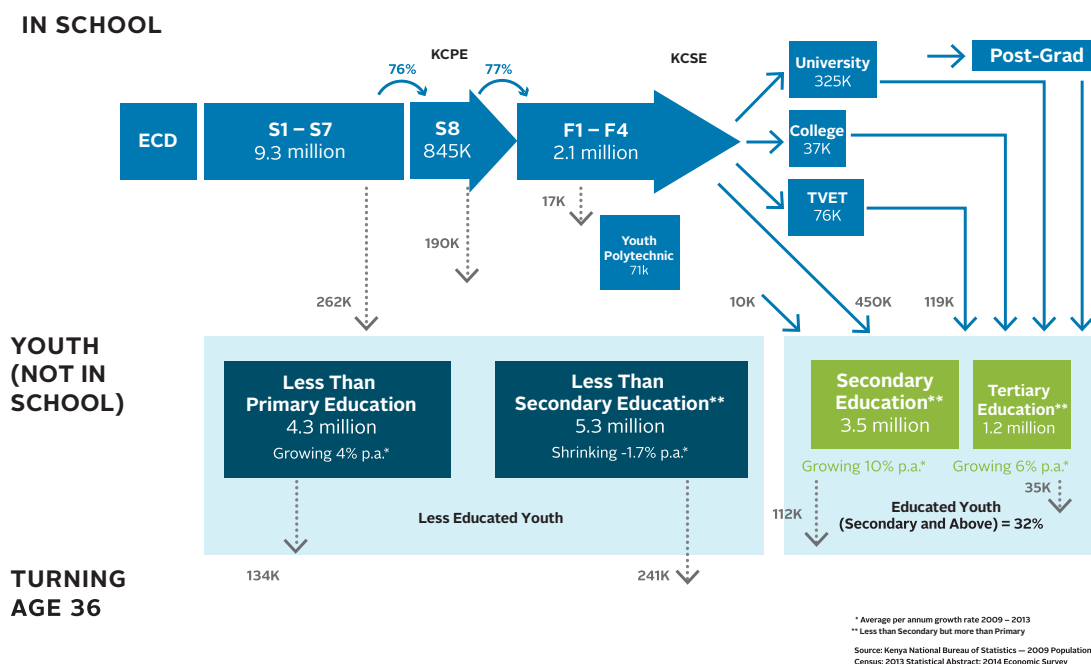
Figure 8. Morocco's Automotive Business Impact Matrix



Source: USAID Career Center, Morocco

Approach 3a: Education Stocks and Flows Diagram

Drawing from systems thinking concepts, the Education Stocks and Flows Diagram allows the viewer to instantly visualize the composition of a labor market in terms of educational attainment and age. Revealing a dynamic picture of skills supply in a workforce, the diagram helps stakeholders learn how young people are moving through the education system, estimate the number of youth in various levels of education and in the labor pool, understand changes in the workforce over time, and gain insights into future trends in the labor market.

Figure 9. Youth Educational Attainment Stocks and Flows

Source: FHI 360, Kenya Youth Assessment. Calculated using data from Kenya National Bureau of Statistics—2009 Population Census; 2013 Statistical Abstract; 2014 Economic Survey.⁴⁰

• Why is this tool important?

The Education Stocks and Flows Diagram allows stakeholders, policymakers, and implementers to better understand the profiles of key educational segments of the population and how these are likely to change in the future, namely, which populations are the largest and/or growing the fastest in terms of educational attainment. This information can then be used to plan forward-looking education and workforce development programs to target specific groups. The concept of stocks and flows, often used in business, economics, and accounting, can be utilized to understand the behavior of complex systems, along with feedback loops and delays (see Causal Loop Modeling tool).

• How does this tool help me understand information?

Revealing a dynamic picture of skills supply in a labor market, the diagram allows the viewer to instantly visualize the composition of the youth population in terms of current educational level, educational attainment, and age. With this information, implementers, policymakers, and other stakeholders can identify how young people are moving through the education system, estimate the number of youth in various levels of education and in the labor pool, understand changes in the workforce over time, gain insights into future trends in the labor market, and learn where mismatches between supply and demand are originating or may be in the future. The diagram can also be constructed for a subset of the labor force (such as doctors or nurses in the health care workforce), and further disaggregated by gender or age group.

• How do I use this tool?

Reading the graphic

-A **stock** represents a quantity of something (in this case, people) in the system at one point in time. For example, a bathtub; you can measure the amount of water in the bathtub at any given time.

⁴⁰ Calculations are estimates. Some needed data are not available and assumptions or simple models were used for estimation. Results have been reviewed with leading professionals in the field, however, and are understood to represent a reasonably accurate picture of the dynamics of youth labor market supply in Kenya. From USAID FIELD Report (2014): Kenya Youth Assessment—a rapid assessment of the Kenyan youth workforce and labor market to determine the best strategic fit for youth programming. From FHI 360. (2014). Kenya Youth Assessment. USAID FIELD Report. Pages 18-19. http://www.wfconnections.org/978_kenya_labor_market_assessment

-A **flow** represents the rate at which the stock is changing. In the bathtub example, the flow is how fast the water is increasing or decreasing.

The stocks and flows diagram above analyzes Kenya's youth labor pool in 2013. There are "stocks" in two places—one, students currently studying at each stage of the education system, and two, youth aged 15–35 who have either completed, or left, each level (see the bathtub-like shapes at the bottom of the diagram). "Flows" are the rate at which they pass (inflow and outflow) through the various stages of the education system and the labor pool. In the figure, one can review the current population (stock) and transition (flow) of students from primary all the way through the various postsecondary education tracks (youth polytechnic, TVET, college, and university).

The following are examples of the types of data shown in the diagram:

- *Education stock*: 9.3 million students are currently in primary school, Standards 1 through 7.
- *Education flow*: 650,000 (77 percent) students transition from Standard 8 to the secondary level each year).
- *Education to youth potential labor pool flow*: 460,000 students leave the education system (outflow from education) after completing secondary education and enter the youth potential labor pool (inflow to youth not in school).
- *Youth not in school stock*: In 2013, about 32 percent of students, or 4.6 million in the youth potential labor pool, had a secondary education or higher (stock).
- *Growth of youth not in school stock*: The stock of youth who are not in school and have less than a primary school education with less than a primary school education (4.3 million) has been growing at rate of 4 percent per year—an unpleasant surprise in a country that has been rapidly expanding the primary school system.
- *Youth not in school flow*: Each year, 134,000 people with less than a primary education turn 36 and "age out" of the youth potential labor pool (outflow).
- *Gender breakouts*: Where available, data on gender and/or regional disparities can be illustrated with this graphic tool.
- *Unemployment rate*: Where available by educational attainment, unemployment rates for the various categories of youth workforce can also be depicted.

Put together, this information can tell us where people are leaving the system, where we might intervene, and how supply does or does not match up with demand.

Creating the graphic

The data behind the education stock and flow diagram is mainly calculated from educational attainment statistics and enrollment data by grade.⁴¹ These data are typically available from the country's Ministry of Education and/or national statistics agency, or the [UNESCO Institute of Statistics](http://www.unesco.org/).⁴² You will need enrollment data over several years, preferably consecutive years leading up to the most recent year available.

The stock of students currently studying at each stage of the educational system is simply enrollment numbers for the most recent year available. The stock of youth (in this case, those aged 15–35) who have either completed, or left, each level of educational attainment can be calculated using Ministry of Education or national census data on population size, disaggregated by age group, levels of education, and gender. Often the

⁴¹ This tool was also applied in an interesting way in Kenya by IntraHealth in conjunction with the USAID-funded FUNZOKenya project: <https://www.intrahealth.org/sites/ihweb/files/attachment-files/funzohrbriefprint.pdf>

⁴² <http://www.uis.unesco.org/>

data available for stock of youth by educational attainment are not as recent as the current enrollment data, unless a national survey has been conducted that same year. In this case, you will need to add the youth (aged 15–35) who have left the school system each subsequent year and deduct the number of those who are turning 36 and who are thus no longer considered youth (the definition of youth will vary depending on the context). The change in the stock over the years can be used to show the annualized growth rate of each stock of youth.

The number of students leaving the education system (the outflow) is calculated from the enrollment data (the number of students who do not transfer to the next grade). Although this methodology does not adjust for grade repetition, it does provide a general understanding of how many students are leaving the system prematurely. The flow of students between the various stages of the education system (inflow) is similarly calculated from the number of students who transfer to the next grade. Because data sets used are often not perfectly compatible, the creation of this graphic often requires approximations and even guesswork. Nevertheless, precisely because national statistical agencies seldom “put the puzzle pieces together,” it is worth the effort, because it provides a bird’s eye view of the system, many of the issues, and—where important unknowns remain—areas where data need to be collected.

In the above example, we can see that although today the largest segment of the youth potential labor pool has less than a secondary education, the fastest-growing segments have either secondary education or higher. Depending on additional data availability, for example from the International Labour Organization’s [School to Work Transition Surveys](#),⁴³ we can include information on the labor force status of each group of youth as well. When coupled with a Stakeholder Mapping exercise that can reveal the types and capabilities of education, training, and intermediation providers in a system, these data can inform short-, medium-, and long-term workforce strategies and program design and targeting, and help stakeholders focus on where investments and capacity-building efforts might be channeled to improve providers’ ability to respond to these educational trends and dynamics.

■ Where can I find more information?

The following sources provide background on the history of stock-and-flow analysis and more information on how to use it in combination with other tools to understand and model system behavior.

Meadows, D. H., & Wright, D. (2008). *Thinking in systems: A primer*. Chelsea Green Publishing.

Williams, B., & Hummelbrunner, R. (2010). *Systems concepts in action: a practitioner’s toolkit*. Stanford University Press.

Additional supply of skills approaches with relevance for LMAs

Information on current offerings and students is often available through the [UNESCO Institute for Statistics](#).⁴⁴ Cross-country skills surveys do exist: the OECD’s [Programme for the International Assessment of Adult Competencies \(PIAAC\)](#) covers individuals aged 16–65 in 40 (mostly high-income) countries, and “measures the key cognitive and workplace skills needed for individuals to participate in society and for economies to prosper.”⁴⁵ The World Bank’s [STEP Skills Measurement Program](#) has measured skills on the same scale as PIAAC in a number of low- and middle-income countries.⁴⁶ **However, in many countries, information on the quality of current educational offerings and the relevance of existing skills must be collected through a qualitative research process, including, for example, surveys, interviews, and focus groups with both current and potential future members of the workforce, as well as employers, a critical step for any LMA.** Sample focus group discussion guides for employed and unemployed youth are attached in Annex B.

⁴³ http://www.ilo.org/employment/areas/WCMS_234860/lang--en/index.htm

⁴⁴ <http://uis.unesco.org/>

⁴⁵ <https://www.oecd.org/skills/piaac/aboutpiaac.htm>

⁴⁶ <https://www.oecd.org/skills/piaac/aboutpiaac.htm>

MODULE 4. SYSTEMS AND STAKEHOLDERS

Tools and approaches in this section help the user better understand both the labor market system itself as well as the larger systems within which the labor market is functioning. They can also help to identify the factors that may be contributing to suboptimal labor market functioning, and leverage points and strategies to address those factors.

How can mapping systems and analyzing how they work inform a labor market assessment?

In parallel with the analysis of labor supply and demand, it is helpful to take a step back and attempt to look at the system(s) within which the labor market operates. This section identifies some tools, borrowed from the realm of systems thinking, that can help the user diagnose or understand system dynamics from the very broad (say for an entire labor market) to the specific (perhaps a local workforce development system), and explains how these tools can be practically applied in a labor market assessment. One aspect of systems/stakeholder analysis is understanding how jobseekers currently find employment, how employers find workers, and how everybody finds information on the labor market. It can include a stocktaking of existing labor market information and intermediation systems and how well they work, look at patterns of discrimination and labor mobility, and which signals to employers are effective for which jobseekers. However, it can go far beyond this as well. In fact, systems theory can be a powerful approach to help us answer some overarching questions, including those that follow.

What are the institutional relationships, barriers, and opportunities for supporting change in a labor market or workforce development system, and what type of interventions can support this change?

That is, how can the system become more resilient, more self-organized, and directed toward the purpose at hand? In the case of a labor market system, this is the overall purpose of connecting workers to employers. In a workforce development subsystem, this means building and upgrading market-relevant skills. Of course, to do this effectively, the larger system must also:

- Facilitate stakeholders to develop an overarching vision for their economy and youth employment as well as committed action to make it real.
- Support employers to identify and articulate their current and future skills needs.
- Facilitate the flow of information about skills needs between actors.
- Support education and training institutions and firms to develop needed skills.
- Support learners to acquire those skills.
- Connect individuals with needed skills to employment.
- Support workers in utilizing and building on their skills.

Generally, labor market assessments that incorporate systems thinking provide insights far beyond the mere need to train more electricians (or accountants or nurses). Rather, they are able to pinpoint a far wider range of reasons why individuals might not be finding jobs (that are matched to their training) and why employers are not finding suitably skilled candidates. Combining systems thinking and stakeholder analysis with information on demand and supply can help us begin to answer questions such as:

- Do students and jobseekers have information about demand, and do employers have information about supply?
- Is there a geographical match between skilled workers and employment opportunities?
- Are there effective intermediaries helping to connect employers and jobseekers?

- Are the incentives to stay in the labor market greater than to leave (perhaps through emigration)?
- Are biases, or cultural or gender norms, keeping skilled workers from being hired?

Workforce development and labor market strengthening programs can address many, though not all, of these issues. **Ultimately, however, if the root cause of misalignment is not a workforce development or labor market issue, then we should not try to use workforce development or labor market strengthening program strategies to address it.** Systems tools can help donors, implementers, and other stakeholders understand which problems might best be addressed through workforce development—and which through education system strengthening, poverty reduction, economic growth programming, private sector development, labor market policy reform, or any of the other key areas of development.

Why should workforce development practitioners care about taking a systems approach to understanding labor markets and programming for workforce development?

In essence, the labor market of any country is a system, with the workforce development system nested within it. Of course, the labor market in turn is nested within the larger system of a country's economy, which is nested within the global system. According to the seminal systems thinker and scientist Donella Meadows (2008), a system is “a set of things—people, cells, molecules, or whatever—interconnected in such a way that they produce their own pattern of behavior over time.” Although the system may be impacted by external forces, the way it responds to those forces depends on its own characteristics. We might consider a system to consist of the following parts:

- **Elements**, the players of the game—organizations, communities, groups, individuals, intermediaries—both formal and informal.
- **Interconnections**, both formal and informal “rules of the game.” According to Meadows, many of the interconnections in systems operate through the flow of information. If interconnections between elements are reinforced by timely, accurate, complete information flows, feedback loops can function.
- **Function** or purpose – what is the function of the system overall? It may very be different from what it at first appears to be, what we think it is, or what it should be. Function is often the most crucial determinant of the system's behavior.
- **Perspectives** “shape actors' understandings of the systems and its parts, along with their beliefs about system performance, ways to change the system and incentives for promoting change.”⁴⁷
- **Boundaries** “define the limits of the system being studied, which helps to keep the system manageable for analytical purposes but may result in excluding relevant components.”⁴⁸

USAID highlights the “five Rs” of local systems, that is, Resources, Roles, Relationships, Rules, and Results.⁴⁹ The use of Resources and the ensuing Results can be seen as the purpose of a system; Roles describe the functions of individual actors; and Relationships and Rules are types of interconnections.

How can we best incorporate all of these concepts into understanding of a system? The following may provide a starting point.

A system is a set of interacting parts that play specific roles and are connected directly or indirectly via various relationships and rules. A system's actors hold different perspectives on the system, its parts and performance, and possibilities and methods for changing it. A system has a boundary, and the boundary is determined subjectively by those who want to address a problem pertaining to a specific part of the greater system. Systems can be embedded, or “nested” within other systems.

47 Fowler, B. and Dunn, E. (2014). “Evaluating Systems and Systemic Change for Inclusive Market Development: Literature Review and Synthesis.” P. 2. LEO Report No. #3. June. Accessed March 15, 2017. http://pdf.usaid.gov/pdf_docs/PBAAC412.pdf

48 Ibid.

49 Ibid., p. 8

Understanding the larger systems in which workforce development is nested can help stakeholders tackle problems at their root cause, rather than merely treating the symptoms. The following tool, Causal Loop Modeling, can help stakeholders to understand some of their assumptions about these root causes.

Approach 4a: Causal Loop Modeling Tool

A causal loop model is a free-form map that shows causal relationships between variables in a system, and uncovers gaps between actual performance and desired performance. The act of building a causal loop model and recognizing the root causes and patterns can help policymakers and implementers identify potential places to effect change in a system. This tool may be used at the outset of an LMA with labor market stakeholders, to define key areas of investigation. It may also be used before or after carrying out an LMA—before, it may also be used with a donor or donors to identify whether there is a need for an LMA; afterwards, the LMA may inform causal loop modeling as donors, implementers, or other stakeholders construct a theory of change.

• Why is this tool important?

Causal loop models help us to make explicit our understanding of how different factors are interacting to cause specific results in a system. This tool, which has been adapted and simplified for the purposes of this toolkit, can be used to identify root causes of problems, in order to spur a thinking process about a system.

• How does this tool help me understand information?

A causal loop model creates a visual image of how elements in a system interact with one another. Mapping the causes and results of variables in a system can help policymakers decide where to implement changes. However, a causal loop model can only reflect the perspectives of those creating it. Thus, it may not reduce biases, but it can make them explicit.

• How do I use this tool?

When constructing a causal loop model in your own context, the following the three *Principles of Causal Loop Modeling* will help you to map system dynamics:

PRINCIPLE #1: Never show someone a model they have not helped to develop. Causal loop modeling is about the process, and everyone should be a part of the process to share ownership of the model.⁵⁰

PRINCIPLE #2: Systems thinking and causal loop modeling is not about EITHER/OR, it is about BOTH/AND thinking. This inclusive strategy will identify solutions that holistically address a problem instead of focusing on a single cause, and reduce the skewing effect of unequal power dynamics within the group modeling the causal loop.

PRINCIPLE #3: Most systems are complex because they are based on human and social elements. Complexities within the system can be structural (system size, number of parts, connectivity), dynamic (behavioral), evaluative, and adaptive. As a result, causal loop models are likely to be messy, and will always be unique.

Causal loop models exhibit several key characteristics:

Feedback loops are interconnected stabilizing forces of inputs and outputs between different components of a system. They are affected by delays, which stagnate progress between the current state and desired state of the system. There are two types of feedback loops: balancing and reinforcing.

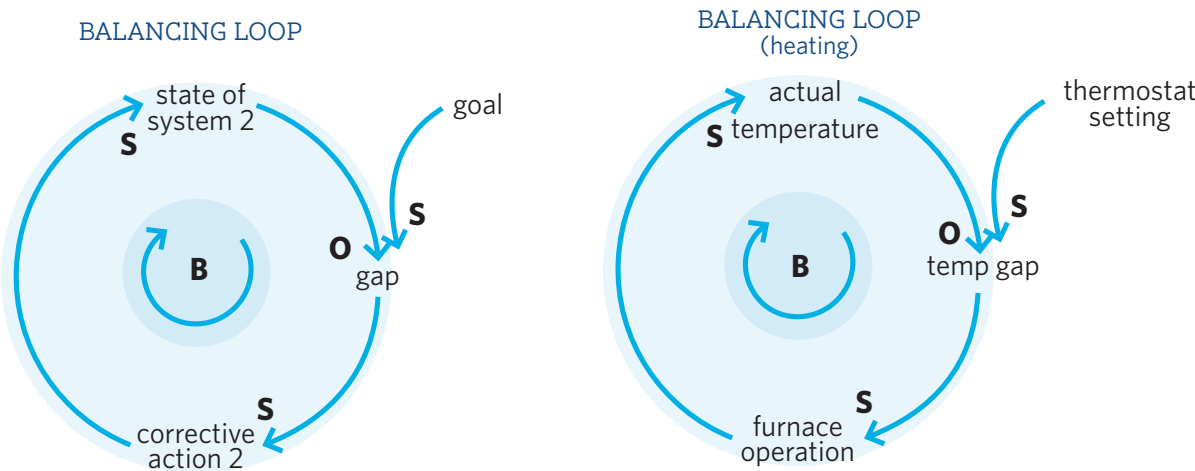
⁵⁰ Unfortunately, in order to illustrate what a causal loop model looks like, we are going to violate this principle later in this document (Figure 12).

Balancing loops occur when variables change in opposite directions. Balancing loops attempt to move a current state (status quo) to a desired state (an objective or goal) through some action (to reach the goal). For example, it is 65 degrees in Anne’s living room, but she wants it to be 70 degrees, so she adjusts the thermostat, which turns up the furnace output, which eventually (with a delay) brings the room temperature up to 70 degrees. When the room reaches 70 degrees, there is no longer a gap between the current state and the desired state, and the furnace only puts out enough energy to keep Anne’s living room at that temperature.

Table 3. Examples of Balancing Loops

STRUCTURE	BEHAVIOR	EXAMPLES	POLICY CONSIDERATIONS
Balancing Loop	<ul style="list-style-type: none">▪ Goal seeking▪ Regulates system behavior▪ Opposes system change from set target or goal	<ul style="list-style-type: none">▪ Heating or cooling system, setting thermostat to regulate room temperature▪ Economic growth; Federal Reserve modifying interest rates to meet growth target	<ul style="list-style-type: none">▪ Recognize that balancing loops regulate the system to provide stability and, on the other hand, resist change

Figure 10. Balancing Loop



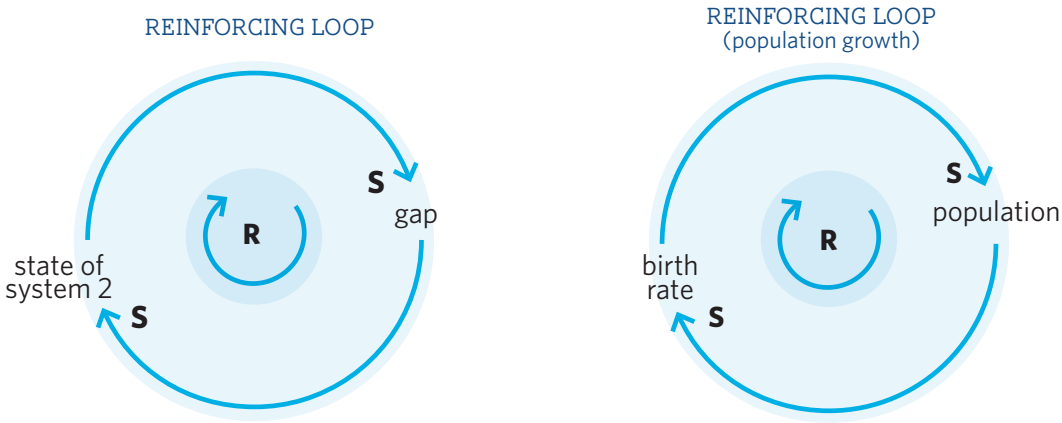
Source: Continuous Improvement Associates, “Systems Thinking Archetypes,” 2003.

Reinforcing loops occur when there is a causal relationship between two variables that move in the same direction. That is, an action produces a result that causes more of the same action, which leads to a growth or decline. For example, an increase in a country’s population (all else equal) leads—perhaps after a delay—to an increase in the birth rate, which leads to a further increase in the population.

Table 4. Examples of Reinforcing Loops

STRUCTURE	BEHAVIOR	EXAMPLES	POLICY CONSIDERATIONS
Reinforcing Loop	<ul style="list-style-type: none"> Growth or decline of the “state of the system” 	<ul style="list-style-type: none"> Population growth or decline Sales growth or decline Microphone feedback 	<ul style="list-style-type: none"> Recognize that reinforcing feedback creates exponential growth that can bring on pressures to retard growth They are two-edged swords that can work for us or against us

Figure 11. Reinforcing Loops



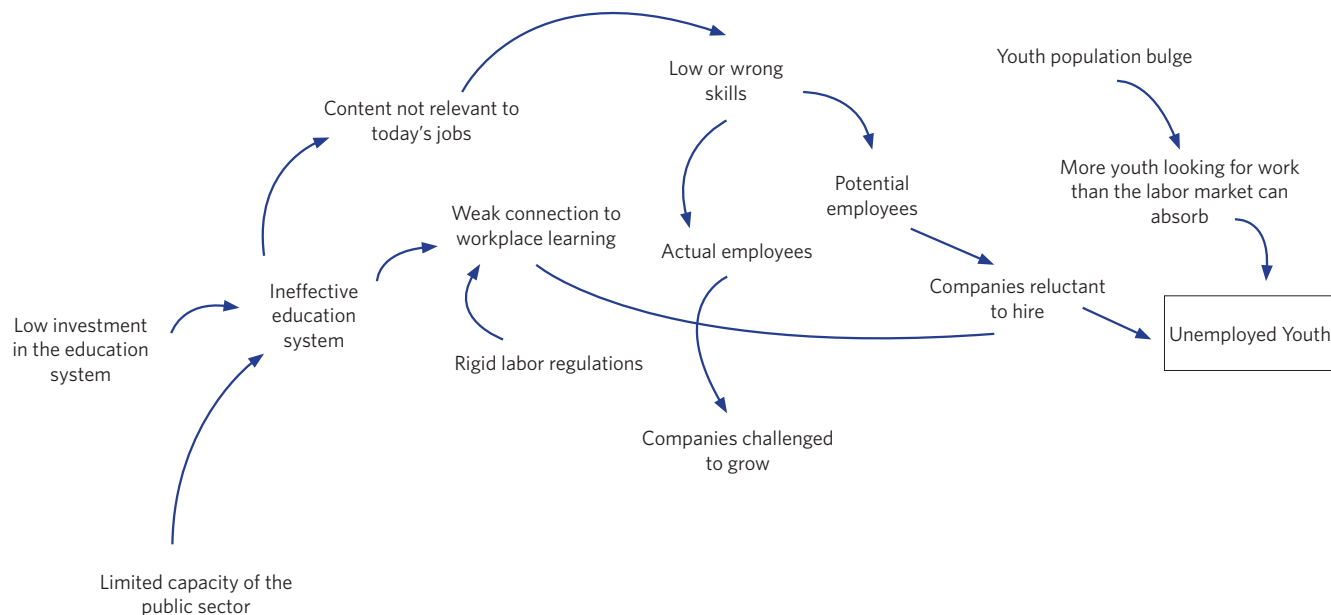
Source: Continuous Improvement Associates, “Systems Thinking Archetypes,” 2003

Example of Causal Loop Model in Workforce Development

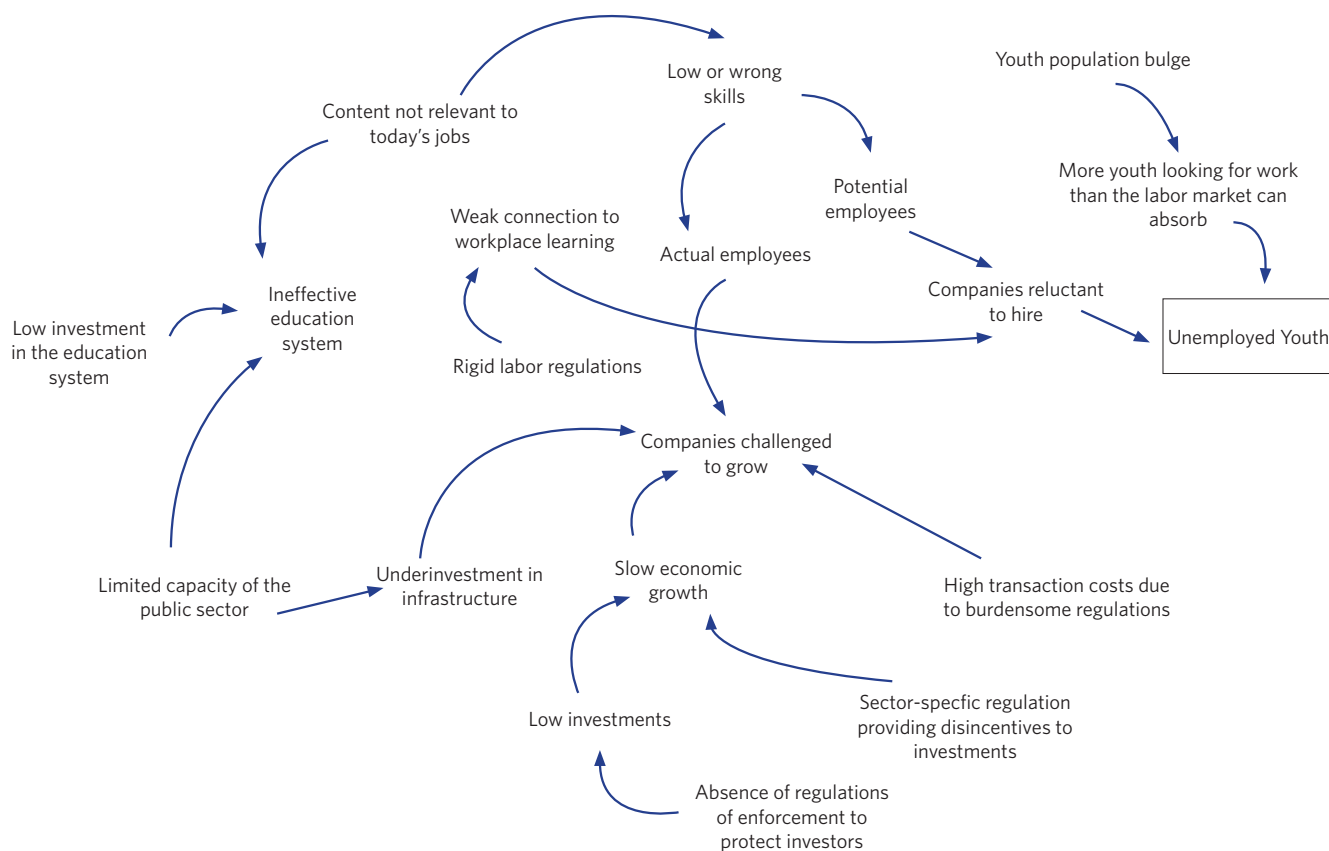
The sequence of images below shows the building of a causal loop model in the context of labor market assessment and workforce development programming, from left to right and top to bottom. The figure below does not show balancing and reinforcing loops, but can be used as a basis to develop them.

Figure 12. Causal Loop Model: Unemployed Youth

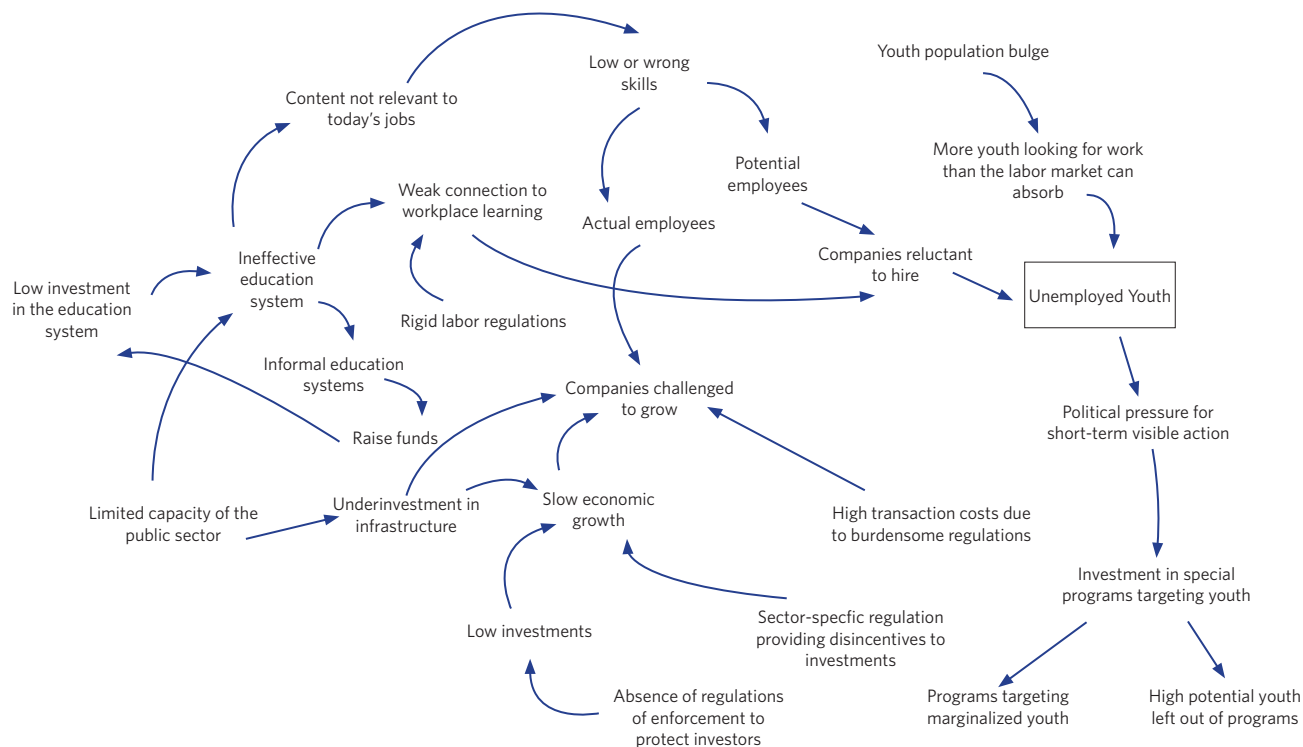
1. Identification of issue (in box) and first round of factors, interactions, and pathways



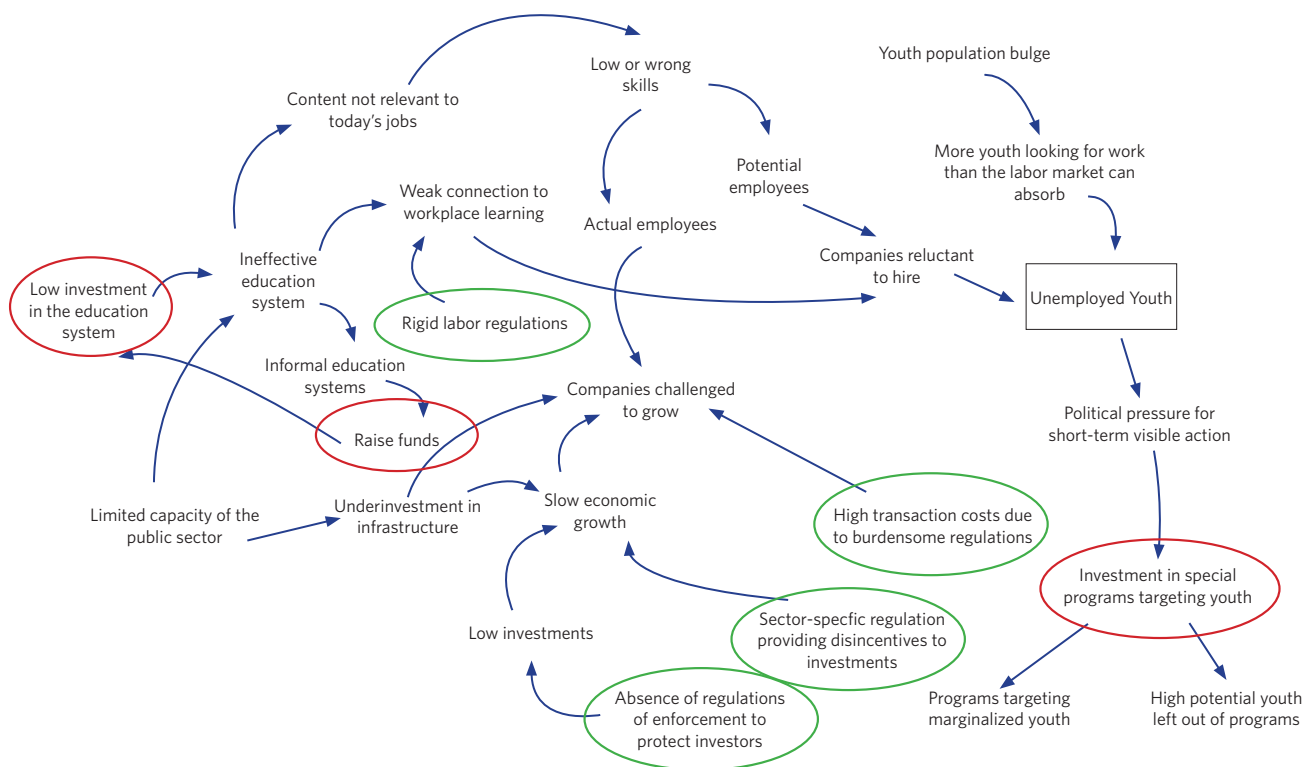
2. Further identification of factors, interactions, pathways



3. Further identification of factors, interactions, pathways



4. Identification of root causes (green circles) and archetype patterns that result in outcomes (red circles)



A facilitator can help a group construct such a model by asking them to jointly identify an issue (in Figure 12, it is “unemployed youth”), asking why they think it has come to pass, documenting the causes as mentioned by the group and how they are related to other causes, asking and documenting what has led in turn to each of those causes, what they think has led to those causes, and so on. The facilitator may ask the group to first read some information or a case study on the issue that is being mapped (perhaps the dashboard or the draft social and economic context section of the LMA), or group members may bring only what they know to the exercise. In either case, the model will be a map of participants’ perceptions rather than a true reflection of reality, but especially in the latter case, including individuals who know the context well will help create a more realistic and comprehensive model.

Identifying root causes and emerging patterns once loops have been drawn out will allow those constructing the model to identify relevant and related issues and imagine how to change current interactions within the system to help the system achieve the desired performance. Root causes are the most interconnected issues to the system as a whole, and will generally be those with the most arrows stemming from and going to other causes. Each system will have multiple root causes affecting the system. Patterns are the way in which interactions happen and how to reasonably develop interventions to change outcomes.

▪ Where can I find more information?

Background on systems dynamics, causal loop modeling and its uses

Meadows, D. H., & Wright, D. (2008). *Thinking in systems: A primer*. Chelsea Green Publishing.

Mostashari, A. (2013). *Systems Thinking in International Development*. USAID Training, October 9-11.

Williams, B., & Hummelbrunner, R. (2010). *Systems concepts in action: a practitioner’s toolkit*. Stanford University Press.

How-to instructions for drawing causal loops

Kim, D. H. (1992). Guidelines for drawing causal loop diagrams. *The Systems Thinker*, 3(1), 5-6.

Details on causal loop structures and archetypes

Continuous Improvement Associates. (2003). “Systems Thinking Archetypes (Generic Structures).”

<http://www.exponentialimprovement.com/cms/uploads/ArchetypesGeneric02.pdf>

Senge, P. M. (2006). *The fifth discipline: The art and practice of the learning organization*. Broadway Business.

Approach 4b: Social Network Analysis

Social network analysis (SNA) is a set of analytical and visual tools that allow implementers and policymakers to understand the patterns and dynamics of social capital, which are “the institutions, relationships and norms that shape the quantity and quality of social interactions.”⁵¹

▪ Why is this tool important?

Determining the dynamics of social interactions ultimately allows practitioners to select appropriate and efficient pathways for intervention in the labor market or workforce development system, as well as anticipate its potential reach.

⁵¹ World Bank, “What is Social Capital?” <http://web.worldbank.org/WBSITE/EXTERNAL/TOPICS/EXTSOCIALDEVELOPMENT/EXTSOCIALCAPITAL/0,contentMDK:20185164-menuPK:418217-pagePK:148956-piPK:216618-theSitePK:401015,00.html>

• How does this tool help me understand information?

Social network analysis depicts existing social structures in terms of nodes (actors) and links (the relations that exist or do not exist between them). The tool helps the user determine existing social relations within a system. In a workforce development system, this means, for example, connections and flows of information between educational institutions, employers, relevant government entities, relevant non-governmental organizations, business associations, labor market intermediaries, worker, youth, and women's advocacy groups, and others.

Social network analysis quantifies the key properties of networks, such as the density and quality of linkages among stakeholders, centrality (the importance or influence of a particular node in the network), and segmentation (the strength of ties between sub-groups in the network). Simple SNAs focus on informational ties (connections that are face to face, phone, or email) while more complex SNAs can also trace financial, economic, legal, and/or emotional ties. Higher density regions indicate potential concentrations of valuable social capital where tacit knowledge is being exchanged and higher levels of coordination, trust, and specialization are taking place.

It also allows the user to decipher an actor's behavior within the community: "An actor's position in a network determines, in part, the constraints and opportunities that it will encounter, and therefore identifying that position is important for predicting the actor outcome as performance, behavior or beliefs."⁵² SNA allows for both whole-system and egocentric networks (the latter focus on individual actors and can help us to understand their differing perspectives on a system).

SNA should answer the following questions:

- What is the level of interaction between actors?
- Do all actors partake in this interaction, or can we identify any outliers?
- Which actors are most powerful? What is the extent of their influence within the network?
- Are there any opportunities for collaboration between actors?
- Are there any bottlenecks?

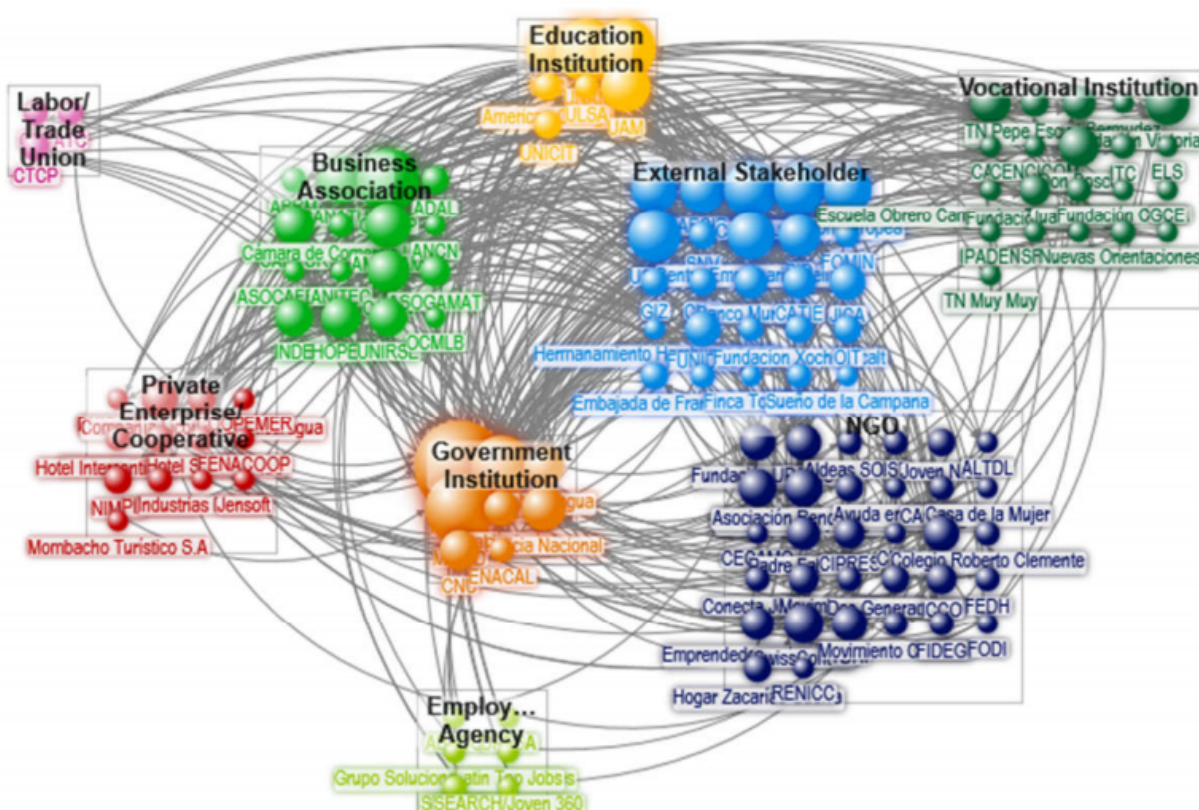
Ideally, the SNA gives insights into how much social capital various stakeholder groups have. And examining the changes in SNA over time can reveal whether social capital has increased – often one of the key outcomes of upgrading projects.

Figure 13 below shows Nicaragua's workforce development system. In this network map, different types of organizations are grouped together, and we can see the connections between individual organizations and those in other organizational groupings. This allows us to see which types of actors are the least and best represented and connected in the system. According to the system mappers, Nicaragua's workforce development system shows a "diffuse but resilient network with no single actor capable of disruption; weak reciprocity among actors; a network clustered around smaller groups; and weak potential for change absent outside intervention." The researchers note that resulting strategies to address these issues might be: "network hub development and incubation of pivotal actors / groups"; "strengthening network communities and deepening intragroup relations"; "engag[ing] sub-groups for rapid diffusion and forging new intergroup ties to bridge gaps"; and "targeted [workforce development] network development programming."⁵³

⁵² Borgatti, S. P., Everett, M. G., & Johnson, J. C. (2013). *Analyzing social networks*. SAGE Publications Limited.

⁵³ LINC. (2015). "Social Network Analysis – Nicaragua Workforce Development System." Presentation at the Global Youth Economic Opportunity Summit. October 7. Accessed May 23, 2017. http://linclocal.org/wp-content/uploads/2017/02/Presentation_YEO_LINC_FINAL.pdf

Figure 13. Network Core Map, Nicaragua Workforce Development System



Source: LINC

• How do I use this tool?

This tool provides detailed steps on conducting social network analysis in the context of a labor market assessment.

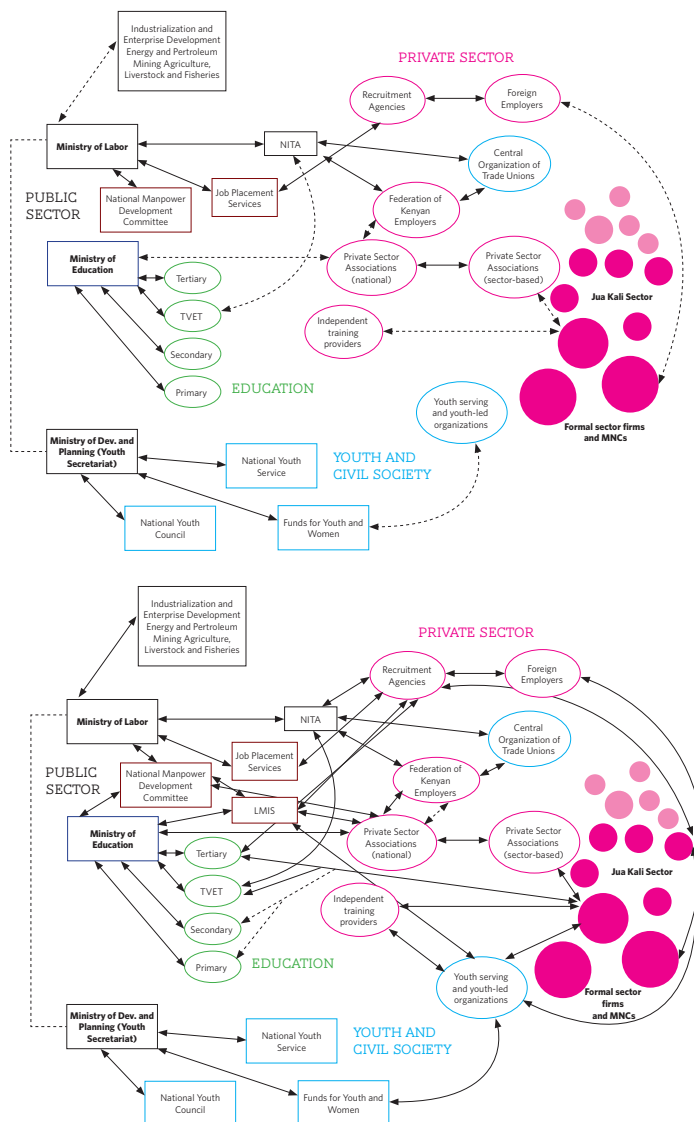
In the context of an LMA, a simple SNA would identify the key stakeholders in the system and the degree to which they coordinate to the degree necessary, as well as identify emerging sources of social capital where new approaches may be gaining momentum.

Analysis of the changes in a network over time is especially useful for monitoring and evaluation.⁵⁴ Improvements over time in the number and quality of linkages, and especially the emergence of hubs and new segments may serve to validate predicted intermediate outcomes. Network visualizations can also lead to qualitative insights into emerging network dynamics.

The left-hand portion of Figure 14 shows an illustrative version of the baseline map that a short SNA could generate, while the right-hand portion shows a vision for a preferred future network.

⁵⁴ For an excellent overview of theory and practice, see Giuliani, E. and Pietrobelli, C. (2011). Social Network Analysis Methodologies for the Evaluation of Cluster Development Programs. November. Inter-American Development Bank.

Figure 14. Kenya Workforce Development Network (current and potential future)



Source: *Workforce Connections/FHI 360, Kenya Youth Assessment, July 2014.*

An SNA survey usually takes about seven weeks in order to properly map a system (larger systems will take longer). A more limited SNA, focusing only on the participants in a labor market assessment, could be conducted in a shorter amount of time—such as the three-week time frame of a rapid LMA with an additional week for finalization and analysis—but only if the proper preparations are made in advance.

STEP ONE (IMMEDIATELY OR PRIOR TO LMA)

- Agree upon the system within which to track the social network (geographic area).

STEP TWO (ONE WEEK)

- Map/Define the system: Who are the stakeholders to be surveyed?
- Conduct initial meetings at the level of the system to be addressed to create Cross-sector Advisory Committees. (*This can be done informally and quickly if the assessment team moves fast.*)

STEP THREE (ONE WEEK OR SKIP)

(This step can be skipped by the assessment team, which would then need to make every effort to try to identify at least four representatives of every stakeholder group. Sixty to 100 stakeholders should be interviewed for interesting data—on the lower end for smaller systems, and on the higher end for larger systems.)

- Create Cross-sector Advisory Committee (CAC). Plan for two meetings to determine stakeholder database (mapping the entire system).
- CAC maps the stakeholders related to the issue: team creates the database of partners following the recommendations of the CAC. This must be done by a cross-sector committee to best understand the real scope of the system we intend to impact.

STEP FOUR (ONE WEEK)

- Hire enumerators to conduct SNA (preferably led by someone who has worked with the assessment team in setting up the interviews).
- Prepare questions for survey and customize project indicators.
- Upload stakeholder database into survey tool.
- Train enumerators in-country.

STEP FIVE (ONE WEEK OR MORE)

- Conduct survey. (A typical survey takes 15 minutes to conduct; depending on the number of enumerators and the size of the system, the survey could possibly be done in one week.)

STEP SIX (ONE WEEK)

- Analyze the information and produce graphs and analyses of network characteristics.

• Where can I find more information?

Borgatti, S. P., Everett, M. G., & Johnson, J. C. (2013). Analyzing social networks. SAGE Publications Limited.

Giuliani, E., & Pietrobelli, C. (2011). Social network analysis methodologies for the evaluation of cluster development programs. Inter-American Development Bank. <https://publications.iadb.org/bitstream/handle/11319/5342/IDB-TN-317%20Social%20Network%20Analysis%20Methodologies%20for%20the%20Evaluation%20of%20Cluster%20Development%20Programs.pdf?sequence=1&isAllowed=y>

Additional systems approaches with relevance for LMAs

A number of other tools and approaches can be used to understand the systems in which labor markets function. Several of these are detailed in a USAID Bureau of Policy, Planning and Learning (PPL) [technical note](#) providing guidance for using the 5Rs Framework, “a practical methodology for supporting sustainability and local ownership in projects and activities through ongoing attention to local actors and local systems,” in the program cycle. The 5Rs stand for what USAID PPL considers the five key dimensions of systems: Results, Roles, Relationships, Rules and Resources.⁵⁵

The International Labour Organization’s [Employment Diagnostic Analysis: A Methodological Guide](#) describes an “employment diagnostic reference tree,” which starts from “a broad array of often interrelated factors” to

⁵⁵ “The 5Rs Framework in the Program Cycle,” Version 2.1, October 2016. Retrieved from https://usaidlearninglab.org/sites/default/files/resource/files/5rs_techncial_note_ver_2_1_final.pdf

funnel down through “a structure process of elimination and disentanglement of causal links” that “results in a stepwise narrowing down of the focus and in the identification of core constraints, challenges, and opportunities for inclusive job-rich growth.”⁵⁶ RTI has developed a [Workforce Development Ecosystem Assessment tool](#)⁵⁷ for mapping complex workforce development systems and diagnosing their performance from a stakeholder perspective. RTI intentionally took an “institutionally agnostic” approach to this mapping, choosing to focus on functions and processes rather than certain institutions or individuals.

Workforce Connections has also developed and supported the development of additional systems tools in the labor market or workforce development context. For example, during the process of a labor market assessment, Workforce Connections creates a stakeholder map to determine the main actors in each of five groups (government, donors and implementers, education, employers, and the workforce), and the intermediaries that connect them. This also serves the purpose of showing where the introduction of new stakeholders or intermediaries might help the system function better.

MODULE 5. POLICY

Tools and approaches in this section help the user identify key policies, regulations, and institutions that may be impacting the labor market.

Why is it important to understand the policies that can impact a labor market?

Labor markets are affected by a wide range of policies. Indeed, **policies set some of the rules of a system, so this and the prior module necessarily go hand in hand.** Relevant policies obviously include labor market policies, such as training and job-search assistance (examples of active labor market policies that increase employability and aid in placement of the unemployed) and unemployment insurance (an example of a passive labor market policy to replace income). Of course, they also include policies that set a minimum wage (a form of price-control policy) and regulate hiring and firing, worker protections, and employee benefits. But there are many other areas of policy that we might want to think about when carrying out a labor market assessment. Macroeconomic policies can provide the stability necessary for firms to start up, expand, and create jobs, for example through fiscal policies that may incentivize employment generation and training. Trade and investment policies may spur (or deter) growth in particular industries, also affecting employment and skills needs. The treatment of informal businesses affects the many workers who find themselves in informal jobs, and the dynamics of the informal labor market. All of these policies may have outsize effects on micro, small, and medium enterprises (MSMEs) that do not have the resources to adapt; in developing countries, MSMEs count for around 70 percent of employment.⁵⁸

On the supply side, education policies will affect who gets education and training, who progresses through the system, what types of education and training are available, and who pays for what. And finally, structural policies impact how institutions coordinate with each other and manage and target public funds to improve functioning of the labor market.

⁵⁶ International Labour Office, Employment Sector, “Employment Diagnostic Analysis: A Methodological Guide,” Geneva, ILO, 2012. P. 49.

⁵⁷ See presentation at http://www.wfconnections.org/ecosystems_assessment_tool

⁵⁸ Gonzales, E., Hommes, M., & Mirmulstein, M.L. (2014). MSME Country Indicators 2014: Towards a Better Understanding of Micro, Small, and Medium Enterprises. Analysis Note. December. International Finance Corporation. Accessed April 19, 2017. <https://www.smefinanceforum.org/sites/default/files/analysis%20note.pdf>

How can the process of analyzing labor-market-relevant policies support an assessment?

It is important for those engaging in or utilizing labor market assessments to understand how the actions and practices of the government may be impacting the supply of and demand for labor and how the two are intermediated. **Even if addressing such policies lies beyond the stakeholder's purview or sphere of influence, such analysis is crucial to form a picture of how the labor market functions, and give a sense of the factors that might enable or hinder the effectiveness of labor market interventions.** Like systems and stakeholders analysis (Module 4)—to which it is directly linked⁵⁹—this process should occur simultaneously with understanding the nature of supply and demand for labor, starting at the big-picture level with information that can be gathered via desk research, with the analysis getting more specific through interviews with experts, government officials, employers, and others.

Approach 5a: Enabling Environment for Spurring Employment

This approach highlights the policy areas impacting the labor market, allowing users to understand the enabling environment in spurring employment and inclusive growth in the economy, and the extent to which policy changes can more effectively contribute to those outcomes.

- **Why is this approach important?**

By focusing on a range of relevant policies, implementers can identify key policy issues affecting both the supply and demand for jobs and labor, rather than focusing only on labor policy, a necessary but insufficient lever for improving employment.

- **How does this approach help me understand information?**

Researchers will gain a deeper knowledge of all aspects of the labor market by going through each policy area and gathering answers to relevant questions. These specific questions are designed to help researchers delve into all areas of policymaking, both in conducting desk research and in stakeholder meetings in the field. By understanding the relevant policies, implementers and policymakers can understand how these interact to influence and incentivize stakeholders' behavior and produce labor market system dynamics and outcomes. This understanding can allow them to pinpoint areas of success as well as areas of possible improvement and reform.

- **How do I use this approach?**

This questionnaire guides the user through some key questions to ask during the desk and field research phases of an LMA, to better understand which policies might be impacting the labor market and how. The policy section of an LMA will identify the most pertinent policy issues, getting deeper into detail on specific policies in the relevant sections (economic context, demand for skills, supply of skills). During the research phase, users will identify which of these questions may be important to ask in a specific context, and gather answers through desk research and/or field work, including interviews with policymakers and others from the relevant stakeholder groups (for example, the public sector, private sector, education and training sector, and labor market intermediaries, as well as representatives of the workforce and any specific populations such as youth and women). The findings from this investigation will indicate which policy areas currently hinder functioning of the labor market, which areas currently contribute to better outcomes, and how.

⁵⁹ For example, in many countries different ministries each fund some part of youth programming for employment. Yet they do so in isolation from each other, thus ensuring that they do not learn or leverage from each other's investments.

FHI 360's experience is that certain policy issues arise in many labor market assessments. For example, across the majority of developing countries, barriers to formal business registration and operation, combined with employers' motivation to avoid paying social benefits, lead to informality of both firms and employment. Issues relating to lack of coordination and information-sharing between labor market stakeholders (the public, private, and education sectors) are endemic, and often lead to students being trained for nonexistent careers or jobs, with obsolete technology, and by out-of-touch instructors. And in countries where employers are assessed a payroll tax that finances a public training institution, that institution may only train existing workers (not jobseekers) and/or be perceived as poor quality.

Table 5. Enabling Environment for Spurring Employment: Policy Questionnaire

MACROECONOMIC POLICY	
FISCAL	<ul style="list-style-type: none"> • Are there fiscal stimulus packages to create jobs? • Are there hiring subsidies/tax breaks for hiring? • Are there subsidies/tax breaks for training or training on the job? • Is there an earned income tax credit?⁵⁸ • Is there differential taxation on income derived from capital and from labor?
TRADE, INVESTMENT, AND COMPETITION POLICY	
INDUSTRIES/ INNOVATION	<ul style="list-style-type: none"> • For small economies, is there an explicit policy of export-oriented development? • Are conditions favorable to knowledge-transferring Foreign Direct Investment (FDI)? • What are the explicit or implicit structural economic policies (which types of value chains are being supported)? (Distinguish between manufacturing, IT, public sector, personal services, and so forth.) • Are there specific innovation policies, including institutional coordination of investments in research and development across the public, private, research, and education sectors? • Are there regulations regarding automation?
DOING BUSINESS	<ul style="list-style-type: none"> • What are the key barriers to investment and doing business (varying by value chain), in the areas of, for example, enforcing contracts, property rights; finance; trade facilitation/customs, and others? • What are impediments to free and fair competition within industry sectors?⁵⁹
LABOR AND SOCIAL PROTECTION POLICY	
FORMAL	<ul style="list-style-type: none"> • What are bottlenecks in formal laws and regulations governing labor from the employer perspective? • What are bottlenecks in formal law and regulations governing labor from the worker perspective? • What are the implementing institutions and practices in the formal sector?
INFORMAL	<ul style="list-style-type: none"> • What are the practices (institutions) in the informal sector? • What are the major labor exchanges (that is, search mechanisms for workers and employers) and how well do they work?

⁶⁰ See Tan et al. (2012), p. 4

⁶¹ <http://www.doingbusiness.org/>

ACCESS AND EQUALITY

EDUCATION POLICY

- What are the conditions for accessing education? (Payment of fees, prior formal educational attainment, birth certificate or proof of citizenship, and so forth.)
- Is there mobility (such as between non-vocational and vocational training) and alternative education and/or equivalency/adequacy programs, or is the education system rigid?
- To what extent are there opportunities for people of all education levels to access training and education? Is there active support of online learning, for example through enabling ICT infrastructure?

SKILLS

- Is investment in education aligned with targeted or growth sectors?
- What mechanisms exist for private sector input into or participation in training/educational priorities?
- How flexible are post-secondary institutions' response mechanisms to changes in skills needs?
- What is the quality and use of licensing or certification available (including presence of certification bodies in-country)?
- Do government or private sector institutions offer incentives for students to pursue specific academic or technical subjects, domestically or abroad?

INSTITUTIONAL COORDINATION AND CAPACITY

OTHER STRUCTURAL FACTORS

- What are the formal coordination mandates of the Ministry of Labor vis-à-vis other relevant departments such as Ministries of Education, Higher Education, and/or Youth?
- Are there institutional bodies governing coordination (such as a workforce development authority or related organization)?
- What are the institutional dynamics influencing the labor market?
- Are mechanisms in place to ensure that public funds for labor market and workforce development are efficiently managed?

DIRECT MEASURES

- Are there arrangements/subsidies to guarantee additional training and/or a job for certain populations?
- Does the government support training or other measures to transition some workers from declining industries?
- Are there incentives for competitive technology choices by investors and firms?

Additional policy approaches with relevance for LMAs

Additional examples of tools for understanding how policies impact the labor market include the World Bank's Systems Approach for Better Education Results tool for assessing workforce development systems ([SABER-WfD](#)), which focuses on "how well the system is equipping individuals to meet the demand for skills in the labor market" by examining strategy, system oversight, and service delivery.⁶² The World Bank's [Doing Business Project](#) "provides objective measures of business regulations for local firms in 190 economies and selected cities at the subnational level," including data for labor market regulation, with multiple years of data available for most countries.⁶³

MODULE 6. ALIGNMENT

Once the work has been done to gather and analyze information on the economic and demographic context of a labor market, current and potential employment demand and specifically demand for skills, the nature and availability of labor supply, the systems within which the labor market is operating, and the relevant policies, it is up to the user to make sense of the results and draw out the key findings to provide actionable intelligence relevant to the specific context.

For example, USAID's [Advance](#) regional workforce development program⁶⁴, implemented by FHI 360 in [Guatemala](#)⁶⁵, [Honduras](#)⁶⁶, and [Jamaica](#)⁶⁷, has conducted labor market assessments that include elements of each of the core modules. The analysis is being shared with education, private sector, and government stakeholders to inform the process of bridging the gap between existing technical education offerings and labor market needs and improve the capacity of target tertiary technical institutions. Specifically, the LMAs highlighted the knowledge and skills identified by employers as important to expansion in key potential growth subsectors, but difficult to find among the existing labor force.

The assessments have prompted different initiatives in different countries. In Honduras, universities are interested in learning how to carry out assessments themselves so that they may better adapt offerings to market demand; while in Guatemala, dissemination of the results is bringing together diverse groups of stakeholders to debate and devise solutions to employment challenges in the country's Western Highlands. In these countries as well as in Jamaica, the value chain analysis in particular, paired with an assessment of related educational offerings, has spurred actors from many parts of the labor market system to engage with the analytical findings and come together to identify interventions to their respective labor market challenges.

For the [USAID Career Center](#)⁶⁸ project implemented by FHI 360 in Morocco, rapid industry analyses were undertaken in each of the three regions where career centers have been established to inform the type and focus of information and services provided to students. Career center staff are being trained in industry analysis methodology to provide them with skills to assess local labor market opportunities and continually improve and tailor the services they provide, ensuring the sustainability of the centers.

After conducting assessment fieldwork in Lebanon, the team validated initial findings in a stakeholder workshop and worked with participants to develop and commit to potential responses to the country's youth employment challenges, in an activity dubbed the "Breakfast of Champions."

⁶² See Tan et al. (2012), p. 4

⁶³ <http://www.doingbusiness.org/>

⁶⁴ <https://www.fhi360.org/projects/advance>

⁶⁵ http://www.wfconnections.org/1001_guatemala_labor_market_assessment

⁶⁶ http://www.wfconnections.org/1000_honduras_labor_market_assessment

⁶⁷ http://www.wfconnections.org/1002_jamaica_labor_market_assessment

⁶⁸ <http://vcc.careercenter.ma/vcc/>

Under the USAID-funded, FHI 360-implemented Accelerating Strategies for Practical Innovation and Research in Economic Strengthening (ASPIRES) project, which is working to support gender-sensitive programming, research, and learning to improve the economic security of highly vulnerable individuals, families, and children.⁶⁹ Teams will be carrying out job demand market assessments in selected DREAMS countries to identify employment and self-employment opportunities for adolescent girls and young women; the analysis will inform a pilot program to address the needs of these target populations.

As has been noted, assessments may be undertaken in a variety of different contexts, so we will not attempt to give specific guidance on next steps. However, it is best practice to communicate results and findings back to participants and other relevant stakeholders. This will help avoid survey fatigue and go a long way to ensuring that the information in the assessment is absorbed and used—ideally, even beyond the specific use for which it was commissioned. Especially if multiple labor market assessments are being carried out in the same place over time (or even if a discrete piece of analysis is being updated, such as sector selection or social network analysis), validating and ground-truthing results with respondents, and continuing to update them on how the information is being used, can result in much richer and more valuable findings.

Conclusions

This publication outlines the six areas that we consider key to conducting a labor market assessment, and shares a number of tools and approaches for each one, with specific examples and additional references. It presents a set of approaches at a particular point in time—but it should be emphasized that Workforce Connections is continually refining and adapting these tools and approaches to new contexts and needs, and will be sharing them on the project website and housing them in an open-source repository after the project comes to an end. Workforce Connections continues to actively welcome and learn from the knowledge and experience of a wide spectrum of workforce development stakeholders, who are encouraged to share their own approaches with the community of practice by contacting project staff or by uploading them to www.wfconnections.org.

⁶⁹ <https://www.fhi360.org/projects/accelerating-strategies-practical-innovation-and-research-economic-strengthening-aspires>

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ANNEX A. SAMPLE VALUE CHAIN INTERVIEW GUIDE

KEY: (D) Director • (M) Manager • (HRM) Human Resource Manager • (E) Expert

1. Description of Business

- a) Can you provide a brief description of your business, size of business, how many years in operation; where you operate in the country and/or internationally; how many people you employ, etc.? **(D)**
- b) Looking at the sample value chain, where and how do you operate within the value chain? **(D)**

2. Principal Products

- a) What goods or services does your company produce and/or provide? **(D, M)**
- b) Are your goods or services principally designed to serve the local market (on the parish level), national market, or export market? If export, please explain where and how a good is exported, what other actors are involved, etc. **(D)**
- c) How do you market existing and new products (social media, direct sales to existing customers, other forms of advertising, etc.)? **(D)**

3. Structure of Value Chain

- a) Based on the size of your business, can you describe the production (or service) process from imported and input supplies to the time of delivery of the finished product or service to end market? **(D, M)**
- b) Specifically... What local input and/or imported supplies are necessary for production/to provide your service? **(D, M)**
- c) How do you obtain these materials/goods? (A distributor, or direct sales, etc.)? **(D, M)**
- d) Once producer obtains input/imported goods, what is the production process like? **(D, M)**
- e) Are there intermediaries or cooperatives that manage production at more advanced stages of the value chain? **(D, M)**
- f) Are there other important actors such as wholesale distributors, exporters, local retailers, etc., that you interact with based on the size and market of your production? (E.g., SME may be more likely to sell to local retailer, whereas a large business may focus more on export markets.) **(D, M)**
- g) Do you have any contracted workers that provide part-time work, such as maintenance, cleaning, food services, or are all your employees full time? **(D, M, HRM)**
- h) Are there external service providers at any stage of the value chain that also provide an important service such as maintenance technicians, transportation and logistics services? At what stage of the process do they exist? **(D, M)**
- i) What are the principal limitations that affect productivity in your business and throughout the value chain? This can include human capital (knowledge, technical, and “soft” or socio-emotional skills, attitudes) of workers; cost of energy; business environment; lack of access to necessary or more advanced technology; accessibility of input goods/maintenance technicians. **(D, M, E)**
- j) Where are these limitations most pronounced and why? **(D, M, E)**
- k) How are these limitations addressed by the firm and/or by the industry? Where are there possible solutions? **(D, M, E)**
- l) Looking at the sample value chain and based on our conversation, does the flow of production, actors included, and relationships among them as illustrated (show sample) make sense? Do you have additional suggestions that would help us better understand this sector’s value chain? **(D, M)**

4. Structure and Competencies of the Labor Force

- What are the critical positions within your business that guarantee success (of the production process/service delivery, if applicable)? **(D, M, HRM, E)**
- Fill in chart answering the following questions:
- Are there competitive advantages of hiring employees with technical education? **(D, M, E)**

[illegible]

NAME OF POSITION	KNOWLEDGE	SKILL	ATTITUDE

- d)** What are the top competencies (knowledge, skills [socio-emotional or soft skills], attitudes) required for these positions in the value chain? **(M, HRM, E)**
- e)** What are the limitations of competencies that you see in employees who work in these positions, specifically those responsible for technical functions? **(M, HRM, E) 5)**

5. Recruitment and Training

- a) How do you manage the process of recruiting and hiring new employees? **(M, HRM)**
- a) What obstacles do you encounter in the recruitment and hiring process? **(M, HRM)**
- a) What are the characteristics or criteria that qualify a person to be hired within your firm/organization? **(M, HRM)**
- a) Do you have problems finding appropriately qualified employees? Explain. **(M, HRM)**
- a) Once an employee is hired, specifically those in technical roles, do you require internal training processes or orientation-type programs? How long does internal training take and why? **(M, HRM)**
- a) What is the focus of internal training? Technical or “socio-emotional”/soft skills training? **(M, HRM)**
- a) If training is to compensate for weaknesses in knowledge/skills/attitude of personnel, what efforts take place on the industry level to compensate for these labor force/human capital weaknesses? Are the universities involved? **(D, M, HRM)**

6. Technical Education

Thinking about the positions that require technical education at a university...

- a) Where do your employees come from (universities or other companies that have a technical university education)? Is there a reason for this? **(M, HRM)**
- b) From your perspective, what are the strongest educational institutions that serve your business/industry? Why? **(M, HRM, E)**
- c) What are some of the challenges/limitations of these workers (knowledge, socio-emotional skills, attitudes, etc.)? **(M, HRM)**
- d) What interaction do you have with technical training institutions, technical universities, etc.? (Include internships, career fairs, direct recruitment, etc.) **(M, HRM)**

7. In the Future

- a) What technical positions and skills do you think will be demanded by your business and/or the sector in the future? Is this in the short term (next 12 months), medium (1–3 years), or long term (3+ years)? **(D, M, E)**
- b) How will your industry have to adapt to new technologies? **(D, M, E)**
- c) How do you feel about your future business operations based on current economic/social conditions? **(D, E)**

8. To End

- a) Do you have any additional comments; or is there something else we should consider? **(D, M, DHR, E)**
- b) Are there other actors/businesses/associations that we should speak with that may provide additional information? Could we use your name when making appointments? **(D, M, DHR, E)**
- c) Can you recommend any experts in the sector who can provide additional information? **(D, M, DHR, E)**

ANNEX B. SAMPLE FOCUS GROUP DISCUSSION GUIDE

Welcome Facilitator(s): <ul style="list-style-type: none"> ▪ Read Consent Script. ▪ Introduce yourself and the recorder and explain purpose of the discussion. ▪ Set ground rules: include privacy, listening to others, taking turns, turning off phone. ▪ Answer questions. 	
Sample Questions for Unemployed Youth Job Seekers (Short- and long-term unemployed)	Related Probes
1. How long have you been out of work?	
2. How long have you been looking for work?	
3. We'd like to find out from you what it's like to try to find a job here in <i>(insert name of region)</i> . What is working and what is not working in terms of finding and keeping a job here?	<ul style="list-style-type: none"> ▪ What is working and what is NOT working?
4. What in your view should/could be done to make things easier in terms of finding and keeping a job?	<ul style="list-style-type: none"> ▪ What is the cost of education and how affordable is it for you and others in your community?
5. Do you believe that you have the information you need about where jobs are and how to find them?	<ul style="list-style-type: none"> ▪ What are your sources of information and how helpful are they?
6. Did your education prepare you to have the skills you need to find and keep a job? If so, in what way?	<ul style="list-style-type: none"> ▪ What, if anything was missing from your education in terms of helping you find and keep a job? ▪ In your last job, did you have all the skills you needed?
7. If you were previously employed, why do you think are you not employed now?	
8. Do find that you have the skills you need to get available jobs here?	<ul style="list-style-type: none"> ▪ What skills are most important to <u>find</u> a job? ▪ What skills seem to be most important to <u>keep</u> a job?
9. Can you tell us about how effective you feel the job training/education/other career orientation and job search services you have received are?	<ul style="list-style-type: none"> ▪ Are you in a training program now? Can you tell me about it? ▪ What education/training, career orientation, or job search programs work well? Why do you think so? ▪ Which education/training, career orientation, or job search programs are not working well and why do you think so?
10. Do you know other youth similar to you who have jobs that would interest you?	<ul style="list-style-type: none"> ▪ What types of jobs do they have and how did they get them?
11. If you were to make 3 recommendations for making it easier to find and keep a job, what would your top 3 be?	

