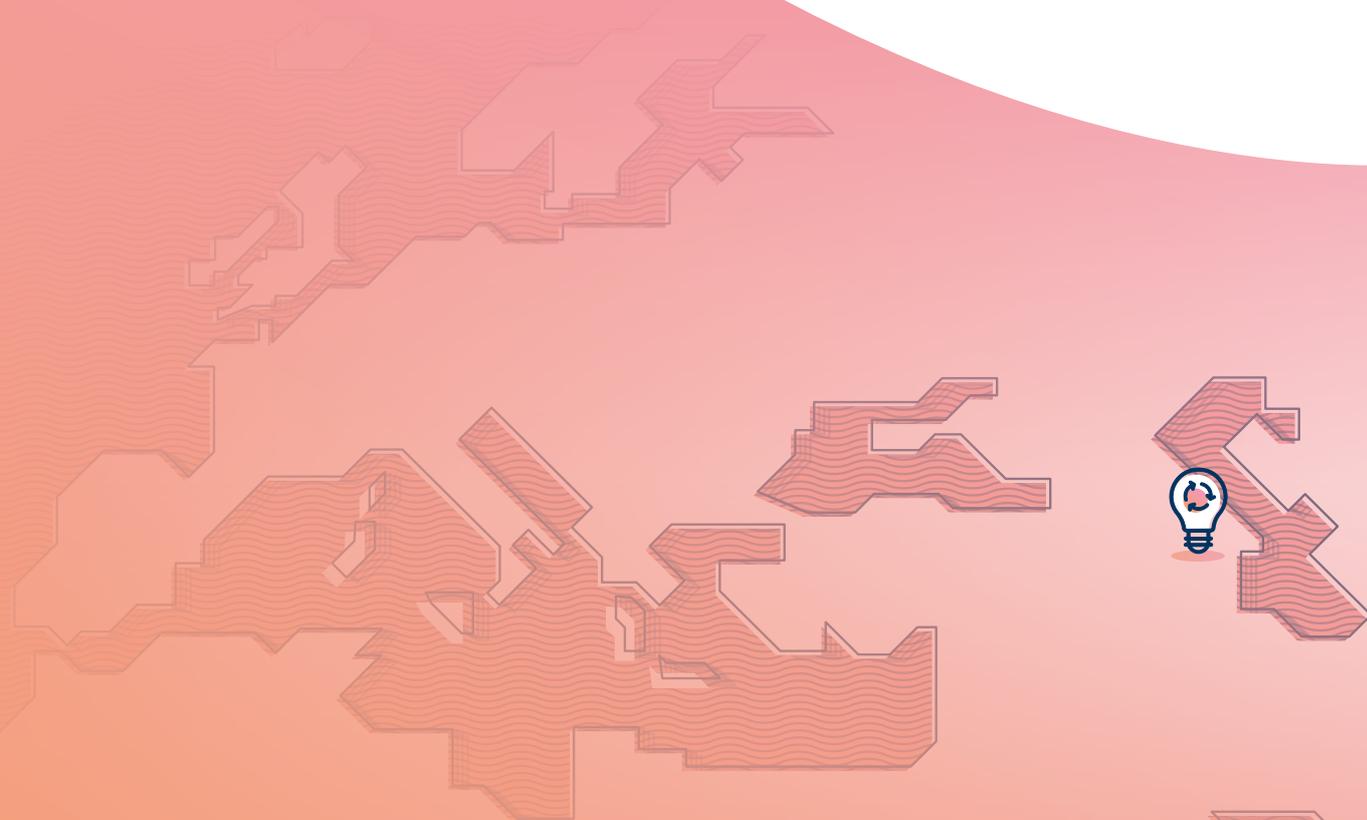


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# AZERBAIJAN



## Chapter I

# ECONOMIC OVERVIEW

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### General overview

Azerbaijan is an upper-middle-income country in the South Caucasus, at the crossroads connecting Europe to Central and East Asia and the Islamic Republic of Iran. It is a global pioneer in hydrocarbons, and its exports from the massive reserves in the Caspian Sea remain the main driver of the economy, contributing to a well-endowed sovereign wealth fund. The overreliance on fuel exports has left the economy undiversified and vulnerable to global commodity price shocks, a risk compounded by low productivity in non-oil sectors and growing environmental concerns.

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### Reform process

Since the dissolution of the Soviet Union in 1991, the economy of Azerbaijan has undergone a series of reforms, including financial liberalization, the restructuring of the banking sector and the establishment of a State Oil Fund in 1999. Pipeline infrastructure projects and foreign investment inflows fuelled the development of the oil sector. Further structural changes began in the 2000s, reforming the public sector in education, health and public administration, followed in the 2010s by programmes for socioeconomic development and economic diversification. Today, reforms continue to be made to improve the business environment, as reflected in the country's rank (34/190) in the World Bank's 2020 *Doing Business* report. Several aspects, however, such as the protection of minority investors (105th), show weaker performance, reflecting a key impediment to private sector development, investment and innovation.

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### GDP growth

Following a severe decline in the first five years of independence, average GDP growth in Azerbaijan has been strong since 1995. It reached its highest rate in 2006 (34.6 per cent), when the Baku–Tbilisi–Ceyhan main export pipeline was completed, coinciding with an increase in global oil prices (figure I.1). The economy's overreliance on oil exports has led to both volatility and stagnation in GDP growth, and makes Azerbaijan particularly vulnerable to external shocks, such as the sharp decline in commodity prices in 2014–2015 and the global financial crisis in 2008–2009. In 2019, GDP growth was at 2.2 per cent, below the sub-regional average (3.8 per cent), and it was expected to drop to 0.5 per cent in 2020 because of oil price shocks (such as the COVID-19 pandemic),

the inflexibility of Russian oil supply, geopolitical tensions and surplus investment into capacity when oil prices were high (ADB, 2020).

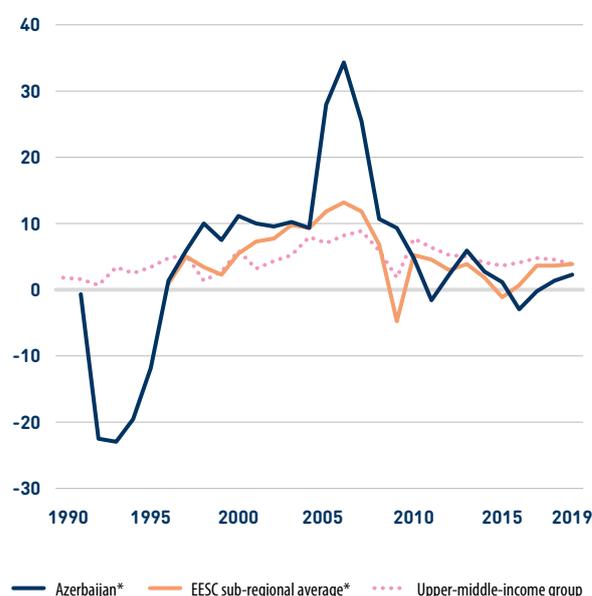
Despite the growth in GDP driven by stable oil production and the rise in private consumption, the need to increase productivity across all sectors has become increasingly pronounced. Gross capital formation, reaching almost 28 per cent in 2015, declined to 20 per cent in 2019. In addition, personal remittances accounted for 2.6 per cent of GDP in 2018, higher than the average in the upper-middle-income group (0.7 per cent) but significantly lower than the average in the Eastern Europe and the South Caucasus (EESC) sub-region (9.3 per cent).

Government spending, which was above 30 per cent between 2011 and 2015, declined to 25 per cent in 2017 and then recovered to almost 29 per cent in 2018. Through public spending, wealth from the oil sector was transferred to other sectors, which not only increased the dependence of the private sector on public investment, exposing private sector output to fluctuations in oil prices and fiscal policy changes and but also had limited effects on sustainable growth in productivity (Kintsurashvili and Kresic, 2019). The current account surplus reached almost 12 per cent in 2018 but declined to under 10 per cent in 2019 (World Bank, 2020c). Furthermore, the economic impact of the COVID-19 crisis, such as the decline in demand for commodities and in oil prices, is expected to have a negative effect on foreign direct investment (FDI) in the country (UNCTAD, 2020).

## Foreign direct investment

FDI inflows to Azerbaijan increased from 3.5 per cent in 2013 to almost 12 per cent in 2016 (the highest in the sub-region) but – suppressed by low global oil prices – declined to 3 per cent of GDP in 2019, the third highest after the Republic of Moldova (5 per cent) and Georgia (7.2 per cent) (World Bank, 2020c). Although most FDI concentrates in the oil and gas industry, the country has made efforts to diversify the economy in recent years, primarily in agriculture and tourism (Heritage Foundation, 2020b). According to the 2018 Business Climate Survey of the EU, with respondents primarily from the services sector, non-extractive FDI from the EU is primarily market-seeking (33 per cent). This shows that foreign investors prefer to sell in Azerbaijan (EU4Business, 2018) and channel little investment into diversified production.

**Figure I.1 • Annual GDP growth, 1990–2019 (Per cent)**



Source: UNECE, based on data from World Bank (2020c).

\*Missing values for the Republic of Moldova (1990–1995), and Armenia, Belarus and Azerbaijan (1990).

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## Sectoral decomposition

Although oil production peaked in 2019, its average rate of absolute production, measured in barrels produced, declined by 25 per cent over the past six years, underscoring the need to diversify into non-energy sectors (World Bank, 2019; 2020b). The extractive industry remains dominant, accounting for 42 per cent of GDP in 2018 (Azstat, 2020) despite recent marked growth in both services and agriculture. In 2019, 49.3 per cent of the labour force (modelled ILO estimate) was employed in services (with a value added of 35.2 per cent of GDP), 35.9 per cent in agriculture (5.7 per cent of GDP) and 14.9 per cent in industry (48.7 per cent of GDP), confirming that non-oil sectors have low productivity and that unskilled labour has few alternatives. Exchange rate risk resulting from volatile oil prices, compounded by the hard peg to the US dollar, has put pressure on the banking sector, where State-owned banks predominate.

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## Demographics

Azerbaijan had the highest rate of population growth among the EESC countries at 0.8 per cent in 2019, although it has decreased steadily (from 1.3 per cent in 2012) (World Bank, 2020c). According to five-year estimates of the World Bank (2019b), annual net migration during 2003–2007 was 53,000 but decreased rapidly to 6,000 during 2013–2017. The unemployment rate in 2019 was 5.5 per cent, with a stable employment-to-population ratio (61–63 per cent; modelled ILO estimate) during 2014–2019 (World Bank, 2020c). Furthermore, in 2000 the shares of rural and urban populations were approximately equal; in 2019, however, 56 per cent of Azerbaijanis lived in urban areas (World Bank, 2020c).

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## External position

Despite its high trade volumes, Azerbaijan is among the few countries that is not a member of the World Trade Organization (WTO), which constrains exports to WTO member countries. Trade with the EU is based on the Partnership and Cooperation Agreement (1999); negotiations for a new agreement began in 2007 (EC, 2020). Moreover, in 2018 Azerbaijan exported primarily to Europe and the Middle East, in particular to Italy (30.2 per cent), Turkey (9.4 per cent) and Israel (6.74 per cent). The Russian Federation and China are the leading sources of imports, accounting for 16.4 per cent and 10.4 per cent of the total in 2018 (World Bank, 2020d). Azerbaijan's total value of trade accounted for 92 per cent of GDP in 2018, with exports – mainly fuel – standing at 54.3 per cent (World Bank 2019a).

Azerbaijani exports are highly reliant on the resource sector (Kintsurashvili and Kresic, 2019). According to the index of merchandise export concentration, where values closer to zero indicate higher diversification and values closer to one signify higher concentration, the country's exports (0.83) are highly concentrated and significantly above the average for the EESC sub-region (0.3) (UNCTADstat, 2020a). More specifically, in 2018, 80.7 per cent of the country's exports consisted of crude petroleum, 7.64 per cent of

## Box I.1 Southern Gas Corridor

The Southern Gas Corridor links three gas pipelines, the Southern Caucasus Pipeline (SCPX), the Trans Anatolian Pipeline (TANAP) and the Trans Adriatic Pipeline (TAP). Originating in Azerbaijan, it runs 3,500 km across Georgia, Turkey, Greece and Albania to southern Italy. With over 90 per cent of the construction complete, Azerbaijan expects to supply Europe with gas from its Shah Deniz gas field in the Caspian Sea by the end of 2020. By concluding long-term contracts with European states, the Government aims to secure demand for the country's gas exports, reducing the impact of external shocks to the economy.

*Source:* Kazimbeyli, Yaver (2020). Southern Gas Corridor to be fully operational by year's end, Caspian News, 17 February, <https://caspiannews.com/news-detail/southern-gas-corridor-to-be-fully-operational-by-years-end-2020-2-17-10>.

petroleum gas and 2.63 per cent of refined petroleum (OEC, 2020). Similarly, Azerbaijan has the most revealed comparative advantages (RCAs)<sup>1</sup> in mineral fuels, lubricants and related materials (one-digit group), within which petroleum oils (three-digit group) has an RCA value over 10 (UNCTADstat, 2020b). Growth relies heavily on fuel exports (92 per cent of merchandise exports in 2018), which increases the economy's vulnerability to external shocks (Ibadoghlu, 2018) (box I.1). Private and non-energy, tradable sectors need to be strengthened, especially to combat potentially sustained low oil prices (ADB, 2020).

The 2020 Competitive Industrial Performance (CIP) Index ranks Azerbaijan at 120/152, the lowest rank in the EESC countries after the Republic of Moldova (111/152) (UNIDO, 2020). The Global Competitiveness Report ranked the country 58/141 in 2019, the highest in the sub-region and an improvement from the 2018 rank of 69/141; strengths were noted in the dimensions for the labour market (21/141), the product market (23/141) and business dynamism (23/141) (WEF, 2019).

## Institutional quality

Credit regulation and e-government services have fostered the development of both the public and private sectors. As a result of continuous reforms, institutions in Azerbaijan have become stronger over the past decade, yet room for improvement remains in several niches. Specifically, on institutional quality assessed as an average of the World Governance Indicators (Kaufmann and Kraay, 2020) of control of corruption, government effectiveness, rule of law, and voice and accountability, Azerbaijan scored –0.8, lower than the sub-regional average of –0.3. The Government should therefore aim to enhance judicial effectiveness, link economic and political strategies, and increase institutional transparency (Heritage Foundation, 2020b).

## Sustainable development

Efforts to reduce poverty, achieve gender equality and address environmental concerns have seen progress over the past decade, but challenges remain. Azerbaijan has reduced

poverty by increasing social spending, with 5.1 per cent of the population at the national poverty line in 2018 as compared with 9.1 per cent in 2010. Yet income inequality is a growing concern, as is the ability to invest in employment outside of the oil industry and the public sector. GDP is concentrated strongly in the city of Baku (68 per cent of the economy in 2019) with less than 10 per cent in each of the other regions, revealing a rural-urban divide greater than the sub-regional trend.

The rate of female labour force participation is one of the highest in the sub-region (63.4 per cent in 2019), and their enrolment rate in tertiary education increased from 19 per cent in 2009 to almost 30 per cent in 2018, higher than that of men (26 per cent). Yet challenges remain on the path towards gender equality. Among other issues, the unemployment rate of women (approximately 6 per cent) has consistently been higher than that of men (approximately 4 per cent) (World Bank, 2020c). This is compounded by a significant wage gap in some types of economic activity, such as mining (47.6 per cent in 2018) and professional, scientific and technical activities (65.5 per cent in 2018) (Azstat, 2019) (chapter IV). More equality in recruitment processes across sectors would enable the country to exploit the full potential of its female human capital.

Achieving sustainable development also requires addressing environmental concerns. Although Azerbaijan ranked 44/129 on GDP per unit of energy use in the 2019 GII, land degradation, clean water shortages and pollution are among the most pressing issues resulting from oil production and industrial activities. In 2018, the economy generated its highest amounts of waste from manufacturing (765,400 tons) and mining (204,800 tons). Excessive greenhouse gas emissions have been reported in some industries, including forestry (50.7 million tons of CO<sub>2</sub> equivalent) and energy (37.9 million tons of CO<sub>2</sub> equivalent) (Azstat, 2020). Lack of private investment in the renewable energy sector, because of the insufficient policies and regulatory frameworks, impedes the country's sustainable use of its natural resources (Kintsurashvili and Kresic, 2019).

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## Synthesis

The table here presents the main achievements and challenges for the economic development of Azerbaijan, based on the findings in this chapter.

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### Progress made so far

- Leveraged the country's strategic position and significant hydrocarbon reserves to boost exports to Europe
- Maintained strong average FDI inflows and macroeconomic stability
- Improved institutional quality and regulatory performance
- Reduced absolute poverty and raised national incomes

### Challenges ahead

- Further diversify exports to take advantage of trade opportunities in products and services.
- Strengthen private and non-energy sectors to build resilience.
- Reduce overdependence on oil production, managing its volatility.
- Enable business sector growth and development, and address remaining governance issues.
- Address challenges for sustainable development, especially reducing harmful.

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Source: UNECE.

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## Note

- <sup>1</sup> The revealed competitive advantage (RCA), developed by UNCTADstat, measures trade patterns between countries based on their relative productivity. It does not take into account national trade measures, such as subsidies and (non-)tariff regulations.

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## Chapter II

# INNOVATION PERFORMANCE OVERVIEW

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## Innovation climate

Economic growth in Azerbaijan depends largely on production and export of hydrocarbons, and the overall focus on low value added activities. Despite the construction of high-technology parks, commercialization efforts at higher-education institutions (HEIs) remain ineffective, impeding productivity in the labour market. To fully exploit its innovation potential, Azerbaijan needs to diversify its economy by increasing support for small and medium enterprises (SMEs) in the non-oil sector and foster innovative activities by supporting investment in research and development (R&D) activities in the private sector and by improving access to finance for SMEs.

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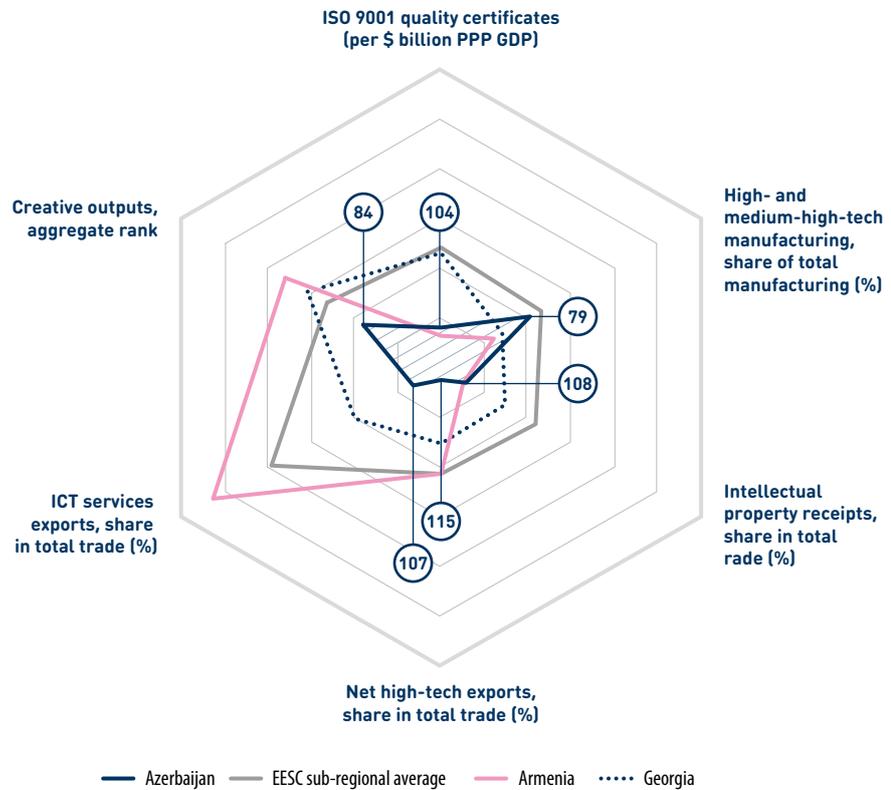
## Innovation outcomes

The 2019 Global Innovation Index (GII) ranked Azerbaijan 84th out of 129 economies, two positions down from 2018 (Cornell University, INSEAD and WIPO, 2019). Despite recent efforts to improve institutional quality and the business environment, the country still faces challenges in translating innovation inputs into outputs. Figure II.1 on the following page depicts innovation performance on selected output indicators, as ranked in the 2019 GII.

Innovation outputs in Azerbaijan are generally lower than the sub-regional averages, and on most separate indicators the country is outperformed by its neighbours. Its best relative performance is in the share of high-tech and medium-high-tech manufacturing in total manufacturing (approximately 10 per cent in 2019), where it ranked 79th, ahead of Georgia (91st). Yet Azerbaijan's high-tech net exports were the lowest in the sub-region, at 0.1 per cent of total trade (imports and exports), ranking the country 115th and highlighting the risks that the undiversified and oil-dependent export basket hides for innovative development (chapter I). Upgrading technology can help the private sector develop and the economy move up in global value chains; however, the number of ISO quality certificates (1.2 per \$1 billion PPP GDP in 2019) is particularly low, ranking the country 105th and indicating limited absorptive capacity in the private sector.

According to the 2019 GII, a competitive advantage for Azerbaijan is the development of non-technological innovation, which remains predominantly low (or unreported) across the sub-region. The country scores high in both information and communication technology (ICT) and organizational model creation (35th) and in ICT and business model

**Figure II.1 • Innovation performance by selected GII indicators, 2019 ranks**



Source: UNECE, based on data from Cornell University, INSEAD and WIPO (2019).  
Note: Lower values indicate stronger performance.

creation (48th), revealing an income group strength in creative outputs. This is an evident improvement since 2016, when the country's Strategic Road Map for Development of Telecommunications and Information Technologies highlighted a weakness in this area, namely the preferences of SME employers for traditional business practices because of the lack of technological skills and awareness of employees.

No nationwide survey has investigated the innovation activity of firms, so information on the needs of the private sector in relation to innovation is limited. According to the Business Environment and Enterprise Performance Survey (BEEPS V) of the European Bank for Reconstruction and Development (EBRD), innovation activity in Azerbaijan is extremely low: 99 per cent of SMEs reported no innovation between 2010 and 2012. One of the most significant obstacles was access to finance, as compared with the country's EESC peers (OECD et al., 2020). To correctly characterize the country's innovation performance and to design effective innovation policy, the Government needs to collect comprehensive data on the innovation activity of firms.

Over the past several years, as the Government has made digitalization of public services central to its agenda (Azerbaijan, 2017), the ICT sector has developed; yet ICT use in businesses is generally low, in particular among SMEs (ADB, 2019). According to the

State Statistical Committee (Azstat) (2020), only 14 per cent of domestic firms owned a website in 2017, largely because of the high costs of registering domains. In the 2019 GII, Azerbaijan ranked 64th in ICT access and 63rd in ICT use, the former a slight improvement from 2015 (from 65th) and the latter a substantial decline (from 49th). The number of fixed broadband subscriptions was about 19 per 100 people, a slight increase from 2017 to 2018, just below the peak of almost 20 in 2014. This was higher than in Armenia (11.8), Ukraine (12.8) and the Republic of Moldova (15.4), but lower than in Belarus (33.9) and Georgia (21). Despite ongoing efforts to diversify the economy, the ICT sector in 2019 accounted for a low share of value added – 2.2 per cent of GDP in 2019 (3.4 per cent excluding the oil sector) (ADB, 2019; Azstat, 2020). Furthermore, ICT exports as a share of total trade were barely 0.4 per cent, ranking the country 107th.

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## Innovation activity – channels, strengths and weaknesses

Cross-border knowledge absorption, through both increasing the capacities of domestic firms to innovate and adopting knowledge and technology from abroad, is integral for developing an innovation system. The latter is particularly important as it can help Azerbaijan diversify without entirely transforming its production structure. Indeed, in 2017 imports of computer and information services already exceeded exports by more than \$40 million (WTO, 2020).

### International knowledge transfer

Although foreign investment is high (chapter I), the majority flows into the oil and gas sector. Specifically, net inflows in 2019 constituted an impressive 8.8 per cent of GDP, ranking Azerbaijan 15th. Nonetheless, gross expenditure on R&D from abroad was about 0.1 per cent that year, and high-technology imports were only 2.8 per cent of GDP (ranking the country 124th). Furthermore, the country ranks 113th on the aggregate GII score for knowledge absorption.

In the 2019 Global Competitiveness Index (GCI), Azerbaijan performed well in terms of business dynamism (23/133), specifically due to high scores on the cost of starting a business (1.3 per cent of gross national income per capita) and the average time needed to start a business (3.5 days) (WEF, 2019). Yet its significant dependence on capital-intensive oil extraction, which entails limited use of technology, means that more productive, high-growth SMEs are scarce. In 2016, large firms employed more than 80 per cent of the labour force, and SMEs (125 employees or fewer) accounted for less than 10 per cent of value added in GDP (Azstat, 2019). Moreover, more than 50 per cent of SMEs concentrated in trade and in repair of motor vehicles, while less than 1 per cent were active in ICT (2016). This economic structure underscores the need for the private sector to diversify, specifically in support of SMEs (OECD, 2019).

### Investment in R&D

Neither the public nor the private sector invests much in R&D. The Government conducts 86 per cent of R&D activity. HEIs, which conduct only 9 per cent, are hampered by the

lack of regulatory support and limited investment, and thus do not effectively translate innovation inputs into competitive innovative outputs (World Bank, 2018).<sup>1</sup> In the 2019 GII, on funding from abroad Azerbaijan ranked 100th, behind all its neighbours, with a value of 0.1 per cent of gross expenditure on R&D – significantly lower than that of Armenia (1.7 per cent) and the Republic of Moldova (3.7 per cent), but more significantly lower than that of Belarus (14.1 per cent), Georgia (14.7 per cent) and Ukraine (24.4 per cent).

Gross expenditure on R&D was only 0.22 per cent of GDP in 2015 and dropped to 0.19 per cent in 2019, the lowest share among the EESC countries (World Bank, 2020). It was largely spent on salaries (70 per cent) (World Bank, 2018). Almost 28,000 employees were engaged in R&D in 2018, but only about 40 per cent had a doctoral degree. SMEs spent about AZR 30 million on R&D in 2018, the majority of it in the industry and construction sector; expenditure on innovation was highest in trade and in the repair of transport means, followed by industry (excluding construction) (Azstat, 2020).

According to the BEEPS V responses, only about 1 per cent of Azerbaijani enterprises had invested resources in R&D and only 2 per cent had actually introduced innovations (EBRD, 2019). The Azerbaijan National Academy of Sciences (ANAS), one of the main institutions responsible for research (World Bank, 2018), focuses its scientific activity on nuclear and renewable energies. Furthermore, although the 2019 GII indicates a high degree of collaboration between industry and universities in Azerbaijan (ranked 32nd), such collaboration seems insufficiently diversified across the private sector (ADB, 2019); instead, collaboration focuses on research activities in the energy sector. This creates a significant impediment to developing innovation.

## Skills development

Aligning education with business needs is a pressing concern. According to the Strategic Road Map for Development of Telecommunications and Information Technologies (2016), most SME employees have limited technology skills and awareness, and domestic corporations consider the quality of the IT talent to be poor, especially in software development. In 2017, government expenditure on education was quite low at 2.5 per cent of GDP, a decline from 2016 (2.9 per cent) and the lowest in the EESC sub-region (World Bank, 2020). In 2018 enrolment in tertiary education as a share of the total eligible population was the lowest in the sub-region at 27.7 per cent – significantly less than in Georgia (60.3 per cent) and Belarus (87.4 per cent) (World Bank, 2020). Nevertheless, Baku State University is listed in the Quacquarelli Symonds university ranking as among the best HEIs worldwide.

The 2019 GII found that only 23.2 per cent of the workforce was employed in knowledge-intensive jobs, also the lowest share in the EESC sub-region (the average was about 30 per cent). The lack of advanced skills creates a significant mismatch between the labour force and the labour market, inhibiting innovation. Moreover, the lack of R&D investment in non-oil economic activities, the limited efforts invested in vocational training and the decreasing number of graduates in science and engineering also negatively affect the innovation capabilities available to the private sector (ADB, 2019).

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## Synthesis

The table here presents the main achievements of and challenges to R&D and innovation (RDI) in Azerbaijan, based on the findings described in this chapter.

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### Progress made so far

- Relatively high amounts of FDI attracted

### Challenges ahead

- Foster the use of ICT and promoting the digitalization of the economy.
- Improve access to finance in the private sector.
- Direct investment efforts to improving productivity and developing skills in the labour force.
- Strengthen absorptive capacities and cooperation with educational institutions.
- Expand the kind of data collected on the innovation activities of firms

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Source: UNECE.

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## Note

<sup>1</sup> Kheyfets, Igor, and Naveed Hassan Naqvi, Higher education institutions as drivers of innovation and growth in Azerbaijan, *Eurasian Perspectives*, World Bank Blogs, 13 December 2018.

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## Website

Institute of Radiation Problems, Azerbaijan National Academy of Sciences, Department of Physical, Mathematical and Technical Sciences: <http://irp.science.az/?!=/static,32/lang,en>

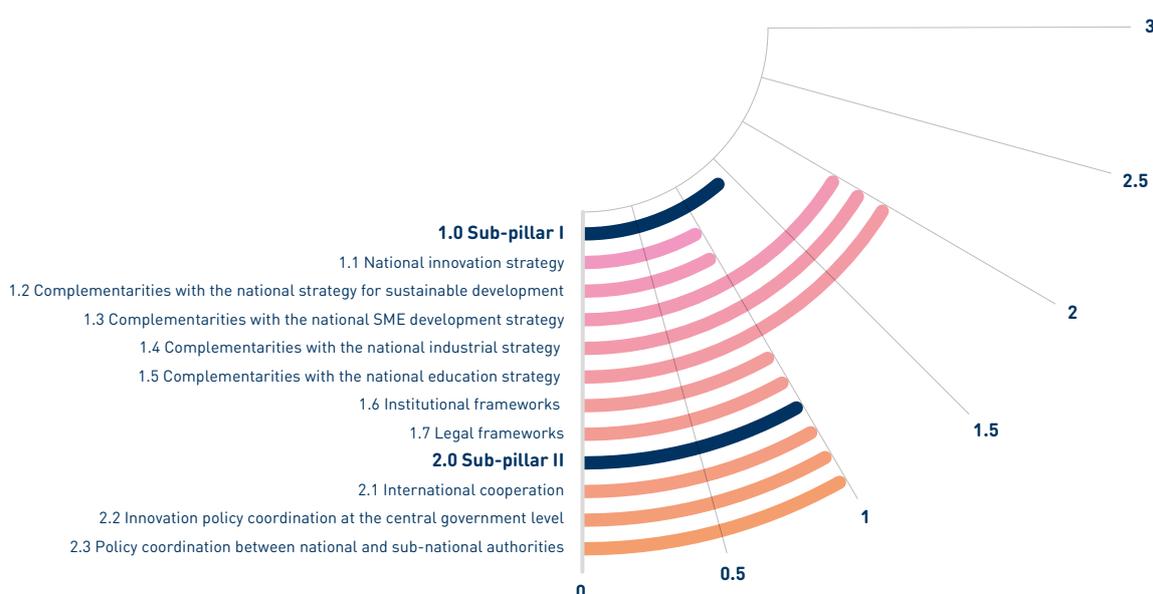
## Chapter III

# PILLAR I: INNOVATION POLICY GOVERNANCE

The first pillar of the IPO reviews the overarching strategic, institutional and legal framework for innovation policy, as well as the competences of and coordination among government bodies involved in innovation policy. This review assesses the extent to which innovation policy governance is sound, well-structured, efficient and flexible.

## National innovation policy governance – strengths and weaknesses

Figure III.1 • Scoring of sub-pillars: innovation policy governance



Source: UNECE.

Note: Each indicator is assessed using a score from 3 to 0. The highest score (3) is given to fully fledged policy initiatives and mechanisms that can provide mutual learning opportunities for the EESC sub-region. A score of 2 is assigned if a policy initiative is operational. An indicator receives 1 point if a policy initiative is under development. The lowest score (0) is given if a country does not have a specific policy mechanism, strategic document or policy initiative. The indicators are based on an extensive questionnaire answered by national government agencies and external consultants. The questionnaire consists of open, binary and multiple-choice questions. Additional statistical data supplement the formal assessment framework by informing on key socioeconomic trends and context conditions. Statistical data are not directly integrated into the qualitative indicators but are used to guide scoring decisions. For more information, please refer to Methodology and Process.

Azerbaijan is actively developing a national innovation system, and the Government shows a consistently high level of commitment to innovation. In 2019, the Government took several important steps, ranging from preparing the national innovation strategy to establishing institutions with responsibilities for science and innovation. Azerbaijan has recently launched high-level events to foster synergies in innovation policy and unite stakeholders from the Government, the business sector, academia and international organizations. Two examples are InnoWeek and InnoFest, annual events that support innovation and entrepreneurship

Yet more progress is needed. New policy instruments are not yet fully operational. Both old and newly established authorities lack full capacities to formulate, design and implement innovation policy initiatives. Neither the central government nor national and subnational authorities coordinate policy to an extent that improves the overall efficiency and effectiveness of policymaking. Despite its potential in research and innovation, Azerbaijan is not fully engaged in international cooperation in science and technology. Insufficient financial support for enterprises, low governance quality and insufficient human capital, as well as inadequate regulation, hold back private sector innovation. To enable innovation-led economic growth, policy efforts thus need to continue in a systematic way.

**Table III.1 Overview of sub-pillars and indicators for innovation policy governance**

Sub-pillar I: Innovation Policy Frameworks	Sub-pillar II: Innovation Policy Coordination
National innovation strategy	International cooperation
Complementarities with other policy areas	Innovation policy coordination within the central government and between national and subnational authorities
Institutional frameworks	
Legal frameworks	

Source: UNECE.

## Sub-pillar I: Innovation policy frameworks

*Given the many government levels involved in designing and implementing innovation policy, it is vital to have a strategic document containing the Government's overarching vision.*

### National innovation strategy

Although economic diversification has been recognized as a policy priority at the highest level for two decades, it has not yet been realized. In 2012, the Government adopted Azerbaijan 2020: Vision for the Future, a development strategy for sustainable and inclusive economic growth. The strategy called for expanding the non-resource sector,

boosting innovation-led growth and developing human capital. The Strategic Road Map on the National Economy and Key Industrial Sectors of Azerbaijan (2016) put innovation-led growth front and centre. It included investment in human capital, physical infrastructure and institutional capacities. Efforts to diversify concentrate on agriculture, consumer goods, chemicals, ICT, tourism and manufacturing of machine tools (OECD, 2019).

Innovation policy remains fragmented, spread across legal and strategic documents and bodies with little coordination or alignment. To address gaps, a presidential decree of 10 January 2019 mandated that the Administration develop a national innovation strategy and action plan for adoption in 2020, with sector-specific national road maps for 2025 and related key performance indicators. The strategy seeks to solve several problems in the national innovation system and to introduce structured approaches to policymaking. Government support focuses on high-tech sectors, while neglecting innovation in low-tech ones.

Research and innovation are underfinanced, and the quality of research is below international standards. In 2018, R&D expenditure accounted for only 0.18 per cent of GDP, far below the average of 2.37 per cent among member countries of the Organization for Economic Cooperation and Development (OECD). In 2018, gross domestic expenditure on R&D as a share of GDP in Georgia was 0.3 per cent and in Ukraine it was 0.47 per cent. The low availability of financial resources to support R&D prevents innovation-led economic growth. The national innovation strategy sets out a goal to create funding programmes and policy instruments for applied research.

The broadly top-down approach to innovation policy limits the flexibility needed to adjust measures to emerging needs and opportunities. Policy measures do not sufficiently reflect the needs, demands and expectations of stakeholders, thus undermining the quality and impact of interventions. The strategy should enable bottom-up initiatives and support mixed approaches in national governance of science and innovation.

## **Complementarities with other policy areas**

Several strategies steer innovation policy in Azerbaijan. An important one is the State Programme on Industrial Development 2015–2020, which aims to strengthen industrial and technological parks, set up new industrial parks and special economic zones, and raise the industrial capacity of regions. It contains several innovation-related measures, such as modernizing industrial facilities, increasing non-oil exports, improving energy efficiency, expanding knowledge-intensive production and developing skills in the labour force. It recognizes innovation as a key development driver and calls for investing in human capital and creating conditions for economic growth based on scientific advances. To help implement it, the Ministry of Economy launched an initiative promoting the sharing of international best practices with senior managers of domestic enterprises. In addition, with the Ministry of Transport, Communications and High Technologies (MTCHT), the ANAS and the Ministry of Foreign Affairs, the Ministry of Economy developed a programme to strengthen cooperation with foreign entities in science, technology and innovation.

In December 2016, to complement the programme, Azerbaijan adopted the Strategic Road Map for the Development of Heavy Industry and Engineering. The main objective is to enable Azerbaijani industrial companies to become integral parts of global

value chains and contribute to producing high value added goods. The road map introduces objectives that support industrial development by

- Focusing on emerging industries and high value added industrial sectors
- Attracting local and foreign investment in heavy industry and mechanical engineering
- Promoting the application of international standards and best practices in industry
- Creating mechanisms for transferring advanced manufacturing technologies
- Supporting innovation in domestic enterprises

The Strategic Road Map for the Production of Consumer Goods by Small and Medium Enterprises defined SME policy measures for 2016–2020. It aimed to create a favourable business environment and improve the regulatory framework for SME operation. It also aimed to simplify procedures for start-ups and decrease the number of inspections of businesses. In addition, it introduced frameworks for favourable taxation policy and conditions that encourage the development of SMEs. SMEs and start-ups are burdened by high taxes and by limited access to finance and sales channels. With these measures, the Government sought to broaden and improve access to financing for entrepreneurs and create export associations to expand the share of SMEs involved in exporting. The road map emphasized the importance of the national innovation system to providing SMEs with a pool of knowledge and the skills required to develop high value added products and services.

In 2018, the Government introduced tax incentives for innovative SMEs. The Tax Code adopted in 2019 provides tax exemption for small, innovative start-ups for three years after their founding. The Government also offers several funding mechanisms, mainly the SME Development Fund, the Agriculture Fund and the Innovation Agency Fund. The nascent venture capital market cannot provide enterprises with sufficient funding for RDI activities.

Implementation of the United Nations Sustainable Development Goals (SDGs) is governed by several policy documents. The National Strategy for the Conservation and Sustainable Use of Biodiversity in the Republic of Azerbaijan for 2017–2020 lays out protection measures and calls for scientific research in the field. In May 2019, Presidential Decree No. 1209, “On the acceleration of reforms in the energy sector of the Republic of Azerbaijan”, outlined key initiatives for developing the energy sector and energy-efficient technologies. The decree complements the strategic road map for developing thermal energy, water and gas supply published in December 2016.

The National Strategy for Information Society Development 2016–2020 sets out specific targets and assigns responsibility for achieving them to specific government institutions. Measures to be undertaken address technology parks, business incubators and initiatives for innovative entrepreneurship. The strategy includes several major infrastructural components, including the Azerspace Communications Satellite programme and the Trans-Eurasian Information Super Highway. The Government is working on developing a Google Cloud platform to provide cloud solutions for public authorities.

In 2015, the ICT industry accounted for 2 per cent of GDP, with a turnover of approximately \$972 million – and substantial potential for further growth. Yet, more investment is needed in hard and soft ICT infrastructure: Azerbaijan ranks 53rd on the Network Readiness Index of the World Economic Forum (2016) and 65th on the ICT Development Index of the International Telecommunication Union (2017) (chapter II).

E-governance is part and parcel of these efforts. To complement the development of digital government, the State Agency for Public Service and Social Innovations established service centres of the Azerbaijan Service and Assessment Network (ASAN) across the country. The service centres provide one-stop services for citizens using a single-window concept. The State Agency for Public Service and Social Innovation manages more than 100 services including a digital system for electronic visas, the ASAN payment system, a digital platform for communal services and the Abad platform to help entrepreneurs to find national and international sale channels. In 2015, for its governance model and its contribution to the effectiveness and efficiency of public services, the agency received the United Nations Public Service Award.

## Institutional frameworks

In 2017, the Government set up the Small and Medium Business Development Agency (SMBDA). The SMBDA provides direct financial support through the SME Development Fund and other funding mechanisms and, with the Ministry of Finance, is developing financial incentive schemes for start-ups. It also supports the national innovation policy. The agency contributes to innovation laws, innovation-related diaspora engagement and enterprise skill development, such as through training on tax legislation and training on entrepreneurship for women. The SMBDA is planning to open regional offices, to be available also to other public bodies such as those working on promoting innovation in the private sector.

In 2019, after merging the ICT Fund and the High-Tech Park Azerbaijan, the Government established the Innovation Agency. The agency provides financial support for innovative projects, including for commercializing research, as well as for acceleration programmes such as Idea to Business and Fast Track. In the past, the ICT Fund distributed grants, with a maximum amount of AZN 50,000. The Innovation Agency plans to increase the maximum amount to AZN 500,000, to support ambitious innovation projects that have large scope and scale.

The Innovation Agency's role as a facilitator of innovation activities is not entirely clear or well defined, as some of its mandates overlap with those of other government authorities with responsibilities for science and innovation. The agency still lacks mechanisms for ensuring the efficiency and effectiveness of its operations and has yet to conduct either market failure analyses or cost-benefit analyses. In addition to providing financial support to innovation actors, government authorities should actively contribute to strengthening the enabling environment for RDI and developing elements of the national science and innovation system (such as incubators, accelerators and technology transfer offices).

To strengthen Government support for innovation, the President signed decrees on innovation policy in January 2019 that made the Administration the main public authority responsible for formulating and implementing national innovation policy. In 2018 it had established the Department of Innovative Development and e-Government to coordinate science and innovation policy initiatives as well as the development of digital government. In each government department, appointed chief innovation officers report twice a year on measures related to supporting science and innovation. Azerbaijan does not have a permanent national innovation council, but some attempts have been made to reduce the degree of fragmentation of policy and to foster synergies through intraministerial working groups.

## Legal frameworks

In parallel with developing the national innovation strategy, the Government is working on improving laws and regulations to enable and support research and innovation. Although it still lacks a national coordination framework, the Government has made progress in improving bankruptcy procedures, business licensing and regulatory impact assessments. The Presidential Decree on Additional Measures for Entrepreneurship Development of 3 March 2014 simplified business regulations and streamlined public inspection procedures. Mechanisms for protecting intellectual property rights are well developed but not sufficiently enforced. Legal frameworks lack definitions of some key innovation actors such as start-ups, making it challenging to develop supporting regulations. Regulations on venture capital investment and business insolvency do not exist. Public procurement is governed by the 2001 Law on Public Procurement, which is updated regularly; the latest amendments, related to reductions of tender durations, occurred in December 2018. Public procurement authorities have not mainstreamed support of innovation in their policies and processes, leaving substantial potential untapped in a country where government expenditure accounts for almost 30 per cent of GDP (\$14.8 billion in 2019) (TPPR, 2020).

Sub-pillar I IPO evaluation and recommendations			
Achievements			
<ul style="list-style-type: none"> <li>✓ General awareness of the importance of innovation-led growth exists and it is a priority, as documented in various strategies and official documents.</li> <li>✓ A national innovation strategy has been developed, and government bodies in charge of innovation policy have been set up.</li> <li>✓ The Government has made progress in developing digital government platforms and public sector innovation.</li> </ul>			
Area for improvement	Recommendation	Time frame	Responsibility
• Funding of RDI is low.	✓ Increase funding of RDI and improve the efficiency and accountability of public expenditure, by adopting best governance practices and establishing full-fledged monitoring and assessment mechanisms for public funding of RDI.	Long-term	Government
• The absence of a clear definition of start-ups in national legislation makes it very challenging to develop well-functioning policy initiatives aimed at promoting RDI activities in start-ups.	✓ Adopt legal acts that introduce the term “start-up” into policymaking.	Short-term	Government
• Azerbaijan does not have legal frameworks for insolvency or for venture capital.	✓ Close the gaps in legislation related to insolvency regulations and venture capital investment, to enable greater dynamism of innovation activities in the business sector.	Short-term	Government
• Government support concentrates on high-tech sectors. Systematic efforts to support innovation in sectors with lower uptake of advanced technologies are lacking.	<ul style="list-style-type: none"> <li>✓ Expand the scope of science and innovation policy.</li> <li>✓ Ensure that the Government provides sufficient support for RDI activities in the service sector and in industries with lower technological intensity, in addition to high-tech industries.</li> </ul>	Medium-term	Government
• The design of public procurement frameworks does not support innovation.	✓ Assess the potential of innovation-enhancing procurement.	Short-term	Government

Source: UNECE.

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## Sub-pillar II: Innovation policy coordination

*Coordinated approaches help avoid overlapping, duplicating or omitting actions required to implement innovation policy successfully.*

### International cooperation

At an international crossroads and with strong cultural and historic linkages with the Russian Federation, the Islamic Republic of Iran and Turkey, Azerbaijan could play a significant role in regional cooperation and development. It could become a gateway country for investment into the surrounding region. Azerbaijan is actively expanding cooperation with Gulf countries, organizing the Falcons Summit in 2019 to bring together innovative start-ups and investors from Azerbaijan, Kuwait, Oman, Qatar, Saudi Arabia and the United Arab Emirates, and setting up a joint fund with Saudi Arabia. Azerbaijan actively cooperates with post-Soviet and Islamic states on advancing technology-intensive industrial sectors and supporting start-ups.

Azerbaijan also maintains strong cooperation with the EU – already its largest investor and largest trading partner. The EU-Azerbaijan Partnership and Cooperation Agreement supports the diffusion of international best practices in governance and closer alignment with international industrial standards. Azerbaijan is a non-associated country in the EU Horizon 2020 programme, which opens up opportunities for Azerbaijani researchers to collaborate with international peers and compete for international funding.

Foreign partners fund most international mobility programmes for researchers and students, with no contribution from the Azerbaijani Government. However, all of these initiatives operate on the basis of bilateral agreements with the Ministry of Education. During 2007–2015, some 3,500 students received scholarships to study in foreign HEIs through the State Programme on Education of Azerbaijani Youth Abroad. The President's Youth Foundation provides students with full or partial stipends for education at leading universities abroad.

The German Academic Exchange Services provides funds each year for 100 Azerbaijani nationals to participate in undergraduate and graduate programmes. The United States Embassy offers degree as well as non-degree programmes in science and technology. Azerbaijani HEIs foster collaboration with European research partners through bilateral agreements. Examples include those of the Brandenburgische Technische Universität Cottbus-Senftenberg with the Azerbaijan Technical University and of Humboldt Universität Berlin with ADA University and Baku State University.

### Innovation policy coordination within the central government and between national and subnational authorities

Public authorities with responsibilities for science and innovation develop their measures in silos, as both formal and informal mechanisms are insufficient to ensure that innovation policy is coordinated. In January 2019, the President signed Decree No. 881, "On coordination in the field of innovative development in Azerbaijan", which will set up the Coordination Council for Science and Innovation Policy. The Council will consist of

representatives of all ministries, the ANAS and central executive bodies. Once operational, the Council is expected to lead the coordination of policy as well as efforts to improve the national science and innovation system. Other mechanisms for coordinating innovation policy between government authorities, such as joint working groups, are lacking.

Coordination among national and subnational authorities is also not yet institutionalized. Some policy measures are targeted at resolving innovation policy challenges at a regional level. In accordance with the State Policy on Social and Economic Development of the Regions of the Republic of Azerbaijan for 2019–2023, local governments – jointly with the MTCHT – should provide support to young entrepreneurs and start-ups and build their skills.

## Sub-pillar II: Evaluation and recommendations

The national science and innovation policy landscape remains fragmented. Successful implementation of science and innovation policy requires clearly defining the mandates of all government authorities with responsibilities for science and innovation. It is critical to ensure that science and innovation policy initiatives are coordinated at central, regional and local levels to avoid duplicating functions and to foster positive synergies. The first step in this direction could be the launch of the national Coordination Council, which should unite all relevant public and private stakeholders. Because international cooperation in science and innovation is not fully developed, there is a need to establish effective mechanisms for knowledge spillovers from international partners to the domestic economy and civil society.

Sub-pillar II		IPO evaluation and recommendations	
Achievements			
<ul style="list-style-type: none"> <li>✓ Linkages with foreign partners in science and innovation are historically strong.</li> <li>✓ The Government created the Coordination Council for Science and Innovation Policy.</li> </ul>			
Area for improvement	Recommendation	Time frame	Responsibility
<ul style="list-style-type: none"> <li>• The country engages only marginally in international research collaboration.</li> </ul>	<ul style="list-style-type: none"> <li>✓ Design programmes supporting the international mobility of researchers and students and the development of joint research.</li> </ul>	Medium-term	Government
	<ul style="list-style-type: none"> <li>✓ Provide qualification measures for Azerbaijani research organizations on how to manage applications for international funding and provide support to set up internal structures.</li> </ul>		
<ul style="list-style-type: none"> <li>• Coordination of science and innovation policy initiatives is limited: public authorities with responsibilities for science and innovation develop their measures in silos. Some mandates for implementing science and innovation policy initiatives are missing or not enforced sufficiently.</li> </ul>	<ul style="list-style-type: none"> <li>✓ Make the Coordination Council for Science and Innovation Policy fully operational.</li> </ul>	Medium-term	Government
	<ul style="list-style-type: none"> <li>✓ Establish coordination working groups among government authorities with responsibilities for science and innovation.</li> </ul>		
	<ul style="list-style-type: none"> <li>✓ Ensure the free exchange of data on RDI funding within the Government.</li> </ul>		

Source: UNECE.

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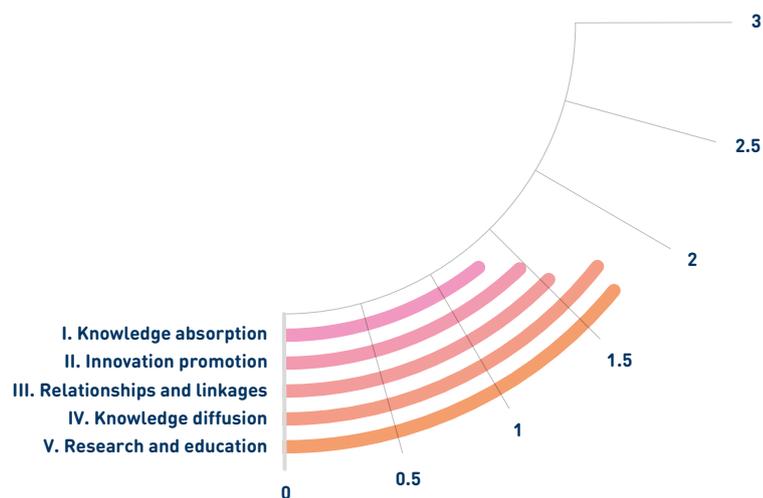
## Chapter IV

# PILLAR II: INNOVATION POLICY TOOLS

*This chapter reviews the policy mechanisms in Azerbaijan that enable, promote and diffuse innovation. It addresses five sub-pillars: knowledge absorption, innovation promotion, relationships and linkages, knowledge diffusion, and research and education.*

### National innovation policy mix – strengths and weaknesses

**Figure IV.1 • Scoring of sub-pillars: innovation policy tools**



Source: UNECE.

Note: The IPO pillar scoring is calculated on the basis of the average quantitative assessment of individual indicators under each sub-pillar. In the evaluation all support measures in a given area are taken into account and special consideration is paid to indirect contributions from external mechanisms. The overall band score for each sub-pillar forms the following generalized categories: 0.0–0.5, No policy instruments/mechanisms exist; 0.5–1.5, Policy efforts are in their initial stage of development; 1.5–2.5, Policy efforts are evident and partial implementation takes place; 2.5+, Policy efforts are comprehensive and monitoring activities are systematic. The scores for individual indicators are as follows: 0, No policy instrument/mechanism exists; 1, A policy measure/s is/are under development /has/have partial or indirect impact; 2, A policy scheme/s is/are operational and implementation has started; 3, Implementation is advanced and evaluation/impact assessment is taking place. Policy measures with sector-specific or partial or non-targeted impact on a given area are subject to case-by-case evaluation. For a more detailed discussion of the IPO scoring methodology, please refer to Methodology and Process.

The national development strategy, Azerbaijan 2020: Vision for the Future, emphasizes innovation-driven growth and led to a range of new and emerging measures to achieve this end. The IPO analysis of policy identified relatively even development of policy support measures in all five sub-pillars, with stronger performance on *Knowledge diffusion* and *Research and education*, relative to *Relationships and linkages*, *Innovation promotion* and *Knowledge absorption* (figure IV.1). Indeed, in recent years the country has focused more sharply on entrepreneurship, investment into connectivity and the use of e-governance to modernize public services. The Innovation Agency is a dedicated agency unifying the delivery of policy support for knowledge-based development in the country. In addition, public-private partnerships work towards aligning support measures with current market needs and build synergies for creating a knowledge-based economy. Several areas for improvement remain, including early-stage investment and other types of support for innovative start-ups as well as support for industry-science collaboration. Filling these gaps is important to develop and sustain a well-functioning innovation system and to harness the potential for innovation-driven growth in Azerbaijan.

**Table IV.1 Overview of sub-pillars and indicators for innovation policy tools**

<b>Sub-pillar I: Knowledge Absorption</b>	<b>Sub-pillar II: Innovation Promotion</b>	<b>Sub-pillar III: Relationships and Linkages</b>	<b>Sub-pillar IV: Knowledge Diffusion</b>	<b>Sub-pillar V: Research and Education</b>
Promotion of public and private sector organizational and managerial practices	Business plan and start-up competitions	Innovation voucher schemes	Information and brokerage schemes for technology upgrading	Policies to increase the number of science, technology, engineering and mathematics graduates
Schemes to support the development of technical and business services	R&D loans	Cooperative R&D grants	Standards, testing and certification instruments for SMEs	Policies to foster research development
Fiscal incentives for acquiring knowledge capital	VAT exemptions	Supplier matching services	Industrial technology assistance programmes and extension services for SMEs	
	Technology incubators	S&T parks	Public procurement for innovation	
		Innovation spaces	Digitalization	
		Technology accelerators		
		Business networks and clusters		
		Academia-industry linkages		
		Diaspora networks		
		Gender equality		

Source: UNECE.

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## Sub-pillar I: Knowledge absorption

*The process of assimilating external knowledge plays a substantial role in developing dynamic core competencies, as well as in gaining competitive advantage and creating new value chains.*

### Promotion of public and private sector organizational and managerial practices

The primary provider of capacity-building services is the Small and Medium Business Development Agency (SMBDA), established in 2017. The agency recently developed a platform with training modules for SMEs, as well as a management training programme in partnership with GLZ, the German development agency for international cooperation. It is still too early to assess the impact of these measures. The Innoland Incubation and Acceleration Centre and the Barama Innovation and Entrepreneurship Centre provide IT and business training for programme participants in addition to mentor support, networking and access to investors. Although no dedicated scheme exists to promote organizational and managerial practices, process innovation has transformed organizational practices in the public sector. The ASAN one-stop shop model provides a unified and coordinated way to deliver public services, and the ASAN Service Centres ensure transparency in the activities of State bodies. Both the State and citizens evaluate public services, forming the basis for systematic improvements. Nevertheless, coordinated efforts are needed to increase efficiency and improve managerial practices in both the public and the private sector. The National Strategy on Development of Civil Services 2019–2025 (adopted in 2018) envisions the development of training modules and programmes for human resource management for civil service executives, among other activities.

### Schemes to support development of technical and business services

The measures in place to optimize the provision of technical and business services are outlined by a 2019 Presidential decree supporting the development of the private sector, in particular the SME competitiveness and market entry. Despite the existence of a set policy and institutional framework, technical and business services are in demand on the domestic market: as of 2018, less than 20 per cent of Azerbaijani SMEs had benefited from publicly funded or co-funded business development services, according to the OECD SME Policy Index 2020 (OECD and others, 2020). The hitherto fragmented business support infrastructure is being restructured, with the SMBDA developing a model business factory, among other schemes to promote technical and business services in the domestic market.

### Fiscal incentives for acquiring knowledge capital

Fiscal incentives for innovation cover resident companies based in high-technology and industrial parks, such as those in Pirallahi and Mingachevir. They include exemptions from taxes on property, value added (VAT) and corporate income. In addition, a policy and institutional framework has been developed to support small innovative start-ups and SME

clusters: according to the amended Tax Code of 2019, start-up beneficiaries are exempt from income tax for three years from their certification date, and cluster companies are eligible for a seven-year exemption from corporate and property tax, as well as VAT on qualifying imported machinery and equipment. The mechanisms for establishing start-ups and SME clusters are still in development. An interministerial committee is developing selection criteria and processes for issuing start-up certificates. Following their adoption, the Government is expected to start implementing fiscal incentives for innovation.

Sub-pillar I IPO evaluation and recommendations			
Achievements			
<ul style="list-style-type: none"> <li>✓ The SMBDA is developing a platform with training modules for SMEs.</li> <li>✓ A unified and coordinated manner of delivering public services is in place through the ASAN.</li> </ul>			
Area for improvement	Recommendation	Time frame	Responsibility
<ul style="list-style-type: none"> <li>• Policy measures related to knowledge absorption do not sufficiently address the promotion of non-technological innovation in the public and private sectors.</li> </ul>	<ul style="list-style-type: none"> <li>✓ Promote organizational and managerial practices by extending measures for stimulating non-technological innovation.</li> </ul>	Medium-term	Academy of Public Administration
	<ul style="list-style-type: none"> <li>✓ Create dedicated schemes for promoting such practices, with set measures (such as training programmes and lifelong learning) aligned with the core priorities for developing the civil service and business environment.</li> </ul>		
<ul style="list-style-type: none"> <li>• Both the provision of technical and business services and policy mechanisms for cooperating with private sector service providers are limited.</li> </ul>	<ul style="list-style-type: none"> <li>✓ Conduct an analysis of the market for technical and business services to identify potential mismatches and services in demand.</li> </ul>	Short-term	SMBDA
	<ul style="list-style-type: none"> <li>✓ Regularly monitor private sector provision of such services.</li> </ul>		
	<ul style="list-style-type: none"> <li>✓ Create a register of service providers.</li> </ul>		
	<ul style="list-style-type: none"> <li>✓ Promote market-based provision of technical and business services by stimulating the use of private sector service providers.</li> </ul>		
	<ul style="list-style-type: none"> <li>✓ Introduce quality assurance mechanisms and/or certification programmes.</li> </ul>		
	<ul style="list-style-type: none"> <li>✓ Offer basic technical and business services that do not compete with private sector offerings, as based on the assessment conducted, in particular for soft skills (for example, mentorship programmes, workshops).</li> </ul>		

Source: UNECE.

## Sub-pillar II: Innovation promotion

*Promoting innovation requires governments to invest in establishing platforms where young companies can develop and test innovative ideas.*

### Business plan and start-up competitions

The number of business plan and start-up competitions focusing on innovation has been growing steadily in the past decade (table IV.2). Multiple events are held; examples include the National Innovation Challenge of the Ministry of Economy and the joint project with the Ministry of Transport, Communications and High Technologies (MTCHT) called From Idea to Business (I2B),<sup>1</sup> which involves start-up tours and aims to develop the start-up movement in Azerbaijan. A challenge for these competitions is that after distributing funds, many do not have follow-up mechanisms, including professional mentorship and guidance following the receipt of seed capital.

**Table IV.2 Business plan and start-up competitions in Azerbaijan**

Competition	Implemented by	Funded by	Number of participants	Frequency	Outcome to date
Creative Business Cup	Social Innovation Lab	Ministry of Culture	19 in 2019	Annual since 2018	A five-week Creative Business Cup training and coaching programme for 15 successful applicants
Climate Launchpad	Social Innovation Lab	Barama Innovation and Entrepreneurship Centre	83 in 2018	Annual since 2017	Direct access to the Climate-KIC Accelerator and an eight-week intensive training course for the top 10 competitors
Imagine Camp	Microsoft	MTCHT, Ministry of Education, Ministry of Youth and Sport, Copyright Agency, Microsoft Azerbaijan, PASHA Bank, Nar Mobile	15 in 2018	Annual since 2015	Cash prizes distributed to top three start-ups annually
Inclusivity Hackathon	UNDP	Ministry of Education	16	Piloted in 2019	One project awarded a cash prize; two projects assisted with links with investors
National Innovation Challenge	Social Innovation Lab	Ministry of Economy, United Nations Office in Azerbaijan	220 in 2018	Annual since 2017	Cash prizes to top three start-ups annually
New Generation	Youth Inc	Ministry of Youth and Sport, Coca-Cola Company	25 in 2019	Annual since 2018	Cash prizes for the top three start-ups annually
New Idea start-up competition	Baku Engineering University	BP	148 in 2017	Annual since 2013	842 projects supported (100 financially)
NewSpace Business Accelerator	AzerCosmos and Social Innovation Lab	Azerbaijani-French University	40 (from 5 countries)	Annual since 2018	Seed investment in three winning projects
Seedstars World	Barama Innovation and Entrepreneurship Centre	Azercell Telecom	N/A	Annual since 2013	Training and access to investment network for the 10 best start-ups annually

Source: UNECE.

## Support for RDI investment

Obtaining early-stage finance for innovative projects is a major challenge for entrepreneurs in Azerbaijan. Until 2017, R&D loans were distributed by the State ICT Fund, established by the MTCHT in 2012. The Fund allocated grants – mainly to SMEs – for developing software products, innovative infrastructure projects and e-services. Because of various limitations, including a lack of follow-up mechanisms and funding of non-viable projects, the MTCHT dissolved the Fund. Under a recently approved policy framework, the Innovation Agency is developing a mechanism for distributing preferential loans.<sup>2</sup> Local entrepreneurs can also obtain funding from traditional banks; however, the high collateral requested for risky projects often forces start-ups to put their projects on hold. A venture capital industry is beginning to emerge, with several funds established in recent years, but more time is needed for the industry to develop and make an impact on innovative development. General support in business development is also provided by the SMBDA. The start-up movement is further supported by large, private sector companies (such as Azerfon, AzerTurkBank, PASHA Bank and Procter & Gamble) that sponsor hackathons and innovation competitions in the framework of their corporate social responsibility policies.

## Technology incubators and accelerators

The emerging scene of technology incubators has seen several structures established in recent years (table IV.4). For example, the Barama Innovation and Entrepreneurship Centre of AzerCell Telecom – the first business incubator in Azerbaijan, created in 2009 – is supported by the Innovation Agency. As of 2017, the Centre had hosted more than

**Table IV.3 Incubators and accelerators**

Incubator		Accelerator	
Name	Location	Name	Location
ADA Innovation Centre	ADA University	Barama Innovation and Entrepreneurship Centre	Innovation Agency
ADAU Innovation Centre	Azerbaijan State Agricultural University (ADAU)	Climate Launchpad	Social Innovation Lab
APPLab	Innoland	Fast-Track Acceleration Programme	Innovation Agency
Barama	Innovation Agency	NewSpace	Azercosmos
BMU Innovation Centre and Technopark	Baku Engineering University	Social Innovation Lab	Social Innovation Lab
EAZI Start-up Centre	Azerbaijan State Oil and Industry University	SUPaz	Innoland
Innovative Business Incubator	State Economics University		
Next Step	Innoland		
Technovate	Farid Ismayilzada		
Youth Inc, Entrepreneurship Programme & Business Incubation Centre	Youth Inc		

Source: UNECE.

300 events and launched 45 start-ups. One issue for incubators is that the role of government agencies often overlaps with the activities of the private sector in providing support for innovative start-ups and SMEs. Many activities of technology incubators are outlined by the Model Regulations on Technology Parks (2014); however, the lack of a clear policy framework defining technology incubators impedes the development of innovative projects. The situation could be improved by standardizing private sector provision of incubation services. Similarly, technology accelerators are outlined in the charter of the Innovation Agency, which has several programmes providing technical, legal and financial services to start-up projects. Among the schemes are the first tech accelerator in the country – Fast Track, established by the Innovation Agency – as well as the SUP accelerator at Innoland Incubation and Acceleration Centre, which expanded internationally following its Demo Day in 2019.

## Sub-pillar II IPO evaluation and recommendations

### Achievements

- ✓ Institutional reforms for developing the business environment were undertaken with the establishment of the SMBDA as a specialized agency for SME development.
- ✓ Several entities provide start-ups with Incubation services, in addition to co-working space and assistance with investment attraction.

Area for improvement	Recommendation	Time frame	Responsibility
<ul style="list-style-type: none"> <li>• Support tools for promoting innovation do not sufficiently address the low access to early-stage finance, which obstructs the development and implementation of innovative projects.</li> </ul>	<ul style="list-style-type: none"> <li>✓ Develop a venture finance mechanism (in cooperation with international donors) to overcome the early-stage financing gap and make possible innovative projects and technological creativity.</li> </ul>	Medium-term	Innovation Agency
<ul style="list-style-type: none"> <li>• The lack of a policy framework for technology incubators obstructs the development of start-ups and compounds existing overlaps in the support activities of government agencies and the private sector.</li> </ul>	<ul style="list-style-type: none"> <li>✓ Conduct a comprehensive assessment of the institutional framework for start-up support</li> </ul>	Short-term	Innovation Agency Ministry of Economy MTCHT
	<ul style="list-style-type: none"> <li>✓ Develop a policy framework for the activities of private incubators that are involved with developing innovative SMEs.</li> </ul>		
<ul style="list-style-type: none"> <li>• The policy and institutional framework of business plan and start-up competitions does not cover follow-up mechanisms or monitoring of beneficiaries' progress.</li> </ul>	<ul style="list-style-type: none"> <li>✓ Develop a strategic evaluation framework for business plan and start-up competitions to follow up on beneficiary projects and evaluate the effectiveness of schemes.</li> </ul>	Short-term	SMBDA
	<ul style="list-style-type: none"> <li>✓ Consider applying co-financing schemes to increase the number of viable projects that receive funding.</li> </ul>		

Source: UNECE.

## Sub-pillar III: Relationships and linkages

*Schemes that promote linkages between science and industries help create innovative ecosystems by assisting scientists and businesspeople in commercializing research, creating products and developing organizational processes.*

### Business networks and clusters

Cooperation among businesses in Azerbaijan takes place in part through business associations. The 12 associations registered in 2019 organize sector-specific training in business and skills development. Most associations aim primarily to promote agricultural exports or IT-related products. In this regard, the Azerbaijan Innovation Export Consortium is the main actor. Supporting such business networks are recent initiatives such as the MAINTeCH innovation and technology forum and the Caspian Innovation Conference (organized by the MTCHT in 2018), which serve as collaboration platforms in the ICT sector. Furthermore, the annual exhibition of IT – Innovations and High Technologies Bakutel – serves as a platform for cooperation and cross-promotion, supporting business networks in the country.

Supplier-matching services facilitate the export of local production by linking local producers with foreign buyers through online platforms, such as the Baku E-Trade Forum. The Digital Trade Hub, a public-private partnership initiative implemented by Best Solutions in cooperation with the MTCHT in 2019, applies a novel approach to e-commerce (see digitalization and e-governance under sub-pillar IV). Several support measures are also in development in government entities. The SMBDA is in charge of creating an e-network of SMEs in the country, as well as managing a supply chain system and a procurement network of entrepreneurship. Network building is also included in the mandate of the Innovation Agency.

### Innovation support infrastructure

The ANAS High-Technology Park was established by a Presidential decree in 2016 to expand high-technology production and develop modern scientific and technological innovations (Azerbaijan, Order of the President, 2016). Starting in 2019, a public procurement mechanism applied to products manufactured at the park has stimulated the production of innovative goods. Five industrial parks are registered as sector-specific manufacturing compounds, containing large conglomerates that receive a range of fiscal incentives (table IV.6). Although these parks offer space and physical infrastructure, few provide technical and business services to residents. Some, including the ANAS park and the Sumqayıt Chemical Industrial Park, offer incubation and consulting services. The development of innovative start-ups and SMEs thus requires a greater orientation towards services, which are in demand across the subregion.

A main player on the innovation scene is Innoland Incubation and Acceleration Centre, which houses the SUP accelerator, Next Step and Khazar Ventures. Innoland operates on a public-private partnership model formed through the ASAN and initiated by the State

**Table IV.4 Industrial and high-technology parks**

Name/location	Industry	Residents	Established
ANAS High-Technology Park	High-tech engineering innovation, educational technology	9	2016
Balakhani	Recycling (motor oils, plastic, paper and cardboard products)	10	2011
Garadagh	Shipyard and ship repair	1	2015
Mingachevir	Light industry (textiles, leather, cotton products and so on)	1	2016
Pirallahi	Pharmaceuticals, medicinal products	5	2017
Sumgait Chemical Industrial Park	Polymers, construction materials, machinery and equipment	18	2011

Source: UNECE.

Agency for Public Service and Social Innovations, which co-funds start-up projects and offers links with investors, IT training and educational programmes. Self-funded, Innoland has several main investors based in Silicon Valley, some of which are members of the Azerbaijani tech diaspora.

### Academia-industry collaboration and mobility

Although no institutionalized industry research networks exist in Azerbaijan, universities run multiple ad hoc projects that facilitate the inclusion of industry in research. For instance, the Innovation Centre and Technopark of Baku Engineering University brings together about 20 companies to work on joint and independent projects with students and faculty members, and ADA University cooperates with the private sector on developing business solutions tailored to market needs. The State Economics University also implements a virtual labour exchange project and targeted work placements. It applies a researcher evaluation approach that is based on the scientific activity of teaching staff. Despite these efforts, industry-science linkages in Azerbaijan are not yet sufficiently developed. Sustainable partnerships are needed to unite business and research communities. To this end, for example, an innovation lab is planned for Mingachevir State University.

### Diaspora networks

The Government has undertaken several schemes to strengthen diaspora networks, such as the first summer camp for Azerbaijani living abroad and the establishment of a Diasporas Youth organization in 2018. Cultural centres and language schools operate in several other countries, including Belarus, Belgium, the Russian Federation and Ukraine. In addition, to ensure cooperation among diaspora organizations, Azerbaijani coordination councils have been established in the Baltic States, France, Germany, Italy, the Netherlands, Spain, Switzerland, and Sweden to ensure cooperation among diaspora organizations. The State Committee on Affairs with Diaspora further organizes and hosts special events, roundtables and gatherings to improve the process of integrating Azerbaijanis living abroad. In addition, the SMBDA supports innovation-related engagement of the diaspora on an ad hoc basis (chapter III). In 2020, to help develop the start-up ecosystem in Azerbaijan, the Innoland Incubation and Acceleration Centre opened the Azerbaijan Innovation House at Stanford University in Silicon Valley, featuring the first forum of “tech diaspora”.

## Gender equality

Azerbaijani legislation that instils the principle of equality and prohibits discrimination on the basis of gender includes the Law on Gender Equality (2006), the ratification of the UN Convention on the Elimination of all Forms of Discrimination Against Women and the adoption of several acts on gender equality. Female empowerment platforms also exist (such as WoWomen and TechTech Khanum), as well as conferences and centres to encourage women's participation, mainly in the IT sector (for example, the Ada Legacy annual conference and Femmes Digitales ICT Club). Nevertheless, challenges are still present in social expectations, the gender wage gap and access to childcare facilities. According to the State Statistical Committee, women occupy about 28 per cent of civil servant positions in the highest ranks (from level 3 to senior classification positions) and 21 per cent of administrative positions in the lower ranks (level 4 to 7) (Azerbaijan, State Statistical Committee, 2020b). Women occupied the majority of the supplemental positions in civil service (56 per cent) as of 2019. In addition, although female employment has risen steadily in Azerbaijan over the last decade, the rise has taken place primarily in rural areas, where women are most likely to be employed in low-wage agricultural industries. At the same time, the number of women engaged in entrepreneurial activities is less than a third of the number of men as of 2019; both men and women are engaged mainly in the trade sector. The percentage of women holding positions in the decision-making process also continues to lag far behind that of men. An additional challenge is the availability and affordability of childcare – attendance and enrolment rates for early childhood development programmes are very low, especially in rural areas.

### Sub-pillar III IPO evaluation and recommendations

#### Achievements

- ✓ The innovation infrastructure supported by the Government includes several facilities that offer start-ups co-working space and incubation and acceleration services, as well as three high-technology parks and five industrial parks.
- ✓ Several schemes to develop diaspora networks have recently begun building on existing partnerships.
- ✓ Policy tools that support gender equality in the IT sector include female empowerment platforms, conference events and centres that encourage women to participate.

Area for improvement	Recommendation	Time frame	Responsibility
<ul style="list-style-type: none"> <li>• Policy tools do not provide sufficient stimulation for joint projects between industry and academia, to strengthen linkages for innovative development.</li> </ul>	<ul style="list-style-type: none"> <li>✓ Support science-industry collaboration and stimulate commercialization of innovative ideas by introducing early-stage finance for non-competitive financial support (such as innovation voucher schemes).</li> </ul>	Medium-term	Innovation Agency ANAS
	<ul style="list-style-type: none"> <li>✓ Consider reinstating a cooperative R&amp;D grant programme to stimulate cooperation between innovative enterprises and public R&amp;D institutions.</li> </ul>		
	<ul style="list-style-type: none"> <li>✓ Conduct a comprehensive assessment of the policy mix for stimulating industry-academia collaboration and set up a framework for monitoring joint activities to identify trends and areas that need policy support.</li> </ul>		

Sub-pillar III		IPO evaluation and recommendations (Concluded)	
Area for improvement	Recommendation	Time frame	Responsibility
<ul style="list-style-type: none"> <li>The impact of the innovation support infrastructure is not assessed regularly.</li> </ul>	<ul style="list-style-type: none"> <li>Set up a framework for regular monitoring and evaluation of innovation infrastructure elements to identify and provide value added solutions based on current market needs and further stimulate start-up development.</li> </ul>	Short-term	MTCHT
<ul style="list-style-type: none"> <li>Mechanisms for stimulating mobility between academia and industry are limited and mainly cover separate projects within universities.</li> </ul>	<ul style="list-style-type: none"> <li>Strengthen industry-science linkages and the entrepreneurial experience of researchers by applying an effective approach for increasing mobility between industry and academia.</li> </ul>	Short-term	Ministry of Education
	<ul style="list-style-type: none"> <li>Develop a national unified and coordinated scheme, to consolidate under one umbrella the policy tools in the area (for example, sabbatical leaves, compulsory placements).</li> </ul>		

Source: UNECE.

## Sub-pillar IV: Knowledge diffusion

*Mechanisms that ensure equal and widespread access to information are vital to creating an innovative ecosystem in both the public and the private sector, serving as channels for the distribution and intersectoral flow of information.*

### Standards, testing and certification

The institutional framework for standards and technical regulations in Azerbaijan has recently been reorganized. A new law on standardization and a state programme on compliance with international standards were implemented in 2019. In 2018 the State Committee on Standardization, Metrology and Patents was liquidated. In its stead, two new agencies were established by Presidential decree, each specializing in separate elements of policy support – the State Agency for Antimonopoly and Control of Consumer Market of the Republic of Azerbaijan and the Agency on Intellectual Property. It is expected that the new institutional framework will account for improved efficiency in the delivery of public services. In addition, during 2010–2018 an EU twinning project on standardization, technical regulation, accreditation and metrology served to assist Azerbaijan in bringing standards in compliance with those of the EU. At present, 45 per cent of national standards are compliant. A main challenge remains to increase the level of awareness regarding the reforms and regulations on start-up certificates.

### Digitalization and e-governance

The Strategic Road Map for Development of Telecommunication and Information Technologies in Azerbaijan (approved in 2016) sets out digitalization objectives along with a nationwide action plan for the ICT sector. Actions implemented under the strategic road map's targets for 2017 were in the areas of overall ICT development, increased productivity

and performance efficiency in business activity, and digitalization of the government and social environment. The expansion of ICT infrastructure has improved connectivity, as signified by increased internet use among the population. The State Agency for Public Service and Social Innovations has established the E-GOV Development Centre, with two portals for public services now operational. E-commerce has also been expanded with the recent development of the Digital Trade Hub platform (box IV.1), connecting SMEs to global markets regardless of their location.

### Box IV.1 Digital Trade Hub

The Digital Trade Hub is the first e-trade and e-commerce platform in Azerbaijan – and the subregion – to support SMEs on the domestic (and global) market, while optimizing the domestic infrastructure potential (chapter 2). Developed by Best Solutions and under the management of the Centre for Analysis of Economic Reforms and Communication, this public-private partnership was designed with consideration of international best practices in the field. It offers global B2B (business-to-business) e-commerce and B2G (business-to-government) e-services, including e-customs, e-apostilles, shipping documents, business start-up, e-banking and tax returns. Among its many functions, the platform provides e-residency services, empowering entrepreneurs around the world to set up and run a location-independent business in Azerbaijan with the issuance of a mobile ID for non-residents.

Access to and use of data was facilitated through the MTCHT's establishment of a unified data processing centre, in accordance with ISO standards. This was followed recently by work on developing a government cloud (G-cloud). High-performance computing solutions are developed at an Internet of Things Laboratory, boosting the digital economy, and the annual high-tech exhibition BAKUTEL showcases ICT innovations and digital solutions. An ICT innovation network is being developed as part of the project EU4Digital, supporting the development of the digital economy in the sub-region. According to the 2019 digital development overview of Azerbaijan prepared by the Asian Development Bank, technical and vocational education and training in ICT is not yet developed. The inclusion of modern ICT facilities and training instructors is needed in order to develop an education system that meets market needs. A positive development in this direction is the launch of the Baku State Vocational Education Centre of Industry and Innovations in September 2019.

### Other policy tools

In line with the sub-regional trend, policy tools in Azerbaijan do not sufficiently address the present gaps in knowledge diffusion, with regard to leveraging the potential of public procurement to support innovation and industrial technology assistance. Nevertheless, efforts have been made to develop a policy framework for the former. In 2019, the Government adopted a resolution regulating the procurement of goods produced in the ANAS technology park (Azerbaijan, Cabinet of Ministers, 2019). It could apply the ample potential of public procurement further through pilot initiatives for innovative solutions, as well as broader uptake of technology. AZPROMO – the Export Promotion Agency – administers a scheme for industrial technology assistance that does not generate enough interest, revealing a need to better address underlying issues of firm capacity.

## Sub-pillar IV IPO evaluation and recommendations

### Achievements

- ✓ Public provisions to innovative start-ups have been expanded to include information and brokerage services, as well as access to international markets.
- ✓ Policymakers have made digitalization a priority, with broader initiatives for improving e-government, accessing and using data, and obtaining G2B services.
- ✓ Institutional reforms through the establishment of specialized legal entities for standards, testing and certification are a positive development in the direction of quality assurance.

Area for improvement	Recommendation	Time frame	Responsibility
<ul style="list-style-type: none"> <li>• Despite significant public expenditure as a share of GDP (30 per cent in 2019), the Government has not yet fully explored the potential of public procurement to stimulate innovative activity on the demand side.</li> </ul>	<ul style="list-style-type: none"> <li>✓ Promote broader uptake of technology using public procurement as an innovation policy tool.</li> </ul>	Medium-term	State Procurement Agency
	<ul style="list-style-type: none"> <li>✓ Develop framework conditions and organizational capabilities, identify and signal market needs, and mainstream support of innovation in policies and processes.</li> </ul>		
	<ul style="list-style-type: none"> <li>✓ Introduce pilot initiatives for public procurement, to explore opportunities for further modernizing public sector institutions and to assess the potential of demand-driven policies for socioeconomic development.</li> </ul>		
<ul style="list-style-type: none"> <li>• The co-financing mechanism in industrial technology assistance for SMEs suffers from low uptake by qualified applicants.</li> </ul>	<ul style="list-style-type: none"> <li>✓ Apply an effective approach to raising awareness of existing schemes and to boosting public interest (for example, dissemination of informational material, collection and promotion of success stories).</li> </ul>	Short-term	Export Promotion Office
	<ul style="list-style-type: none"> <li>✓ Conduct a comprehensive assessment of the industrial R&amp;D co-financing mechanism to identify potential improvements.</li> </ul>		
	<ul style="list-style-type: none"> <li>✓ Relieve compliance requirements to increase the number of applicants and stimulate innovative activity.</li> </ul>		
<ul style="list-style-type: none"> <li>• Policy tools do not fully address the need to raise awareness about and develop capacities to use regulation of national standards and certificates.</li> </ul>	<ul style="list-style-type: none"> <li>✓ Develop a promotional initiative to raise awareness about recent reforms in standards, testing and certification, in particular regional reforms.</li> </ul>	Short-term	Azerbaijani Institute of Standardization

Source: UNECE.

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## Sub-pillar V: Research and education

*Recognizing the requirements of today's labour markets and rapidly evolving technological environment, governments have pursued a multidisciplinary approach to education through science, technology, engineering and mathematics (STEM) initiatives. Policy measures to enhance research are designed to promote research excellence, collaboration and commercialization.*

### Policies to increase the number of STEM graduates

The National Strategy for the Development of Education in Azerbaijan (2015–2025) recognizes the importance of STEM education and has led to a series of support initiatives over the past several years. In 2019, a STEM tournament, the First Lego League Azerbaijan 2019, was piloted for 10–15-year-old pupils across the country. A Digital Skills project that started in 2017 helps students develop algorithmic thinking and programming fundamentals. In addition, the STEAM project provides training for teachers in the field, addressing the growing demand for qualified teaching personnel. The Strategic Road Map for the Development of Vocational Education and Training (approved in 2016) further aims to improve the quality of technical and vocational training. The Azerbaijan Robotics Engineering Academy works with children and youth in a broad age range, from 4 to 25. The Robopark exhibition project, led by the MTCHT, aims to increase interest in robotics, develop distance learning and attract innovative projects to competitions. Within the project, the formation of an innovation cluster is envisaged for companies involved in robotics (such as the Academy). In addition, the World Robot Olympiad Azerbaijan adds to the support in the artificial intelligence field and increases students' interest in STEM education. As most STEM initiatives are concentrated in Baku, science, technology and innovation (STI) policy should ensure the simultaneous development of STEM education across the country.

### Policies to foster research development

Most research is funded by the public sector. In 2017, Azerbaijan was home to 137 R&D organizations, 89 of them based in the ANAS and 6 affiliated with various ministries (Azerbaijan, State Statistical Committee, 2020a). The activities of the ANAS are financed from the State budget with ad hoc contributions of international funds for specific projects. The funding of branch R&D institutes within different ministries is part of the budgets of the respective ministries.

No nationwide action plan exists for research funding, and the level of involvement of private capital in R&D remains low – according to state statistical information, only 9 of the organizations that performed R&D in 2017 were private companies. Among the constraints to private sector engagement are insufficient funding and the lack of widely accessible information on the research infrastructure available. As a result, scientists and enterprises complain of a lack of access to modern R&D equipment, while modern research infrastructure often remains underused because of restrictive internal procedures at higher-education institutions (HEIs) that limit access by outside users.

One of the leading constraints is insufficient funding. According to data from the State Statistical Committee, the Government allocates approximately 0.6 per cent from the State budget each year for science-related expenses, which accounts for just 0.2 per cent of GDP. The principal source of funding for R&D is the State budget. In terms of expenditures, in 2017 the biggest share of finances allocated for R&D was spent by the state sector (represented mainly by the ANAS), HEIs and – by the smallest relative share – the private sector. An important channel for improving innovative ability is joint research projects, which facilitate technology spillovers. They also present more opportunities for cross-border research cooperation, an area with ample potential for innovative development that has yet to be fully explored.

## Sub-pillar V IPO evaluation and recommendations

### Achievements

- ✓ A widespread network of scientific laboratories has been established by the ANAS to support research activity.
- ✓ Recent efforts to improve the quality of STEM education complement existing support measures to improve education.

Area for improvement	Recommendation	Time frame	Responsibility
<ul style="list-style-type: none"> <li>• Policy support measures aimed at increasing the number of STEM students in the higher-education subsector need to be reinforced to complement existing policy efforts.</li> </ul>	<ul style="list-style-type: none"> <li>✓ Expand support for STEM education at HEIs (for example, State-funded places at universities, scholarships) and build on efforts to improve cross-border knowledge absorption (such as international exchange programmes in STEM-related fields).</li> </ul>	Short-term	Ministry of Education
<ul style="list-style-type: none"> <li>• Policy support measures for nationwide research funding need to be strengthened further to incentivize innovative activity.</li> </ul>	<ul style="list-style-type: none"> <li>✓ Introduce competitive research-funding mechanisms to promote research that responds to market needs (for example, offer scholarships and grants in high-potential research fields, co-finance collaborative R&amp;D projects).</li> </ul>	Medium-term	ANAS Innovation Agency
	<ul style="list-style-type: none"> <li>✓ Consolidate policy tools in a State programme for developing research, innovation, science and technology, to unify policy efforts and ensure efficient delivery.</li> </ul>		
<ul style="list-style-type: none"> <li>• Policy tools do not fully exploit opportunities for cross-border research cooperation.</li> </ul>	<ul style="list-style-type: none"> <li>✓ Foster international collaborations in research by forming partnerships with foreign R&amp;D institutes or better supporting existing partnerships with R&amp;D activities.</li> </ul>	Short-term	ANAS
	<ul style="list-style-type: none"> <li>✓ Incentivize engagement with co-publications, to exchange knowledge and build research networks.</li> </ul>		
	<ul style="list-style-type: none"> <li>✓ Develop a programme of international study tours for capacity-building and mutual exchange of best practices.</li> </ul>	Short-term	Fund for Support to Azerbaijani Diaspora
	<ul style="list-style-type: none"> <li>✓ Consider integrating incentives for joint research collaboration into diaspora mobilization initiatives (for example, through support for co-publications).</li> </ul>	Short-term	Fund for Support to Azerbaijani Diaspora

Source: UNECE.

## Notes

- <sup>1</sup> I2B – From Idea to Business is a joint project of the MTCHT with the Regional Development Public Foundation of the Heydar Aliyev Foundation, the Youth Fund of the Republic of Azerbaijan, the United Nations Development Programme, and the Azercell and Microsoft companies.
- <sup>2</sup> President of Azerbaijan, The Regulations of Innovation Agency under the Ministry of Transport, Communications and High Technologies of the Republic of Azerbaijan, 22 February 2019.

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German Federal Ministry for Economic Affairs and Energy – Manager Training Programme: <https://www.managerprogramm.de/en>

Innoland Incubation and Acceleration Centre: <http://Innoland.az/en>

State Agency for Public Service and Social Innovations – Azerbaijan Service and Assessment Network: <https://asan.gov.az/az>

Tax Code of the Republic of Azerbaijan: <https://www.taxes.gov.az/az/page/ar-vergi-mecellesi>

## Chapter V

# PILLAR III: INNOVATION POLICY PROCESSES

*Pillar III examines the underlying processes for innovation policymaking: how data, evidence and stakeholder input inform how decisions are made, put into practice, monitored and evaluated, based on the experience from one specific policy. Ten detailed policy indicators address each step in the policy process of that specific policy, from problem identification or market failure to policy design, implementation, evaluation, impact assessment and learning.*

*In consultation with Azerbaijan's MTCHT, UNECE selected the Grant Scheme under the State Fund for Development of Information Technologies for assessment, on the basis of these criteria:*

- i) The policy measure is intended to foster science, technology and innovation (STI) in the country.*
- ii) The policy measure reflects the standard innovation policy practices in the country.*

*Pillar III also derives broader policy lessons for innovation policymaking.*

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## **Innovation policy processes – strengths and weaknesses**

Azerbaijan launched major structural reforms in 2015 that included establishing the Centre for Economic Reforms and Communications, with the primary goal of developing economic reform proposals based on analytical data and efficient coordination between government bodies. In general, the top-down approach dominates all policymaking spheres in the country as the political environment is highly centralized. Evidence-based policymaking is not yet fully established, and the quality of the analysis supporting new policies and laws is relatively low. Azerbaijan has also made progress in developing electronic government and e-services in recent years. The development of e-government was envisioned in the State Programme for the Development of Communication and Information Technologies 2014–2020 and the Presidential Decree “On measures to

develop e-government and transition to the digital government” (14 March 2018). The main purpose of the programme is to provide good-quality, efficient and accessible services for citizens, based on the one-stop shop principle, and gradual development of the e-services and e-government applications in government institutions. The programme has also expanded the range of services provided by the ASAN and increased the number of its service centres.

Following the Decree on e-government, the E-GOV Development Centre, a legal public entity, was established under the State Agency for Public Service and Social Innovations. The Centre has become a coordinating body in charge of enforcing supervision of the formulation, implementation, integration and effective management of public information resources and systems, as well as promoting public awareness of services. The Government also opened a tier 3 data centre in 2019; its G-cloud will accelerate the transition to digital government and is expected to lead to more effective public administration. These developments are considered far-reaching in Azerbaijan, as they not only modernized service delivery and added to its transparency and efficiency, but also thereby changed the mindsets of civil servants and ordinary citizens, who believed that bureaucracy and corruption were firmly embedded within governmental structures.

### **Policy focus: grants programmes**

Grant schemes are “non-reimbursable transfer[s] to project beneficiaries [...] based on a specific project rationale for particular purposes and on condition that the recipient makes a specified contribution for the same purpose or subproject” (IFAD, 2012, p. 8). As one-off payments, they differ from permanent public transfers such as social security or subsidies for inputs and services (IFAD, 2012). Grants are a form of direct subsidy to enterprises. In the innovation policy sphere, grants programmes usually aim to stimulate enterprise innovation and defray some of its risk by helping entrepreneurs meet the high financial costs of experimenting with new ideas.

Grant schemes require substantial budget resources and risk encouraging rent-seeking and market distortions. For these reasons, they should target a well-identified market failure, specific beneficiary groups that have a verified demand and the potential for additionality and spillovers (IBRD and World Bank, 2016). This is particularly true in countries with limited fiscal space and a strong need to maximize the impact of public spending, such as those in the EESC sub-region. Ideally, to avoid free-rider effects, resources for co-funding should be available for beneficiary firms.

Successful design and implementation of grant schemes (box V.1) requires time and resources, starting with the analytical underpinnings. Failure to take all the steps is likely to result in suboptimal outcomes, such as limited additionality and spillovers, weak demand and disbursements, and unintended consequences on the service provider market (such as a price increases if the supply is inelastic) (IBRD and World Bank, 2016).

### **Policy focus: the Grant Scheme**

Azerbaijan’s Grant Scheme, which operated between 2012 and 2018, stimulated innovation and development in ICT, and provided financial assistance for applied scientific research in the field. It operated under the State Fund for Development of Information Technologies.

## Box V.1 Success factors in designing and implementing grant schemes

A recent review of 106 World Bank–implemented grant schemes (IBRD and World Bank, 2016) identified several success factors in their design and implementation:

- Early presentation of the functionality of the scheme to stakeholders
- Provision of personalized technical assistance to beneficiaries
- Mitigation measures to avoid political capture
- Selection of service providers by beneficiaries
- Transparent selection criteria for beneficiaries
- A level of subsidy that makes the scheme attractive but does not diminish ownership
- Light-touch administrative procedures
- Effective marketing and promotion
- Continuous, transparent monitoring and evaluation so as to assess impact, reduce fraud and identify ways to improve

Established by Presidential Decree No. 2095 (15 March 2012), the State Fund itself operated under the MTCHT. The Fund provided financing through investment, low-interest loans and grants. The Grant Scheme focused on financing innovative and scientific-technical start-up projects.

The operational part of the Grant Scheme was structured through a well-laid-out manual, addressing eligibility criteria, selection criteria and application rules and describing the process and funding options. Nevertheless, the scheme faced a number of issues in preparation, design and implementation.

In all, the Fund disbursed AZN 1.59 million under the Grant Scheme. Distributed in six financing cycles across six years, the grants of AZN 10,000–300,000, in small, medium-sized and large categories, had no co-financing requirements for the beneficiaries. Projects could be financed for up to three years, and beneficiaries could spend the grants on costs that derived directly from organizing work in accordance with the business plans of their projects. A supervisory committee made the decisions on grant allocations.

After 2018, the Grant Scheme changed its focus from “ICT Innovations” to “Innovations Everywhere” to become more scalable and diversified under the operation of the new Innovation Agency of the MTCHT. That agency, which replaced the State Fund, is designing and implementing a new innovation grant scheme.

## Table V.1 Overview of sub-pillars and indicators for innovation policy processes

Sub-pillar I: Preparation	Sub-pillar II: Design	Sub-pillar III: Implementation	Sub-pillar IV: Post-implementation
Innovation foresight	Planning	Amendment of policies	Ex-post evaluation
Policy rationale	Public-private consultation	Review of the policy against its action plan	Adaptation
	Policy coherence		

Source: UNECE.

## Sub-pillar I: Preparation

*Sound preparation of policies sets the foundation for the policymaking process. Public intervention should, where appropriate, depend on the identification of market failures as well as future trends that will affect the area of intervention.*

### Innovation foresight

Innovation foresight – the practice of capturing future trends and perspectives in research activities and adjusting innovation policies accordingly – is new in Azerbaijan and thus not yet integrated systematically and continuously into the innovation policymaking process, or into the processes for other policies. Foresight exercises were implemented for the first time in the 11 Strategic Road Maps for the National Economy and Main Economic Sectors, which included a detailed short-term action plan for 2017–2020, a long-term strategy for the period until 2025 and a vision for the post-2025 period. The lack of systematic forecasting indicates that measures such as the Grant Scheme may not have been grounded in agreed, realistic assumptions from which the key performance indicators (KPIs) follow, and that it may not be possible to monitor and evaluate impacts in a concerted fashion.

### Policy rationale

No market failure analysis was conducted by the MCTHT. The rationale cited for the policy was to implement support for start-ups so as to form a start-up movement in the country. It was established to stimulate activity in the ICT sector and to expand the application of innovations in this field as well as applied research. Limited access to external finance presents a barrier to all types of SMEs in Azerbaijan. According to a 2015 World Bank survey, 51 per cent of SMEs consider limited access to finance the biggest obstacle to doing business in Azerbaijan (World Bank, 2015).<sup>1</sup> The 2018 OECD enterprise survey of Azerbaijani SMEs found that a large majority (76 per cent) of respondents consider internal funds their most important source of financing, while 58 per cent considered insufficient access to finance a barrier to their growth (OECD, 2018). Another significant challenge for innovative SMEs is the lack of regulations related to venture capital and angel funding.

The most common type of analysis conducted within the policy process in Azerbaijan generally is the strengths-weaknesses-opportunities-threats (SWOT) analysis; computer simulations, market failure analyses and econometric analyses are rare. For example, in 2018 a SWOT analysis was conducted as part of the “Building a Knowledge Economy in Azerbaijan” project (UNDP, 2018).

### Broader policy issues

The Constitutional Law of the Republic of Azerbaijan on Regulatory Legal Acts (Azerbaijan, President, 2011) regulates the procedure for submitting draft normative legal acts to the relevant regulatory bodies. It stipulates that all such acts should include a letter justifying the necessity of adoption, with financial and economic validation; documents reflecting

the agreement of the draft act; expert opinions on the draft; a list of the people who drafted it and related documents selected by the submitter. The level of policy analysis underlying this information is generally basic, in particular that of the accompanying letter.

In addition, all draft normative legislative acts must pass a compulsory legal review. The inspection includes analysis of the status of regulations in the field (specific acts in force); the compliance of the draft act with its goals and objectives; the rationale for the internal structure of the act; the exclusion of mutual inconsistency of the norms in the draft act; the presence of abuse factors or any provisions that may create conditions for abuse; and a list of the normative legal acts (or their structural elements) that must be cancelled or amended following the adoption of the draft act. The Cabinet of Ministers has issued guidelines on how to conduct regulatory impact assessment (RIA) (Azerbaijan, Cabinet of Ministers, 2016). But the document covers only the regulation of issuance of licenses and permits; it does not address other aspects of policy.

Sub-pillar I IPO evaluation and recommendations			
Achievements			
<ul style="list-style-type: none"> <li>✓ Policymakers have started to apply foresight exercises in preparing policies.</li> <li>✓ SWOT analyses are the most common type of analysis conducted in preparing policy.               <ul style="list-style-type: none"> <li>✓ A legal framework with requirements for preparing policy is in place.</li> </ul> </li> </ul>			
Area for improvement	Recommendation	Time frame	Responsibility
<ul style="list-style-type: none"> <li>• Innovation foresight is not yet integrated systematically; it tends to be done ad hoc and tied to specific policy design efforts.</li> </ul>	<ul style="list-style-type: none"> <li>✓ Integrate innovation foresight practices into the policy processes of relevant line ministries to capture future trends in and perspectives on research activities for incorporation in the long-term strategic direction of innovation development.</li> </ul>	Medium-term	MTCHT
<ul style="list-style-type: none"> <li>• Evidence-based policymaking is not yet fully established, and the quality of the analysis supporting new policies and laws is relatively low.</li> </ul>	<ul style="list-style-type: none"> <li>✓ Build on efforts and experiences with RIAs by creating a timeline and plan to institutionalize and implement RIAs more broadly, to ensure that drafters use evidence-based policymaking systematically when creating policies and laws.</li> </ul>	Medium-term	Cabinet of Ministers

Source: UNECE.

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## Sub-pillar II: Design

*Public-private consultations are an integral part of the policy design process, to ensure policy relevance to the market and private sector needs and to confirm the commitment of relevant stakeholders to its implementation. Innovation policy is a supplementary component of a country's overarching strategy that contributes to the achievement of broader vision and objectives of socioeconomic development. Its priorities and activities should be consistent and coherent with relevant "non-innovation" policies.*

### Planning

Overall, the Grant Scheme seemed to aim at achieving a strong uptake of the scheme. The grants were relatively large and there were no co-financing requirements, in common with the practice in other countries for projects with high additionality or significant spillover potential (IFAD, 2012). Furthermore, despite the limited fiscal space of the Government, the State Fund for Development of Information Technologies did not require an equity stake for itself in beneficiary companies. The committee that selected beneficiaries did not include international experts, although this would have been a good practice.

The focus on uptake by default reduced the focus on innovation and potential return. The Grant Scheme's focus on social return was low. There was no evidence of a systematic effort to vet projects from the perspective of sustainable development, to make sure they do no harm and to give preference to those likely to make a strong contribution if successful. Nonetheless, attention was paid to the contribution of the projects to the development of the ICT sector.

### Public-private consultation mechanisms

The Law on Public Participation, which entered into force in 2014, provides the legal basis for public councils, hearings and consultations, written consultations through the internet, and public consultations on draft legislation to be organized by the Parliament. The Parliament places draft laws and other legislative acts online and provides an opportunity for feedback but not for discussion. International assessments consider these provisions insufficient – minutes from parliamentary meetings, for example, are not published in a timely manner and advanced degrees of public participation at the parliamentary meetings, including committees, are virtually non-existent; comments can be made on draft laws through the parliamentary website but no information exists about whether they are taken on board (Council of Europe, 2017).

Decree No. 142 of the Cabinet of Ministers (25 June 2012) introduced the "Rules for placing draft normative legal acts developed by the Cabinet of Ministers and central executive bodies on the e-Government portal". The main purpose was to regulate public and professional discussion through the online platform before the projects

are submitted for approval. Anyone wishing to participate in the project discussion must register and acquire an electronic signature on the portal. That said, this section of the website does not appear to be updated regularly, as the last draft normative act on it dates back to 2018. Also, it has no features to show what suggestions, if any, have been proposed and whether they have been considered.

The National Confederation of Entrepreneurs represents small and large businesses across a wide range of economic sectors as well as a number of business associations. It works closely with public institutions and organizes public hearings, discussions and roundtables on business-related topics, including the legislative process, with the participation of the business community. The Confederation is invited to attend Parliamentary commissions to comment on business-related legislation. The Confederation also hosts discussions and forums organized by civil society organizations, such as the Entrepreneurship Development Foundation, on business environment and legislative initiatives. No civil society organizations represent the interests of innovative SMEs.

Despite these consultative efforts, there is no systematic information on and no centralized website for ongoing and past public-private consultations and their outcomes. Public-private consultations are still conducted ad hoc, rather than in a systematic and planned manner. There is no detailed information about consultations in which SMEs participate. A 2017 Council of Europe assessment raised concern about the degree of information available to the public about activities and decision-making by authorities who treat their activities as confidential information and are often secretive about the agenda and decision-making process in government agencies, with NGOs lacking access to the decision-making process. Furthermore, information provided to civil society is rudimentary, especially before a final government decision is adopted.

## **Policy coherence**

The Grant Scheme was coherent with the National Strategy for the Development of the Information Society. One of the measures in the strategy was support of start-up projects on ICT and high technology in order to create an innovation system that ensures the development of high-tech products.

## **Broader policy issues**

The analysis found no evidence of systematic efforts to train civil servants to draft policy in ministries responsible for STI policies. Capacity-building for civil servants is offered at the Academy of Public Administration, through which mid-level civil servants can take short-term courses or a two-year course that leads to a master's degree. The National Strategy on Development of Civil Services, adopted in 2018, envisions developing training modules and programs for civil service executives. It also sets up the following targets: (1) assessment of civil servants' training needs, (2) preparation of proposals on training strategies, (3) preparation of proposals on improving the activity of the Academy of Public Administration in professional development of civil servants and (4) preparation of proposals for coordinating the activities of the training centres of the state bodies.

## Sub-pillar II IPO evaluation and recommendations

### Achievements

- ✓ The Grant Scheme was coherent with the objectives of the National Strategy for the Development of the Information Society.
- ✓ The Law on Public Participation provides a legal basis for public councils, hearings and consultations, written consultations on the internet, and public consultations on draft legislation, organized by the Parliament.
- ✓ A Decree of the Cabinet of Ministers regulates public and professional discussions through an online platform.

Area for improvement	Recommendation	Time frame	Responsibility
<ul style="list-style-type: none"> <li>• Despite the limited fiscal space in Azerbaijan, the State Fund did not require an equity stake in beneficiary companies.</li> </ul>	<ul style="list-style-type: none"> <li>✓ Integrate mechanisms for the Innovation Agency to hold equity in beneficiaries' projects in future grant schemes, to augment the financial return on investment of public resources; refer to practices in other EESC countries, which have tried relatively simple mechanisms that do not disrupt entrepreneurs' operations.</li> </ul>	Short-term	Innovation Agency
<ul style="list-style-type: none"> <li>• The Grant Scheme had no co-financing requirements for beneficiaries.</li> </ul>	<ul style="list-style-type: none"> <li>✓ Introduce co-financing requirements in future grant schemes. Evidence suggests "that the higher the subsidy, the lower the likely long-term impact as a proportion of the subsidy cost, as it may lead to 'adverse selection' of initial participants, who are unlikely to be able to purchase the service at full cost" (IBRD and World Bank, 2016, p. 49).</li> </ul>	Short-term	Innovation Agency
<ul style="list-style-type: none"> <li>• The Grant Scheme focused too little on social returns.</li> </ul>	<ul style="list-style-type: none"> <li>✓ Enhance efforts and mechanisms to further mainstream the three pillars of sustainable development across Innovation Agency policies and processes, by targeting explicit sustainability criteria to the eligibility of applicants for future grant schemes. These criteria could relate to gender or to subnational development issues, for example, or other priorities for the Government.</li> </ul>	Short-term	Innovation Agency
<ul style="list-style-type: none"> <li>• Across ministries, there is no systematic practice of consulting the public on new policy proposals.</li> </ul>	<ul style="list-style-type: none"> <li>✓ Develop and pilot a concerted approach in line ministries to consultations with the private sector and the broader public on policy design and implementation, as part of the regular policy cycle and decision-making processes.</li> </ul>	Short-term	MTCHT

Source: UNECE.

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## Sub-pillar III: Implementation

*Targets and time frames defined in the action plan provide a basis for regular reviews of implementation progress. Analysis of intermediate progress helps identify administrative, institutional and technical challenges faced during implementation and makes it possible to undertake necessary measures, including adjusting activity and reallocating resources.*

### Amendments of policies

Based on the transformation from the “ICT Innovations” to the “Innovations Everywhere” approach, the Innovation Agency was established on 6 November 2018, to replace the State Fund for Development of Information Technologies. The aim was to focus on innovation holistically, rather than only on the ICT sector.

### Review of the policy against its action plan

Numerous interministerial working groups and sub-working groups exist, organized by the targets set in the 11 Road Maps of the Government. In accordance with the procedure established by the coordinating agency – the Centre for Analysis of Economic Reforms and Communication – each working group prepares and approves its yearly plan with the coordinating agency. Each group has an executive organization (a ministry or agency) that bears primary responsibility for achieving the set target. The working groups meet quarterly and submit to the coordinating agency a report about implemented activities within 10 days of the meeting. On the basis of this data, the Centre prepares an annual report.<sup>2</sup> BP Azerbaijan has allocated funding for modernizing the electronic monitoring and evaluation infrastructure of the Centre to enable it to process effectively the information on implementing Strategic Road Maps from 47 State bodies.

Nine working groups have been established to improve the standing of Azerbaijan in international business rankings. One is dedicated to technology and innovation (Azerbaijan, Commission on Business Environment and International Rankings, 2019). It operates under the leadership of the State Agency for Citizens Service and Social Innovation. The MTCHT participates in a form of public-private partnership (of nine members, two are representatives of the business community – PwC Azerbaijan and Ernst & Young Azerbaijan). This working group has an annual action plan structured on indicators related to ICT and innovation as reflected in international rankings (Azerbaijan, Deputy Prime Minister, 2019).

The Presidential Decree “On coordination in the field of innovative development” (10 January 2019) identifies entities involved in coordination: the ANAS, executive authorities established by the President and public institutions, including State HEIs, State-owned legal persons and business entities whose shares (stocks) are controlled by the State form a coordination council. These entities submit to the Presidential Administration semi-annual reports about the work done in supporting innovative development,

including start-up activities. Yet, to date the work of the coordinating council has not been formalized. According to the MTCHT, as of March 2020 two interministerial group meetings had been conducted under the lead of the Assistant to the President on Innovations.

## Broader policy issues

The analysis revealed some limitations in the implementation of the Grant Scheme. First, although the State Fund had not previously implemented an ICT grants scheme, it made no systematic training efforts to prepare staff to coordinate and implement the scheme. Adequate staff training is an important success factor in the ability of agencies to implement grants schemes (IBRD and World Bank, 2016, p. 3), particularly when no experience with such schemes exists. Second, the measures in place to prevent fraud by grant beneficiaries were not evident. Third, the Grant Scheme gave no consideration to sustainability. These limitations should be corrected in future grant schemes.

Sub-pillar III		IPO evaluation and recommendations	
Achievements			
<ul style="list-style-type: none"> <li>✓ Implementation of the Grant Scheme underwent six yearly financing rounds as planned.</li> <li>✓ The operational part of the Grant Scheme was supported by a project manual and a structured selection process.</li> <li>✓ The Government has adjusted its approach to grants schemes, with a more holistic approach to innovation.</li> </ul>			
Area for improvement	Recommendation	Time frame	Responsibility
<ul style="list-style-type: none"> <li>• Staff received no specific training on implementing grant schemes.</li> </ul>	<ul style="list-style-type: none"> <li>✓ Introduce targeted training schemes for Innovation Agency staff, when a policy measure is introduced or revamped.</li> </ul>	Short-term	Innovation Agency
<ul style="list-style-type: none"> <li>• Measures in place to prevent fraud by grant beneficiaries were not evident.</li> </ul>	<ul style="list-style-type: none"> <li>✓ Bolster the Innovation Agency's anti-fraud measures, including audits of projects, public disclosure of fraudulent behaviour and structured field visits for future grants schemes – particularly those with no or very low co-financing requirements.</li> </ul>	Short-term	Innovation Agency

Source: UNECE.

## Sub-pillar IV: Post-implementation

*Ex-post evaluation is completed after the implementation of the action plan and based on results rather than forecasts. It helps establish the impact of policy activities on the industry in general, on specific fields or on beneficiaries. In light of experience acquired during implementation, governments introduce necessary adjustments to innovation policy measures so as to better target new or established policy objectives.*

### Ex-post evaluation

Policy monitoring in Azerbaijan is usually conducted by focusing on implemented activities but not the results. This was the case with the Grant Scheme: at the end of each year, the State Fund reported on the number of grant competitions, the number of projects in the competitions, the winners and the state of their funding. During grant financing, all start-up projects were monitored in order to assess the implementation of the project contractor's obligations. A recent OECD report describes the process of monitoring the Strategic Road Maps as needing to improve the relevance of its KPIs, as many are not measurable, others are not specific to the assigned actions and others are driven more by the activity of large firms than that of SMEs (OECD, 2017).

### Broader policy issues

Overall, monitoring and evaluation in Azerbaijan's government is insufficient, superficial, haphazard and overly focussed on outputs, with few systemic linkages to ensure that learning feeds into the policy design process, including in government bodies responsible for STI policy. The IPO found only limited evidence of any type of impact assessment of innovation policies across relevant ministries, including the Grant Scheme.

## Sub-pillar IV IPO evaluation and recommendations

Achievements			
Area for improvement	Recommendation	Time frame	Responsibility
<ul style="list-style-type: none"> <li>Monitoring and evaluation in the Government is insufficient and overly focussed on outputs, with few systemic linkages to ensure that learning feeds into policy design.</li> </ul>	<ul style="list-style-type: none"> <li>✓ Implement RIA systematically, to enhance the quality of the flow and stock of laws and policies, given the scarcity of monitoring, evaluation and impact assessment practices in the policymaking process.</li> </ul>	Medium-term	Line ministries
<ul style="list-style-type: none"> <li>The Grant Scheme lacked an impact assessment.</li> </ul>	<ul style="list-style-type: none"> <li>✓ For future grant schemes, ensure the independence of impact assessments, ideally by having an external, independent assessor conduct them, rather than internal staff.</li> </ul>	Short-term	Innovation Agency
<ul style="list-style-type: none"> <li>Monitoring and evaluation have only a tenuous link with future policy design.</li> </ul>	<ul style="list-style-type: none"> <li>✓ Establish a more systemic linkage of monitoring and evaluation to policy design, including in government bodies responsible for STI policy.</li> </ul>	Medium-term	Line ministries and implementation agencies

Source: UNECE.

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## Notes

- <sup>1</sup> World Bank, Access to finance – essential for job creation and diversified growth in Azerbaijan, 12 May 2015.
- <sup>2</sup> The latest report, from January 2019, focuses on the results of 2018 (Centre for Analysis of Economic Reforms and Communication, 2019).

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