



REP. OF MOLDOVA



Chapter I

ECONOMIC OVERVIEW

General overview

The Republic of Moldova is a lower-middle-income economy in Eastern Europe neighbouring Romania and Ukraine. Since independence it has seen economic and financial crises, drought and political instability. Declining macroeconomic stability is compounded by a mounting fiscal deficit, deindustrialization and heavy reliance on volatile flows of personal remittances. Yet, with its ready access to markets in the European Union (EU) and the Commonwealth of Independent States, the country has started to reap benefits from economic integration, with several sectors emerging as potential leading activities. To sustain and reinforce this momentum for sustainable, long-term growth will require economic stability and diversification through innovation.

Reform process

Since the country attained its independence in 1991, the economy has undergone a series of reforms, including large-scale privatizations, financial and trade liberalization, and democratization. The Government is maintaining this momentum with reforms of the pension system, the banking sector¹ and public administration² (Republic of Moldova, State Chancellery, 2020; USAID, 2020). This progress is reflected in the country's *Doing Business* rank, which rose from 90/183 in 2011 to 48/190 in 2019 (World Bank, 2020b). The slow progress on strengthening the rule of law and the lack of more structural reforms of the judicial system, however, leaves room for further improvement. Continued political instability may dampen the momentum and the severe banking crisis still holds back the accumulation of capital (box I.1).

GDP growth

Over the past two decades, after a sharp decline following the dissolution of the Soviet Union, the Republic of Moldova has sustained growth in gross domestic product (GDP), mainly driven by long-term productivity gains and the expansion of private consumption, remittances and fixed capital accumulation (figure I.1) (World Bank, 2016a). Despite both external and internal shocks, such as the 2008–2009 global financial crisis, the 2012 drought, the 2014 rouble devaluation and the 2016 banking crisis, the country has maintained macroeconomic stability, marking steady improvement in its economic performance relative to regional averages. GDP per capita in current US dollars increased

Box I.1 The banking crisis

In 2014 about \$1 billion disappeared from three of the largest commercial banks in the Republic of Moldova (Banca de Economii, Unibank and Banca Socială). That amount corresponded to more than 25 per cent of banking assets, or about 12 per cent of GDP. To contain the consequences of the crisis and with international support, in 2016 the Government launched a large effort to reform the banking system: it put the three banks under special administration by the National Bank of Moldova and introduced guarantee and reimbursement schemes as well as changes in legislation to tighten the sanctions for shareholders and bank managers as well as the lending rules (Republic of Moldova, 2018). In addition, reserve requirements for local currency debt more than doubled, from 14 per cent to 35 per cent, and two of the banks acquired new foreign investors, one of which is the European Bank for Reconstruction and Development (EBRD). Macprudential restrictions further constrained access to finance for businesses, weakening the investment climate (EBRD, 2017). Containing the crisis caused a rise in government debt; however, an intensive reform program has improved transparency and attracted international investors to the domestic banking sector. The rates at which consumer and real estate loans are made have managed to recover, thanks to the entry into force of the Basel III regulations in 2018 and a decrease in interest rates (to 3.25 per cent in 2020). The new deposit rates (5.71 per cent in December 2019 and 3.7 per cent in April 2020) also suggest sustained confidence in the banking sector despite the COVID-19 crisis. This confidence has yet to be felt in the area most important to innovation: credit to the private sector, which has declined considerably.

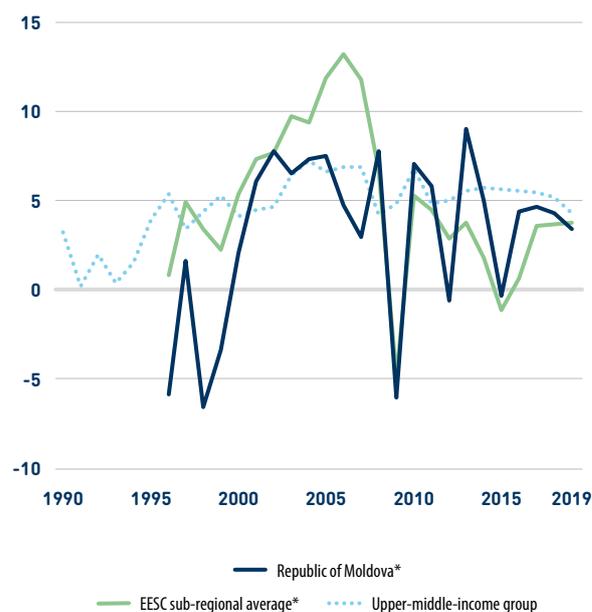
Sources: Gaibu and Knobel (2018); World Bank (2020a); IMF (International Monetary Fund), IMF Executive Board completes sixth and final review of Moldova's extended credit facility and extended fund facility, 11 March 2020.

from \$2,700 in 2015 to almost \$5,000 in 2019, and GDP per capita (based on purchasing power parity (PPP) in current international dollars) reached \$13,500. With average annual GDP growth of 4.6 per cent since 2000 and rising income levels, the past decade has seen strong domestic demand and rising exports (World Bank, 2020a).

Looking at GDP elements separately, labour productivity has been declining recently. Gross capital formation accounted for 26.3 per cent of GDP in 2019, an increase from previous years (22 per cent in 2016) and a partial recovery towards the levels preceding the 2008 financial crisis (39 per cent in 2008) (World Bank, 2020a). Personal remittances as a share of GDP are significant – almost 16 per cent in 2019 – making the country highly vulnerable to events such as the sharp drop in the Russian rouble in 2014.

Overall growth due to household consumption and rising public spending towards the end of 2019, specifically in capital and social spending, led to an increase in wages, and the current account deficit stabilized at about 9.7 per cent of GDP. Yet, the decline of both exports and remittances caused by the effects of the COVID-19 pandemic threaten to push this number to over 10 per cent (World Bank, 2020d). The significant presence of State-owned enterprises (SOEs) has concentrated the majority of resources in the less productive public sector, impeding the productivity of the private sector (World Bank, 2019b).

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



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

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

Foreign direct investment

Despite recent political volatility, the country's improving economic performance makes it attractive for foreign direct investment (FDI) (World Bank, 2020). Inflows increased from 2.7 per cent of GDP in 2018 to almost 5 per cent in 2019, the second highest in the Eastern Europe and the South Caucasus (EESC) sub-region (World Bank, 2020a). In 2009–2013, the majority of FDI inflows was market-seeking investment in non-tradable sectors, such as banking and transportation (Republic of Moldova, 2016). The National Strategy for Investment Attraction and Export Promotion 2016–2020 identified a need for increased efficiency-seeking FDI, and the low investment taxes and cheap labour costs are increasingly attracting such investment. The main targets are services, such as business process outsourcing and tourism, and manufacturing, which is underpinned by the country's Soviet-era industrial heritage. Employment in the automotive industry is growing; the country is a strong second- and third-tier supplier of car parts, concentrated in the free economic zones and attracting mainly Japanese and German investment.

Sectoral decomposition

Over the past two decades the economy has gone through a structural transformation from domination by agriculture and industry to growth in the share of services and trade in total output, mainly caused by inefficiencies and infrastructural weaknesses in the agriculture and industry sectors (Kintsurashvili and Kresic, 2017). Since 2014, industry (including construction) has contributed about 22 per cent of GDP and accounted for 16.8 per cent of employment, while manufacturing reached 10.9 per cent of value added GDP (World Bank, 2020a). Agriculture has significant, systemic productivity problems: in 2019 the sector employed 36 per cent of the active labour force, yet its output had declined from 30 per cent of GDP in 1996 to almost 10 per cent. Reliance on commodity prices and weather-dependent agricultural products, such as sunflower seeds, exacerbates the economy's exposure to both external and internal shocks, such as the 2012 drought, which caused major losses in export revenue. The expanding services sector accounted for 54.3 per cent of GDP in 2019, driven mainly by transport, tourism and services exports in the expanding information and communication technology (ICT) industry (World Bank, 2019b; 2020a). With a substantially low employment-to-population ratio in 2019 of 40 per cent, sectoral productivity must increase and the economy must find new engines for sustainable growth. Foreign-owned firms are among those with high productivity levels and represent an opportunity. Finally, the issue of the size of the informal sector, which accounted for about 30 per cent of the employed population in 2016 (World Bank, 2016b), remains to be resolved.³

Demographics

High outmigration, low fertility and an ageing population pose risks for the economy, suppressing the labour force – especially in terms of available skills – while reducing tax

revenue and increasing the burden of social policy liabilities. In 2019, the population growth rate was almost –2 per cent while the unemployment rate increased to 5 per cent (World Bank, 2020a). The high level of employment in small-scale agriculture indicates a systematic lack of other attractive employment opportunities, in particular for those with medium and low skill levels. Meanwhile, government liabilities for pensions and other social policies have led to growing and increasingly unsustainable deficits and pressure on the already constrained fiscal space (World Bank, 2019a).

External position

Sustaining the economy's robust GDP growth will increasingly depend on accelerating and solidifying economic integration. The EU Association Agreement and the Deep and Comprehensive Free Trade Area (DCFTA) have opened a range of opportunities. In 2018, trade (the sum of exports and imports of goods and services) stood at 84.3 per cent of GDP, and over half of it was with the EU (World Bank 2020c).

Nevertheless, diversifying the export basket is essential. According to the merchandise concentration index for exports, with values ranging from 0 (diversified) to 1 (concentrated), the Republic of Moldova scored 0.19 in 2018, the third most diversified in the EESC sub-region (average of 0.3) (UNCTADstat, 2020a). However, the high dependence on energy imports (World Bank, 2019b) and overreliance on low value added, commoditized exports make a rickety foundation for long-term sustainable development. Sunflower seeds were the second most exported product in 2018 at 5.9 per cent of total exports, after insulated wire (17.1 per cent) and before hot-rolled iron bars (5.19 per cent), wine (3.97 per cent) and seats (3.91 per cent) (OEC, 2020). Similarly, most of the country's revealed comparative advantages (RCA),⁴ specifically with values higher than 10, were in food and live animals, such as wheat, maize, and fruit and nuts, and in manufactured goods, such as iron and steel bars, and glassware (UNCTADstat, 2020b).

This dependence on a small group of commodities is reflected in the Competitive Industrial Performance (CIP) Index 2020, where the Republic of Moldova ranked 111/152, the second lowest in the EESC sub-region after Azerbaijan (120/150) (UNIDO, 2020). In the 2019 Global Competitiveness Index (GCI), the country ranked 86/141, an improvement on previous years, but still down from 2015 (when it ranked 82/140) (WEF, 2019). Its main strength was in ICT adoption (48/141).

Institutional quality

Inefficient governance can impede innovation processes needed for sustainable development. According to the World Governance Index, in 2018 the Republic of Moldova (–0.4) lagged behind the regional average (–0.3) for institutional quality, as proxied by the world average of indicators on the dimensions for rule of law, control of corruption, voice and accountability, and government effectiveness (IMF, 2018; Kaufmann and Kraay, 2020).

Sustainable development

Despite rising income levels and a low unemployment rate, the Republic of Moldova remains the poorest country in Europe. Its rural-urban divide continues to grow, with absolute poverty in rural areas almost five times higher than in urban areas (Republic of Moldova, National Statistics Bureau, 2020). Yet poverty levels overall have decreased significantly over the past two decades (World Bank, 2016c). The share of the population living below the national poverty line shrank from 54.6 per cent in 2001 to 9.6 per cent in 2015.

Like other countries in the sub-region, the Republic of Moldova still faces challenges in achieving gender equality (UNDP, 2020b). In 2018, the rate of female tertiary enrolment was 45.7 per cent (gross), compared with 34.1 per cent for male enrolment. In 2019 the labour participation rate was higher for men (46 per cent) than for women (40.5 per cent) (World Bank, 2020a).

Energy efficiency is relatively low, most significantly because of the inefficient consumption of heat in residential buildings. The country ranks 112/129 in GDP per unit of energy use (Cornell University, INSEAD and WIPO, 2019), largely due to its outdated energy infrastructure, and is almost entirely dependent on external sources of energy, with imports supplying more than 90 per cent of domestic consumption. A sustainable future will need a balanced combination of technology measures to reduce the dependence on energy imports and support the further exploitation of sources of renewable energy, such as biomass, wind and solar energy (IEA, 2020).

Synthesis

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

Progress made so far

- Maintained economic growth in the face of external and internal shocks over the past two decades
- Increased momentum, investment and diversification potential in manufacturing, especially in the automotive industry, and services trade (especially in ICT)
- Improved ease of doing business through regulatory reforms and facilitated market entry
- Decreased poverty and increased income levels

Challenges ahead

- Diversify production to reduce dependence on remittances, low value added activities and consumption so as to promote innovation, create decent jobs and generate positive spillover effects.
- Increase sectoral productivity and identify sustainable growth potential.
- Fortify the business environment to support private sector development, raising investor confidence.
- Strengthen institutional trust in political and economic governance by mitigating corruption.
- Increase efficiency-seeking and innovation investment.
- Improve energy efficiency and further reduce inequality to advance sustainable development.

Source: UNECE.

Notes

- ¹ EC (European Commission), EU report: The Republic of Moldova moved forward with key reforms, 12 September 2019.
- ² Republic of Moldova, Government approves pension system reform, 5 December 2016.
- ³ LO (International Labour Organization), Supporting Moldova in the formalization of informal economy, 8 January 2016.
- ⁴ The revealed comparative advantage (RCA) database, created 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

Innovation climate

Despite facing a series of socioeconomic challenges over the past two decades, the Republic of Moldova has made significant progress towards improving the business environment, integrating into the international community and attracting foreign investment (chapter I). This creates opportunities to develop the sphere of innovation across all sectors of the economy, drawing on the economy's biggest asset – human capital. Before it can transform into a knowledge-based economy, though, the country must overcome a number of impediments. Low demand for innovation, insufficient funding for research and development (R&D), a skills mismatch in the labour market and an outdated education system obstruct the further development of an enabling environment. These factors are intensified by weak commercialization of innovative results, unevenly developed ICT infrastructure and low engagement of the private sector in R&D.

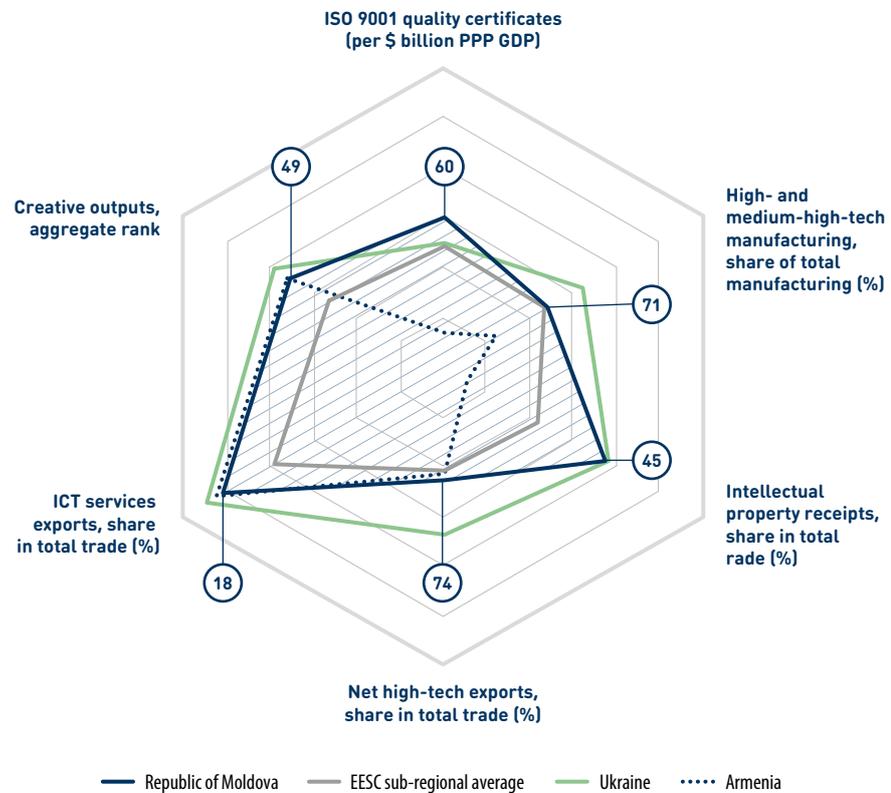
Innovation outcomes

In the 2019 Global Innovation Index (GII) report (Cornell University, INSEAD and WIPO, 2019), the Republic of Moldova was classified as an innovation achiever whose innovation performance exceeded expectations given the level of economic development. Overall, it ranked 58th, down 10 positions from 2018. In part, this change was caused by weaknesses in the national innovation system and the supporting policy environment (chapters III and IV). Nonetheless, it still performed strongly relative to the sub-region with regard to innovation outputs (figure II.1).

Performance on creative outputs (49th) was led by trademarks by origin (127.1 per \$1 billion PPP GDP) and industrial designs by origin (12.2), revealing two strengths relative to the rest of the income group. The country ranked 4th for utility models and 11th for industrial designs, closely following Ukraine on the global scale.

With regard to technological innovation, the Republic of Moldova performs above the sub-regional average on several key metrics – slightly higher than Armenia, Azerbaijan and Georgia in high- and medium-high-tech manufacturing (approximately 10 per cent of total manufacturing) and high-tech net exports (0.7 per cent of total trade) and substantially higher on intellectual property receipts (0.1 per cent of trade is revenues from selling or licensing Moldovan intellectual property abroad) and ICT services exports (4.2 per cent of total trade). These strengths also result, in part, from greater efforts to reform

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.

institutions and implement programmes to support small and medium enterprises (SMEs) (chapter IV). Nonetheless, the number of International Standards Organization (ISO) certificates has continued to decline, from 7.2 per \$1 billion PPP GDP in 2015 to 6.1 in 2018 and 4.6 in 2019. Although that number is the second highest in the sub-region, after Belarus, the decline suggests a need to upgrade technology.

The country's performance on non-technological assets, such as ICT business model creation (98th) and ICT organizational model creation (86th), leaves more room for improvement. The demand for firm innovation is low and commercialization processes are insufficiently supported, but more importantly, the private sector lacks in-house innovative capacities and mostly relies on acquiring foreign technologies (Raim et al., 2016). According to the National Bureau of Statistics of Moldova,¹ between 2017 and 2018, only 18 per cent of surveyed enterprises engaged in innovative activity: 40 per cent of these firms created innovative organizational models, 40 per cent created innovations in products and/or processes, and 20 per cent created innovations in both.

The ICT sector experienced significant growth between 2006 and 2014, accounting for nearly 10 per cent of GDP and employing approximately 3 per cent of the labour force in 2014, according to the European Commission (EC) (2014). Since then, however,

its growth has stagnated. ICT infrastructure remains unevenly developed across regions (EC, 2017), despite ongoing efforts to improve connectivity and broadband infrastructure (chapter IV). In 2019, ICT service imports increased to 1.9 per cent of total trade, outperforming the country's peers in the sub-region and revealing the high potential for developing the sector further. Attracting more FDI is the key to reaping the full economic benefits in the sector, according to a recent study on innovation competitiveness in the country (Dumitrasco, 2018).

Innovation activity – channels, strengths and weaknesses

Improved business regulatory procedures have fostered entrepreneurial endeavours, but the low value added of these activities leaves significant room for improvement. Microbusinesses constitute almost 75 per cent of all enterprises, yet according to the National Bureau of Statistics, the contribution of SMEs to the economy in 2018 amounted to 44 per cent.² Although improvements in the business climate have facilitated the creation of businesses (98.7 per cent of enterprises were SMEs in 2016), the incentives in place are insufficient for these businesses to innovate.

International knowledge transfer

The Republic of Moldova ranked 82/129 in the 2019 GII in the aggregate rank for knowledge absorption. Inward FDI constituted 2.2 per cent of GDP in 2019, ranking the country 77th. High-tech imports made up 7.4 per cent of trade, a higher share than in Azerbaijan, Armenia and Belarus (Cornell University, INSEAD and WIPO, 2019).

On the 2019 Global Competitiveness Index (GCI), three of the country's four best scores related to the enabling environment, specifically macroeconomic stability (73/100), ICT adoption (67/100) and infrastructure (66/100) (WEF, 2019). The lowest score was for innovative capabilities (30/100), specifically caused by a decline in the sub-scores for R&D investment and for commercialization.

Investment in R&D

Investment in R&D is not a national priority, as reflected in the national R&D investment target of 1 per cent of GDP by 2020 (Spiesberger and Cuciureanu, 2015). The EC's Horizon 2020 Background Report (2016) attributed this lack of priority to social issues, such as the low level of understanding of how R&D supports economic competitiveness and decreases reliance on remittances. Gross expenditure on R&D has in fact been declining over the past few years, falling below the sub-regional average to 0.25 per cent of GDP in 2018 (UIS, 2019; World Bank, 2020). Although higher than in Armenia and Azerbaijan, this share lags behind the allocations made in the other EESC countries.

Moreover, R&D investment in the Moldovan private sector is vital for the development of an innovation ecosystem; such investment depends significantly on the country's economic structure, specifically a greater concentration of low- rather than high-tech industries, as well as on FDI inflows from international investors (Raim et al., 2016).

Private sector R&D investment is extremely low, as identified in the 2017 GCI, where the country ranked 135/137 on company spending on R&D, underscoring the impediment that this factor presents to innovative development (WEF, 2019). This was confirmed in the Business Environment and Enterprise Survey (BEEPS) of the European Bank for Reconstruction and Development (EBRD) (2017a). An important factor for commercializing research is the linkages between industry and science, which require strengthening: University-industry research collaboration ranked 109th in the 2019 GCI, a weakness for the economy's innovative development.

With an ageing population of researchers and little attraction or retention of younger talent, the number of researchers per 100 people has steadily decreased, falling below the EU average. The 2019 GII further underscored that few Moldovan companies employ researchers and that the level of foreign investment in R&D is a major weakness for the country's innovative development: 3.7 per cent of gross expenditure on R&D originated from abroad, higher than in Azerbaijan and Armenia, but significantly lower than in Belarus (Cornell University, INSEAD and WIPO, 2019). To enhance competition and limit dependency on remittances, as well as to sustain and develop research capabilities, it is vital for the country to implement reforms that increase both public and private investment in R&D (Spiesberger and Cuciureanu, 2015).

Skills development

The low levels of R&D investment are mirrored in employment trends. As noted earlier, the labour force consists of approximately 40 per cent of the population; 26.5 per cent of the labour force is employed in knowledge-intensive activities, which remain at a modest level below the sub-regional average. This issue can be attributed to the significant mismatch between labour-market requirements and the skill level of labour-market entrants, as highlighted in the EBRD country strategy (EBRD, 2017b). Indeed, in the GCI (2018), the country ranked 73/140 on skills and 71/140 on labour market, with low ranks on the indicators concerning the hiring and firing practices (94) and cooperation in labour-employee relations (70) of talent. No Moldovan university is included in the Quacquarelli Symonds ranking, and the Programme for International Student Assessment scores in reading, mathematics and science remain relatively low compared with the rest of the EESC countries (Cornell University, INSEAD and WIPO, 2019).

Only about 40 per cent of the population enrolls in tertiary education, the second lowest share among EESC countries (World Bank, 2020), yet the Government's expenditure on education constitutes 6.7 per cent of GDP, the highest in the sub-region. To make optimal use of its human resources, counteract emigration trends and ensure the efficient use of public resources, the economy needs to attract and retain new talent.

Synthesis

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

Progress made so far

- Innovation investment is efficiently translated into outputs
- High level of tertiary education enrolment and government expenditure on education as a share of GDP
- ICT access and use are facilitated, while trade in ICT services has developed significantly

Challenges ahead

- Support further the development of technological and creative outputs.
- Modernize the education system to respond accurately to the needs of the labour market.
- Increase governmental and private sector R&D expenditure, and attract foreign investment in R&D.
- Strengthen industry-science linkages to improve research commercialization and collaboration.

Source: UNECE.

Notes

- ¹ Republic of Moldova, National Bureau of Statistics, Innovation activity of enterprises in the Republic of Moldova in the years 2017–2018, press release, 20 December 2019.
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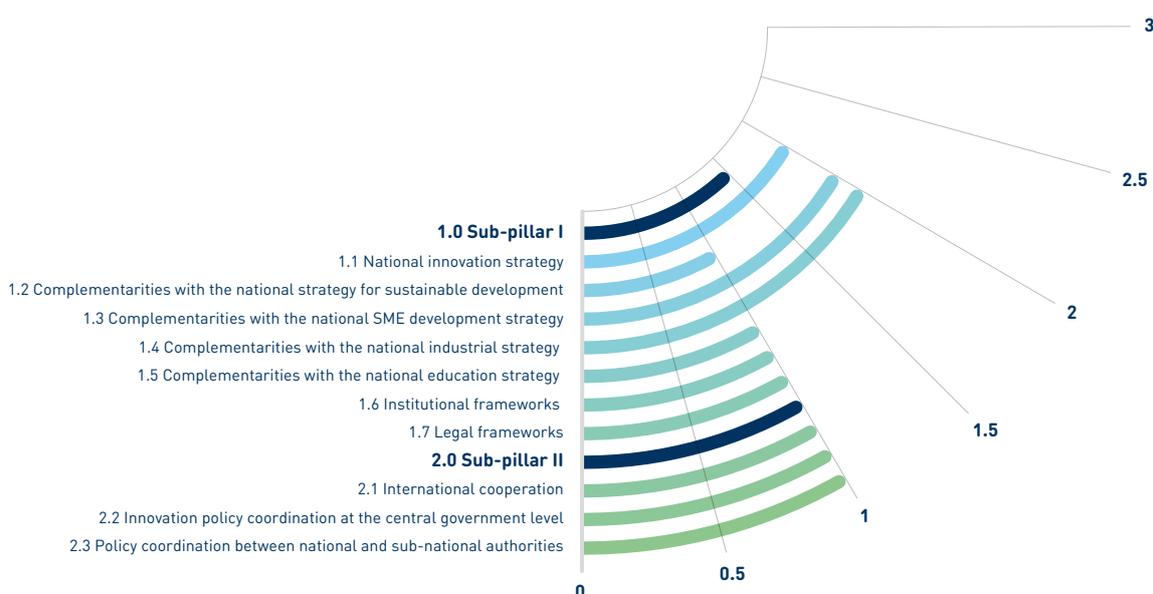
Chapter III

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.

Despite various socioeconomic challenges since its independence, the Republic of Moldova has managed to maintain several islands of research excellence in physics, chemistry and nanotechnology. To strengthen research capabilities and support innovation-led economic growth, the Government has implemented overarching reforms. Changes in the Code on Science and Innovation put the Ministry of Education, Culture and Research (MECR) in charge of most national research institutions and gave it responsibility for shaping the national research and innovation agenda. The National Agency for Research and Development (NARD) is the main public funder of research and innovation. The role of the National Academy of Sciences shrank: it is mainly a consulting body advising the Government on science and innovation policy.

The Moldovan Government has adopted strategic documents governing RDI activities (figure III.1). The National Programme for Research and Innovation for 2020–2023 is supported by an action plan that defines subsequent steps for achieving policy objectives. Priorities of the national innovation policy align with other overarching policy objectives anchored in strategic documents on education, SMEs and industrial development. The Government is working on integrating the Sustainable Development Goals (SDGs) into the national innovation agenda and on aligning the National Development Strategy 2030 with innovation policy needs. Legal and institutional frameworks related to research and innovation are still nascent.

Government bodies formulate and implement innovation policy initiatives in isolation, as no fully fledged coordination mechanisms exist at either the national or the subnational level. Other challenges that negatively affect the development of the knowledge economy include the weak financial sector, the lack of skilled labour, the low quality of public infrastructure, and the low numbers of scientists and researchers relative to the population (Spiesberger and Cuciureanu, 2015; OECD, 2016). As in many post-Soviet countries, weak collaboration between academia and industry remains a severe problem. According to the National Bureau of Statistics, in 2016 only 13 per cent of innovative companies had cooperation agreements with higher-education institutions (HEIs) and public research organizations.

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 the design and implementation of innovation policy, it is vital to have a strategic document that contains the Government's overarching vision.

National innovation strategy

The National Programme for Research and Innovation, which entered into force on 16 August 2019, provides a comprehensive vision and objectives for developing the national science and innovation system. The programme unifies a fragmented policy landscape previously governed by two strategic documents: the Innovations for Competitiveness Strategy 2013–2020 (developed by the Ministry of Economy and Infrastructure (MEI)) and the Research and Development Strategy until 2020 (developed by the National Academy of Sciences). Neither intermediary nor final assessments were conducted to assess the implementation of the two strategies.

Key themes of the National Programme for Research and Innovation are the adoption of both the SDGs and smart specialization approaches. The programme outlines key measures for achieving six national strategic objectives in science and innovation:

- Ensure better prioritization of science and innovation and their closer alignment with the needs of national socioeconomic development
- Leverage international collaboration to access funding, knowledge and skills
- Strengthen collaboration and promote synergies among stakeholders in science and innovation policy
- Promote science and innovation in society
- Create favourable conditions for supporting business innovation
- Increase the efficiency and effectiveness of public research funding

The objectives of the programme align with other strategic policy documents. For instance, supporting collaboration between stakeholders in national science and innovation policy and developing synergies between academia and industry also feature as topics of particular importance in the national SME Development Strategy, in SME laws (2007, 2016), and in the Law on Science and Technology Parks and Innovation Incubators. The National Programme for Research and Innovation specifies a group of research priorities to receive a 1 per cent annual increase in competitive funding from 2019 to 2023: health care, security and safety, environment and climate change, societal challenges, and economic competitiveness and innovation technologies. The action plan of the programme allocated funding for only seven policy actions in priority areas. Funding of other measures depends on the State budget laws.

Complementarities with other policy areas

Support for science and innovation is based on the National Programme for Research and Innovation, the National Education Strategy and the National Development Strategy.

No strong synergies exist among these policy documents, as government bodies develop science and innovation policy initiatives in isolation, without considering positive and negative externalities for other policy areas.

Goals for SMEs are set out in different strategies and in law. The SME Development Strategy aims to ensure that effective market competition exists and that innovation activities are promoted. The Law on SMEs dedicates an entire section to supporting innovation and internationalizing domestic firms. According to the law, government authorities are required to (a) facilitate collaboration between SMEs and academia; (b) facilitate adoption of new technologies by SMEs; (c) support capacity-building in research and innovation for SMEs; (d) facilitate the development of innovation support infrastructure for SMEs, including science and technology parks, industrial parks, ICT parks, business incubators, research laboratories, and information and consulting centres; (e) facilitate the cooperation of SMEs with large enterprises through cluster initiatives; and (f) simplify access to public research infrastructure, facilities and equipment for SMEs. The National Development Strategy 2020 also establishes goals for SMEs: increasing the number of such firms and the number of their employees by 65 per cent and raising their contribution to GDP by 38 per cent.

The contribution of digital products and services to economic growth is growing. In 2017, exports of ICT services amounted to 13.92 per cent of GDP (in the form of computer data-related transactions and computer and communications services). The National ICT Industry Competitiveness Road Map 2023 establishes measures to improve ICT infrastructure, develop skills and competences, and create a favourable business environment. In addition to promoting digitalization of the economy, the Government supports the digital transformation of the public sector; however, the lack of continuous efforts and changing policy priorities mean that digital government is not well developed.

The National Education Strategy 2020 acknowledges the weak linkages among HEIs, public research institutions and the business sector, noting the rather inefficient mechanisms of interaction between them and the labour market. The quality of research in HEIs remains quite low. The strategy promotes research as a tool for advanced professional training and as a mechanism for promoting the quality of higher education. To achieve that, it specifies three actions:

- Elaborate minimum standards of research performance required for obtaining scientific titles.
- Allocate separate funding for doctoral programmes.
- Design mechanisms to attract young people to the pursuit of research careers.

In addition, the Education Code contains a section on support for research in HEIs.

Public project-based funding of RDI activities comes from the NARD. In addition, HEIs may benefit from institutional funding for research and innovation in accordance with the Code on Science and Innovation. HEIs are the sole owners of all intellectual property generated from their research activities that are financed from the State budget and can use the revenues from commercializing that intellectual property at their discretion.

Another document with a potential impact on RDI is the National Development Strategy 2030. It includes four pillars of sustainable development, based on 10 long-term objectives:

- A sustainable and inclusive economy (reduced economic inequalities, greater access to public infrastructure and facilities, improved working conditions)
- Robust human and social capital (good-quality education for all and promotion of lifelong learning opportunities, creation of conditions for the best physical and mental health, development of an inclusive social protection system, life-work balance)
- Transparent and efficient government institutions (strengthened rule of law, promotion of a safe and inclusive society)
- A healthy environment for individuals (ensuring the fundamental right to a healthy and safe environment)

The targets of the National Development Strategy Moldova 2030 are based on the SDGs. The plan is to monitor and evaluate their achievement using a set of international benchmarks, mainly indicators of the EU and rankings of international organizations. The Government sees research, education and innovation as the main drivers of sustainable development.

Institutional frameworks

Several government bodies play roles in science and innovation. Since 2017, the national innovation policy has been mainly shaped by the MECR. The MEI shares responsibility for supporting innovation activities, but its impact is rather limited and the new regulation on its organization and tasks does not mention innovation among its competence areas. The Ministry of Agriculture, Regional Development and Environment and the Ministry of Health, Labour and Social Protection oversee some research institutes and research centres. In 2018, the former developed an action plan to support agricultural research and support collaboration between academia and business in the agriculture sector. The National Academy of Sciences is responsible for performing research activities, advising the Government on science and innovation policy, and supporting international collaboration on research.

The Ministry of Finance defines the national budget and establishes procedures for financial monitoring and for assessing and evaluating projects that receive RDI funding. In 2018, the Government established the NARD to allocate project-based funding; before that, the state budget for R&D was managed mainly by the National Academy of Sciences. The NARD offers funding for four project types: state research programmes, technology transfer projects, international research projects and projects for postdoctoral research. In 2020, it allocated \$11.3 million to research projects and \$440,000 to innovation and technology transfer projects. Private and public entities as well as members of entrepreneurs' associations can apply for funding. Sectors such as high-performance computing, energy and forestry are among the priority areas. The agency seeks to use available funding to provide targeted support for spin-off companies. Its Council selects projects on the basis of feedback from independent national experts, with final choices made by the general director. The agency assesses projects (for four years) by comparing results and planned indicators. The main criteria are volume of exports, investment, staff increase and project duration.

Governance of public institutions remains insufficiently developed (Spiesberger and Cuciureanu, 2015; EBRD, 2017). That poses serious barriers to the growth of innovation and entrepreneurial activities. Reforms of judiciary bodies have produced overregulation of RDI activities and excessive bureaucratization, decreasing the efficiency and effectiveness of the national science and innovation system.

Legal frameworks

The Code on Science and Innovation, adopted in July 2004, is the main policy document that sets frameworks for developing the national science and innovation system. It defines the main activities, the actors and their relationships, and the goals of science and innovation activities; it also sets mandates for government authorities. According to the Code, the major goal of the State policy is to achieve sustainable socioeconomic and human development that is based on making progress in science and technology and on creating and commercializing research outputs effectively. It serves as a basis for establishing quality assurance mechanisms in Moldovan research.

The National Agency for Quality Assurance in Education and Research is the main government body responsible for assessing and evaluating the national science and innovation system. Government authorities in Moldova do not have sufficient capabilities to enforce the laws as intended, and laws on entrepreneurship and innovation are not always implemented as intended. According to the Law on SMEs, financial control bodies may audit SMEs only once within the first three years of operation and are not allowed to fine these companies during this period. Government inspectors do not fully abide by this rule and expose SMEs to greater scrutiny that is not always justified. Frequent inspections result in interruptions of business activities and negatively affect entrepreneurship in the country. Excessive and complex regulation of business is detrimental to the growth of both SMEs and innovation.

Apart from irregular implementation of legal frameworks and overregulation, another challenge is legislative gaps. Missing are laws on FDI, venture capital investment and spin-offs. The Law on Investments No. 81/2004 provides a governance framework for FDI. Although many policy documents in the last 25 years mention venture capital investment, the country does not have a fully fledged legal framework governing such investment. The action plan of the Innovation for Competitiveness Strategy envisaged the elaboration of a law on venture capital in 2014. The same activity was included in the earlier action plan for the implementation of the SME Development Strategy 2015–2017. Neither of these plans translated into real actions.

Sub-pillar I IPO evaluation and recommendations

Achievements

- ✓ The Government has made a strong commitment to reforming the national science and innovation system.

| Area for improvement | Recommendation | Time frame | Responsibility |
|--|---|----------------------|--------------------------------|
| <ul style="list-style-type: none"> • Funding of RDI activities is suboptimal. | <ul style="list-style-type: none"> ✓ Increase public expenditure on R&D to create conditions for an innovation-driven economy. | Medium-term | Government |
| | <ul style="list-style-type: none"> ✓ Raise expenditures jointly with making efforts to improve the accountability of both recipients and funders, as well as the quality of governance. | | |
| <ul style="list-style-type: none"> • Government services are not sufficiently digitalized. | <ul style="list-style-type: none"> ✓ Increase efforts to develop digital government platforms, so the Government leads by example in the digital transformation of the society and economy, creating demand and setting standards for digital solutions. | Medium- to long-term | MEI Agency for E-Government |
| <ul style="list-style-type: none"> • Legal instruments are not sufficiently developed to fully support innovation activities. | <ul style="list-style-type: none"> ✓ Adopt regulation on FDI, venture capital investment and spin-offs to support innovations in the business sector. | Short-term | Government |

Source: UNECE.

Sub-pillar II: Innovation policy coordination

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

International cooperation

The Republic of Moldova has strong historical linkages with countries that have long scientific and technological traditions. It maintains cooperative efforts with post-Soviet states on a number of joint research projects; for instance, Moldovan scientists conduct research with their international peers at the Joint Institute for Nuclear Research in Dubna. The scope of international cooperation is extensive. The country is a partner in the EU Water Joint Programming Initiative and in ERA.Net RUS Plus. It has agreements with the Romanian Ministry of Education and Research, the German Federal Ministry for Education and Research, the National Research Council of Italy, the French National Centre for Scientific Research, the Belarussian State Committee on Science and Technology, and the Scientific and Technological Council of Turkey.

The Republic of Moldova is the only country in the post-Soviet space to have become an associated member of the EU Framework Programmes for Research and Innovation, which occurred in 2011. In 2014, it deepened its cooperation with the EU by joining the DCFTA and signing an agreement on a visa-free regime with the EU member countries. National science and innovation priorities are congruent with the priorities of the Framework Programmes, yet because of the immaturity of the national science and innovation

system, among other reasons, the country has not been able to benefit fully from them. Nevertheless, over the last decade, domestic RDI organizations have accumulated the knowledge and expertise required to foster cooperation with EU partners and apply for international funding.

Given the country's close relations with the EU, the development of research and innovation is largely shaped by the priorities and trends of the European Research Area. The 2019–2021 Road Map for the Integration of the Republic of Moldova into the European Research Area seeks to build the capabilities and skills of domestic institutions to apply synergies from this cooperation with the EU effectively to advance domestic research and innovation. The Road Map contains six objectives:

1. Develop an effective national research system.
2. Support international cooperation to jointly address grand challenges and develop joint research infrastructures.
3. Create favourable conditions for an open labour market for research personnel.
4. Reach higher levels of gender equality in research.
5. Promote open access and open science.
6. Strengthen international cooperation in research and innovation.

Actions under the Road Map align with the National Research and Innovation Programme. One of that programme's general objectives is to foster internationalization. It establishes measures to improve the ability of Moldovan organizations to benefit effectively from the Horizon 2020 programme and to support organizations in preparing the national capabilities for the next EU Framework Programme, Horizon Europe.

The ability of Moldovan firms to integrate into global value chains is burdened by outdated industry standards and product certifications. Greater alignment with international norms would open new opportunities for Moldovan exports and contribute to creating new jobs. Adoption of the standards of the EU and the Eurasian Customs Union could make Moldovan enterprises more competitive globally.

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

The Republic of Moldova does not have fully functioning mechanisms and approaches that make it possible to coordinate science and innovation policy. The Innovation for Competitiveness Strategy 2013–2020 and the Research and Development Strategy 2020 included plans to establish an interministerial council to coordinate State programmes on science and innovation. Plans also existed to set up a consultative committee for research and innovation, comprising public and private stakeholders; however, these plans have never been implemented.

Each national ministry creates its own initiatives to support research commercialization and innovation activities, leading to fragmented use of resources, greater administration costs and less transparency and producing only moderate impacts on support for RDI activities. The parallel funding schemes with the same objectives and similar designs do not provide the intended results for socioeconomic development.

The regional aspect of science and innovation policy is not developed, as there are neither regional innovation agencies, nor regional science and innovation strategies. Instead, Moldova has four regional development strategies: the Regional Development Strategy North 2016–2020, the Regional Development Strategy Centre 2016–2020, the Regional Development Strategy South 2016–2020 and the Regional Development Strategy of Gagauzia 2017–2020. The strategies define actions and goals for implementing the National Strategy for Regional Development. Although the regional strategies do not address innovation support, they do outline goals for improving the quality of governance by local authorities and for creating the conditions for sustainable economic growth.

| Sub-pillar II IPO evaluation and recommendations | | | |
|--|---|----------------------|--|
| Achievements | | | |
| <ul style="list-style-type: none"> ✓ Public research organizations and HEIs have experience in participating in international funding calls. ✓ A large number of international agreements in RDI exist with countries that are advanced in science and technology. | | | |
| Area for improvement | Recommendation | Time frame | Responsibility |
| <ul style="list-style-type: none"> • No functioning mechanisms exist for coordination among science and innovation policy stakeholders. | <ul style="list-style-type: none"> ✓ Establish strong communication channels among government authorities with responsibilities for science and innovation. | Medium-term | Government |
| <ul style="list-style-type: none"> • No regional science and innovation policy exists. | <ul style="list-style-type: none"> ✓ Integrate a science and innovation policy dimension into the design of regional policies. | Medium- to long-term | National and regional governments Ministry of Agriculture Regional Development and Environment |
| | <ul style="list-style-type: none"> ✓ Ensure regional authorities obtain all necessary competences to successfully steer science and innovation policy initiatives. | | |
| <ul style="list-style-type: none"> • Industry standards and product certifications do not fully align with international standards. | <ul style="list-style-type: none"> ✓ Implement international quality standards and product certifications in order to enable domestic enterprises to integrate into global value chains. | Medium-term | MEI |

Source: UNECE.

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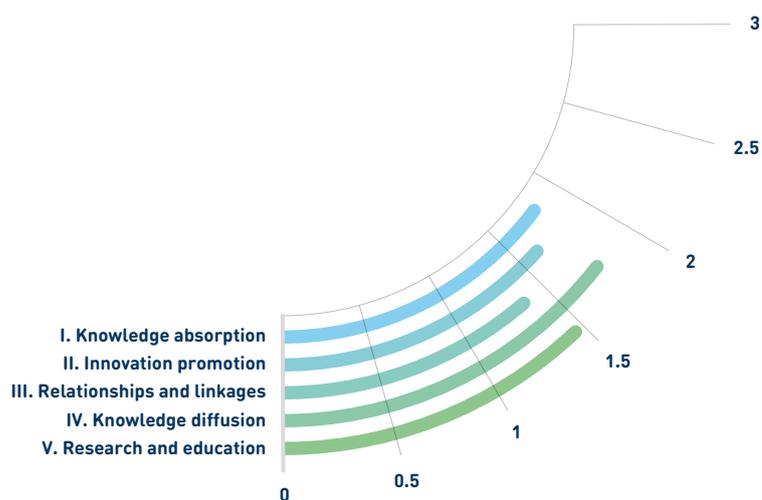
Chapter IV

PILLAR II: INNOVATION POLICY TOOLS

This chapter reviews the existing policy mechanisms in the Republic of Moldova 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.

In accordance with the National Development Strategy “Moldova 2030”, the Government develops the innovation policy mix in coherence with the country’s socioeconomic development, reflecting the needs and challenges of its emerging innovation system. With the advancement of key economic reforms, policy efforts have focused on building a stable regulatory framework and fostering business development. In parallel, in recent years policy support has increased in several innovation domains; this support includes adopting dedicated schemes and policy initiatives related to the sub-pillars of *Knowledge absorption*, *Innovation promotion* and *Knowledge diffusion*, signalling positive development in forming an enabling environment for innovation (figure IV.1). That said, SME support measures and innovation incentives tend to be developed in independent processes, which is reflected in the country’s modest performance on the sub-pillars of *Relationships and linkages* and *Research and education*.

The downsized innovation infrastructure, stagnating industry-science linkages and a mismatch between educational outputs and job-relevant skills all require greater policy attention, and overreliance on donor support reduces the sustainability of existing measures. Developing efficient policy tools in these domains could not only bring about the improvements needed for future development and the growth of entrepreneurship but also offset barriers to innovation posed by the structural problems of the Moldovan economy, which include low productivity in SMEs and remittance-driven growth. To position and promote the country as an attractive destination for investment in RDI and technology, further policy efforts need to address integrating the business sector into the national innovation system.

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

| Sub-pillar I: Knowledge Absorption | Sub-pillar II: Innovation Promotion | Sub-pillar III: Relationships and Linkages | Sub-pillar IV: Knowledge Diffusion | Sub-pillar V: Research and Education |
|--|--|---|---|---|
| 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.

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 value chains.

Promotion of public and private sector organizational and managerial practices

A decade ago, no initiatives promoting organizational and managerial practices existed in the Republic of Moldova. Today, several training programmes are in place to expand the absorptive capacities of businesses and public organizations. Although a full-fledged national scheme does not yet exist, civil servants in management positions can now take part in short-term training courses at the Academy of Public Administration. The Civil Servants Training Programme 2016–2020, developed by the State Chancellery, aims to improve leadership skills and knowledge of foreign languages. In the private sector, training in entrepreneurial skills and organizational effectiveness occurs through the business management programmes implemented by the Organization for Small and Medium-sized Entrepreneurship (ODIMM), as well as through the cross-border training modules of the Chamber of Commerce and Industry.

Schemes to support development of technical and business services

Moldovan technical and business service providers primarily receive support indirectly, through international projects that grant SMEs non-reimbursable financial support for technical and business development, knowledge transfer and the like (table IV.2). For instance, the World Bank Competitiveness Enhancing Project encourages investment in value added activities and export-oriented processes by co-financing grants, and projects funded by the United States Agency for International Development (USAID) to promote a diverse and export-oriented economy award grants and technical assistance in the key sectors of agriculture, ICT, wine and light industry. The SME support agency ODIMM regularly updates its online register of private providers of technical and business services in the country.

Table IV.2 Donor-funded initiatives for developing technical and business services

| Support measure | Funding body | Intervention area | Budget | Duration |
|---|--------------|---|-------------|--------------|
| Advice for Small Businesses | EBRD | Market for consulting services and competitiveness of SMEs | unknown | 2005–present |
| Competitiveness Enhancing Project (co-financing grants subcomponent) | World Bank | Encouragement of investment in value added activities and export-oriented processes | \$3 million | 2015–2019 |
| ICT Excellence Center Project (part of the Moldova Competitiveness Project) | USAID | Educational, training and entrepreneurship development activities | \$4 million | 2015–2020 |

Table IV.2

**Donor-funded initiatives for developing technical and business services
(Concluded)**

| Support measure | Funding body | Intervention area | Budget | Duration |
|--|---|---|----------------|-----------|
| Moldova Competitiveness Project | USAID Swedish International Development Cooperation Agency | Improvements in productivity and the sector-enabling environment in ICT, wine, tourism and textiles | \$21.9 million | 2015–2020 |
| Regional Farmer to Farmer Programme | USAID | Improvements in food processing, production and marketing | \$1.3 million | 2018–2021 |
| Supporting Entrepreneurial Education in Eastern Europe | USAID | Building soft skills and stimulating more entrepreneurial activity | \$179,102 | 2017–2020 |

Source: UNECE.

Fiscal incentives for acquiring knowledge capital

The Republic of Moldova provides fiscal stimulation in the country's seven free economic zones and the IT sector, consisting primarily of tax exemptions for resident companies and their employees. Specifically, the IT Park grants residents a 7 per cent single tax from sales revenue in lieu of income tax on entrepreneurial activity, income tax on wages and compulsory social insurance contributions; compulsory medical insurance payment; local taxes; real estate tax and road usage tax. Established in 2018, the park plays an important role in stimulating the IT sector through its preferential tax regime and cluster facilitation model. Among the success factors in its positive effects on export and local sales growth are its applied virtual approach, its reduction of bureaucratic barriers through optimizing processes (such as an IT visa programme), and its operational capacity in eight types of business activity.

Sub-pillar I

IPO evaluation and recommendations

Achievements

- ✓ A dedicated SME development agency (ODIMM) supports businesses through programmes and services aimed at strengthening entrepreneurship and competitiveness.
- ✓ Fiscal incentives applied in the IT sector have created a favourable business environment and stimulated demand for new technologies and sectoral growth.

| Area for improvement | Recommendation | Time frame | Responsibility |
|---|---|-------------|-------------------|
| <ul style="list-style-type: none"> • Policy tools do not sufficiently promote good organizational and managerial practices in the public sector. | <ul style="list-style-type: none"> ✓ Increase the effectiveness of training schemes that aim to raise the professional qualifications of civil servants, through a comprehensive analysis of the assessment framework of such plans. | Medium-term | State Chancellery |
| | <ul style="list-style-type: none"> ✓ Develop criteria and requirements for established training plans and processes. | | |

Sub-pillar I IPO evaluation and recommendations (Concluded)

| Area for improvement | Recommendation | Time frame | Responsibility |
|---|--|-------------|----------------|
| <ul style="list-style-type: none"> The development of technical and business services relies heavily on international donor support, as the economy lacks sustainable providers of services that match market needs. | <ul style="list-style-type: none"> Conduct regular analyses of the market for technical and business services to ensure that services provided correctly respond to current demand, identifying the needs of firms. | Medium-term | ODIMM |
| | <ul style="list-style-type: none"> Integrate targeted technical and business services in agendas directed at other policy areas (such as rural development and green technologies). | | |
| | <ul style="list-style-type: none"> Provide basic public technical and business services that do not compete with private sector offerings. | Medium-term | MEI ODIMM |
| | <ul style="list-style-type: none"> Introduce quality assurance mechanisms (such as certification) for technical and business service providers, to build public confidence and stimulate the provision of high-quality service. | Short-term | MEI |

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

Business plan competitions are vital for stimulating the SME sector, which accounted for 31 per cent of GDP in 2016.¹ A wide variety of business plan and start-up competitions are implemented jointly and independently by state agencies, private companies, international organizations and non-governmental organizations; some include an innovation component. The Moldova State University organizes an innovative business start-up fair. Until 2018, State programmes were organized by the former Agency for Innovation and Technology Transfer, which merged into the NARD in 2018. The NARD needs to evaluate the current competitions to identify which ones to implement in the future.

Support for RDI investment

Both the Government and regional mechanisms support investment in RDI. The National Programme for Research and Innovation for 2020–2023 includes provisions concerning State funding of RDI (Republic of Moldova, 2019). Although for 2020 the programme allocates 40 per cent of such funding (MDL 256.3 million) to institutional strengthening, the NARD awards the other 60 per cent competitively through State science grants for individual and collaborative research, including support programmes for young researchers. In 2016, the European Investment Bank Group initiated the InnovFin programme to support innovation in the region, with the cooperation of the European Investment Fund.

Under the Horizon 2020 programme, commercial banks distribute loans, guarantees and equity-type funding for innovative firms. Costs arising from innovating are not offset for businesses by the Government through preferential subsidies or loans, a factor that discourages innovation and investment in the domestic market. Exemptions from value added tax (VAT) exist but could be applied more widely to stimulate investment in RDI and demand for innovation.

Technology incubators and accelerators

The ecosystem supporting start-ups in the Republic of Moldova is still developing, with only a few acceleration service providers in place to respond to the needs of the growing tech community. Although no specific policy framework defines technology accelerators, similar elements are applied through technology transfer centres under the EU-funded Tempus project, the Technology Transfer Network.² Several acceleration programmes with established international connections support start-ups, mainly at the pre-seed and seed stages, including the Founder Institute Programme implemented by the DreamUps Innovation Campus and the Rockstart Launchtrack programme organized with the support of USAID and the Swedish International Development Cooperation Agency within the Moldova ICT Excellence Centre Project. Few domestic accelerators exist, so Moldovan start-ups using the services of foreign accelerators face the challenge of relocating to the host country after receiving seed capital.

The Government supports innovation incubators, most located at the premises of universities and research institutes, through the public budget. Although 10 incubation facilities opened during 2007–2018, more than half were cancelled without receiving applications (Stratan, Novac and Maier, 2018a). Four now offer solutions to students and researchers looking to commercialize their results. They aim to create a knowledge-sharing environment, providing space and support to entrepreneurs for realizing their innovative business ideas (figure IV.2) (Maier, 2013). A recent study by the National Institute of Economic Research argues that although the four operational structures offer a certain range of incubation services, they fail to make a strong impact on developing the SME sector, because of either their specialization or their lack of efficient management and innovation specialists (Stratan, Novac and Maier, 2018b).

Figure IV.2 • Innovation incubators



Source: NARD (2020).

Sub-pillar II IPO evaluation and recommendations

Achievements

- ✓ A wide range of business plan and start-up competitions supports the growing start-up movement and fosters innovative entrepreneurship.
- ✓ The State Programme for Innovation and Technology Transfer, administered by the NARD, stimulates RDI and provides incentives for businesses and public R&D institutions to collaborate.

| Area for improvement | Recommendation | Time frame | Responsibility |
|--|--|-------------|---------------------|
| <ul style="list-style-type: none"> • Incubator infrastructure is limited as a result of fluctuations in the number of residents, which suggests inefficiencies in service provision and insufficient capacity for innovation and technology transfer. | <ul style="list-style-type: none"> ✓ Expand the portfolio of the innovation incubators to add value and increase their overall efficiency, by including services at several stages: pre-incubation (training, orientation, business plan assessment), incubation (for example, IPRs, legal and administrative support, fundraising, networking) and services for SMEs (for example, business diagnostics, marketing, internationalization, clustering). | Medium-term | NARD MECR |
| <ul style="list-style-type: none"> • Policies do not sufficiently stimulate the production and consumption of innovative goods, and no indirect policy tools (such as tax exemptions) target innovative activities. | <ul style="list-style-type: none"> ✓ Conduct a comprehensive assessment of the tax policy framework to identify potential benefits of targeted taxation tools to stimulate innovation (for example, a cost-benefit analysis of VAT concessions on innovative products given exclusively to businesses with turnover below a set SME exemption threshold). | Medium-term | Ministry of Finance |
| <ul style="list-style-type: none"> • Low access to finance discourages entrepreneurs from realizing innovative ideas or forces them to fund projects through traditional bank loans with unfavourable rates. | <ul style="list-style-type: none"> ✓ Introduce direct financial support tools to facilitate access to finance for innovative enterprises (for example, preferential R&D loans, loan guarantees and/or subsidies, including loans targeted at businesses that partner with public R&D institutions to stimulate industry-science linkages). | Medium-term | MEI MECR |

Source: UNECE.

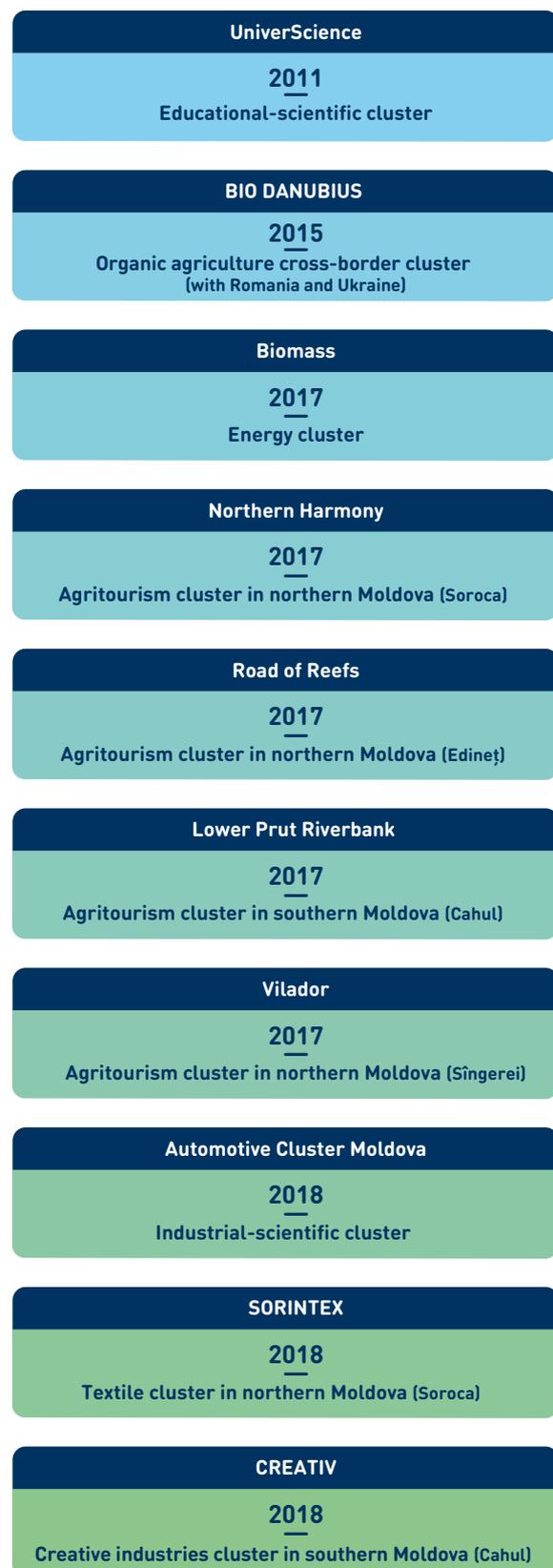
Sub-pillar III: Relationships and linkages

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

Business networks in the country are supported by associations and chambers of commerce, uniting international and local companies. Such structures benefit local SMEs by helping them develop in-house knowledge and expertise but also by creating links between foreign and Moldovan businesspeople. A large share of Moldovan companies create innovative solutions jointly with their suppliers (28 per cent) and business partners (26 per cent), according to a study by the National Bureau of Statistics in 2016.³

Figure IV.3 • Cluster initiatives



Source: NARD (2020), EaP Plus (2017), Roman (2017).

Clusters are another efficient tool for increasing the competitiveness and innovation capacity of Moldovan SMEs while stimulating the attraction of foreign investment and technological transfer. In line with the State concept of cluster development in the industrial sector, eight cluster initiatives now exist, including recently emerged ones in the agribusiness, textile and creative industries (figure IV.3) (Republic of Moldova, 2013). For instance, the Automotive Cluster Moldova, established in 2018, unites 32 companies, universities and local public authorities. It plans to establish a technology transfer centre in Chisinau and develop local suppliers in the automotive sector, with the aim of internationalizing Moldovan companies and integrating them in global and regional value chains.

Innovation support infrastructure

The new legal framework on science and technology parks adopted in 2018 (Republic of Moldova, 2018a) granted rights to establish innovation infrastructure facilities to public entities and associations as well as to clusters. Of the three parks created under the 2007 law, only Academica remains operational, administered by the State-owned enterprise Aseteh. Since its establishment, Academica has hosted more than 40 residents in fields including renewable energy, biotechnologies, IT and environmental protection. To increase interest in the park, it should expand its value added services, such as the increased provision of business and technical training. Doing so would also avoid competing with private innovation spaces that share similar features, such as providing co-working space, organizing events (such as hackathons and start-up weekends) and mentoring.

Academia-industry collaboration and mobility

The Republic of Moldova does not have national industry-research networks, and limited mobility between industry and academia poses a challenge for Moldovan research. As an active member of the Enterprise Europe Network (EEN), the NARD is able to draw on the expertise of international networks for the domestic market. To create structured interactions and sustainable cooperation in the field, the MECR

plans to introduce an industrial doctoral programme. In addition, the National Road Map for Integration of the Republic of Moldova into the European Research Area for 2019–2021 envisions an open labour market for researchers. Among other aims, it targets the removal of legal barriers to researcher mobility and the promotion of the EURAXESS Programme, managed by the EC, which provides services to support researchers in Europe (Republic of Moldova, 2018b). Although the country does not have a dedicated scheme for encouraging researcher evaluation between academia and industry, some institutions, such as the Moldova State University, conduct annual evaluations of research personnel. A database on industry-science collaboration could help identify which measures are most needed to further stimulate the growth of business-academia networks and linkages.

Among continuing schemes the NARD inherited from the Agency for Innovation and Technology Transfer are cooperative R&D-type grants through the State Programme for Innovation and Technology Transfer, which aims to commercialize innovative ideas and results on the domestic market. Although the principal applicants are registered businesses, the programme conditions funding on 50 per cent co-financing from a partnership with an R&D institution, thereby ensuring collaboration between Moldovan entrepreneurs and researchers.

Diaspora networks

The national Diaspora Relations Bureau implements programmes that draw on diaspora networks. One of these programmes is the Diaspora Engagement Hub, a thematic grant programme designed for Moldovan citizens living abroad. It supports initiatives through two funding lines: one encouraging the transfer of human capital through grants for returning professionals and one financing diaspora specialists who are implementing innovative projects that entail technology transfer and use international best practices (Republic of Moldova, Diaspora Relations Bureau, 2020).

Gender equality

In line with the Strategy for Ensuring Equality between Men and Women in the Republic of Moldova for 2017 to 2021, the Government and international partners have implemented several initiatives on gender equality in recent years. They include ODIMM's Women in Business Programme, the European PLATO training network for female entrepreneurs, and Women in Politics, run by UN Women jointly with the United Nations Development Programme. Combining work and family life continues to be difficult for women, as reflected in the significant differences in employment rates between men and women who have at least one preschool child. Limited access to childcare and occupational discrimination remain among the main barriers to integrating women into the Moldovan labour market.

Sub-pillar III IPO evaluation and recommendations

Achievements

- ✓ The rate of cluster creation has increased in recent years, attracting foreign investment and inducing technological transfer (for example, in an automotive cluster).
- ✓ The State Programme for Innovation and Technology Transfer administered by the NARD stimulates innovation and provides incentives for collaboration between businesses and public R&D institutions.
 - ✓ Several policy initiatives make use of diaspora networks, including an innovation project competition and a remittance-based investment programme.

| Area for improvement | Recommendation | Time frame | Responsibility |
|---|---|-------------|----------------|
| <ul style="list-style-type: none"> • Limited synergies between business and science impede research commercialization; business-academia collaboration is not sufficiently supported through joint projects or structured interactions and sustainable partnerships. | <ul style="list-style-type: none"> ✓ Adopt a set of policy measures to stimulate industry-science mobility in line with set commitments (such as sabbatical leaves for professors, joint training programmes, opportunities for doctoral and master's students to pursue research projects in a company as part of their study). | Medium-term | MECR |
| | <ul style="list-style-type: none"> ✓ Expand the mix of policies supporting industry-science linkages to include matching services, through which researchers with highly innovative projects can find potential partners. | | NARD |
| | <ul style="list-style-type: none"> ✓ Develop further the technology transfer system to strengthen linkages between public research institutions and enterprises on the domestic market. | | MECR |
| <ul style="list-style-type: none"> • Elements of the innovation infrastructure do not sufficiently stimulate demand, providing only limited activities and services for developing resident firms. | <ul style="list-style-type: none"> ✓ Run a comprehensive evaluation of the innovation infrastructure, and set up an action plan for generally improving the efficiency of its elements, including replacing physical equipment, attracting highly skilled personnel, introducing value added services in the portfolio of science and technology parks (for example, hard and soft technology transfer, access to R&D facilities); creating linkages with local HEIs; outlining key performance measures; and developing a monitoring framework. | Short-term | NARD |
| <ul style="list-style-type: none"> • Although several national projects have been implemented, gender equality issues persist, pointing to the need to integrate the principle more thoroughly into the policymaking process. | <ul style="list-style-type: none"> ✓ Integrate gender-based analysis in the policymaking process to identify the gender dynamics and implications of any planned action, including legislation, policies and programmes. | Short-term | All ministries |

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

Since the endorsement of the Association Agreement with the EU in 2014, the Moldovan quality assessment system has continuously been harmonized with EU standards, with actions undertaken to develop and consolidate its elements. Overseeing the implementation process, the National Institute of Standardization elaborated a strategy for the years 2018–2020 with yearly action plans and support measures in place, such as a web-based library with standards for SMEs (Institutul de Standardizare din Moldova, 2018; 2020). Standardization in the country still faces challenges, including insufficient laboratory equipment to evaluate all necessary parameters, lack of human resources and costs associated with adopting standards for companies. An EU-funded technical assistance project further supports the quality infrastructure framework in the DCFTA context, assisting exporters with numerous technical issues related to assessing conformity and to licensing (EU4Business, 2017).

Digitalization and e-governance

In line with the National Strategy for Development of the Information Society, called Digital Moldova 2020, the Broadband Development Programme for 2018–2020 sets out measures to develop new-generation electronic communications networks with national coverage. Reducing the rural-urban divide is among the programme's objectives, and connecting all localities with broadband networks has already provided access to broadband Internet for 49 per cent of Moldovan households. Increasing connectivity, however, remains a challenge in some regions. To improve access to data, the e-Government Agency has implemented more than 40 digital transformation projects since 2011, including launching a public services portal and an open data platform that offers citizens and businesses access to public data sets, ensuring transparency and open communication.

Other policy tools

In line with the sub-regional trend, policy tools in use in the Republic of Moldova do not sufficiently address the present gaps in knowledge diffusion by leveraging the potentials of industrial technology assistance, public procurement and brokerage schemes for upgrading technology. Nonetheless, they do provide indirect support in industrial technology assistance, such as the World Bank's Second Competitiveness Enhancement Project, which supports business development services to foster competitiveness in SMEs.

Sub-pillar IV IPO evaluation and recommendations

Achievements

- ✓ An e-government public service portal and an open data platform offer a vast range of digital services to businesses and individuals.
- ✓ A series of actions developed and consolidated elements of the Moldovan conformity assessment system (such as certification and international standards).

| Area for improvement | Recommendation | Time frame | Responsibility |
|--|---|-------------|---------------------------------------|
| <ul style="list-style-type: none"> • No separate procurement procedure for innovation exists, despite its potential to stimulate competition in the technology market and complement other R&D investments. | <ul style="list-style-type: none"> ✓ Adopt a pre-commercial procurement approach to stimulate RDI activity through demand and to allow innovative solutions to reach the domestic market. | Medium-term | Public Procurement Agency |
| <ul style="list-style-type: none"> • Outsourcing standardization because of the lack of laboratory equipment often involves expensive procedures abroad, which might fuel the rise of non-compliant products on the market; human resources trained in conformity assessment are limited. | <ul style="list-style-type: none"> ✓ Comprehensively evaluate laboratory equipment for standardization and identify potential improvements. | Medium-term | National Institute of Standardization |
| | <ul style="list-style-type: none"> ✓ Set up a maintenance and support framework. | | |
| | <ul style="list-style-type: none"> ✓ Promote expertise in standardization by including standards as a subject in the curricula of universities and research centres (or as an extracurricular activity). | | |
| <ul style="list-style-type: none"> • Brokerage services are not readily available to help innovative firms plan and implement innovation activities, and technology extension services for SMEs rely too much on donor support. | <ul style="list-style-type: none"> ✓ Integrate brokerage and technology extension services within the service portfolio of science and technology parks and innovation incubators (such as export and market development, investment promotion). | Short-term | NARD MECR |

Source: UNECE.

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 STEM initiatives. Policy measures to enhance research aim to promote research excellence, collaboration and commercialization.

Policies to increase the number of STEM graduates

Science, technology, engineering and mathematics (STEM) education has been integrated in the general education curriculum, having received support and stimulation through several policies in recent years. Each year, the MECR organizes a national science and engineering competition, engaging primary school pupils in STEM-related fields. In addition, the USAID-funded Moldova Competitiveness Project promotes STEM education through its flagship initiatives Future Classroom Lab and Educational Robotics, which benefited more than 11,500 Moldovan students during 2015–2018. Under the project, a Concept of STEM Education was further developed in 2016 in cooperation with the MECR.⁴ In response to the higher demand for STEM teachers in general education, the National Centre for Digital Innovation in Education was inaugurated in 2019 at the State Pedagogical University, with a State budget allocation of \$280,000, to train teachers in using digital technologies. Demand for STEM disciplines at universities is, however, still low, reflected in unfilled budgetary places in engineering and sciences.

Policies to foster R&D

The NARD implements RDI policy in accordance with the National Programme for Research and Innovation 2020–2023, conducting innovation projects and distributing budget allocations for R&D on a competitive basis. Its five priority areas for scientific research are health care; sustainable agriculture, food security and safety; environment and climate change; social challenges; and economic competitiveness and innovative technologies. The NARD's project competitions aim to achieve scientific results and commercialization in these priority areas (Republic of Moldova, NARD, 2020). The State Programme for Innovation and Technology Transfer is the main policy instrument that stimulates partnerships between industry and science. In the business sector, however, these provisional support measures do not translate into increased investment in R&D. In 2017, business enterprises accounted for 19 per cent of R&D expenditure, a share that has remained stable over the preceding decade (UNESCO, 2020).

By joining Horizon 2020, the EU Framework Programme for Research and Innovation, in 2014 the Republic of Moldova made a strong effort to raise the level of internationalization of its national research and innovation system, ensuring a stable process of integration in the European Research Area. The National Road Map for Integration in the European Research Area outlines specific actions and support measures for six priorities, among them a more effective national research system, optimal transnational cooperation and competition, and an open labour market for researchers. In addition, it sustains

cross-border cooperation through joint projects with foreign research organizations. The MECR supports the annual development of bilateral projects with Belarus, France, Germany, Italy, Romania and the Russian Federation. The NARD also issues calls for proposals for research projects in joint competitions with Belarus and Turkey.

| Sub-pillar V IPO evaluation and recommendations | | | |
|---|---|-------------|----------------|
| Achievements | | | |
| <ul style="list-style-type: none"> ✓ The Government has successfully implemented several STEM initiatives in general education since 2015 (such as national competitions, classroom labs and a national centre for digital innovation in education). ✓ Participation in several EU projects and joint bilateral programmes has enhanced cross-border research cooperation, making progress towards the country's integration into the European Research Area. | | | |
| Area for improvement | Recommendation | Time frame | Responsibility |
| <ul style="list-style-type: none"> • The Government needs to strengthen the stimulation of STEM in higher education, to tackle stagnating enrolment rates in related disciplines and the shortage of STEM specialists on the domestic labour market. | <ul style="list-style-type: none"> ✓ Develop a STEM learning ecosystem in a community setting to enhance the transfer of knowledge and the development of creative and collaborative skills (for example, afterschool and/or summer STEM programmes); a web-based STEM portal, to provide information on opportunities and support infrastructure; and a STEM teaching network, to offer knowledge exchange through conferences, events and virtual discussions on strategies and lessons for improving teaching and learning. | Short-term | MECR |
| | <ul style="list-style-type: none"> ✓ Use international best practices and foreign partnerships to incorporate global STEM education policies into the higher-education system, to improve educational output and equip students with knowledge and skills that meet labour market needs. | Medium-term | |
| <ul style="list-style-type: none"> • Despite policy efforts to enhance research, the commercialization of science and technology activity remains low; the number of researchers is decreasing, fuelled by emigration and weak industry-science linkages, thus reducing the pool of entrepreneurial talent in the country. | <ul style="list-style-type: none"> ✓ Conduct a comprehensive impact assessment of the research initiatives and grant programmes to identify potential inefficiencies and drivers of innovative development. | Short-term | NARD |
| | <ul style="list-style-type: none"> ✓ Expand the career-funding instruments (such as excellence and mobility grants, and professional fellowships) allocated to students to stimulate pursuit of a career in research and improve the mobility of researchers between industry and academia. | Medium-term | MECR |

Source: UNECE.

Notes

- ¹ Republic of Moldova, National Bureau of Statistics, Innovation activity of enterprises in the Republic of Moldova, in the years 2015–2016, 18 January 2018.
- ² State Agency on Intellectual Property, Tempus Project “Technological Transfer Network - TecTNet” – First Year Review, 30 January 2015.
- ³ Republic of Moldova, National Bureau of Statistics, Innovation activity of enterprises in the Republic of Moldova, in the years 2015–2016, 18 January 2018.
- ⁴ Republic of Moldova, Ministry of Education, Culture and Research, Learning the exact sciences will become more attractive to students, 13 October 2016.

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Chapter IV

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, on the basis of 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 Moldova's MECR and the ODIMM, UNECE selected the 2016 Law on Small and Medium-Sized Enterprises 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.

Innovation policy processes – strengths and weaknesses

In a country such as the Republic of Moldova where 98 per cent of all companies are SMEs, the adoption of the SME Law is an important milestone. In replacing an obsolete law from 2006, the country established a sound legal framework as well as State support measures for creating and developing SMEs. The new law emerged from a structured and open, albeit lengthy, consultation process with relevant stakeholders, and its design and content are sound, responding to the needs identified in the 2012–2010 SME Strategy. The law's application is advanced, except for areas where cooperation with other line ministries is required, such as in stimulating RDI. Its main shortcomings lie in its lack of systematic mechanisms for monitoring and evaluation.

At the broader policymaking level, the IPO analysis found that the recently established regulatory impact assessments (RIAs) on draft policies follow a number of international good practices and are a promising tool to improve the quality of legislative and

regulatory flow, although questions remain about its sustainability and the ability of parliamentarians to circumvent the procedure. Mechanisms for public-private consultations, and for inter- and intraministerial consultation are embedded in a well-defined legal framework but are not systematically implemented and overseen. Monitoring and evaluation of policies remains the largest gap in the policymaking cycle, with little evidence of such practices being applied systematically even to important strategic documents and laws. These issues affect the quality of policies and hence the innovation performance of the country.

Policy overall: progress and gaps

Over the past two decades, political tensions between pro-Western and pro-Russian factions in the Republic of Moldova have created a difficult environment to govern in. State capture has been common, and the effects of the 2014 banking scandal continue to reverberate.

Although the Government has adopted substantive legislative reforms, political commitment to implementing the reforms has been limited (Rahman, 2017). European integration has anchored the Government's policy reform since 2014, when the Association Agreement and the DCFTA were signed. Recent governments have made public administration reform a priority, but the Public Administration Reform Strategy for 2016–2020 has seen only modest efforts at implementation and produced only modest impacts to date.¹

Policy focus: SME Laws

An SME law sets requirements on enterprises up to a certain size, establishing the legal framework and functioning framework for such enterprises. The objective is to make improvements by changing the behaviour of SMEs in a way that generates positive results in terms of solving societal and economic issues or challenges (OECD, 2010) and to improve the framework conditions that SMEs operate in.

Not many middle-income countries have laws specific to SMEs. Typically, they exist in economies with particularly high shares of SMEs, such as the Republic of Moldova. Alternatively, or in tandem, governments need to ensure that relevant laws that affect businesses (such as those related to competition or employment) recognize the needs of SMEs.

The foci of SME laws depend on the needs of the country and the state of its SME policy, ranging from defining what qualifies as an SME and integrating this definition across key policy documents and strategies, outlining future State support measures for SMEs, and even promoting entrepreneurs from minority groups.

International experience reflects several key features that make SME laws successful. The SME Law of the Republic of Moldova is benchmarked against these features:

- They should be founded on the dynamics observed in the private and public sectors and prepared on the basis of data-driven evidence, the identification of market failures, future scenarios and strengths-weaknesses-opportunities-threats assessments.
- Oversight and enforcement of national SME laws is often conducted by the relevant line ministry with the support of the SME implementation and funding agencies.

- SME laws should clearly identify the types of enterprises in need for support.
- They should avoid generating an excessive burden for the state's finances, especially in countries like the Republic of Moldova, where the fiscal space is very limited.
- SME laws usually prioritize incentives and promotion over direct subsidies.
- To ensure accountability and measure their outputs and outcomes, evaluation rules and tools should be incorporated in an SME law's application.

The SME Law – formally the Law on Small and Medium-Sized Enterprises – was adopted by the Parliament on 21 July 2016. It establishes the legal framework for the activity of micro, small and medium-sized enterprises, as well as the State support measures for their creation and development. It replaced an SME law from 2006 that was widely regarded as inadequate.

The law aims to promote the sustainable development of micro and SMEs by improving the legal framework and the economic environment within which they are created and function. It also aims to ensure and improve the competitiveness and performance of micro and SMEs, as well as to enable them to adjust promptly to economic and technological changes.

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 |
| Rationale | Decision-making | Review of the policy against its action plan | Adaptation |
| | Private sector consultation | | |
| | 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 and future trends that will affect the area of intervention.

Innovation foresight

Like most of the EESC countries, the Republic of Moldova does not systematically or continuously integrate innovation foresight – the practice of capturing future trends and perspectives related to research activities to incorporate them in innovation policies –

into the process of making innovation policy or other kinds of policy. Foresight tends to be ad hoc and restricted in scope, tied to specific policy design efforts and not subject to continuous revision. In preparing the SME Law, for instance, the MEI used no foresight tools or methods. This state of affairs means that policymakers may not ground policies, strategies and measures in agreed, realistic assumptions from which key performance indicators follow, and thus that it may not be possible to monitor and evaluate policy impacts in a concerted way.

Policy rationale

The MEI drafted the SME Law in order to adjust the Moldovan legal framework to European principles, classifications and practices for developing the SME sector. The project began in 2010–2011. In September 2012 the Government adopted the Strategy for the Development of the SME Sector for 2012–2020. One of the priorities was to adjust the legal and regulatory framework to the needs of SMEs, with the aim of reducing administrative barriers and regulatory costs for them. The SME Law therefore directly responds to the needs identified in the strategy and the shortcomings in the 2006 law.

While elaborating the SME Law, the MEI benefited from external expertise provided by the European Commission, within the project “Support for the implementation of the Agreements between the Republic of Moldova and the European Union”, which focused on assessing the 2006 law and providing input for the new law. In 2011 the German Economic Team (funded by the German Federal Ministry for Economic Affairs and Energy and implemented by the consulting firm Berlin Economics), which advises the Government on economic policy, analysed the draft law and provided recommendations. The OECD also provided inputs. In a 2013 report on competitiveness and private sector development, it examined market failures for SMEs in the country and identified international good practices for developing SME policy, practices that the MEI integrated into the SME Law. During this time the MEI conducted a review, concluding that more than 60 per cent of the old law would need to be modified; under Moldovan legislation, this required elaborating a new law.

Broader policy issues

The Moldovan legal framework of government places the responsibility for preparing policy within ministries (SIGMA, 2015). The two main line ministries dealing with STI policies are the MECR and the MEI.

Although the ministries develop evidence-based policy by assessing impacts, in general, the quality of the assessments has not been consistent, as the analysis has been weak (SIGMA, 2015). The application of RIAs by line ministries has been mandatory since 2008; however, initially RIAs were restricted to business regulation that involved economic agents. They also were limited in scope, producing explanatory notes that describe the regulation’s objective without analysing the rationale and clarifying expected outcomes. Furthermore, with no oversight unit and insufficient political backing, their application was sporadic.

In 2017, Law 100 on Normative Acts established a more comprehensive cost-benefit methodology for two RIAs: one for business regulations and one for institutional reforms

and laws that have an impact on the public budget. In 2019, with the support of the World Bank, these two RIAs were streamlined into a single methodology, fine-tuned further and approved through Government Decision No. 23. An RIA manual clearly defines quality frameworks and proportionality principles apply; that is, depending on the comprehensiveness of the regulation or law, a full-fledged quantitative cost-benefit analysis may not be required. This lightens the analytical burden for line ministries.

The RIA process is now overseen by a dedicated, World Bank–financed RIA Secretariat, operating under the State Chancellery and staffed with one expert per line ministry. It manages three working groups, one for each type of law or regulation (business, institutional, budget), which scrutinize each RIA and provide an opinion on it. Each working group has a clearly defined operational manual, which includes details on membership, meeting frequency, rules on the accountability of meetings, voting rules and so on. The working group for regulation of business activity, for example, is chaired by the Deputy State Secretary of the State Chancellery and composed of 10 representatives from ministries and agencies and 10 representatives from business associations. World Bank experts also regularly sit on the working group as observers to ensure compliance with the working group’s manual. Working groups discuss draft RIAs and vote on their suitability. If RIAs do not meet the required quality standards, they are returned to the line ministry for improvement.

RIA training across ministries has begun under a project implemented by DAI and financed by the United Kingdom. In 2019, the project trained 103 civil servants, and in 2020 it organized awareness-raising seminars for state secretaries and heads of departments. In addition, a compulsory module on RIA is being introduced into the introductory course for civil servants at their academy. According to the RIA Secretariat, the working group for regulation of business activity has scrutinized about 70 per cent of business regulations published in the government gazette. In 2017, the rate of compliance among relevant government bodies with carrying out RIAs was about 45 per cent.

Overall, the RIA process is a promising step towards better-quality, evidence-based policymaking, as it follows a number of international good practices (OECD, 2019):

- An oversight unit with sufficient competences and political backing provides clear RIA guidelines.
- Resources invested in RIA are targeted.
- Civil servants receive training.
- The rate of compliance by ministries is improving.

Nevertheless, the analysis noted two important caveats:

1. The RIA process is entirely donor assisted and funded. The World Bank plans to discontinue its assistance and funding as of 2021. The State Chancellery is likely to take over the funding of the RIA Secretariat’s staff, although at significantly lower salary levels. Thus, it is questionable whether current staff will stay involved. After donors withdraw their assistance and supervision, the risk of political capture of the working groups may increase.

2. As in Ukraine, ministries regularly adopt a practice whereby they submit draft legislative proposals for parliamentary adoption directly through individual members of Parliament. Law 100 obligates any author of a law (including a parliamentarian) to conduct an RIA before a law can be adopted. Instead, however, parliamentarians have insisted on following the parliamentary code, in which they are obliged only to enclose an explanatory note, which has no concrete guidelines attached to it and is often filled out rudimentarily and arbitrarily.

| Sub-pillar I IPO evaluation and recommendations | | | |
|---|--|----------------------------|----------------------------------|
| Achievements | | | |
| <ul style="list-style-type: none"> ✓ The SME Law responds to legislative needs identified in the SME Strategy, which were based on assessment of the previous law and some market failure analysis. ✓ The RIA process aligns with a number of international good practices. | | | |
| Area for improvement | Recommendation | Time frame | Responsibility |
| <ul style="list-style-type: none"> • Ministries have not yet integrated innovation foresight practices into innovation policymaking. | <ul style="list-style-type: none"> ✓ Integrate innovation foresight practices into the policy process of relevant line ministries to capture future trends and perspectives for research activities that are subsequently incorporated in or adjusted in a long-term strategic direction of innovation development. | Medium-term | MECR MEI |
| | <ul style="list-style-type: none"> ✓ Follow up on this exercise for reviews and updates of the SME Law. | | |
| <ul style="list-style-type: none"> • The RIA process depends extensively on donor assistance and funding and may not be sustainable in the medium term. | <ul style="list-style-type: none"> ✓ Secure funding for the RIA Secretariat staff beyond the end of World Bank assistance. | Short-term | State Chancellery |
| | <ul style="list-style-type: none"> ✓ Continue transferring expertise and coordination functions to the line ministries and RIA working groups. | | |
| <ul style="list-style-type: none"> • Ministries submit draft legislative proposals directly to individual members of Parliament, circumventing the RIA process. | <ul style="list-style-type: none"> ✓ Standardize the explanatory note that accompanies legislative acts submitted by parliamentarians to include some aspects of objectives, rationale and expected outcomes, as a short-term step. | Short-term/ Medium-term | Secretariat of the Parliament |
| | <ul style="list-style-type: none"> ✓ Amend the parliamentary code to make RIAs compulsory for all legislative proposals, including those submitted by parliamentarians, as a medium-term step. | | |

Source: UNECE.

Sub-pillar II: Design

Public-private consultations are an integral part of the policy design process, to ensure a policy is relevant to the market and private sector needs and to confirm that stakeholders are committed to implementing it. Innovation policy is a supplementary component of a country's overarching strategy that helps achieve the broader vision and objectives of socioeconomic development. Its priorities and activities should be consistent and coherent with other relevant policies.

Planning

The consultation process for the Moldovan SME Law evolved through multiple rounds over several months with inputs from stakeholders representing the public sector, business, academia, and trade and investment support institutions. The framework of the consultations was the Working Group of the State Commission for Regulating the Entrepreneurial Activity, which seems to be a well-functioning forum to debate in detail all policies related to the business sector.² At the request of non-governmental institutions, the MEI organized additional public sessions that were attended by non-governmental organizations and representatives of the business sector.

Public-private consultation

Ministries cannot submit policy drafts for approval until the pertinent working group issues a positive opinion. In the working group on business activity, if the private sector representatives consider that the legislative proposal will have predominantly negative impacts on the private sector, the group votes against the proposal and returns it to the authoring ministry for review and modification. This occurred on several occasions with the SME Law. According to one working group member, some 70 per cent of the documents examined are returned for changes to respond to the objections of the private sector representatives in the working group. This can prolong the policymaking process when the stakes are high (as was the case with the SME Law), but as a result business associations are actively developing advocacy campaigns in order to promote their proposals on draft laws.

Along with the consultations in the working group, the ministry solicited public consultations by posting the draft of the SME Law on a web page for 15 days. The State Chancellery website published the agenda of the meeting to approve the law. In addition, a summary of the steps of the design process for the law was made available on the Parliament's website³ before the law's adoption.

Comments and discussion from both the working group and the public consultations were taken on board to improve the law. For example, the Chamber of Trade and Industry, on behalf of its members, proposed introducing the term "young entrepreneur", and it appears in the final version of the law. Summary records were kept of both consultation

processes, and a table of proposals containing all opinions received and the MEI's responses to them was attached to the draft law when the ministry submitted it to the Government.

Overall, stakeholders interviewed for the IPO agreed that the law achieved its goal of establishing the legal framework for micro and SMEs, as well as the State support measures for their creation and development. They agreed that the consultations were open and meaningful, if lengthy. They noted that because the law was elaborated over several months, with the involvement of relevant stakeholders, the authors could tailor the initial draft more closely to the needs of the SME community.

Broader policy issues

According to Article 8 of the Law on Public Administration, government bodies must inform stakeholders about draft laws and ensure transparency in their decision-making activity by involving the private sector and civil society in the elaboration of laws. In practice, public-private dialogue is still in the development phase. The several platforms for dialogue include the Economic Council to the Prime Minister and working groups created by line ministries.

Government bodies carry out public consultations by directly contacting stakeholders, by establishing working groups and by consulting online (at www.particip.gov.md or the website of the relevant government body). Draft regulations are published for comments for a specified period (a minimum of 15 days, unless the decision is adopted under emergency circumstances) with contact information. The initiating public body must examine the recommendations received, compile an overview of the results of the process (including the proposals submitted and the body's conclusions) and make it available to the public. In practice, this last step is done by making the summary tables part of the package submitted to the Government, as was the case with the SME Law.

Yet, the amount of interaction with and involvement of the business sector is not always at the level of the working group for business activity. This may in part be explained by the frequent changes in government and thus priorities. Nonetheless, evidence suggests that business associations are gaining a stronger voice. The larger ones, such as the European Business Association and the American Chamber of Commerce, have good advocacy and lobbying strategies and are able to push topics onto the governmental agenda.

Policy coherence

Regarding interministerial coordination, before submitting a draft law for approval by the Moldovan Government, the authoring ministry must coordinate with other ministries "affected by the matter" (Law 64). Those ministries must present their opinions of the draft within 10 working days of receiving it – an ambitious time frame, especially for more complex documents such as the SME Law. The draft submitted to the Government must contain a table of all opinions received and the responses from the authoring ministry. This requirement is regularly met, as was the case with the SME Law. In case of unresolved issues between ministries, working groups can be assembled by the Prime Minister or Deputy Prime Minister; however, according to the information available, such bodies have not been set up. An official forum for conflict resolution between ministries at the administrative level is also missing (SIGMA, 2015).

Regarding intraministerial consultation, no such practices have been set up across all ministries. Some line ministries have adopted internal regulations prescribing the steps of the policy design process, but others have not (SIGMA, 2015). Ministerial decrees define the responsibilities of the departments that are directly subordinate to the minister or deputy minister in charge of a policy area (SIGMA, 2015), but the analysis found no evidence of systematic policy design training for civil servants in the ministries responsible for STI policies.

| Sub-pillar II IPO evaluation and recommendations | | | |
|---|---|-------------|-------------------|
| Achievements | | | |
| <ul style="list-style-type: none"> ✓ Legal framework for public-private dialogue on draft policies in place. ✓ Open, comprehensive and meaningful stakeholder consultations occurred during the design of the SME Law. <ul style="list-style-type: none"> ✓ Through advocacy and lobbying strategies, business associations have a growing voice. <ul style="list-style-type: none"> ✓ A legal framework for interministerial consultation is in place. ✓ Ministerial decrees stipulate the responsibilities of ministerial departments. | | | |
| Area for improvement | Recommendation | Time frame | Responsibility |
| <ul style="list-style-type: none"> • Line ministries do not always meet legal requirements for public-private consultation. | <ul style="list-style-type: none"> ✓ Ensure that requirements for public-private consultation are met and their results are systematically submitted to the Government before adoption of a law. | Medium-term | State Chancellery |
| <ul style="list-style-type: none"> • An interministerial conflict resolution forum is lacking. | <ul style="list-style-type: none"> ✓ Establish an administrative-level coordination body with a formal mandate to ensure resolution of differences of opinion among line ministries before drafts are submitted to the State Chancellery for discussion. | Medium-term | State Chancellery |
| <ul style="list-style-type: none"> • Not all ministries have adopted regulations regarding the policy design process and related intraministerial consultation. | <ul style="list-style-type: none"> ✓ Ensure that all line ministries adopt policy design regulations to ensure that relevant departments are consulted on policy drafts. | Medium-term | Line ministries |
| <ul style="list-style-type: none"> • The civil service lacks specific policy design training. | <ul style="list-style-type: none"> ✓ Integrate policy design training modules within the curriculum for civil servants. | Medium-term | State Chancellery |
| | <ul style="list-style-type: none"> ✓ Offer training-on-the-job in policy design by external consultants with international experience. | | |

Source: UNECE.

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.

Key elements of the SME Law have been implemented and enforced. The Advisory Council for SMEs has been set up and is working on its tasks of analysing the competitiveness of the SME sector, promoting the development of competences and entrepreneurial spirit, and presenting recommendations for improving the business environment. This is an important institutional addition.

An innovative and important aspect of the law relates to the availability of resources for implementing SME support policies. This aspect is the provision of an annual financial allocation amounting to 0.3 per cent of the gross value added to GDP by the SME sector in the preceding year. Furthermore, the law regulated the access of SMEs to public procurement of products, works and services, establishing a quota of 20 per cent of all public procurement contracts for subcontracting to micro and small enterprises. Another significant provision was a tax deduction for expenses linked to entrepreneurial education and continuous vocational training. More generally, the law institutionalized the allocation of responsibilities of all the actors involved in elaborating and implementing policies and programmes to support SMEs.

Broader policy issues

In areas that require cooperation with other line ministries, such as the stimulation of RDI, less progress is evident in the Republic of Moldova. In addition, Moldovan policies often lack specific performance indicators and a timeline, as well as accountability, given the absence of evaluation and impact assessments, as well as the lack of a central oversight body to monitor implementation of the SME Law. In principle, when legislation is adopted, it should define specific reporting requirements and deadlines, if the responsible ministry is reporting to the Government. After receiving reports, the State Chancellery is supposed to analyse them and send feedback. In practice, this requirement is not complied with, including during the adoption of the SME Law, which lacks reporting and monitoring requirements.

| Sub-pillar III | | IPO evaluation and recommendations | |
|--|---|------------------------------------|--------------------------------------|
| Achievements | | | |
| <ul style="list-style-type: none"> ✓ The Government passed and successfully enforces the SME Law. | | | |
| Area for improvement | Recommendation | Time frame | Responsibility |
| <ul style="list-style-type: none"> The SME Law does not contain any provisions for monitoring its implementation. | <ul style="list-style-type: none"> ✓ Establish an indicator framework for monitoring key performance indicators against the targets and activities of the SME Law, to evaluate its implementation. | Short-term | MEI |
| <ul style="list-style-type: none"> Cross-ministerial mechanisms have not been implemented. | <ul style="list-style-type: none"> ✓ Use the working group on business activity to address implementation issues that concern ministries other than the MEI. | Short-term | Line ministries |
| <ul style="list-style-type: none"> Line ministries do not adhere to reporting requirements. | <ul style="list-style-type: none"> ✓ Ensure that line ministries adhere to reporting requirements and that the State Chancellery verifies reports. | Short-term | Line ministries State Chancellery |

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

The feedback mechanism involving the Moldovan State Chancellery was not applied to or functional in the SME Law. This omission may result from a lack of continuity related to frequent government changes and a lack of planning within the SME Law itself. Indeed, perhaps the most significant drawback of the SME Law is that it does not contain any provisions for monitoring and evaluating its impact.

One ad hoc evaluation of the SME Law has occurred, and one is under way. In 2018, the Parliamentary Commission on Economy, Budget and Finances organized a hearing on the results of implementing the SME Law. The MEI reported on progress on the enforcement of the law and members of Parliament could request further details about activities implemented.⁴ No evaluation report was produced or implementation needs defined. The application of the law is also being measured within the 2020 OECD SBA Assessment, which contains specific indicators to measure progress on the implementation of the legal framework for SMEs and scores countries on it.

Broader policy issues

Monitoring and evaluation practices are the weakest part of the policymaking cycle in the Republic of Moldova. Monitoring and evaluation practices across line ministries are insufficient, and when applied, overly output-focussed, including in government bodies responsible for STI policy. The implementation of the SME Law is not systematically monitored or evaluated, nor is its impact gauged.

To tackle this issue, the Government set up special divisions for policy analysis, monitoring and evaluation in each line ministry in 2010, as well as a corresponding division with the same title in the State Chancellery, which was supposed to coordinate divisions in the line ministry. Yet, these divisions are not operational in all ministries, some are understaffed and central oversight mechanisms to ensure implementation are insufficient. Adaptation of policies is not a widespread practice, one of the reasons being the lack of adequate personnel. Thus, few systemic linkages ensure that learning feeds into the design process for future policy. Concerning STI policies specifically, the former RDI strategies underwent no intermediate or ex-post evaluation, nor was there any evidence that lessons learned were integrated into the 2020–2023 National Programme for Research and Innovation. For a more detailed overview of the monitoring and evaluation practices of innovation policies and measures, see chapter IV.

Sub-pillar IV IPO evaluation and recommendations

| Area for improvement | Recommendation | Time frame | Responsibility |
|---|---|-------------|---|
| <ul style="list-style-type: none"> A culture of policy evaluation is lacking, including the willingness to learn from failures and guarantee transparency. | <ul style="list-style-type: none"> ✓ Guarantee that at least every large programme or initiative is supported by a scientific formative evaluation or ex-ante as an impact assessment. | Mid-term | State Chancellery Various ministries |
| <ul style="list-style-type: none"> The SME Law lacks provisions for monitoring it and evaluating its impact. | <ul style="list-style-type: none"> ✓ Develop appropriate capacities and mechanisms for monitoring and evaluating the application of the SME Law. | Short-term | MEI |
| <ul style="list-style-type: none"> Monitoring, evaluation and impact assessment practices are scarce in policymaking. | <ul style="list-style-type: none"> ✓ Streamline and implement impact assessment mechanisms systematically to enhance the quality of the flow and stock of laws and policies. | Medium-term | State Chancellery |
| | <ul style="list-style-type: none"> ✓ Adopt legislation that makes it mandatory to report on the implementation of major laws. | | |
| <ul style="list-style-type: none"> The rare monitoring and evaluation practices in the Government are of poor quality . | <ul style="list-style-type: none"> ✓ Adopt more systemic linkage of monitoring and evaluation practices to policy design, including in government bodies responsible for STI policy. | Medium-term | State Chancellery MECR |

Note: No achievements were identified for this sub-pillar.

Notes

- ¹ Transparency International Moldova, Monitoring the implementation of the public administration reform and resource distribution, Press release, 18 July 2018.
- ² The working group members are the Ministry of Finance; the Ministry of Labour, Social Protection and Family; the Ministry of Education; the Academy of Sciences of Moldova; the Institute of Economy, Finances and Statistics; the Agency for Innovation and Technology Transfer; the Public Procurement Agency; the National Bureau of Statistics; the Customs Service; the Chamber of Commerce and Industry; the Centre for Fighting Economic Crimes and Corruption; the Organization for the Development of the SME Sector; the National Confederation of Employers of the Republic of Moldova; the National Confederation of Trade Unions of Moldova; the ARIA Competitiveness and Productivity Centre; the Export Promotion Organization of Moldova; and the Small Business Association.
- ³ Republic of Moldova, Parliament, Draft law on small and medium-sized enterprises, www.parlament.md/ProcesulLegislativ/Proiectedeacteleislative/tabid/61/LegislativId/3184/language/ro-RO/Default.aspx.
- ⁴ Republic of Moldova, Parliament, Development of the Small and Medium Enterprises Sector, Hearing at the Committee on Economy, Budget and Finance, 5 August 2018.

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