Assessing Skills Mismatches
A perspective from the Asia – Pacific Region

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Outline

✧ A quick overview
✧ Some evidence of skills mismatches in developing Asia and Pacific
✧ Highlights from skills demand analyses in ADB education operations
✧ Looking ahead
Overview
Developing Asia-Pacific: a middle-income region

- Most of the developing Asia and Pacific region has reached middle-income status

Developing Asia economies

- More than 95% of developing Asia's population lives in middle-income economies

Population living in low, middle, and high income economies

Source: Estrada et al., forthcoming.
Improved access to education, but quality remains an issue

- Educational attainments have improved steadily
  - Gross enrollments in secondary and tertiary education are increasing
  - Average years of schooling has doubled from 4 in 1970 to 8 in recent years
- But
  - Disparities remain, both between and within countries
  - Quality and relevance are a major concern

[Graph showing test scores across Asian and OECD economies]

**Youth with secondary education and above (age 15-29)**

- Share


- Secondary Vocational
- Secondary General
- Tertiary Vocational
- Tertiary General

**PRC = People's Republic of China.**
**Source:** ADB estimates using data from labor force surveys.
Megatrends & challenges faced by developing Asia and Pacific

- Developing Asian and Pacific economies face specific challenges linked to their recent transition to middle-income status...
  - Drivers of growth and employment need to evolve, to focus more on improving productivity and promoting innovation
- ... and must deal with global megatrends affecting all regions
  - Fast-evolving technologies
  - Globalization and shifting trade patterns, including global value chains
  - Demographic trends – urbanization, aging
  - Climate change and exposure to disasters
Skills mismatches in developing Asia-Pacific economies
Routine and low-skilled occupations still predominate

Employment by sector

Employment & skills content

Share of employed workforce with secondary or tertiary education, by sector

PRC = People’s Republic of China.
Notes: Only latest survey year available for each country is used. ISIC Rev. 4 industry groups. Agriculture = 1–3; Manufacturing = 10–33; Other Industry = 41–43; Services (Low-Skilled) = 49–56, 94–98; Services (High-Skilled) = 58–93, 99.

Source: ADB estimates using labor force surveys. Data for the PRC is based on published survey results from the Tabulation on the 2010 Population Census of the People’s Republic of China.
Employers in Asia and the Pacific report difficulties in filling vacancies

Difficulty filling vacancies in Asia and the Pacific (in %)


Qualification mismatches

Educational attainments in high-skilled occupations

PRC = People's Republic of China.
Note: Only latest survey year available for each country is used.
Source: ADB estimates using data from labor force surveys.
Assessing skills mismatches
## Data collection across selected countries

<table>
<thead>
<tr>
<th></th>
<th>Labor force data</th>
<th>Enterprise data</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Collection rate</td>
<td>Occupational code detail</td>
</tr>
<tr>
<td>United States</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Republic of Korea</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Armenia</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Cambodia</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>China, People's Rep. of</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>India</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Indonesia</td>
<td>●</td>
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</tr>
<tr>
<td>Pakistan</td>
<td>●</td>
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<tr>
<td>Philippines</td>
<td>●</td>
<td>●</td>
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<tr>
<td>Thailand</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Viet Nam</td>
<td>●</td>
<td>●</td>
</tr>
</tbody>
</table>

- ●: Data fully collected on 4 or more of the indicated indicators.
- ○: Data collected on fewer than 3 categories.

Source: Various labor force and enterprise surveys.
**Highlights from ADB’s project preparatory documents**

### Nepal – Skills development project

<table>
<thead>
<tr>
<th>Research Tools Employed</th>
<th>Level of Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employer Survey, in selected provinces</td>
<td>1. Priority sectors (construction, services, manufacturing) in 9 industrial hubs</td>
</tr>
<tr>
<td></td>
<td>2. Focus on occupations in high demand</td>
</tr>
<tr>
<td></td>
<td>a. <em>Construction</em>, e.g. overseers, special construction machine operators, masons</td>
</tr>
<tr>
<td></td>
<td>b. <em>Services</em>, e.g. housekeepers, marketing and sales employees, IT support staff, chefs, waiters</td>
</tr>
<tr>
<td></td>
<td>c. <em>Manufacturing</em>, e.g. steel industry occupations, garment workers, wood workers</td>
</tr>
<tr>
<td></td>
<td>3. Questions on technical and general skills needed</td>
</tr>
</tbody>
</table>

Sample size: 306 employers
Geographical coverage: 9 industrial hubs
Sectoral coverage: 3 sectors – construction, services, manufacturing

The survey included questions on employers’ future occupations needs, specific skills needed in main occupations, assessment of the quality and relevance of current education and training programs, migrant workers, etc.
The employer survey confirmed low educational attainments and little technical training, particularly in the construction sector.
### Nepal – Skills development project

**Skills missing in selected construction sector occupations, as reported by employers**

<table>
<thead>
<tr>
<th>Skill Category</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>More general technical knowledge*</td>
<td>12</td>
</tr>
<tr>
<td>More practical skills</td>
<td>10</td>
</tr>
<tr>
<td>More theoretical knowledge</td>
<td>8</td>
</tr>
<tr>
<td>Better communication skills (reading)</td>
<td>6</td>
</tr>
<tr>
<td>Better communication skills (writing)</td>
<td>4</td>
</tr>
<tr>
<td>Better communication skills (speaking)</td>
<td>2</td>
</tr>
<tr>
<td>Better mathematical skills</td>
<td>1</td>
</tr>
<tr>
<td>Computer skills</td>
<td>1</td>
</tr>
<tr>
<td>Better and more energetic attitude to work</td>
<td>1</td>
</tr>
</tbody>
</table>

* such as codes and regulations to suit the enterprise

- Survey results highlighted missing skills in selected occupations,
- But sample size was small, making it difficult to generalize.
**Highlights from ADB’s project preparatory documents**

**Nepal – Skills development project**

Q: If employment opportunities in your line of business are good, why are they not filled by Nepali workers?

- **Migration of Nepali workers**
  - Employers reported that workers went overseas for higher wages
  - Nepalese employers reported a preference for recruiting foreign workers regarded as more flexible and easier to manage
**Mongolia – Skills for employment project**

- **Research Tools Employed**
  - To complement labor force survey data,
  - Qualitative interviews with employers
  - Meetings with key stakeholders
  - Focus group discussions*

<table>
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<th>Research Tools Employed</th>
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<tbody>
<tr>
<td>To complement labor force survey data,</td>
<td>1. Occupations in demand (currently and in the future)</td>
</tr>
<tr>
<td>✓ Qualitative interviews with employers</td>
<td>2. Types of skills valued by employers for specific occupations</td>
</tr>
<tr>
<td>✓ Meetings with key stakeholders</td>
<td>3. Type of training provided by employers for new hires</td>
</tr>
<tr>
<td>✓ Focus group discussions*</td>
<td>4. Forms of cooperation between TVET schools and employers</td>
</tr>
</tbody>
</table>

* with TVET students, recent graduates, unemployed, and persons with disabilities

** Sample size: 101 employers
** Geographical coverage: 4 regions
** Sectoral coverage: 10 sectors**

- Qualitative interviews to assess employers’ current and future occupations needs, specific skills needed in main occupations, as well as their views on the relevance of vocational training programs

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** 1) construction; 2) road construction and maintenance; 3) agriculture; 4) transportation; 5) manufacturing; 6) light industry /wool, cashmere, and food processing/; 7) mining; 8) power energy and heat processing and supply; 9) water supply, sewage, waste management remediation activities; 10) wholesale, retail trade, repair of motor vehicles /mostly equipment supplier, dealers and maintenance
Highlights from ADB’s project preparatory documents

Mongolia – Skills for employment project

- More than half of employers interviewed (58.4%) did not know how to determine job-specific technical skills.
Mongolia – Skills for employment project

- More than half of employers interviewed (58.4%) did not know how to determine job-specific technical skills for trade occupations.

Type of skills emphasized by employers:

- Only technical: 9%
- Only foundational: 0%
- Only soft: 52%
- Both technical and soft: 10%
- All three (foundational, technical, soft): 5%
- No specific response provided: 24%
- No specific response provided: 24%
Mongolia – Skills for employment project

- Over two-thirds of interviewed employers provide some training to new hires
- Most apprenticeship and on-the-job training focus on technical skills, suggesting that training programs lack relevance
- Most firms do not develop specific training programs, providing ad-hoc training

Training provided by employers
# Highlights from ADB’s project preparatory documents

## Bangladesh – Skills for Employment Investment Program

<table>
<thead>
<tr>
<th>Research Tools Employed</th>
<th>Level of Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Primary data:</td>
<td>1. Current and future demand for different types of</td>
</tr>
<tr>
<td>Employer surveys, focus</td>
<td>occupation in each sector</td>
</tr>
<tr>
<td>group discussions, key</td>
<td>2. Mapping and analysis of occupations and</td>
</tr>
<tr>
<td>informant interviews</td>
<td>qualifications</td>
</tr>
<tr>
<td>2. Secondary data:</td>
<td>3. Adequacy of current training programs and training</td>
</tr>
<tr>
<td>Quantitative data analysis</td>
<td>needs assessment</td>
</tr>
<tr>
<td>using census, labor force surveys, and other administrative sources</td>
<td></td>
</tr>
</tbody>
</table>

* Macro-level analysis – labor force projections
* Micro-level analyses - detailed sector assessments in 9 industries*
* Geographical coverage: nationwide

* Light engineering, construction, IT, shipbuilding, leather goods, agro-processing, healthcare, hospitality & tourism
In the Ready Made Garment industry, employers report skills shortages as the major constraint to growth.

Skills content of jobs is also evolving towards more skilled occupations, requiring more autonomy.

**Bangladesh – Skills for Employment Investment Program**

- **Skills for Employment Investment Program**

<table>
<thead>
<tr>
<th>Year</th>
<th>Skilled</th>
<th>Semi-skilled</th>
<th>Unskilled</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>100%</td>
<td>80%</td>
<td>20%</td>
</tr>
<tr>
<td>2015</td>
<td>100%</td>
<td>80%</td>
<td>20%</td>
</tr>
</tbody>
</table>

Unskilled: Needs close supervision to perform any function and does not have an experience of any skilled/semi-skilled job in the RMG sector.

Semi-skilled: Can perform only one function without supervision.

Skilled: Can perform more than one function without supervision.
In the light engineering industry, surveyed employers appear relatively satisfied with workers’ basic knowledge and technical skills. However, they rated skills needed to achieve higher degrees of mastery extremely poorly (e.g. accuracy, precision) and emphasized the absence of transversal skills, such as trouble shooting or communicating.
Assessing skills mismatches
Looking ahead

Need for a clear framework

- Defining skills and skills mismatches
  - Concepts and understanding vary across regions, countries, sectors
  - Need for a common framework

- Proxies to assess skills mismatches
  - Currently:
    - Qualifications (level and field)
    - Ad-hoc questions on skills
    - Tools developed by PIAAC and STEP (more sparingly)
  - Looking ahead:
    - Refine and mainstream these new assessment instruments
    - Explore other options as well (datamining)
Beyond traditional surveys

- Current sources...
  - Labor force surveys
  - Individual and employer surveys
  - Tracer studies
  - Qualitative tools (e.g. focus group discussions, key informant interviews)
- ... present many limitations
  - Timeliness
  - Cost
  - Quality of survey instruments
  - Sampling
- Alternatives?
  - Data mining of professional networking platforms could provide valuable data in real time