



International
Labour
Organization

► Productivity growth, diversification, and structural change in the Arab States

Yemen Country Profile



► 1. Introduction

This country snapshot starts with a historical overview of macroeconomic labor productivity trends in Yemen, one of the poorest countries in the Arab world. Subsequently, it provides an overview of Yemen's contemporary business environment and prospects based on the 2021 ILO enterprise survey on productivity growth, diversification, and structural change.

In addition to highlighting the position of Yemen relative to other Arab economies and global frontiers¹ in terms of labour productivity, the first part (section 2) of this snapshot documents the trends in labour productivity and the relative contributions of labour productivity and employment growth to aggregate output growth. The structure of an economy is important in determining a country's productivity trends, both due to technological change and productivity growth within industries, and the potential for enhancing productivity by shifting resources to more productive uses. Therefore, this section also examines the evolution of the structure of Yemen economy, in terms of industry composition of employment and output compared to the Arab economies' average.

In the second part (Section 3), the snapshot highlights the key findings of a recently conducted ILO enterprise survey. The snapshot focuses on barriers and challenges business enterprises face in Yemen, particularly since the Covid pandemic, and the business impressions regarding the future strategies for productivity improvement.

Finally, in section 4, a few recommendations for future productivity improvement in the country are derived using the existing evidence on the long-term productivity trends and insights from the enterprise survey.

► 2. Historical overview of productivity growth, and structural change

►► 2.1. Relative Labour Productivity levels

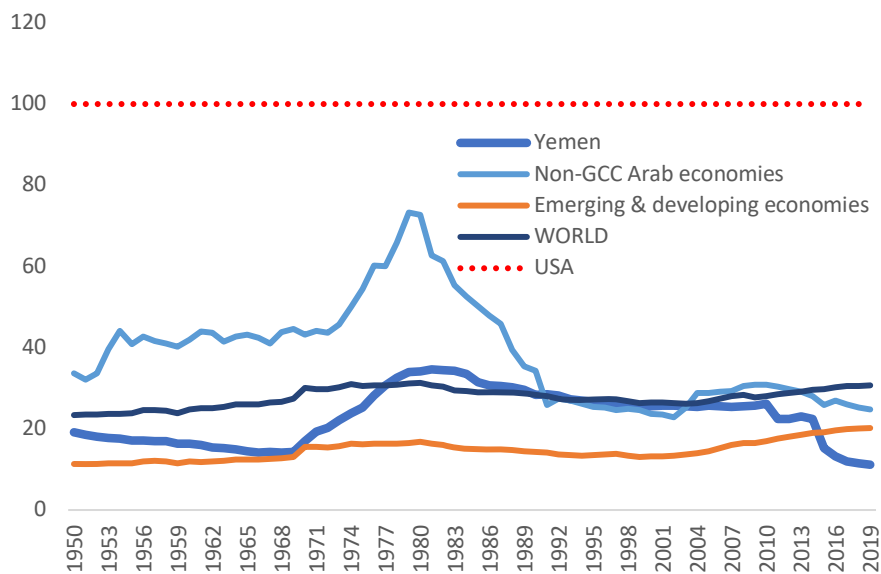
Figure 1 shows the levels of Yemen's labour productivity (output per worker) relative to the United States.² Relative productivity levels have been historically lower in Yemen compared to the averages of non-GCC Arab economies and the global economy until the early 1990s. However, Yemen's productivity levels converged to the levels of non-GCC Arab countries by the early 1990s. But that was not due to an improvement in Yemen, but a sharp decline in the non-GCC Arab productivity levels since the early 1980s, reaching the global levels by early 1990s. Although the non-GCC Arab and global average did only slightly

¹ In this snapshot, when we refer to the Arab states, it consists of six GCC countries (Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, and the United Arab Emirates) and six non-GCC Arab countries (Iraq, Jordan, Lebanon, the occupied Palestinian territory, the Syrian Arab Republic, and Yemen). The global economy is an average of 132 countries covered in The Conference Board Total Economy Database.

² Relative labour productivity level measures the amount of output an average worker in Yemen produces in a year, compared to the amount of output an average worker produces in the United States.

better than Yemen until the early 2010s, Yemen's productivity levels started diverging from them in 2014, when its civil war began. Currently, Yemen's labour productivity level is just 11 percent of the US level, which is just above 60 percent of its relative productivity levels in 1950 and is only a third of its peak productivity level in the 1980s. The highest productivity level Yemen ever achieved was 35 percent of the US level in 1981. While the remittances from unskilled workers sent from Gulf countries might have supported its somewhat slow productivity momentum in the 1970s, both through supply and demand-side channels, that momentum doesn't seem to have sustained further, as evidenced by its productivity erosion since the 1980s. Despite the commercial oil discovery in 1984, the country has not managed to translate high oil rents into higher productivity levels since then. However, the consistent fall in oil rents since 2006 seems to have been reflected in Yemen's recent low labour productivity levels. According to the World Bank data, the oil rent as a percentage of GDP has fallen from about 40 percent in 2005 to 1/5th during the global financial crisis and further to a mere 0.7 percent in 2016. Despite some marginal upticks in 2017 and 2018, it still remains much low, below 5 percent of GDP. Like most other Arab economies, Yemen's productivity levels generally stayed above the emerging market average, except during its war years. In the 1970s, its productivity level was quite close to the emerging market average, as Yemen has seen a continued erosion of its relative productivity levels from the 1950-1970 period, which also included a period of domestic tension due to the North Yemen Civil War.

► **Figure 1: Relative Levels of labour Productivity (US=100)**



Note: Labour productivity levels are calculated in purchasing power parity terms for individual economies as GDP per worker and are expressed as a percentage of productivity level in the United States. For the list of countries used to obtain the aggregates of World, and Emerging & developing economies, please see Appendix Table 4 in ILO (2022)³. Non-GCC Arab economies consists of Iraq, Jordan, Lebanon, Syria, Yemen, and Occupied Palestinian Territory.

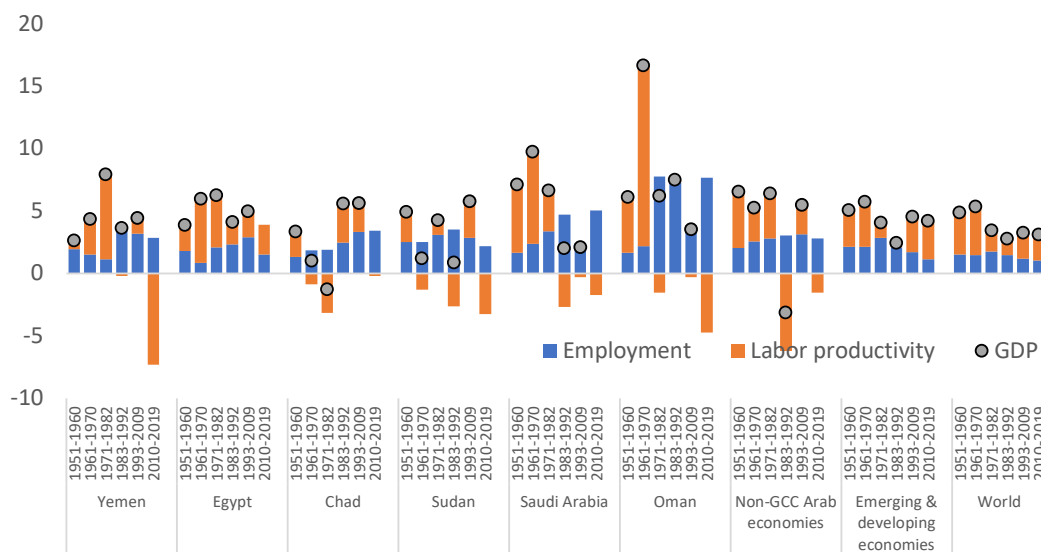
Source: The Conference Board Total Economy Database (TED), April 2021.

³ ILO (2022), "Productivity growth, diversification and structural change in the Arab States", https://www.ilo.org/actemp/publications/WCMS_840588/lang--en/index.htm

2.2. Labour Productivity growth: Labour productivity vs. Employment

The output of an economy can be increased by adding more workers, increasing working hours, or raising worker productivity. Looking at labour productivity growth rates, Yemen seems to have done better for two decades between 1961 and 1982 (Figure 2). While productivity growth was nearly zero in the 1980s and moderate in the 1990s, it has been negative since the global financial crisis. Moreover, the productivity deceleration during the last decade was quite intense compared to the non-GCC Arab country average and other neighboring developing countries such as Sudan, Chad, and GCC economies such as Saudi Arabia and Oman. The damage from Yemen's war on its long-term growth prospects is clearly evident from the rapidly falling productivity growth. Yemen's best productivity decades, the 1960s through 1980s, a kind of productivity golden age for the country, appears to have a lagged alliance with the rapid advancements in its GCC neighbors, Saudi Arabia and Oman. Productivity growth in Yemen during the decades was comparable to (or even higher than) the emerging markets and global averages. It is hard to make any strong conclusions about the future of Yemen's productivity trends, given that the country has been exposed to and continues to be at war.

► Figure 2. Contribution of labour productivity growth and employment growth to GDP growth



Notes: All growth rates are calculated as log changes. Regional growth rates are a weighted average of individual countries, using nominal value added weights. For other notes, please see Figure 1.

Source: The Conference Board Total Economy Database, April 2021.

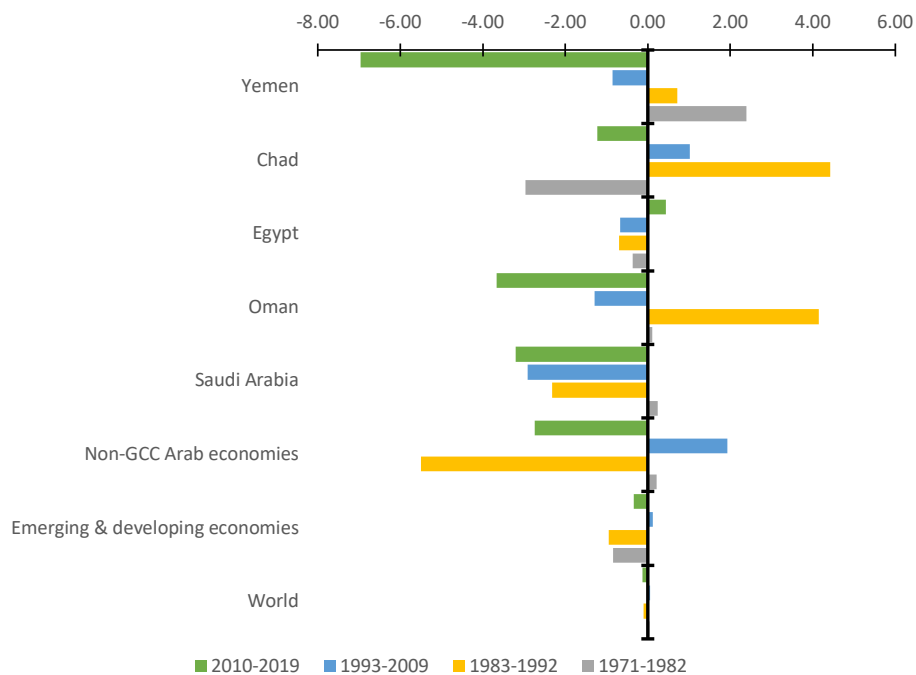
Yemen's high productivity growth in the 1960s through the early 1980s was accompanied by very slow growth in employment. Also, compared to the non-GCC Arab average, the relative size of productivity contribution was higher in the 1970s. A possible reason for the low employment growth and high productivity growth is the large outflow of workers to GCC countries during this period, which may have created a demand for several domestic sectors with the inflow of remittances. On the contrary, the massive return of migrants, especially after the Gulf war, may have reversed this trend, and we see that increased reliance on employment since the 1990s, outpacing that of productivity growth. Overall, during the last three decades, the relative roles of productivity and employment have reversed, making the country rely primarily on workers, without enhancing their productivity, to run the economy. This is quite contrary to

what we see in emerging and developing markets and the global economy averages. With a relatively lower level of productivity, and the massive ruins of the economy due to its continued war exposure, the need for reconstruction and productivity enhancement are plenty in the country.

2.3. Multifactor productivity growth

Multi-factor productivity (MFP) growth is an important indicator of technological change and overall efficiency improvement.⁴ Yemen has witnessed massive MFP erosion in the recent decade. In fact, its MFP has been declining since the 1990s, losing much of the productivity gains it made in the 1970s and 1980s. When compared with its neighboring countries, we see recent productivity weakening as a phenomenon across the board. The only exception is Egypt which showed very moderate improvement in the recent decade after continued productivity declines in the previous decades. In the 1970s, Yemen had the highest TFP growth among the neighboring countries, Chad, Egypt, Oman, and Saudi Arabia. Its MPF growth during this period was impressive even compared to non-GCC average and emerging and developing countries. In the 1980s, although MFP growth remained positive, it was eased substantially from the high rates in the 1970s, and was also lower than the only two countries with productivity improvements, Chad and Oman. In the most recent decades, it appears Yemen was the most hit country, as its productivity deceleration is much more intense compared to the neighboring countries or even the non-GCC and emerging market averages.

► Figure 3. Multifactor productivity growth



Notes: Multi-factor productivity growth rates are calculated using a growth accounting equation as a residual after accounting for the contributions of capital and labour inputs to GDP growth. For other notes, please see Figure 1.

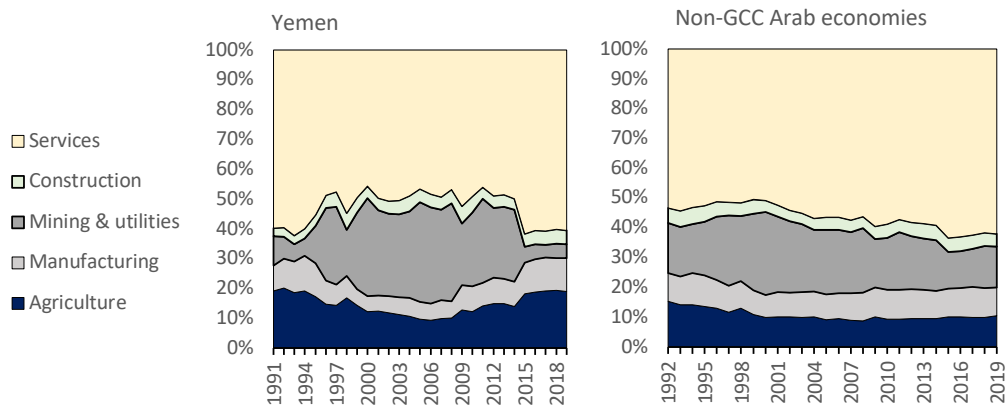
Source: The Conference Board Total Economy Database, April 2021.

⁴ MFP is generally measured as a residual after allocating output growth accrued due to the accumulation of factor inputs (e.g., labour and capital) to input growth. A multitude of factors, including technology and innovation, macroeconomic and business climate, market conditions, and institutional factors, can influence changes in MFP.

2.4. Industry composition of employment and output

Enhancing productivity growth and levels can be achieved by moving workers to more productive sectors of the economy. For developing economies like Yemen, in their early stages of development, one would expect worker movements from the agricultural sector to the manufacturing sector, creating more productive and income-earning jobs. We indeed see a shift away of workers from agriculture in Yemen in the 1990s through the end of the 2010s, but that does not appear to be benefitting the manufacturing sector. The manufacturing sector's job share has been somewhat stagnant, while the sole beneficiary of shrinking jobs in agriculture was the service sector. This fall in agricultural jobs and rise in services jobs are not unique to the country but are similar to the non-GCC Arab economies trends in general. If the service sector job boom is mainly associated with the informal sector and low-value-added activities, its impact on productivity and welfare is rather ruinous. But what is unique about Yemen, compared to the non-GCC Arab average, is the recent rise in agricultural employment share since the early 2010s. Although it fell again in recent years, it is closer to 30 percent.

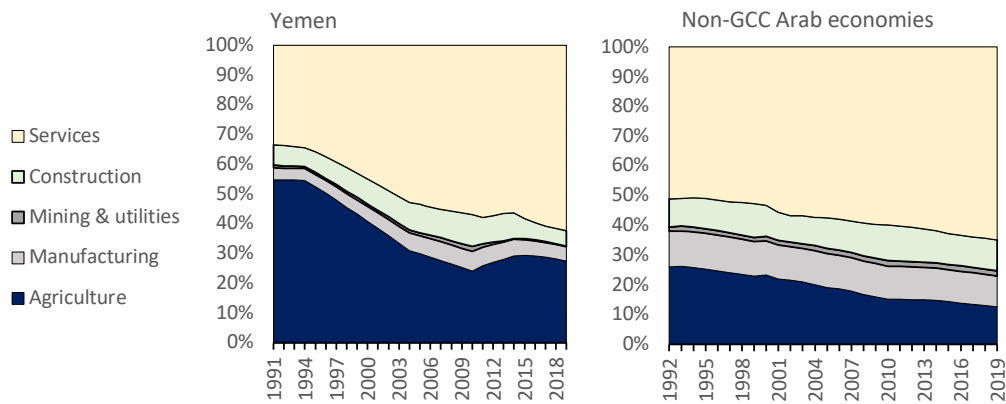
► **Figure 4: Output share of industries**



Note: See Figure 1.

Source: UNNAS, ILOSTAT.

► **Figure 5: Employment share of industries**



Note: See Figure 1.

Source: UNNAS, ILOSTAT.

► 3. Business environment, productivity, and prospects: insights from Enterprise Surveys

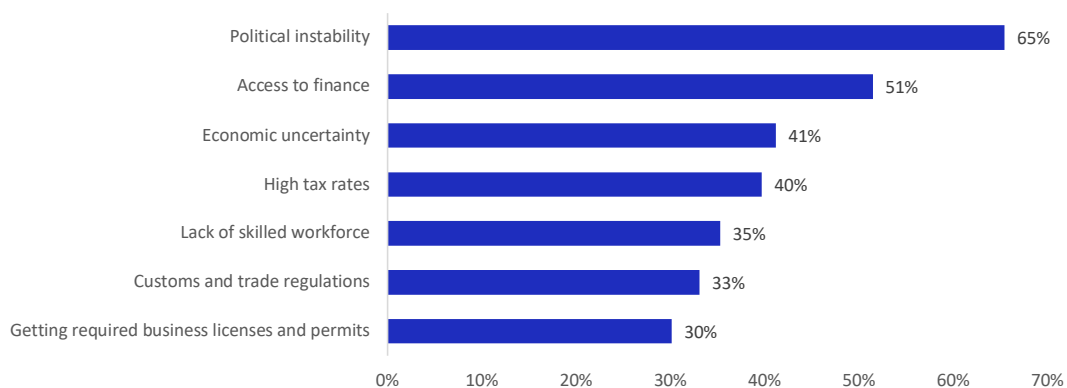
This section highlights the key findings from the ILO 2021 enterprise survey on productivity growth, diversification, and structural change in Yemen. The survey aimed to assess challenges and opportunities for sustainable enterprise development and economic growth amid the COVID-19 pandemic. Surveyed enterprises were asked about factors for an enabling business environment, obstacles to operating and upgrading technology, and factors that impacted productivity growth, among others. The survey covered 137 micro, small, medium, and large enterprises in Yemen. Most responses came from enterprises in other service activities (24 percent), shopkeeping, sales or trade activities (15 percent), and education (13 percent).

►► 3.1. Obstacles for business operations

An enabling business environment that combines conditions that can improve enterprises' capacity to start up, grow, develop, and create decent jobs, is important for enterprises to harness the benefits of productivity. The extent to which governments influence and encourage innovation through policies and incentives can also have major implications on enterprises' growth and productivity. In the ILO survey, only 3 out of 10 enterprises in Yemen agreed that government policies were adequate to promote innovation and technology adoption. This indicates the potential for a better government role in creating a business climate conducive to productivity growth.

The survey results also suggest that political instability, access to finance, and economic uncertainty are the most important concerns affecting business operations in Yemen (Figure 6). While political instability was challenging across enterprises of all sizes and sectors, access to finance was particularly challenging for micro and medium enterprises. Regarding the financing of business operations, 60 percent of enterprises reported relying on internal resources (e.g., cash or savings). The proportion of micro and small enterprises (69 and 64 percent, respectively) resorting to their own resources was higher than medium (40 percent) and large (55 percent) enterprises. Moreover, the share of enterprises reporting to access individual lenders increased as enterprises became larger.

► Figure 6. Obstacles to operate for enterprises



Note: Obstacles that accounted for less than 30 per cent of the sample are not displayed in this figure.

Source: ILO's 2021 survey on productivity growth, diversification, and structural change.

3.2 Impact of Covid on enterprises

Surveyed enterprises were asked about the impact of the COVID-19 pandemic on their businesses. Six out of ten enterprises reported revenue decreases in the first half of 2021 due to COVID-19. Such revenue decreases were seen across most enterprises regardless of size. However, almost half of the surveyed enterprises reported not dismissing workers during the pandemic.

Nevertheless, nearly half of the respondents indicated inadequate cash flow to maintain business operations, higher material prices, and difficulty accessing customers as challenges to their business during the pandemic. The inadequate cash flow was a larger problem for small firms. Half of the micro and small enterprises reported this as a concern, compared to 40 percent of medium and 30 percent of large enterprises. Two other important challenges that enterprises mentioned were the loss in demand due to the cancellation of orders (30 percent) and the difficulty securing access to finance (19 percent).

3.3 Worker skills for fostering productivity growth

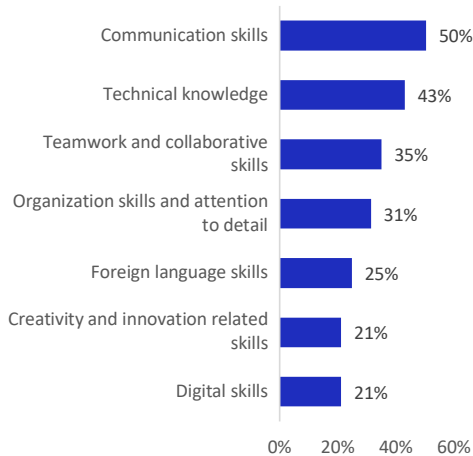
Improving worker skills is essential to enhance the productivity and performance of enterprises. Training opportunities are important to ensure improving worker skills and retaining talent. Surveyed enterprises were asked about the most important skills for their businesses in Yemen. As is evident from the Panel A of Figure 7, half of the enterprises reported communication skills, followed by technical knowledge (43 percent) and teamwork and collaborative skills (35 percent) as important for their operation. These skills were important for enterprises across all sizes. Interestingly, almost half of large enterprises in Yemen also highlighted the importance of foreign language skills in their business.

However, only 12 percent of enterprises in Yemen found it easy or very easy to hire workers with the right skills (Panel B, Figure 7). On the contrary, more than 40 percent of enterprises reported finding workers with the right skills was difficult or very difficult, and a comparable proportion of firms reported it neither easy nor difficult.

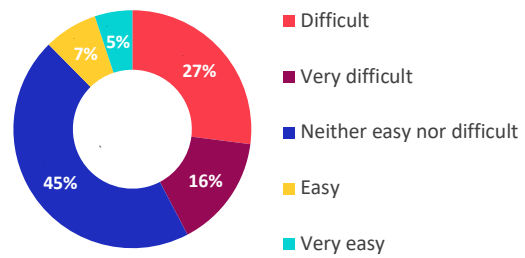
Regarding training and retaining talent, surveyed enterprises were asked whether they allocated a budget for staff training and development and staff compensation programs. Half of the enterprises reported either the absence of a separate budget for staff training (38 percent) or allocating less than 1 percent of the total salary cost for this purpose (12 percent). Nevertheless, almost 60 percent of enterprises reported having incentive compensation programs to reward performance for achieving set results. Large enterprises were more likely to allocate resources to staff training and development and to have incentive compensation programs than micro, small, and medium enterprises.

► **Figure 7. Skills and their availability**

Panel A: Most important skills



Panel B: Difficulty in hiring workers with right skills



Note: Skills that accounted for less than 20 per cent of the sample are not displayed in Panel A. The numbers are % of enterprises

Source: ILO's 2021 survey on productivity growth, diversification, and structural change.

3.4 Investing for future productivity

Several factors impact the extent to which businesses can thrive, particularly in environments that might not be conducive to sustainable enterprise development. Enterprises, however, can implement strategies to increase revenue while boosting business growth and productivity. The survey revealed five important strategies to improve revenue, growth, and productivity.

More than half of the respondents indicated the importance of offering new products or services, and more than 40 percent highlighted the importance of ensuring business continuity planning. While 36 percent of enterprises indicated the importance of diversifying markets, about one-third of enterprises each suggested the need to provide workers with training opportunities (32 percent) and the role of investing in new technologies (33 percent).

Although enterprises realize the importance of technology adoption in fostering growth and productivity, they also anticipate challenges to conducting such adoption or upgrades. More than a quarter of enterprises (primarily micro, small, and medium enterprises) in Yemen consider high fixed capital costs as the top barrier to upgrading technology. The high risk associated with upgrading technology is perceived as a barrier by 16 percent of respondents. Finally, 13 percent of enterprises, primarily large enterprises, consider a lack of skilled staff to operate technology as a challenge to technological upgradation.

Looking ahead, 70 to 80 percent of all enterprises in Yemen plan to launch new products or services, train workers, and adopt new technologies over the next five years. While micro and small enterprises foresee the likelihood of launching new products or services and training workers, technology adoption is primarily on the agenda of medium and large enterprises.

► Recommendations

► Reforms to rebuild the economy fostering productivity and creating jobs

- Yemen, a country that suffers perhaps the most severe humanitarian crisis on earth, would have to initiate several comprehensive reforms to regain its economy.
- Fostering productivity-driven economic growth for decent job creation, poverty reduction, and raising living standards is of high priority.
- Yet it is hard to make stronger recommendations on how it can enhance productivity, given that the country has been exposed to and continues to be at war.

► Political stability, investor-friendly environment, technology, and infrastructure

- First and foremost, an enabling environment for sustainable enterprise development, particularly macroeconomic and political stability, is indispensable to bringing the economy on track, enabling private investment, and enhancing productive employment.
- Yemen's productivity challenges are plenty. In addition to requiring policies addressing the private sector, competition, and trade, it will need enhanced attention to rebuilding its physical and digital infrastructure.

► Diversification of the economy and upskilling population

- Yemen will have to create more opportunities in the non-farm economy, particularly manufacturing, and support technological advancement. Some of the recent hikes in agricultural employment may be a shift towards subsistence, rather than commercial production, as a similar expansion in output is not visible.
- If most of the service activities are informal, low-value-added activities, shifting workers and investment away from those activities to high-value-added activities would be essential.
- Yemen's post-war reconstruction would require more attention to several non-market activities, including health and education, which may not be productivity-enhancing in the short-run, but are essential for long-term productivity growth.
- Given that the country is still not out of war, it may witness job expansion in the construction sector in its post-war reconstruction phase. This might also be another blow to its potential to increase productivity, but again important for its long-term productivity gains.

► Supporting skill enhancement, gender equality, and inclusiveness

- Identifying skills gaps and reskilling or upskilling workers in priority sectors is critical to regaining the economy through productive job creation and diversification.
- Developing women's entrepreneurship development programs is important to address the barriers to women's economic participation, including those related to cultural and social norms.



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