"GREEN TRANSFORMATION IN AZERBAIJAN" POLICY BRIEF

This policy brief has been produced under the leadership of the National Coordination Council on Sustainable Development of Azerbaijan as part of the ***"SDG Dialogues"*** *series,* ***as the outcome of the 1st SDG Dialogue on "Green transformation in Azerbaijan"*** *held on 2 November 2022. It provides a succinct summary of the analysis of green growth progress and offers set of policy recommendations on acceleration of green transformation in Azerbaijan.*

I. Introduction

The analysis of Azerbaijan's progress was based on green growth indicators developed in 2016 by the Inter-Ministerial Working Group on Green Growth Indicators led by the Ministry of Economy with support from the OECD, EU, UNECE, UNEP and UNIDO. The mandate of the working group was to identify and develop green growth indicators that can be used to assess progress towards green growth of Azerbaijan's economy. As a result of this work, in total 38 green growth indicators were adapted for Azerbaijan under five categories: i) socio-economic ii) environmental and resource efficiency; iii) natural asset base; iv) environmental dimension of quality of life; and v) indicators of economic opportunities and policy response.

Most of these indicators are aligned with the national SDGs and contribute to measuring 16 national SDG indicators of the total of 119 (Annex 1). The analysis relied on open-source data both from the national statistics office and international sources and focused on measuring the country's progress over time. The recommendations take into account the discussions held within the 1st SDG Dialogue on green transformation in Azerbaijan.

II. Overview of Government policies and programmes on green transformation

"Azerbaijan 2030: National Priorities for Socio-Economic Development"[1] and the "Strategy of Socio-Economic Development in 2022-2026" identified *a clean environment and country of "green growth"* as one of the five priority directions of the country's development up to 2030.

Under the Paris Agreement on climate change the country has committed to a 35% emission reduction target by 2030 compared to the base year of 1990. At the COP26 in Glasgow, Azerbaijan announced its intention to reduce emissions by 40% by 2050 as a voluntary commitment and to create a "Net Zero Emission" zone in the regained territories. Currently the work is in progress on updating the country's Nationally Determined Contributions (NDCs) within the Paris Agreement, however, the Government's commitment to raise the NDC ambition is yet to be seen.

Azerbaijan has recently updated its environmental legislation by adopting several new laws and amending existing legislation. Considerable improvements have been achieved in terms of implementation of international practices of assessment, prevention, and reduction of significant environmental impacts of different activities specified in the Annex to the 2018 Law on Environmental Impact Assessment[2], such as the design of projects related to exploration of carbohydrates, building of road, rail and pipeline infrastructure, construction of tourism sites, chemical and metallurgical industry sites, large scale agricultural project, etc. The Government has also stepped-up efforts to promote energy efficiency and renewable energy. Two new laws on i) rational use of energy resources and energy efficiency; and ii) the use of renewable energy sources in the production of electricity were adopted in 2021.

The Government of Azerbaijan has been taking concerted actions to increase resource efficiency and raise the level of circularity in the economy. Road maps and actions plans are in place for agriculture, water resources and solid waste management. For example, in the water sector, a national water strategy (2021–2038) has been drafted under

1. Order of the President of the Republic of Azerbaijan on approval of "Azerbaijan 2030: National Priorities for Socio-Economic Development", February 2021
2. Law on Environmental Impact Assessment, 2018

the State Commission on Water Resources (established in 2020). A related water action plan is being developed with short- (2025), medium- (2030) and long-term objectives. In 2022, the two-year Action Plan to Ensure the Efficient Use of Water Resources was approved by Presidential Decree.

III. Status of green transformation progress in Azerbaijan and existing challenges

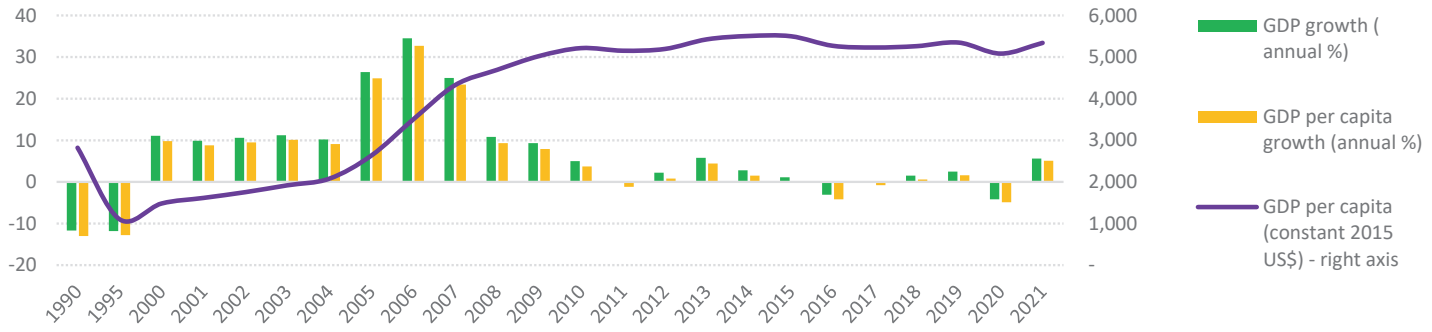
The Government's prioritization of green growth provides a strong impetus to the country's green transition endeavors. However, so far, Azerbaijan's green growth progress has been mixed, with faster progress in early 2000s, slowdown after 2010 and stagnation or reversal of progress on few indicators in the period post 2015. Below section provides a short summary of progress analysis across the five categories of green growth indicators highlighted above.

i. Social and Economic Indicators

Social and economic indicators help track the effects of green growth policies on growth and development. They link the green growth indicators to social goals, such as social equity and inclusion.

In the last two decades Azerbaijan has demonstrated strong economic performance with GDP per capita having grown four times between 2000 and 2021 (Figure 1). This has resulted in the country's progress to an upper middle-income level. According to official statistics, the national poverty rate reduced from almost 30% in 2005 to 5.9% in 2021, showing that the economic growth has translated to improving people's wellbeing. However, pace of GDP and GDP per capita growth have slowed down after 2011.

Figure 1. Real GDP growth, GDP per capita & growth



Source: The State statistical committee of Azerbaijan, the World Bank (World Development Indicators)

Figure 2. GDP Structure by sectors (2005-2020)

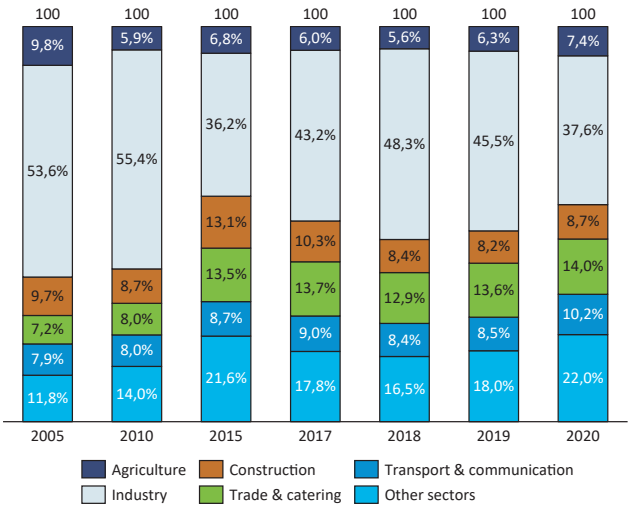
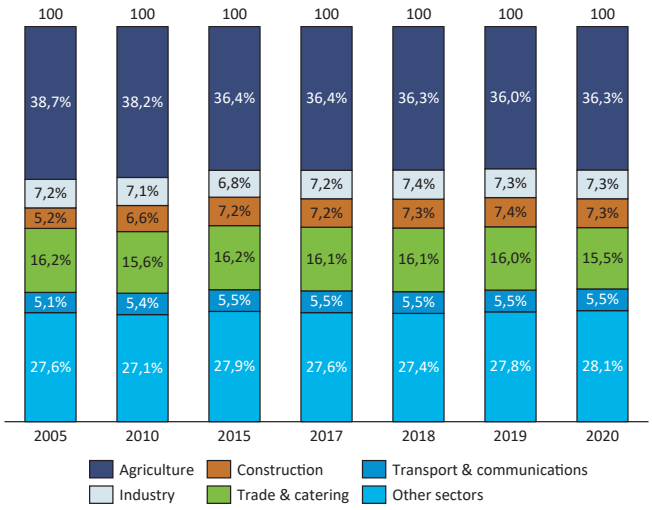


Figure 3. Employment Structure by sectors (2005-2020)



Source: The State statistical committee of Azerbaijan

The GDP structure has seen the increasing share of services, including transport and communications as well as trade and catering over the past years, while the industry, including mining, accounts for the largest share of GDP (Figure 2).

In the employment structure (Figure 3), agriculture continues to provide for the bulk of employment while producing only around 6-7% of GDP. This obviously creates low labour productivity situation in agriculture, resulting in lower level of economic inclusiveness. In its current structure the economy remains vulnerable to external shocks. Strengthening the resilience of the economy can be addressed through transformation and fundamental shifts in the economy, including public and social issues, which together raise the overall productivity.

ii. Environmental and Resource Efficiency Indicators

Environmental and resource efficiency indicators capture the efficiency with which economic activities – both production and consumption – use energy, other natural resources, and environmental services. The also reflect key aspects of the transition to a low-carbon, resource efficient economy.

The main resource efficiency indicator, i.e., domestic material consumption per GDP in Azerbaijan reduced by 2.3 times between 2004 and 2016 mainly due to fast growing GDP, implying that the growth has to large extent been export-led. However, the trend since 2016 has gained an upward path, albeit it remains far below the level of 2004.

After dropping by around 46% between 1990 and 2000, the volume of greenhouse gas emissions has gradually increased, reaching 53.9 million tons of CO2 equivalent in 2020. Energy sector continues to be the largest GHG emitter in the country accounting for 80% of total emissions. The energy intensity of Azerbaijan's economy, measured as a ratio of total primary energy supply to the unit of GDP, has reduced between 2007 and 2010, but then it was stagnant until gaining an upward trend starting 2015 (Figure 4). The recently adopted Law on energy efficiency can play a catalytic role in reversing this trend.

On the positive side, volume of removals of GHG emissions has been also growing from 3.7 million tons of CO2 equivalent in 1990 to 8.5 million tons of CO2 equivalent in 2020 thanks to forestry and land use. Meanwhile, the CO2 productivity, measured as the unit of GDP produced per kg of CO2 emitted, remains largely unchanged over the past 10 years (Figure 5), implying the need for further actions to effectively de-couple the GDP growth from CO2 emissions growth.

Figure 4. Energy intensity
(TPES kg of oil equivalent per thousand US$ of GDP)

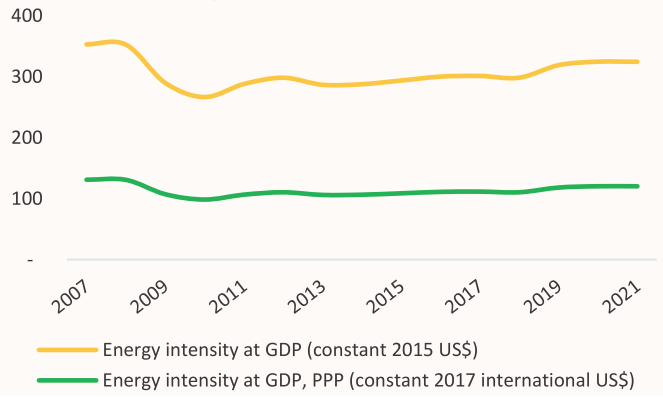
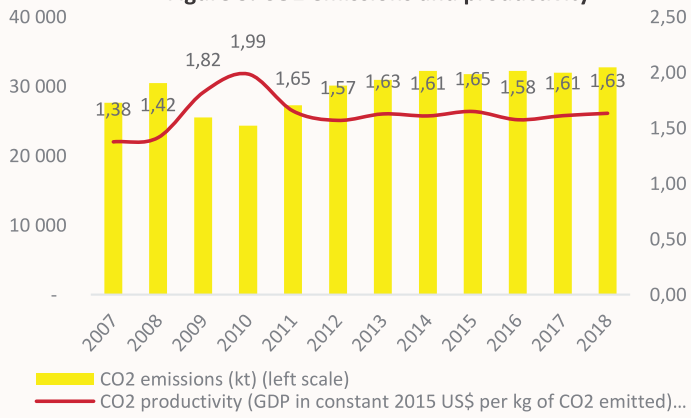


Figure 5. CO2 emissions and productivity



Source: The State statistical committee of Azerbaijan, the World Bank (World Development Indicators)

The share of renewables in electricity production has reduced from 18.4% in 2010 to 5.8% in 2021. Meanwhile, the adoption of the Law on renewable energy coupled with large scale renewable energy projects that are now in progress, are expected to significantly boost the share of renewables in the coming years. The Ministry of Energy has set a target to increase the installed capacity of renewable energy to 30% in the country's overall energy balance by 2030.

For this purpose, it is planned to create a total of 1,500 MW of new generation capacities, including 440 MW in 2023, 460 MW in 2023–2025, and 600 MW in 2026–2030, at the expense of renewables. The real game-changer, however, could be Azerbaijan's offshore wind potential of 157,000 MW. On 3 June 2022, the Ministry of Energy of the Republic of Azerbaijan, the World Bank, and the International Finance Corporation (IFC) published a new roadmap indicating the possibility to install 7GW of offshore wind power by 2040.

iii. Natural Asset Base Indicators

Natural asset base indicators reflect whether the natural asset base (water, land, biodiversity etc.) is being kept intact

and within sustainable thresholds in terms of quantity, quality or value. They help identify risks to future growth arising from a declining or degraded natural asset base.

Since 2012 water stress, measured in terms of freshwater withdrawal as a proportion of available water resources, has increased reaching 54% in 2020, and is rated high being between 40-80%. The volume of water consumption has also been increasing since 2014, mainly driven by increase in irrigation & agriculture. The main source of surface water pollution continues to be insufficiently treated and untreated wastewaters. Another factor affecting the quality of surface waters is the inflow of collection and drainage waters coming back from the irrigated areas. As a result, the level of groundwater increases, and this leads to flooding, swamping and salinization of soils. Moreover, wastewater constitutes one of the main causes of pollution and destruction of small rivers (<10 km). Due to their intensive use for economic purposes, small rivers are prone to depletion and shallowing.

Concerning the water use efficiency, water productivity improved from 1.85 USD of GDP/m3 in 20025 to 4.33 USD/m3 in 2014. However, it has been declining since then falling to 3.96USD/m3 in 2020, suggesting an increasing water loss in the economy (Figure 6).

Total agricultural land increased by 20 thousand ha between 2000 and 2020. Arable land increased by 288 thousand ha over the same period, mainly at the expense of hayfields and pastures (-216 thousand ha) (Figure 7). While some reports indicate that up to 50% of arable land might be degraded to various extent, comprehensive data on land degradation was not available. According to official data by the State Statistical Committee the forest cover has remained stable at 12% of total land area.

Figure 6. Water productivity
(US$/m3 at 2015 constant GDP)

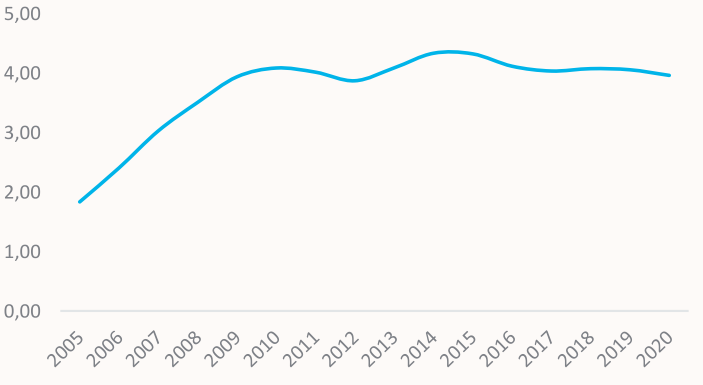
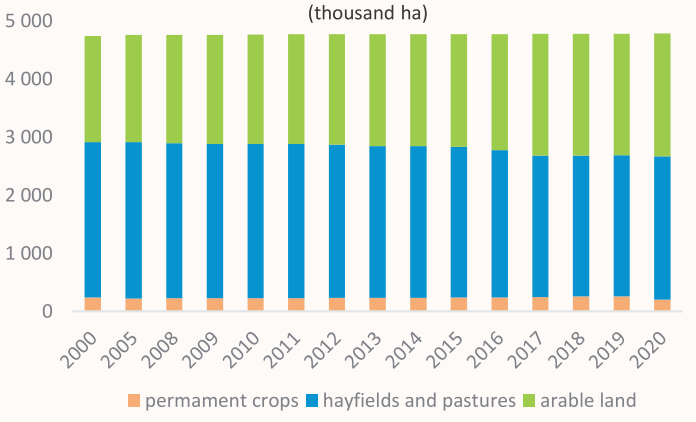


Figure 7. Agricultural land composition
(thousand ha)



Source: The State statistical committee of Azerbaijan

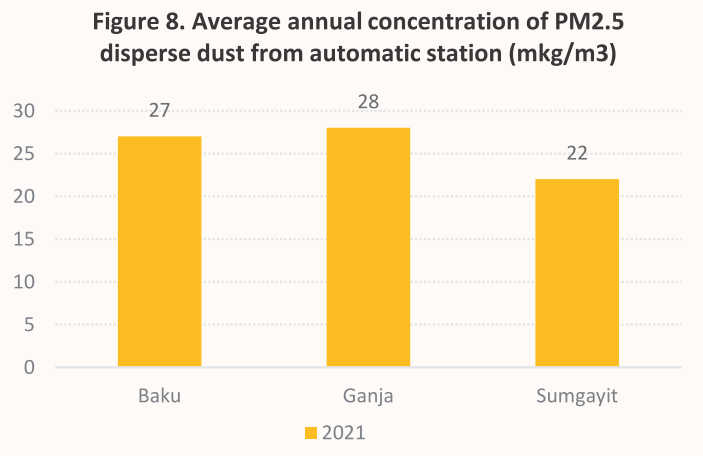
Share of protected areas has increased and currently makes 10.3% of the total area of the country.

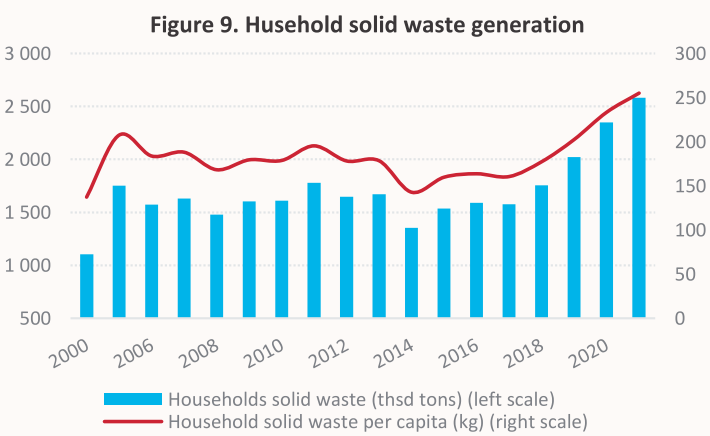
Azerbaijan still needs to build resilience to climate change impact. For example, climate change will have a significant impact on national ecosystems and habitats. According to the sixth national report to the Convention on Biological Diversity, the biodiversity of the marine and coastal environment may be particularly vulnerable due to sea level fluctuations as consequence of temperature increases (higher evaporation) and changes in precipitation, which directly impact the overall water balance. The level of the Caspian Sea is projected to fall by 9–18 m in medium to high emissions scenarios until the end of this century. Coastal protected areas like Qizil Agash, Absheron, Samur Yalama or the delta of the Kura River will be directly impacted and transformed.

iv. Environmental Dimension of Quality-of-Life Indicators

This group of indicators assess the environmental aspects affecting the wellbeing of people and focus on air quality, waste management, availability of clean water etc.

Available international data shows declining trend of PM2.5 air pollution in Azerbaijan from 23.4 mcg/m3 in 1995 to 19.9 mcg/m3 in 2017. However, national statistics for 2021 indicate the increased levels of PM2.5 air pollution in the three major cities of the country: Baku, Ganja and Sumgayit, where the PM2.5. concentration is 27, 28 and 22 micrograms per cubic meter respectively (Figure 8). According to the WHO standards, PM2.5. concentration above 15 mcg/m3 is considered harmful for health and may increase the risk of serious respiratory and lung diseases.





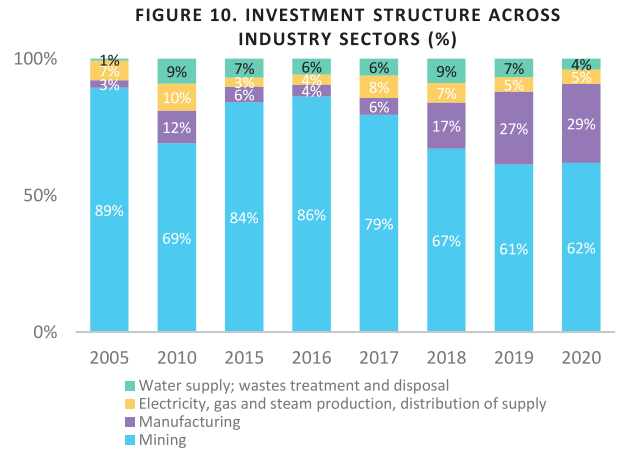
Source: The State statistical committee of Azerbaijan

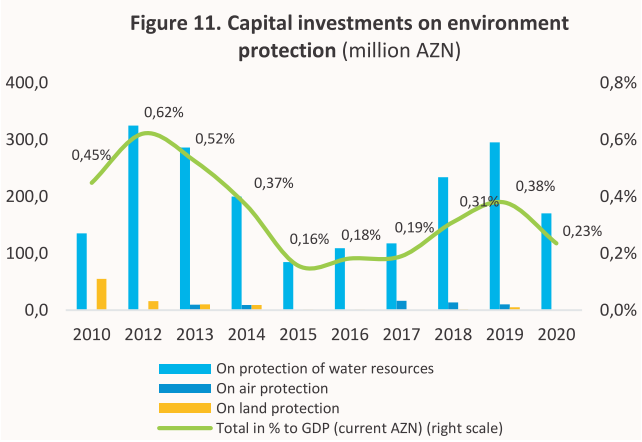
As to the waste management, what is notable is that the total and per capita volume of household solid waste has been increasing at an accelerated pace since 2018 (Figure 9). Household solid waste is a source of methane gas emission, through decomposition of waste at landfills. More attention and investments in solid waste management might be therefore required. Concerning the municipal sewage treatment, only around one fourth of the population is connected to the wastewater treatment system, while almost 40% of population is connected to wastewater collection system. On the upside, progress is observed on both indicators, particularly after 2017. The level of safely treated wastewater has also been steadily increasing and reached 52.5% in 2020.

v. Economic opportunities and policy responses

Economic opportunities and policy responses capture the economic opportunities associated with green growth (e.g. green investments, green jobs). These indicators also help monitor policy measures to promote the transition to green growth and to remove barriers towards such transition.

The analysis of investment structure in Azerbaijan's economy shows that the mining sector absorbs the major share of investments. In the meantime, it is worthwhile to highlight the growing level of investments in the manufacturing industry since 2018 (Figure 10). It is an indication of the Government's continuous efforts to diversify the economy and enhance its resilience. Further increasing the investments in agriculture, water supply and waste treatment could be considered to enhance the sustainability of these sectors.





Source: The State statistical committee of Azerbaijan

As to capital investments on environment protection – the data shows that when measured in relation to GDP, it was 0.23% of GDP in 2020 (Figure 11). Just to compare - the EU average for this indicator is 2% of GDP. Notably, violations of norms of pollutant emissions to air and water seem to be increasing in recent years, potentially necessitating stronger regulations and more incentives encouraging sustainable business practices.

vi. Conclusion and proposed recommendations

A strong foundation of policies and regulations pursuing green growth have been built up in Azerbaijan, creating a conducive ground for accelerated green transformation in the country. According to the analysis, Azerbaijan's green growth progress has been mixed, with faster progress in early 2000s, slowdown after 2010 and stagnation or re-

versal of progress on some of the indicators in the period post 2015. In 2021 Azerbaijan was ranked 136th out of 180 countries in the Global Sustainable Competitiveness Index (GSCI), which measures national development and green growth. Azerbaijan scored 40.7 points out of 100, which is lower than the global average of 45.4. Out of five sub-indexes, i.e., natural capital, resource intensity, social capital, intellectual capital, and governance, Azerbaijan's standing was significantly lower on natural capital (148th) and resource intensity (157th), indicating the need for more ambitious green transformation efforts.

The central question to fostering green growth is about how to de-couple the economic growth from environmental degradation and GHG emissions. As the international expertise indicates, the answer to this question rests on the ability of countries to change the traditional linear model of production – consumption – waste to the circular model, which puts resource efficiency, recycling, and environmental regeneration at the center. Switching to circular models will require strong institutions, which oversee and implement integrated policies and create effective incentives for green transition. Greening the demand side will also play a crucial role for successful green transformation. Without the change of behaviors both by firms and households it will be difficult to significantly improve the resource efficiency, reduce waste and pollution, etc.

As it concerns financing, developing countries cannot afford to lock their investments in 20th century technologies. Success of leapfrogging to green and developed economy will depend on innovations and absorption of modern technologies. These in turn require increased investments in skills building, research and development and scaling up of green finance and investments in green sectors. Last but not least is measuring and reporting of green growth progress. This will be important to guide the decision-making process.

In light of this, based on the analysis as well as guided by the discussions of the 1st SDG Dialogue, the following three set of policy recommendations are proposed towards the acceleration of green transformation in Azerbaijan.

1. Horizontal/ economywide policies for economic transformation and resilience

- Enhancing the institutional capacity to create effective regulations and incentives for green transition: integrated policies targeting green growth, green standards and regulations, incentives for green finance and investments, R&D and facilitation of green technology transfer, etc.
- Further improving the quality of education and skills building –enhancing skills development, innovations and fostering green technology absorption capacity. Innovations and technology are the key for leapfrogging on green transformation agenda.
- Expansion of green finance and investments – minimizing fossil fuel subsidies, fiscal incentives for green practices, improving the environmental accounting, development of green finance instruments, including the carbon credit certification and trading.
- Greening the demand side: green culture and awareness — strengthening environmental education in schools and raising population awareness on the impacts of climate change; popularization of green culture. Behavioral change towards responsible production and consumption will be central to achieving the green growth targets.

2. Sector-wide policy recommendations to promote green growth

- Development of decarbonization strategy of the economy to meet the commitments under the Paris agreement
- Increasing the agricultural productivity and facilitating the mobility of agricultural labour force to other more productive sectors
- Enhancing the financing of green growth:
  - ✓ continuing the expansion of investments in manufacturing sector development (particularly non-oil)
  - ✓ expansion of incentives for financing energy efficiency and renewable energy
  - ✓ boosting investments in agriculture, water supply and waste treatment to enhance the sustainable use of land and water resources and ensure sustainable waste management
  - ✓ increasing the financing for R&D and capital expenditures in environment protection and green growth
- Policies incentivizing sustainable business practices among SOEs and SMEs, e.g. promotion of impact investing, introduction of ESG standards, replacing fossil fuel subsidies with green subsidies, etc.

- National urban policy - integrated urban and rural planning, including the green and sustainable development of large urban centers beyond Baku (Ganja, Aghdam etc.) to promote balanced territorial development.

3. Improving the data for green growth monitoring and reporting

- While the national environmental monitoring system has been improved over the past years, including data collection, analysis and reporting, gaps remain that need to be addressed. To date no integrated environmental monitoring and information system is in place and this adversely affects the timely collection and dissemination of environmental information. Environmental data is not sufficiently used for decision making and state of the environment reports are not produced on a regular basis.
- In this regard, further improving data collection and reporting on "green growth" indicators and their alignment with monitoring and reporting of national SDGs would be important.
- It needs to be acknowledged that reporting on green growth progress in Azerbaijan has already been put in place by the State Statistical Committee at https://www.azstat.org/portal/?lang=az. This information platform needs to be continuously improved, and shared with policy makers and general public, to both inform the decision making, as well as promote collective green behavior change.

Annex 1

Set of indicators to measure green growth in Azerbaijan as proposed by the report "Green Transformation in Azerbaijan: National Report Based on the OECD Set of Green Growth Indicators", 2016 (developed by OECD in partnership with UNEP, UNECE, UNIDO, Partnership for Environment and Growth; funded by the EU) and the list of relevant national SDG indicators.

#	OECD Green growth Indicators adapted for use by Azerbaijan	Relevant national SDG indicators of Azerbaijan	Count of SDG indicators
Social and Economic Indicators			
1	GDP per capita	8.1.1 Annual growth rate of real GDP per capita	1
2	GDP by sector	9.2.1 Manufacturing value added as a proportion of GDP and per capita	2
3	Imports and exports	N/A	
4	Labour productivity	8.2.1 Annual growth rate of real GDP per employed person	3
5	Level of labour participation of the working-age population	N/A	
6	Unemployment rate	8.5.2 Unemployment rate, by sex, age and persons with disabilities	4
7	Educational attainment by level	N/A	
8	Life expectancy at birth	N/A	
9	Population density	N/A	
Environmental and Resource Efficiency Indicators			
10	CO2 productivity (GDP per unit of CO2 emissions)	N/A	
11	Energy intensity (TPES per unit of GDP)	7.3.1 Energy intensity measured in terms of primary energy and GDP	5
12	Total final consumption of energy	N/A	
13	Renewable energy production	N/A	
14	Share of renewable energy in total primary energy supply	7.2.1 Renewable energy share in the total final energy consumption	6
15	Mineral fertilizers per hectare of arable land	N/A	
16	Organic fertilizers per hectare of arable land	N/A	
17	Volume of water losses in production and distribution	N/A	
18	Water losses in irrigation and agriculture	2.4.1 Proportion of agricultural area under productive and sustainable agriculture	7

19	Production of household solid waste (total and per capita)	11.6.1 Proportion of municipal solid waste collected and managed in controlled facilities out of total municipal waste generated, by cities	8
20	Production of industrial hazardous wastes	N/A	
21	Water use efficiency	N/A	
Natural Asset Base Indicators			
22	Fresh water abstraction	N/A	
23	Water stress	6.4.2 Level of water stress: freshwater withdrawal as a proportion of available freshwater resources	9
24	Water consumption (by sectors)	N/A	
25	Forest area and volume	N/A	
26	Extraction (oil, gas, mineral)	12.2.1 Material footprint, material footprint per capita, and material footprint per GDP	10
27	Proven reserves (oil, gas, mineral)	N/A	
28	Land use	2.4.1 Proportion of agricultural area under productive and sustainable agriculture	(repeating)
29	Share of farmland subject to erosion	15.3.1 Proportion of land that is degraded over total land area	11
30	Area of contaminated and remediation of land	N/A	
31	Species under danger of extinction (mammals, birds, fish, plant)	N/A	
32	Share of specially protected areas of nature in the overall country territory	15.1.2 Proportion of important sites for terrestrial and freshwater biodiversity that are covered by protected areas, by ecosystem type	12
33	Fishing	N/A	
34	Fisheries	14.4.1 Proportion of fish stocks within biologically sustainable levels	13
Environmental Dimension of Quality-of-Life Indicators			
35	Population-weighted exposures to PM2.5	N/A	
36	Share of population with improved sanitary connections	N/A	
37	Proportion of population using safely managed drinking water services	6.1.1 Proportion of population using safely managed drinking water services	14
38	Municipal sewage treatment	6.3.1 Proportion of domestic and industrial wastewater flows safely treated 6.3.2 Proportion of bodies of water with good ambient water quality	15 16