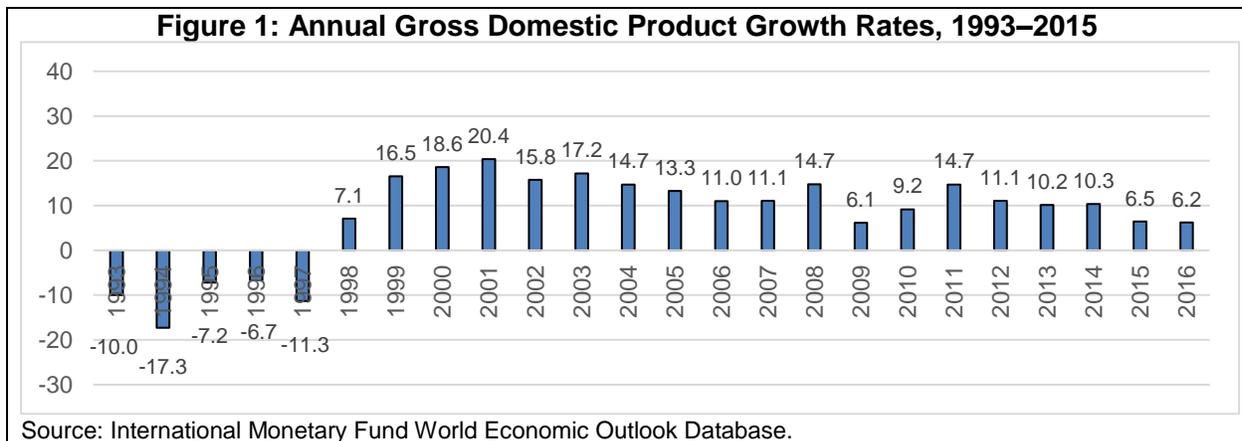


INCLUSIVE AND SUSTAINABLE GROWTH ASSESSMENT

I. RECENT GROWTH, POVERTY, INEQUALITY, AND ENVIRONMENTAL DYNAMICS

A. Macroeconomic Performance

1. **Sustained growth, although economy vulnerable to external shocks.** Turkmenistan was reclassified as an upper middle-income economy in October 2012, after sustained growth that averaged 13.6% during 1998–2011 (Figure 1).¹ While growth averaged at a slightly lower rate of 9.5% in 2012–2015, it is in contrast to the contraction during 1993–1997, after Turkmenistan won independence from the former Soviet Union in 1991.² The country's gross national income (GNI) per capita (Atlas method) for 2016 stood at \$6,670.³ Total gross domestic product (GDP) in 2016 reached \$36.2 billion in current prices, while per capita GDP was \$6,622.41 (footnote 1) with an estimated population of 5.5 million.⁴ And per official data, GDP per capita at purchasing power parity was \$19,435. Turkmenistan has the fourth-largest natural gas reserves after the Russian Federation, Iran, and Qatar.⁵ In 2016, natural gas reserves were 9.4% of the global total, or 17.5 trillion cubic meters, with annual production at 66.8 billion cubic meters. Proven oil reserves stood at 0.6 billion barrels, with daily production of 261 thousand barrels (footnote 5). The International Monetary Fund (IMF) estimates that hydrocarbons contribute close to half of GDP, more than 90% of exports, and 82% of revenues.



2. **Increased macroeconomic imbalances since mid-2014.** Reduced revenues from natural gas exports pushed the current account balance as a percentage of GDP to negative double digits, and lowered GDP growth from 10.3% in 2014 to 6.5% in 2015 and to a projected 6.2% in 2016 as a result of lower public expenditure that affected consumption and investments. Moderating growth in key trading partners—the People's Republic of China (PRC), which accounted for 46.1% of total exports in 2015, and the Russian Federation, where Turkmen exports contracted from 18.6% in 2014 to 6.6% in 2015—was another external challenge. After

¹ International Monetary Fund (IMF). 2017. *World Economic Outlook Database*. Washington DC.

² Asian Development Bank (ADB). 2002. *Economic Report and Interim Operational Strategy for Turkmenistan*. Manila. Two factors were responsible for the economic contraction—(i) payment problems for its natural gas exports resulting in a temporary termination of gas shipments in March 1997; and (ii) a drop in cotton and wheat production caused by adverse weather conditions and transition problems from state farms to farming associations.

³ The World Bank. Middle-income economies have GNI per capita calculated using the World Bank Atlas method of \$1,006–\$12,235 in 2017. The lower and upper middle-income economies are separated by a \$3,955 threshold.

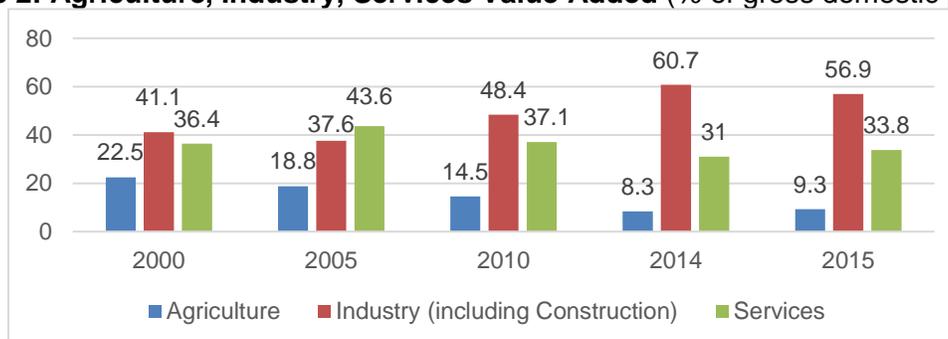
⁴ Official data on the total population of the country is not published.

⁵ BP p.l.c. *Statistical Review of World Energy 2017*. London, Pureprint Group Limited, UK.

maintaining parity of 2.85 manats (TMT, the national currency) to 1 US dollar (\$) from mid-May 2008, the national currency was devalued in early January 2015 to TMT3.50 = \$1.00, in order to also reduce pressures exerted by depreciating currencies of neighboring energy-exporting countries on the domestic economy. Capital controls and importers' access to foreign currency were further tightened.

3. Rapid increase in the share of industry and construction to overall GDP. In terms of sector shares in GDP, industry including construction increased from 41.1% in 2000 to 60.7% in 2014 although it reduced to 56.9% in 2015.⁶ Services rose from 36.4% of GDP in 2000 to 43.6% in 2005, but then dropped to 37.1% in 2010 and further to 31.0% in 2014 although it rose to 33.8% in 2015 (footnote 6). Agriculture dropped more significantly from 22.5% of GDP in 2000 to 18.8% in 2005, 14.5% in 2010, 8.3% in 2014, although it rose to 9.3% in 2015. (Figure 2). However, the real growth rate of non-hydrocarbon GDP (agriculture, trade, other services) was higher than the growth rate of real hydrocarbon GDP in both 2015 and 2016, averaging close to 10%, while hydrocarbon GDP was flat in 2015 and declined by almost 5% in 2016. In industry's share, more than three-quarters come from the fuel and energy complex (natural gas industry, oil industry, gas chemical products, power industry), the rest from the food industry (flavoring, meat and flour-based enterprises), light industry (textiles, sewing, and tanning), machinery and metal works, building materials, and chemical industry.⁷ Construction expanded as a result of high rates of government-led gross fixed capital formation financed by revenues from its gas exports.

Figure 2: Agriculture, Industry, Services Value Added (% of gross domestic product)



Note: Industry includes construction, mining and quarrying, manufacturing, electricity, gas steam and airconditioning supply, water supply, sewage management, and remediation activities.

Source. Asian Development Bank (ADB). 2017. *Key Indicators for Asia and the Pacific 2017*. Manila; and ADB. 2016. *Country Strategy and Program Final Review for Turkmenistan (2002–2016)*. Manila.

4. Highly concentrated exports basket and export markets. Despite being landlocked, Turkmenistan has the highest ratio of exports of goods and services to GDP across Central Asian economies at 74.2% in 2014. The ratio of imports of goods and services to GDP was also high at 44.0% in 2014 (footnote 6). However, the country has a highly concentrated export basket and virtually relied on a single-product (natural gas exports) and single-market (first the Russian Federation, then the PRC) approach. Hydrocarbon exports averaged about 87% of total exports in 2001–2015 (natural gas 71%, oil and related products 16%), which reached a high of 94% in 2011–2012.⁸ Exports of natural gas, oil and oil-related products, cotton, electricity, and carpets averaged 94.3% of annual exports by amount during 2010–2015.⁹ This is reflected in the high

⁶ ADB. 2017. *Key Indicators for Asia and the Pacific 2017*. Manila.

⁷ Government of Turkmenistan. 2012. *Statistical Yearbook of Turkmenistan 2014*. Ashgabat.

⁸ Estimated from country data available from International Trade Centre. Turkmenistan Country Statistics.

⁹ State Committee on Statistics of Turkmenistan. 2016. *Statistical Yearbook of Turkmenistan 2016*. Ashgabat.

Hirschman-Herfindahl Index of 0.7038 for 2015, which averaged 0.6164 in 2011–2015 compared with a longer-term average of 0.5267 in 2002–2015.¹⁰

5. Institutional responses to manage exogenous shocks. Current account surpluses were registered consistently at times of favorable external conditions, when international demand and the price for Turkmenistan’s commodity exports were high, such as in the early 2000s and early 2010s. The government set up the Foreign Exchange Reserves Fund and channeled part of the revenues from hydrocarbon exports (about 20% of annual inflows) into it. The fund is managed by the central bank under supervision of the President. The annual increase in the consumer price index during 2007–2015 averaged 5.6% as per official estimates, but in 2011–2015 was slightly higher at 5.8%. Next, a Stabilization Fund was created in 2008 by diverting fiscal surpluses, as an instrument to provide fiscal stimulus to the economy during difficult times. Gross fixed capital formation averaged 33.5% in 2002–2014, increasing from 23.4% in 2002–2007 to 45.4% in 2008–2014, the highest across Central Asian economies. A State Development Bank was created in 2011, through which the government’s public investment program is implemented. Funding is allocated to government programs such as the National Programme of the President for Transformation of Social Conditions of Populations in Villages, Towns, Cities, Districts, and District Centres for the period up to 2020. An issue is to ensure effectiveness and efficiency of public investments.

6. High levels of government subsidies and social tariffs for basic services. The fiscal position has been strongly supported by hydrocarbon taxes, which accounted for 82% of total government revenues in 2010–2013. The share of the non-hydrocarbon fiscal deficit as a percentage of non-hydrocarbon GDP averaged 46% in 2013. Main tax-based sources of revenue are the value-added tax (15%); corporate income tax (2% on domestic small and medium-sized enterprises, 8% on larger domestic companies, 20% on foreign companies); and natural resource tax (22% on natural gas extraction and 10% on crude oil extraction). Others are personal income tax (10%), custom duties on imports (2%), and property tax (1% of the annual book value of fixed assets).¹¹ On the expenditure side, annual allocations for health and education as a percentage of GDP remained below 5% in recent years. Sector agencies have been subsidized to provide basic services such as gas, water, and electricity supply at social tariffs—with high fiscal implications since gas, electricity, and petrol pre-tax subsidies in 2015 were estimated at about 10.7% of GDP.¹²

B. Developments in Labor Markets

7. Structure of employment unchanged since 2000. The government officially guarantees employment to all its citizens. Data on the annual growth rate of GDP per capita show Turkmenistan to average 7.9% in 2013–2014 in constant 2005 dollar terms, which is among the highest in the Asia and the Pacific region (footnote 6). However, as per modeled estimates of the International Labour Organization, in 2014, the total unemployment rate was 10.5% (10.4% for men and 10.7% for women). Of this, youth unemployment (or the labor-force share of those aged 15–24 years who are available and seeking work) was 20.2% (19.3% for boys and 21.9% for girls).¹³ The government has an ongoing Employment Program 2015–2020 in place. Wages are mandated to increase by at least 10% each year. The share of employed women has increased only marginally since 2000 in the capital city of Ashgabat, compared with the five provinces. The

¹⁰ A perfectly diversified export portfolio would have a Hirschmann-Herfindahl Index value close to zero, whereas a country that exports only one product is assigned a value of 1 or least diversified.

¹¹ PwC. Worldwide Tax Summaries. <http://taxsummaries.pwc.com/ID/Turkmenistan-Overview>

¹² IMF. 2015. Fiscal Affairs Department. *How Large Are Global Energy Subsidies?* Washington DC.

¹³ World Bank. 2017. *World Development Indicators*. Washington DC.

gender gap in labor-force participation during 2004–2014 averaged 29%.¹⁴ Government data from 2016 estimated the share of women in the total labor force at 42.6%.¹⁵ The key sectors for women’s employment were healthcare and social services for the population, education, financial intermediation and insurance, and processing industries (footnote 15).

8. **National Action Plan on Gender Equality.** A National Action Plan on Gender Equality for 2015–2020, developed by the National Institute for Democracy and Human Rights with support from the United Nations Population Fund, was approved in January 2015. The plan set 14 targets to achieve its six key objectives: increase women’s competitiveness in labor markets, improve maternal and child health outcomes, create more gender-responsive legislation, eliminate gender stereotypes, address all forms of gender-based violence, and increase the number of women in top management positions.¹⁶ The state guarantees equal compensation for women and men for work of equal value as well as an equal approach to assessing the value of work. As an indicative example at the operational level, two provincial branches of the Women’s Union of Turkmenistan entered into an agreement with the Union of Industrialists and Entrepreneurs and Rysgal Bank to start a line of credit for women-led businesses.¹⁷

9. **Gender equality provisions well aligned with global standards.** Turkmenistan’s Constitution ensures gender equality in basic rights. The Law on State Guarantees of Equal Rights and Equal Opportunities for Women and Men was enacted in August 2015 covering the exercise of civil rights, participation in the management of society and state, and the electoral process.¹⁸ The country ratified the United Nations’ Convention on the Elimination of All Forms of Discrimination against Women in December 1996.¹⁹ A review of the convention’s country reports²⁰ acknowledged progress on legislative reforms, such as the Family Code of 2012, and adoption of policies such as the National HIV Strategy for 2012–2016. Ongoing work to survey the prevalence, types, and causes of violence are to inform the upcoming law on violence against women. While the country has made progress on gender statistics that take into account national and provincial particularities, an issue is that these are not readily available in the public domain. In March 2016, an Anti-Trafficking Action Plan was adopted to combat human trafficking.

C. Education and Training

10. **Education sector reforms being implemented.** The government has begun to reform the education sector to align its performance with international standards.²¹ The shift to a 12-year schooling system and infrastructure investments to increase access to quality education are ongoing. The reformed system consists of primary (grades 1–4), basic secondary (grades 5–10), and general secondary (grades 11–12) levels for a combined 12-year compulsory general

¹⁴ United Nations Development Programme (UNDP). Regional Human Development Report. 2016. *Progress at Risk—Inequalities and Human Development in Eastern Europe, Turkey and Central Asia*. Istanbul.

¹⁵ Convention on the Elimination of All Forms of Discrimination Against Women. 2016. *Consideration of reports submitted by States parties under article 18 of the Convention*. Advance Version.

¹⁶ United Nations Population Fund. 2017. *Press Release. Framework for monitoring and evaluation of the National Action Plan on Gender equality discussed*. Ashgabat.

¹⁷ Women in Entrepreneurship note for the 25th Economic and Environmental Forum’s first meeting, January 2017.

¹⁸ Turkmenistan – The Golden Age. Press article of 27 May 2016: Mejlis of Turkmenistan Adopts New Laws.

¹⁹ It acceded to the Optional Protocol (18 April 2009), the Convention on the Rights of the Disabled (15 July 2008), and the Faculty Protocol to the Convention on the Rights of the Disabled (25 September 2010).

²⁰ Combined initial and second periodic report, prepared in November 2004; combined third and fourth periodic report, reviewed in October 2012; fifth periodic report, available in December 2016.

²¹ ADB (Central and West Asia Department). 2016. *Education Sector Consultation Mission for the Country Partnership Strategy for Turkmenistan*. Back-to-Office Report. 1 July 2016. (Internal).

secondary education.²² Technical and vocational education and training (TVET) starts after the 12-year compulsory general secondary education. TVET consists of 128 primary vocational and 42 secondary vocational schools. The maximum period of study in primary vocational schools is between 1–1.5 years. Women accounted for 42.6% of total attendees in school year 2015–2016 (footnote 22). The secondary TVET provides free and fee-based programs for specialized courses such as nursing, teacher training for elementary levels, banking, or aviation. Women accounted for 52.5% of total attendees in 2015–2016. Continuing TVET is organized by employers for their staff and takes place in any registered educational institution. Tertiary education is provided through 24 state-owned institutes.

11. High attrition rate beyond the 12-year compulsory general secondary education. With exception of the finance and education sectors, where majority of employees have higher education qualifications, and health care, where most have secondary professional qualifications, the labor force lacks qualifications beyond the 12-year general secondary education (footnote 21). The National Institute of Education has the mandate to provide guidance on increasing the coverage, development of education quality in school education, higher education and TVET (footnote 21). As for gender performance, the gender parity index for primary, basic secondary, and general secondary education is 1.00; equality in completion rates is reflected in the high rate of literacy among women between 15–24 years, at 99.6%.

D. Urbanization

12. High concentration of urban populations. About 50.4% of Turkmenistan's total population is urban and concentrated in the three cities of Ashgabat (the capital city), Turkmenabat, and Dashoquz; the rest is dispersed across 22 designated urban centers and 78 settlements. It is estimated that the proportion of the urban population has increased by 2% in the last 20 years. The overall population is spread across the capital city (15.5%) and the five provinces: Mary (22.8%), Dashoguz (21.1%), Lebap (20.4%), Akhal (11.7%), and Balkan (8.5%). Little data is available in the public domain on the levels and quality of service delivery in the second-tier towns, or on government programs like the National Programme of the President for Transformation of Social Conditions for the Populations of Villages, Towns, Cities, Districts, and District Centres up to 2020. While the size of the urban population is the third highest in Central Asia after Kazakhstan (54.7%) and Uzbekistan (51%), Turkmenistan also has the region's second-lowest population density per square kilometer at 10.4, after Kazakhstan at 6.1.²³ Balkan Province to the west is the center for oil extraction and refining, while much of the natural gas reserves are in the eastern parts of the country. Mary Province has the world's second-largest gas field in Galkynys, where production started in 2013.

E. Inclusiveness of Growth

13. Rapid economic growth but little data on inclusiveness. The Asian Development Bank (ADB) defines inclusiveness of growth as the extent to which economic growth creates and expands economic opportunities and ensures broader access to these opportunities for the population.²⁴ The 2016 Regional Human Development Report highlights a low (and falling) income Gini index for Turkmenistan: 30 in 2006, 29 in 2014. It further highlights a higher household income per capita growth rate in the bottom 40% of the population during 2009–2014

²² European Training Foundation. 2012. *Overview of Vocational Education and Training in Labor Market*. Turin. http://www.etf.europa.eu/web.nsf/pages/Turkmenistan_VET_and_labour_market_update_2015_EN

²³ Center for Economic Research. 2013. *Urbanization in Central Asia: Challenges, Issues and Prospects*. Tashkent.

²⁴ ADB. 2015. *Revised Guidelines on Inclusive Economic Growth in the Country Partnership Strategy*. Manila.

than in the rest of the population (footnote 14). The government had redefined the first Millennium Development Goal (to eradicate extreme poverty and hunger) as reducing the proportion of people whose income was less than 50% of the country's average monthly income during 2000–2015 from 15% to 5%. Available ADB information from 2002 concludes that Turkmenistan's poverty incidence is among the lowest in transition economies.²⁵ Despite this, the life expectancy of women in Turkmenistan (70 years) was lower than the global average (73.4 years) in 2014, while the gender gap in life expectancy (61.6 years for men vs. the women's 70 years), was 8.4 years, about twice the global average of 4.2 years (footnote 14).

14. Annual health and education allocations below 5% of GDP in recent years. Publicly available information on access to and quality of health-care services is scarce, so this paragraph will focus on sector allocations.²⁶ The estimated health coverage as a percentage of the population was 82.3% (2011),²⁷ while the average of seven other countries in the region covered by ADB's Central and West Asia Department (CWRD)—Armenia, Azerbaijan, Georgia, Kazakhstan, Kyrgyz Republic, Tajikistan, and Uzbekistan—is lower at 54.4.²⁸ On financing, total public and private health-care expenditure financed by government, or prepaid private insurance, or employers excluding out-of-pocket payments made by private households was 60.8% (2011), higher than the average of seven CWRD countries at 42.9% (footnote 27). The annual average increase in per capita government expenditure on health in 2007–2011 for Turkmenistan was 10.5%, higher than the average for seven CWRD countries at 7.9%, although the estimated per capita out-of-pocket expenditure for health for the same period rose by 16.7%, much higher than the average of seven other CWRD countries at 2.1% (footnote 27). While expenditure on education as a percentage of GDP has increased, it is low compared with international standards.

15. Government programs aim to provide on broader access to economic opportunities and reduce vulnerability of the population. The extent to which strong growth created and expanded economic opportunities, including jobs across sectors, is limited.²⁹ High rates of growth led by the hydrocarbon industry, which typically accounts for 1.7% of total jobs, did not directly create and expand jobs in other sectors. Broadening access to economic opportunities, especially for the poor, remains a key objective of government programs. Starting in 1993, these programs provided electricity, natural gas, petrol, water, and salt free of charge to all households, and mandated this through legislation to be continued until 2030. Since 2007, however, caps are in place, such as 35 kWh of electricity per person per month being provided free of charge. In 2014, quotas on gasoline and diesel were abolished for car and truck owners, and the domestic price for gasoline raised. In light of low global energy prices, the government plans to better align its services with cost recovery. The scope of the national social security system, which covers policies on sickness, maternity, old age, employment injury, invalidity, survivors, family allowances, and unemployment, is set by national legislation (footnote 27). Pension reforms of 1998 introduced a defined benefit scheme and voluntary pension insurance. This was followed by the adoption in January 2013 of a notional defined contribution pension system, with support from the United Nations Development Programme (UNDP). Contributions are credited to notional

²⁵ ADB. 2002. *Asian Development Outlook 2002*. Manila.

²⁶ The anchors are the State Health Program; National Strategy and Action Plan on Maternal, Newborn, Child and Adolescent Health in Turkmenistan for 2015–2019; and Ministerial Decree No. 166 On the Improvement of Perinatal Care (6 June 2014), which introduced the model for regionalization of obstetrics and maternity services.

²⁷ International Labour Organization. 2016. *World Social Protection Report 2014/15*. Geneva.

²⁸ Coverage includes affiliated members of health insurance or estimation of the population having free access to health-care services provided by the government.

²⁹ Assessing the inclusiveness of growth is problematic given the paucity of data on the three pillars defined by ADB: (i) high and sustainable growth to create and expand economic opportunities, including jobs; (ii) broader access to economic opportunities, including jobs, especially for the poor so as to ensure that all sections of society can participate in and benefit from growth; and (iii) provision of social protection to reduce vulnerability.

accounts that receive returns linked to earnings and are turned into annuities based on life expectancy upon retirement.

F. Progress in Achieving Sustainable Development Goals

16. In March 2016, Turkmenistan completed consultations with the United Nations (UN) country team on adopting the Sustainable Development Goals (SDGs) and associated targets and indicators. The government discussed all 17 SDGs and agreed to 148 out of 169 global targets. Of those, it adopted 122 as is and modified 26 in the national context. It also adopted 187 out of a possible 241 indicators—113 as is, 45 modified, and 29 newly formulated.³⁰ The next step is to roll out the agreed targets and indicators in the government’s medium-term programming cycles. Nodal ministries and UN agencies were appointed to track progress in the implementation of each SDG. The main challenge identified in this consultative process was the lack of relevant metadata for discussions on the global indicator framework (footnote 30).

17. Progress on the earlier Millennium Development Goals (MDGs) can be extrapolated for certain aspects regarding women and children. While no MDG country report after the first one in 2003 was prepared,³¹ the findings of the Multi-Indicator Cluster Survey jointly undertaken by Turkmen Stat and the United Nations Children’s Fund (UNICEF)³² allow to infer some progress relevant to women and children. On the MDG to eradicate hunger, the survey found that the rate of under-five children moderately or severely underweight had dropped from 11% in 2006 to 3.2% in 2016. On the MDG to promote gender equality, 2016 estimates for the gender parity index are 0.99 at primary education level and 1.00 at secondary level, similar to the 2006 values. On the MDG to reduce child mortality, measles immunization coverage (defined as children between 24–35 months who were vaccinated by their second birthday) was 99.3%, compared with 97% in 2006. One area that still seems to need improvement is knowledge about HIV prevention; it stood at a low 25.4% (2016) among young women.

G. Environment, Climate Change, and Disaster Risks

18. **High water dependency rates.** Given Turkmenistan’s location in downstream transboundary water basins, quality and flow volume depend on upstream riparian conditions and river basin agreements.³³ Water resources and agriculture are two critical areas that are vulnerable to climate change and whose sustainability is at risk. The country derives more than 90% of its total actual renewable surface water resources from upstream riparian countries, i.e., from countries outside its territorial domain.³⁴ Using the ADB national water security framework, the water security index for Turkmenistan was estimated to be higher than the Central and West Asia regional average and the country is categorized as “engaged” in terms of ongoing efforts to improve water quality and manage water-related risks.³⁵ Several government authorities are responsible for water resource management, foremost the Ministry of Agriculture and Water Resources, State Committee of Environment Protection and Land Resources, Water

³⁰ UN Country Team Turkmenistan. 2016. *A Structured Approach to SDG Rollout – 17 days of consultations to identify the goals, targets and indicators to be adopted in Turkmenistan*. Ashgabat. Further Government inputs received.

³¹ Millennium Development Goals Report. 2003. Turkmenistan.

http://planipolis.iiep.unesco.org/sites/planipolis/files/ressources/turkmenistan_mdg_2003.pdf

³² UNICEF and Turkmen Stat. 2016. *Multiple Indicator Cluster Survey–Key Findings*. Ashgabat.

³³ ADB (Central and West Asia Department). 2016. Sector Assessment (Summary): Preliminary Assessment of Agriculture, Natural Resources and Rural Development in Turkmenistan. Sector Report. 4 August 2016. (Internal).

³⁴ D. Wiberg et. al. 2017. *Water Futures and Solutions: Asia 2050*. Luxembourg: International Institute for Applied Systems Analysis.

³⁵ Asian Water Development Outlook 2016. *Strengthening Water Security in the Asia and the Pacific*. Manila.

Management Department of Amu Darya in the Interstate Commission for Water Coordination of Central Asia, state-owned TurkmenGeologiya, and the National Committee on Hydrometeorology (footnote 33).

19. **High rates of soil salinity.** About 4% of the country's total available area is cultivable because of the vast expanse of the Karakum desert. In 2007, agricultural land totaled 40.2 million hectares—about 1.8 million hectares of arable lands and about 38.4 million hectares of pastures. The total irrigated area increased substantially from 970,000 hectares at independence in 1991. Of the total cultivable area, cereals and legumes occupy 52.2%, cotton and industrial crops 30.4%, vegetable and potato 1.7%, forage 7%, and perennial crops 1.7%. Of the total irrigated area, it is estimated that about 23.4% is of suboptimal quality because of poor drainage systems, 1.4% has high water tables, and 71.7% suffers different levels of salinity, of which more than a third require compulsory annual leaching.³⁶ Peasant associations and their leaseholders, household plots, dekhan farms (mid-sized privately owned commercial farms distinct from household plots), and other producers control 94% of cultivable land and about 78% of pastures.³⁷

20. **Extreme vulnerability to adverse effects of climate change.** Under the Global Adaptation Index vulnerability rating,³⁸ Turkmenistan is ranked the most vulnerable country to the adverse effects of climate change in Central Asia. It experiences recurrent emergency situations caused by high winds, landslides, earthquakes, and droughts, which hurt livelihoods and infrastructure.³⁹ As a downstream country in transboundary water basins, Turkmenistan is vulnerable not only to the local factors of climate change but also to the basin-wide factors. Annual average temperatures may rise by up to 3°C by mid-century.⁴⁰ River flow and water availability are expected to decline because of increased evapotranspiration under higher temperatures, declining precipitation, and retreating glacial sources upstream. As such, climate change is expected to worsen existing water stresses under a growing population and economy, and negatively impact agricultural output and yield.⁴¹ Rising average temperatures and extreme temperature events may also damage infrastructure and jeopardize human health.⁴²

21. **Areas prioritized for climate change adaptation efforts.** The 2012 National Strategy on Climate Change⁴³ and the 2015 Third National Communication of Turkmenistan under the United Nations Framework Convention on Climate Change (UNFCCC) (footnote 39) identified key investment priorities for adaptation in agriculture and water resource management. These include conservation of natural environment and biodiversity; land reclamation and rehabilitation of salinized and degraded soil; modernization and expansion of irrigation networks and systems; development and use of drought-resistant and salt-resistant crops; improved agro-meteorological information; improved water resource monitoring, forecasting, and management; optimized use of water; prevention of desertification and soil erosion, and improvement of land productivity; and improvement of food safety and quality (footnote 33). Turkmenistan's intended nationally

³⁶ International Center for Agricultural Research in the Dry Areas. 2010. *Focus on Seed Programs. The Seed Industry in Turkmenistan.*

³⁷ Food and Agriculture Organization of the UN, Investment Centre. 2012. Country Highlights. *Turkmenistan Agricultural Sector Review.* Rome.

³⁸ University of Notre Dame. Global Adaptation Index 2016. Available online: <http://index.gain.org>.

³⁹ Ministry of Nature Protection, 2015. *Third National Communication of Turkmenistan under the United Nations Framework Convention on Climate Change (UNFCCC).* Ashgabat.

⁴⁰ Intergovernmental Panel on Climate Change. *Climate Change 2013: The Physical Science Basis.* Cambridge United Kingdom.

⁴¹ ADB. 2014. *Climate Change and Sustainable Water Management in Central Asia.* Manila.

⁴² Intergovernmental Panel on Climate Change. 2014. *Impacts, Adaptation, and Vulnerability. Part A: Global and Sectoral Aspects.* Cambridge, United Kingdom and New York, United States of America.

⁴³ Approved in 2012 by Presidential Decree No. 12366.

determined contributions, prepared well in advance of the United Nations Climate Conference in Paris in December 2015, identified energy efficiency and conservation, sustainable use of natural gas, and increased use of alternative energy sources as pathways through which it will contribute to global targets on climate change.⁴⁴ Separate national action plans for greenhouse gas mitigation and for adaptation are being finalized.

H. Business Environment and Private Sector Development

22. **Tight regulation of foreign direct investments mainly to the hydrocarbon sector.** Of the total gross fixed capital formation, which averaged 33.5% per year during 2002–2014, the share of the private sector was 15.2%. The country has resorted to foreign direct investment (FDI) rather than external debt, and per official estimates, investments by foreign companies in 2013 were 9.4 times the 2007 levels, or about 16% of the total investment volume. Despite a drop in FDI flows to landlocked economies in 2015, Turkmenistan saw an increase in annual inflows from \$3.6 billion in 2010 to \$4.3 billion in 2015, making it the largest recipient among landlocked economies.⁴⁵ The value of its FDI stock rose from \$13.4 billion (2010) to \$32.1 billion (2015). The hydrocarbon industry is the main attraction for foreign investors. As of January 2016, the government has three onshore and four offshore production-sharing agreements with private counterparts to develop gas fields. Beyond hydrocarbons, in 2015, a Korean investment totaling \$1 billion for capital expenditure in the iron, steel, and ferro-alloy segments was among the 10 largest greenfield projects in a landlocked country (footnote 45). However, beyond this regulated approach to private investments in a few industries, the business environment is generally difficult in the absence of reforms.

23. The financial sector is small and consists of 10 commercial banks (of which seven are fully or partially state-owned, one is privately owned, and two are foreign-owned), the State Development Bank created in 2011, and two insurance companies.⁴⁶ Banks represent more than 90% of financial assets. The central bank is the regulator and supervisor of the banking subsector. The country does not have a microfinance industry. In 2016, bank loans were estimated at 55% of GDP.⁴⁷ In 2015, the number of clients served by commercial banks grew by 21%, reaching almost 2 million. But 88.5% of deposits came from state property funds and state-owned enterprises (SOEs).⁴⁸ State-owned commercial banks are usually specialized in specific sectors such as agriculture and construction, although they can also operate as universal banks. During 2013–2015, the average annual inflation was about 6% and the average real lending rate was negative. The refinance rate has remained at 5% since June 2004 (footnote 46). While much of the bank lending is to SOEs, credit to the private sector has grown to 20% of GDP in 2016. Government-sponsored credit programs provide loans to private businesses in selected sectors—businesses oriented to export markets and import substitution (footnote 46).

⁴⁴ UNFCCC. 2015. *Intended nationally determined contribution of Turkmenistan in accordance with decision 1/CP. 20* UNFCCC. Ashgabat.

⁴⁵ UN Conference on Trade and Development. 2016. *World Investment Report 2016. Investor Nationality: Policy Challenges*. Geneva.

⁴⁶ ADB (Central and West Asia Department). 2016. *Sector Assessment (Summary): Private and Financial Sectors*. 7 July 2017 (Internal). Two foreign banks—Deutsche Bank and Commerzbank—have representative offices in Ashgabat and are engaged in foreign-trade-related business, including trade finance and clearance of payments.

⁴⁷ For example, Colombia and Mexico have similar levels of GNI per capita but much higher levels of domestic credit provided by the finance sector (71.1% of GDP in Colombia and 50.2% of GDP in Mexico).

⁴⁸ Data from the Central Bank of Turkmenistan and ADB (footnote 46).

II. KEY IMPEDIMENTS TO INCLUSIVE AND SUSTAINABLE GROWTH, AND GOVERNMENT APPROACHES

24. The key challenge, as articulated in the government's National Program for Social and Economic Development for 2011–2030, is the need to shift to a modern growth model based on the principles of innovation and sustainable development.⁴⁹ The planned pathway to achieve this consists of three programming cycles featuring government-led investments to increase the living standards of the population during 2011–2016; increase the private sector's contributions to the non-hydrocarbon economy to 70% by 2020–2021, at which time the country's human capital will be further strengthened; and deepening of the private sector to diversify the economy with industries, advanced engineering, and social infrastructure during 2025–2030. Based on the empirical experience from the growth trajectories of similar resource-rich, higher-income economies, official estimates put the increase in the share of services by 2030 at 37% under the baseline scenario, and at 47% under the innovative growth scenario. Within services, anticipated drivers are transport, trade, education, health care, tourism, and banking. Whether this will be achieved depends on the extent to which the economy undergoes structural transformation.

25. **Barriers to economic diversification.** In the hydrocarbon segment, the country has experienced a highly concentrated buyers' market for its natural gas exports—first the Russian Federation until 2008, then the PRC since December 2009. Economic diversification requires multi-pronged approaches such as strengthening institutions to create an enabling environment for private investments around prioritized growth drivers, enhancing the human capital and skills base of the workforce, and connecting with external markets. Being a landlocked country, Turkmenistan needs to upgrade its transport infrastructure to better integrate it with regional systems, increase trade with neighboring countries, and link with international markets for its non-hydrocarbon segments in particular. Modernizing and strengthening its institutions is a priority when it comes to making the environment more conducive to private investments in non-hydrocarbon industries, but these are still in the early stages of transition. Despite the high growth rates achieved, the country's employment structure remains agriculture based. Beyond such structural issues, the economy is constrained by the limited availability of arable land, coupled with a high rate of soil salinity caused by intense surface irrigation and cropping. This is further exacerbated by that Turkmenistan is a downstream country in transboundary river basins.

(i) Diversify the hydrocarbon economy

26. Given that the country is the 12th-largest natural gas producer in the world, has the fourth-largest natural gas reserves, and is the 10th-largest oil producer in the Asia and Pacific region, it is obvious that the natural gas and oil industry will remain the key growth driver in the medium term. However, falling hydrocarbon prices in 2014–2015 (despite long-term natural gas contracts), economic downturns in its major trading partners, and currency pressures validated the government's threefold anticipatory approach to diversifying the hydrocarbon industry:

- a. Diversify markets for natural gas exports.

27. It is vital to diversify the markets for the country's primary energy resources. After the Trans-Asia gas pipeline was commissioned in December 2009, the PRC purchased about 75%

⁴⁹ ADB. 2011. *The National Strategy for Social and Economic Development of Turkmenistan during the years 2011-2030*. Unofficial Translation. 2011. (Internal).

of Turkmenistan's annual natural gas exports during 2011–2015.⁵⁰ In effect, Turkmenistan pivoted from the Russian Federation to the PRC markets. The PRC aims to increase the use of natural gas to 10% of its total annual primary energy consumption by 2020 (from 6% in 2014) in line with its policy shift from coal to cleaner energy sources.⁵¹ At the same time, uncertainty is building because the PRC also plans to diversify its natural gas supplies by increasing both domestic production and liquefied natural gas shipments from countries such as Australia and the United States of America, besides its pipeline shipments from Turkmenistan, which now account for close to half of total annual imports.⁵² The Turkmen government's long-term priority is to increase regional connectivity and reach the South Asian markets through the proposed Turkmenistan–Afghanistan–Pakistan–India (TAPI) natural gas pipeline, designed for an annual export capacity of 33 bcm for a 30-year period.

(b) Diversify markets for electricity exports.

28. Increasing electricity exports and diversifying the markets for power generated by natural gas-operated turbines is another government priority. The program for 2013–2020 aims to increase the number of power plants working on natural gas and to upgrade the network infrastructure. Of the 4,000 megawatts (MW) of planned capacity, 1,500 MW have already been commissioned and about 2,000 MW are under construction. In addition to the TAPI natural gas pipeline, the country has ongoing regional power transmission projects such as the Turkmenistan–Uzbekistan–Tajikistan–Afghanistan–Pakistan (TUTAP) and Turkmenistan–Afghanistan–Pakistan (TAP) initiatives. This will allow interconnection between electricity grids of Central Asia and South Asia. Again; developing such regional projects requires sustained engagement.

(c) Move up the natural gas value chain and manufacture higher-value products.

29. The government needs to correctly sequence the move up the natural gas and oil value chain and the manufacturing of higher-value products for export. Its initial analysis, based on existing resources and capabilities, prioritizes natural gas processing, and production of liquid fuels, polyethylene, polypropylene, hydrogen methanol, ammonia, and urea (footnote 39). It is also expected that once these products are manufactured, the country could progress further to higher-value chemical production. A recent increase in domestic and external demand for high-quality fertilizers has driven rapid progress in the chemical industry. In late 2015, Turkmenistan entered into a series of framework agreements and contracts with Japanese companies, totaling over \$10 billion, to build gas-refining and chemical plants in Turkmenabat and Garabogaz.

(ii) Diversify the non-hydrocarbon economy

30. Strengthening institutions in an economy dominated by natural resources is a long-term undertaking, as witnessed in resource-rich economies comparable to Turkmenistan. The

⁵⁰ As of mid-2016, the main pipelines are the (i) Central Asia–Center pipeline (or northern route), which supplies the Commonwealth of Independent States with a capacity of 45 billion cubic meters (bcm) per year, although annual export levels have dropped since 2009; (ii) three Trans-Asia gas pipelines to the PRC commissioned in 2009, 2010, and 2014, with a fourth to start operations by 2020; (iii) two smaller pipelines to Iran (24 bcm/year, although not used to full capacity); and (iv) in-country East West Interconnector since 2015.

⁵¹ M. Ratner, G. Nelson, and S. Lawrence. 2016. *China's Natural Gas: Uncertainty for Markets*. Washington, DC: Congressional Research Service

⁵² The PRC's natural gas reserves in 2016 were 3,700 bcm. It produced 132 bcm and imported 58 bcm in 2016, split evenly between pipelines and liquefied natural gas. With the commissioning of a fourth pipeline from Turkmenistan in 2016, annual gas shipments from Turkmenistan to the PRC could rise to 65 bcm.

government's 2030 National Strategy recognizes this. It aims to strengthen not only private sector contributions to the non-hydrocarbon economy but also the country's human capital. Modernizing all institutions involved in natural resource management with the right policies, regulations, practices, and services is critical in ensuring resource and energy efficiency.

- (a) Modernize institutions to improve business environment and strengthen human capital.

31. The efforts to diversify the non-hydrocarbon economy must be tied to private sector development and the adaptation of lessons from similar efforts in other countries. It also means achieving the interim target to increase private sector contributions to the non-hydrocarbon economy to 70% by 2020, from 56% in 2012. The government also plans to corporatize and privatize SOEs in construction, energy, transport, and communications through FDI (footnote 46). However, it faces business environment challenges. The 2016–2017 Transition Report of the European Bank for Reconstruction and Development (EBRD) for Turkmenistan noted progress in 2 out of 15 sectors—information and communication technology, and insurance and other financial services.⁵³ Turkmenistan is an upper middle-income country but has a lower institutional credit rating than the average lower middle-income economy.⁵⁴ In October 2016, given the adverse external environment, the PRC's Dagong Global Credit Rating Agency downgraded the outlook for Turkmenistan's sovereign credit ratings from stable to negative, while maintaining local and foreign currency ratings at BBB+.⁵⁵

- i) Efforts to improve investment climate but economy at an early transition stage.

32. The government-led structural reforms include an ongoing privatization program initiated in November 2012 and implemented in three phases: privatization of small enterprises in 2013, medium enterprises in 2014–2015, and large enterprises in 2016–2017.⁵⁶ The EBRD report highlighted some progress, in that 39 companies had been privatized. It stressed the need for concerted action to privatize state banks scheduled for 2016–2020 as part of the finance sector development strategy. Three priorities that the EBRD report identified for 2017 are to corporatize state-owned enterprises as a first step before eventual privatization, shift from state-directed lending through commercial banks to more market-based financial intermediation, and continue reforms of utilities to bring tariffs closer to cost recovery (footnote 53).

- ii) Structure of employment has remained unchanged and is agriculture-based.

33. Turkmenistan's sustained growth has yet to translate into structural transformation, especially in the non-hydrocarbon segments, either by moving employment to higher-value

⁵³ EBRD. 2016–2017. *Transition Country Report for Turkmenistan*. London. EBRD transition reports track progress in six areas—large-scale privatization, small-scale privatization, governance and enterprise restructuring, price liberalization, trade and foreign exchange system, and competition policy. Each progress indicator is on a scale of 1 to 4+, where 1 is a rigidly planned central economy and 4+ an industrialized market economy.

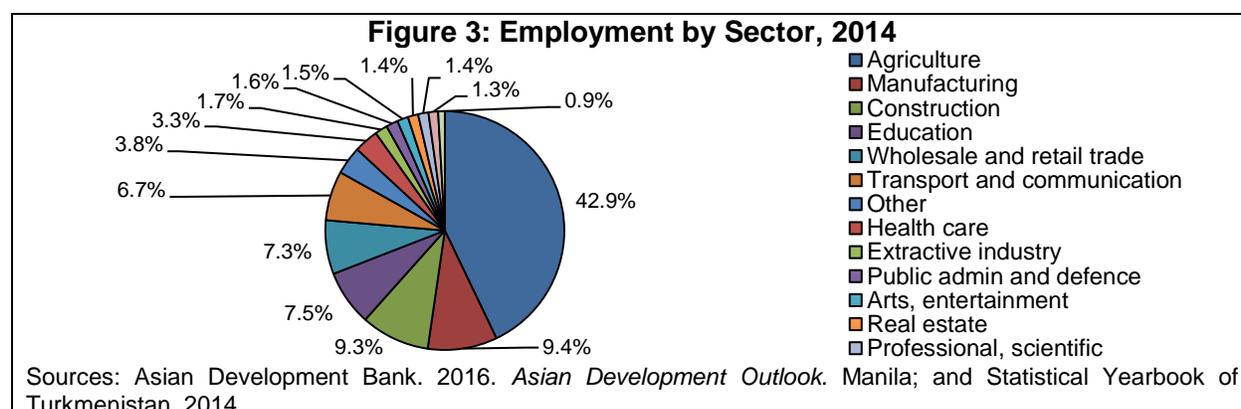
⁵⁴ ADB. 2015. *Clients–Contributors–Collaborators: A New Partnership with Upper Middle-Income Countries*. Manila.

⁵⁵ Dagong Downgrades Sovereign Credit Rating Outlook for Turkmenistan. <http://www.4-traders.com/news/DAGONG-Global-Credit-Rating-Downgrades-Sovereign-Credit-Rating-Outlook-for-Turkmenistan--23183999/>

⁵⁶ As per the 2016 Investment Climate Statements prepared by the United States Bureau of Economic Affairs, Turkmenistan's Law on State Support to Small and Medium Enterprises (August 2009) defines small and medium enterprises as those with an average staff of up to 50 people employed in industry, power generation, construction, gas and water supply, and up to 25 people in other sectors; medium enterprises as those with an average staff of up to 200 people employed in industry, power generation, construction, gas and water supply, and up to 100 people in other sectors. <http://www.state.gov/e/eb/rls/othr/ics/2016/sca/254495.htm>

product industries or creating higher-paying jobs. In 2016, agriculture employed 43.3% of the labor force, little changed from the year 2000, when it stood at 47.6%.⁵⁷ Official data show that the average monthly wage in agriculture is about half the national average wage of the total employed population. Industry is close to the national average wage level, while construction has the highest average monthly wage.

34. The challenge for the government is how to create jobs and best equip its growing labor force (50% of its population is now below 25 years of age) in line with the requirements of a knowledge society, and achieve its economic diversification priorities. The government has begun to align education sector performance with international standards. As highlighted in paras. 10 and 11, the education system has elementary and secondary levels, which combine to form the 12-year compulsory general secondary education. TVET starts after this 12-year compulsory education. However, there is high attrition rate of general secondary education graduates who progress to either higher education or TVET. While the working-age population is set to increase by 30% over the next two decades, a persistent lack of professional skills would jeopardize government plans to diversify the economy beyond the hydrocarbon segment.⁵⁸ Key steps to overcome this are expanding the education system, improving its cost efficiency, improving quality and relevance of student and employee education and imparting the skills to meet the needs of the labor market, modernizing professional development at various levels, and strengthening professional collaboration with regional and international networks (footnote 58).



(b) Undertake institutional reforms to improve natural resource management.

35. Several necessities arise when it comes to strengthening in-country institutions and their capacity for improved natural resource management—e.g., aligning climate change legislation with international requirements, implementing and monitoring national action plans on adaptation and mitigation, setting up an in-country institutional framework on climate change, deploying an updated national greenhouse gas inventory, and developing a law on energy savings and other resource management measures (footnote 39). The energy sector with its heavy reliance on natural gas, oil, and related products is the single biggest source of greenhouse gas emissions (85%), way ahead of agriculture (12%) and industrial processes (2%). The 2010 estimates indicate that emissions were produced from heat generation (36%), electricity generation (34%), and transport (19%).

⁵⁷ ADB. 2016. *Asian Development Outlook*. Manila; and Statistical Yearbook of Turkmenistan, 2014.

⁵⁸ ADB (Central and West Asia Department). 2016. *Education Sector Consultation Mission for the Country Partnership Strategy for Turkmenistan*. Back-to-Office Report. 1 July 2016. (Internal).

36. As for future greenhouse gas emissions, the government has projections for two scenarios: the baseline scenario, where activities under the national strategy are implemented as is, and the innovative scenario, which features accelerated modernization and technological upgrade of productive processes. Under the baseline scenario, the volume of emissions will quadruple from 2000 levels or double from 2012 levels, while under the innovative scenario, emissions are projected to decrease by 9.4% in 2030 compared with the baseline estimate. However, this hinges on the implementation of several institutional reforms, such as adoption of energy efficiency measures, improvements in competitiveness backed by enabling policy and regulations, and financing mechanisms to reduce greenhouse gas emissions (footnote 39). Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) and the United Nations Development Programme are involved in efforts to improve water efficiency and enable integrated water resource management. It is estimated that, given sustained investments, physical and financial water productivity can be increased by a factor of three.

(c) Improve transportation connectivity and links with external markets

37. The central issue is how to support government efforts to reposition the country as a transit and trade hub, and turn its landlocked condition into an asset while maintaining its permanent neutrality doctrine. Government priorities are the construction of airports in the cities of Atamyrat and Garabogaz, construction of transport and logistics centers along the North–South and East–West corridors, besides natural gas pipelines and regional power initiatives. A multilateral agreement signed by the heads of state of Iran, Kazakhstan, and Turkmenistan in 2007 resulted in the North–South railway corridor, to increase regional trade. Freight traffic through this line is projected to increase. In November 2016, when Turkmenistan organized the first Global Sustainable Transport Conference, it acceded to the International Convention on Harmonization of Frontier Control of Goods, Intergovernmental Agreements on the Asian Highway Network and Trans-Asian Railway Network, and Intergovernmental Agreement on Dry Ports.

38. A key issue in the transport sector is low demand from a small population, although the government is taking steps to increase vehicle ownership and boost transit and freight trade.⁵⁹ It is important in this context to ensure during appraisal that transportation projects are economically justified. Given that the transport sector agencies are frequent users of public funds, the adoption of international good practice when selecting and implementing infrastructure projects becomes critical (footnote 59). While transport sector institutions have exponentially improved their capacity since 1992 in areas like public procurement and project management, international practice and experience are not yet sufficiently used. In procurement, international competitive bidding is not used often (footnote 59). Priorities in road and maritime transport are infrastructure improvements. In railways, plans to roll out a program of system electrification with modern signaling and communications systems are in place.

III. IMPLICATIONS FOR ADB COUNTRY ENGAGEMENT

39. There is increased government interest for a deeper ADB role in the context of its present national development priorities. ADB's engagement in diversifying the country's markets for natural gas exports—it has served as the secretariat for the TAPI natural gas pipeline since 2003, as transaction advisor since 2013, and could possibly act as a financial advisor—and for electricity exports (through TUTAP and the more recent TAP interconnection projects) have made it a key development partner. Turkmenistan became a member country of the Central Asia Regional

⁵⁹ ADB (Central and West Asia Department). 2016. *Sector Assessment (Summary): Transport, Information and Communications Technologies*. 3 July 2016. (Internal).

Economic Cooperation Program in 2010. As for the government, reserves accumulated in the past should enable it to overcome the current adverse external environment. However, low hydrocarbon prices in the foreseeable future (despite long-term gas contracts), the economic slowdown in its major trading partners, and currency pressures have underscored the need to increase competitiveness, accelerate diversification, modernize institutions, and improve infrastructure, which are all priorities of the national strategy till 2030. This provides opportunities for ADB to deepen its support for the diversification of Turkmenistan's non-hydrocarbon economy.

40. The objectives of the country's National Program for Social and Economic Development, 2011–2030 provide potential points of entry for ADB to undertake policy dialogue (footnote 49). These include sustained development of all sectors of the economy, continued deepening of the country's integration with the international community, consistent improvements in citizens' well-being, increased investments in human capital development, quality enhancements of housing, improvements to utilities, and careful use of natural resources and their conservation for future generations. Areas listed for public–private partnerships include agro-industry and production of high-quality and high-value agricultural products; textile industry targeting fabrics, and sewed and knitted products; pharmaceuticals; construction, housing, and utilities; and tourism.⁶⁰

41. There is government buy-in for a three-pronged ADB approach during 2017–2021 based on national development priorities, ADB's comparative advantage, and ongoing ADB sector work:

- (i) Continue support to diversify the country's markets for natural gas and power exports through ADB's ongoing TAPI, TUTAP, and TAP flagship initiatives.
- (ii) Initiate support for the diversification of the country's non-hydrocarbon industries through assistance allowing to
 - (a) sequence in-country investments in transport infrastructure, contributing to government efforts to reposition Turkmenistan as a trade and transit hub;
 - (b) strengthen in-country institutions for private sector development, starting with market-based financial intermediation to small and medium-sized enterprises; and
 - (c) explore the human capital development potential with investments to build the skills of workers needed in micro, small, and medium-sized enterprises; and build on the government's dialogue with ADB.
- (iii) Complement financing with knowledge products, e.g., rapid response on topics prioritized by the government and aligned with ADB support. ADB's experience with knowledge management in countries such as the PRC and Kazakhstan, and with sharing "digital first" content, could be adapted.

42. Indicative areas for knowledge work identified during country consultations include support for multimodal transport solutions, cluster development, technology transfer that is cost-effective and suitable to the country context, public–private partnerships, export sophistication, and import substitution with a focus on manufacturing. A balance is needed between financing for infrastructure and ways to support the government's diversification efforts.

⁶⁰ Institute of Strategic Planning and Economic Development. 2017. *Favorable conditions for Inclusive Growth in Turkmenistan* under the framework of ADB regional study Goods jobs for inclusive growth in Central and West Asia. (Unpublished) 18 January 2017.