Understanding Sector Selection Methods:
A Tool for Implementing Labor Market Assessments

This guide presents an overview of how and why to select specific sectors as part of a labor market assessment (LMA). It covers how to identify which sectors are the largest employers; which are the most competitive in export markets; where there is the greatest potential for growth, for job creation and, ideally, employment of the target population(s).

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

How would the results be used? If certain sectors have a high potential to generate jobs, but are being held back due to specific constraints, a growth-oriented program could address those constraints. Alternatively, in a “skills-first” approach, the results can be used to identify the highest priority occupations and skills bottlenecks.

Step 1: High Level Review

Most central statistical agencies publish a Statistical Abstract with employment data for roughly 20 broad sectors over several years. Figure 1 was generated using such data for Kenya, by calculating the growth in employment between 2009 and 2013, re-ordering the sectors based on highest to lowest employment growth. Taking the top ten 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. ²

In the case of the Kenya LMA, a good deal of additional research merely served to confirm 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 ten sectors are by and large also the best targets for informal employment generation as well.

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² 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.
In some LMAs, Step 1 will be sufficient. Where assessment or client priorities require that more systematic and rigorous methods be applied, these additional steps can be undertaken.

**Step 2: Creating a “long list” of potential sectors**

In order to be meaningful, the detailed sector selection approach requires narrower sector definitions. While ‘manufacturing’ in Figure 1 comprises only one sector, most national statistical agencies conduct a manufacturing census with twenty or more sectors within manufacturing alone. Based on interviews and literature review, additional sectors in agriculture and services will emerge, leading to creation of the “long list” of 40-50 sectors, which is the widest possible universe from which the selected sectors will be drawn.

Since it is not always easy to predict at what level of detail supplementary information will be available, at this stage it is not crucially important that these sectors all be defined at the same level of detail, and their definitions may even overlap. For example, ‘cut flowers’ may be listed separately from ‘horticulture’, even though strictly speaking it is a horticultural product.

**Step 3: Develop Sector Selection Criteria**

Selection criteria will vary depending on local priorities. However, there are generally three distinct sets of criteria, as shown in Figure 2. The sector’s potential to generate employment growth is a necessary

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3 This level of detail is needed in order to drive the input-output table that is normally the core of all national accounts systems. Even if this data is not published, it almost certainly exists and knowledgeable local sources may be able to give you access to it if you know what to ask for.
requirement to become shortlisted. Once shortlisted, the remaining criteria become the major factors in the final selection.

**Figure 2: Sector Selection Categories and Criteria**

Forecasting Job Growth

Why use indicators other than “employment” to predict job growth? Sector selection is inherently problematic, because the data only cover the past, but we’re interested in the future: which sectors will create the most employment in the coming years? 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 have been used to provide more insight. For example, growth in exports is often seen as an indicator expanding capabilities in a given sector, suggesting a minimum threshold of competitiveness has been reached. Increases in investment, particularly foreign direct investment (FDI) is an even 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.

Some of the most interesting work on longer term sector selection comes from the analysis of economic complexity. By tracing the historical correlations between growth spurts in exports of a given product and subsequent growth spurts in other products, product space analysis can provide tantalizing indicators of which sectors are most likely to surge in the coming five to ten years. 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. While the results of a product space analysis are often presented using a product space

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visualization, for the purposes of an LMA a simple table showing the number of linkages to a given sector is less distracting and more likely to be effective in presentations.

**Step 4: Final Selection of Sectors**

The aim is to develop a single table that provides a systematic ranking of all sectors, taking all of the criteria into account. This is not meant as a formula that dictates a specific outcome, but as an ‘expert system’ that helps decision makers to evaluate the implications of different choices. For example, such a system can help decision makers to see how the rankings change when they apply greater weight to specific criteria.

The starting point is to create a table with as much data as possible regarding employment, exports, productivity and investment for each sector. Single point estimates are helpful, but time series are much more valuable, since growth is generally more important than sheer size. Ideally, enough quantitative information is available to create an index based on some combination of size and growth of these five key indicators.

In practice, such data can seldom be assembled during a short assessment, so construction of a more qualitative “sector appraisal matrix” (SAM) is recommended. This matrix translates each quantitative result into a score, on a scale from 1 to 7. This approach has two distinct advantages: knowledge from local and international experts can be incorporated as a score where quantitative data is not available, and additional qualitative criteria can also be incorporated within a systematic framework, as shown in Table 1. Note that the weight assigned to ‘future performance’ comprises 60% of the total score, while the weight assigned to ‘recent performance’ contributes only 15%. This ensures that the sector selection is forward-looking.

While most data (such as exports) are normally only available according to narrow product-based sectors, for the purposes of the final selection it is better to represent the sectors as value chains. Not only does this more closely align with likely programming options, but it also tends to create bundles of agricultural, manufacturing and service jobs, so that an artificial debate around choosing between those three broad sectors is avoided.

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5 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.  
Table 1: Sample Sector Appraisal Matrix for Country X

<table>
<thead>
<tr>
<th>Illustrative Data for Country X</th>
<th>Recent Performance</th>
<th>Future Performance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Exports</td>
<td>Productivity</td>
</tr>
<tr>
<td>Dairy</td>
<td>5.6</td>
<td>4</td>
</tr>
<tr>
<td>Fruit &amp; Vegetables</td>
<td>5.8</td>
<td>6</td>
</tr>
<tr>
<td>Food products &amp; beverages</td>
<td>6.9</td>
<td>7</td>
</tr>
<tr>
<td>Textiles</td>
<td>5.4</td>
<td>5</td>
</tr>
<tr>
<td>Wearing apparel</td>
<td>5.0</td>
<td>6</td>
</tr>
<tr>
<td>Chemicals</td>
<td>3.3</td>
<td>4</td>
</tr>
<tr>
<td>Pharmaceutical products</td>
<td>5.3</td>
<td>4</td>
</tr>
<tr>
<td>Medical Devices</td>
<td>4.9</td>
<td>5</td>
</tr>
<tr>
<td>Rubber &amp; plastics products</td>
<td>4.4</td>
<td>3</td>
</tr>
<tr>
<td>Fabricated metal</td>
<td>4.3</td>
<td>3</td>
</tr>
<tr>
<td>Machinery and equipment</td>
<td>4.3</td>
<td>5</td>
</tr>
<tr>
<td>Motor vehicles &amp; trailers</td>
<td>3.7</td>
<td>4</td>
</tr>
<tr>
<td>Furniture</td>
<td>4.3</td>
<td>4</td>
</tr>
<tr>
<td>Retail trade</td>
<td>4.5</td>
<td>5</td>
</tr>
<tr>
<td>ICT</td>
<td>4.4</td>
<td>6</td>
</tr>
</tbody>
</table>

By the end of the first week of the LMA, a consultation with the client or requesting organization and a broad set of stakeholders, 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 within selected sectors.

References:


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7 The sample spreadsheet with live formulas is available at [http://www.wfconnections.org](http://www.wfconnections.org)