



IMPROVING TRANSPORT CONNECTIVITY, INTERNATIONAL TRADE AND TRADE FACILITATION FOR LLDCs IN EURO-ASIA REGION

UN-OHRLLS, UN ESCAP and UN ECE

**Background report prepared for the Euro-Asia regional review
meeting on the implementation of the Vienna Programme of
Action for the Landlocked Developing Countries for the
Decade 2014-2024.**

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ACRONYMS AND ABBREVIATIONS

ADB	Asian Development Bank
AH	Asian Highway
ASEAN	Association of Southeast Asian Nations
ASYCUDA	Automated System for Customs Data
BBIN	Bangladesh, Bhutan, India and Nepal
BIMSTEC	Bay of Bengal Initiative for Multi-sectoral Technical and Economic Cooperation
BRI	Belt and Road Initiative
CAREC	Central Asia Regional Economic Cooperation
CARs	Central Asia Road Links
CBTA	Cross-border Transport Agreement
CIS	Commonwealth of Independent States
CPEC	China Pakistan Economic Cooperation
EATL	Euro-Asian Transport Links
ECO	Economic Cooperation Organization
EAEU	Eurasian Economic Union
EU	European Union
eSEAL	electronic seal
EurAsEC	Eurasian Economic Community
FDI	foreign direct investment
GDP	gross domestic product
GMS	Greater Mekong Subregion Economic Cooperation Programme
HDI	human development index
HoA-IP	Heart of Asia - Istanbul Process
ICT	information and communications technology
INSTC	International North-South Transport Corridor
LDCs	least developed countries
LLDCs	landlocked developing countries
LPI	Logistic Performance Index
MDGs	Millennium Development Goals
NSWs	National Single Windows
ODA	official development assistance
PPP	public-private partnership
SAFTA	South Asian Free Trade Agreement
SPECA	United Nations Special Programme for the Economies of Central Asia
TFA	Trade Facilitation Agreement
TRACECA	Transport Corridor Europe-Caucasus-Asia

TTFMM	ESCAP/ADB Trade and Transport Facilitation Monitoring Mechanism
TUE	Twenty-foot Equivalent Unit
RECCA	Regional Economic Conference on Afghanistan
RFID	Radio frequency identification device
RKC	Revised Kyoto Convention
SAARC	South Asian Association for Regional Cooperation
SDGs	Sustainable Development Goals
TCD	Time/Cost-Distance methodology
TTFMM	Trade and Transport Facilitation Monitoring Mechanism
UNCTAD	United Nations Conference on Trade and Development
UNCTADSTAT	UNCTAD Statistics
UNECE	United Nations Economic Commission for Europe
UNESCAP	United Nations, Economic and Social Commission for Asia and the Pacific
UNDP	United Nations Development Programme
UNOHRLLS	Office of the High Representative for the Least Developed Countries, Landlocked Developing Countries and Small Island Developing States
VPoA	Vienna Programme of Action
WB	World Bank
WTO	World Trade Organization
WTO TFA	WTO Trade Facilitation Agreement

Executive Summary

The Euro-Asian landlocked developing countries (LLDCs) continue to face a wide range of development challenges in achieving sustainable development and realizing the priorities set in the Vienna Programme of Action (VPoA) for Landlocked Developing Countries for the Decade 2014-2024. Lack of efficient transport infrastructure imposes high economic costs and discourage investment and business development. Many of them rely on exports of natural resources with narrowly based economic activities in low value added products and services. With no direct access to sea ports, the Euro-Asian LLDCs face high transport costs, making their exports less competitive. The mid-term review of the VPoA provides an opportunity to assess the progress made in implementing the VPoA, identify the challenges and constraints encountered and adopt support measures for the accelerated development of the Euro-Asian LLDCs.

Significant progress made in improving transport connectivity and building resilient transport infrastructure but challenges remain

The Euro-Asian LLDCs as a whole have achieved significant progress in improving transport connectivity and building resilient transport infrastructure. Progress has been made in completing missing links and generally improving the quality of infrastructure. Several LLDCs have reduced time costs and distance covered due to improved infrastructure and transit transport networks. Significant progress has been made in adopting new and innovative technologies including electronic seal (eSeal) and radio frequency identification device (RFID) in reducing time costs. LLDCs have also adopted several transport facilitation models namely, Cross-border Paperless Trade facilitation and Single Window Systems to promote cross-border rail and road connectivity.

Significant progress has been made in developing **road infrastructure**. For example, Afghanistan is rapidly becoming a land bridge between South Asia and Central Asia with the Lapis Lazuli Route Agreement being finalized and subsequently signed by Afghanistan, Turkmenistan, Azerbaijan, Georgia and Turkey on 15 November 2017. Armenia has begun the construction of the North-South Road Corridor with an investment outlay of US\$1.5 billion. Azerbaijan is upgrading AH-8, connecting Hajigabul-Bahramtapa-Horadiz-Minjivan to Armenian border. Bhutan has built more than 18,396 km of roads as part of the National Highway network. Kazakhstan - situated at the crossroad of Europe, China and South Asia with enormous transit and transport potential - has built 6,300 km of automobile roads. Kyrgyzstan has entered into a bilateral agreement on road transport with the Russian Federation, China, Islamic Republic of Iran, Turkey and Pakistan. Lao PDR launched the Logistics Master Plan in 2015 and constructed about 60,000 km of roads in 2017, of which 19 percent is paved. Mongolia has undertaken a

number of projects including the construction of roads along AH-4 and the Millennium road, the latter aligning itself with AH-32. Nepal has increased the length of strategic roads to 29, 639 km and completed or is in the process of completing several road projects.

The Euro-Asian LLDCs encountered several challenges and constraints in developing their road infrastructure and connectivity include lack of investment resources, institutional bottlenecks and limited supply of skilled human resources. Several operational and regulatory requirements, including road permits for bilateral transport, have constrained the smooth performance of several road corridors. Time spent on transporting goods and people on roads is also very high due to missing links and poor quality with adverse impacts on economic activities. Lack of sufficient institutional capacity has constrained the development of roads of international standards, particularly highways and interstate motorways. Maintenance of national road systems is also a major challenge as most of the major road development projects are financed by development partners with limited allocation of resources for meeting future maintenance costs.

In the **railways** sector, total route-km in several LLDCs have remained more or less the same in 2016 compared to 2014 with some gains in Kazakhstan and Uzbekistan and reductions in several others. Some notable achievements include the Five Nations Railway programme which will connect Afghanistan with China, Kyrgyzstan, Islamic Republic of Iran and Tajikistan. The construction of a 75 km single rail has also connected the country with Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan. The Trans-European and Trans-Asian networks and implementation of projects along the East-West and North-South transport corridors will lead to increased transit facilities. Another notable achievement has been the opening of the Baku-Tbilisi-Kars railway route on 30 October 2017 which has become the shortest and most reliable route connecting Europe with Asia. In Lao PDR, six main railway projects are being implemented under the Lao PDR Railway Strategic Plan of 2016-2030. Mongolia has completed 51 percent of the construction work of the Tevan Tolgoi-Gashunn Sukait rail line as of December 2018. Nepal is rapidly developing its railway infrastructure with assistance from China and India. Despite these impressive gains, the LLDCs continue to face several challenges in developing their rail infrastructure. While some reductions in time spent at border-crossing points have been achieved, average time spent at borders on CAREC Corridors by road, for example, increased by 69% between 2014 and 2017. Missing links and uneven quality of rail lines have also greatly hampered the development of rail infrastructure.

Dry ports are becoming an important part of transport infrastructure in the Euro-Asian LLDCs, particularly along their borders with transit countries. Several notable achievements made during the last few years include the 218

km road link connecting Delaram (India) with Zaranj (Afghanistan). Kazakhstan completed the construction of a dry port and related infrastructure in the east of the country, bordering China, as part of the Khorgos-Eastern Gate Free Economic Zone initiative. Nepal has built three such ports at Birgunj, Bhairahwa and Biratnagar. Several constraints have been encountered in promoting dry ports including lack of financial resources, shortage of skilled personnel, inadequate logistics services, poor transport network and absence of physical infrastructure at border points.

Inland waterways and access to sea ports are vitally important for LLDCs in transporting goods and passengers. Access to sea ports is critical for improving the competitiveness of LLDCs in international markets. Some progress has been made in this regard including the construction of the New International Sea Trade Port Complex in Alyat settlement of Baku, the Chabahar port in the Islamic Republic of Iran and the cooperation agreement signed by Nepal to access the Visakhapatnam port in India. It also has signed the Transit Agreement with China in 2016 which took note of Nepal's right to easy access to and from the sea. Several challenges and constraints have been faced by the LLDCs including inefficient infrastructure in transit countries and other administrative and procedural barriers in accessing nearest sea ports.

Aviation infrastructure has great potential in reducing the isolation of the LLDCs. It provides access to international markets without going through transit countries. Several LLDCs including Afghanistan, Azerbaijan, Kazakhstan, Kyrgyzstan, Lao PDR, Moldova, Turkmenistan and Uzbekistan have seen robust growth in the number of passengers carried in 2017 compared to 2015. In air freight, very little movement seems to have taken place except in Azerbaijan and Uzbekistan. Lack of investment resources and management skills have held back the development of aviation infrastructure in the LLDCs.

In energy infrastructure, several LLDCs particularly oil and gas rich LLDCs and their transit neighbors have undertaken some major oil and gas projects. The Turkmenistan-Afghanistan-Pakistan-India Gas pipeline project, Central Asia-South Asia Regional Energy Market CASA 1000, Turkmenistan-Afghanistan-Pakistan 500-KV energy project, the Southern Gas Corridor project are some of the examples that are driving energy connectivity amongst the participating LLDCs. In hydropower development, Bhutan with a potential of 30,000 MW has emerged as a major exporter of hydropower to its neighbours. Lao PDR will operate some 100 hydropower plants with combined installed generation capacity of 28,000 MW by 2020. A new player in hydropower development and export is Nepal which has significant hydropower generation capacity, estimated to be 43,130 MW. Some of the key challenges in developing energy infrastructure have

remained lack of sufficient investment resources and absence of effective regional cooperation arrangements.

Information and communications technology (ICT) have become an integral part of infrastructure in promoting sustainable development in the LLDCs. Most of the LLDCs began with very high levels of mobile use in 2014 and continued to maintain those levels in 2017. Access to internet improved significantly from the levels achieved in 2015 with several LLDCs achieving quite high levels of internet access by 2017 with Armenia, Azerbaijan, Kazakhstan, Macedonia FYR, Moldova and Uzbekistan leading the group. LLDCs in general have encountered several constraints and challenges including lack of a regionally harmonized regulatory framework to provide ICT services with greater coverage and at affordable prices. Many LLDCs are yet to make broadband policies universal and promote open and affordable access to internet for all.

Slow progress in expanding participation in international trade and achieving trade diversification

International trade is vitally important for the Euro-Asian LLDCs to build their productive capacity, connect with international value chains, diversify their economy and bring about structural transformation. Euro-Asian LLDCs have undertaken a wide variety of measures to improve their trade capacity and harness the potential of international trade.

LLDCs as a group have experienced wide fluctuations in exports and imports from 2010 to 2017, reflecting their vulnerability to external conditions. Afghanistan, Azerbaijan and Kazakhstan suffered major reversals in their export performance in terms of value from 2010 to 2017. In terms of annual growth of export volume, Afghanistan, Azerbaijan, Bhutan, Kazakhstan, Kyrgyzstan, Nepal, Tajikistan and Uzbekistan performed poorly during 2006-2016. In terms of growth in export value, notable progress was achieved by Armenia, Lao PDR, Macedonia FYR, Moldova, Mongolia, and Turkmenistan during the same period. Imports by LLDCs by and large have tended to go up over time.

LLDCs also have a narrow export base with food and agricultural raw materials dominating exports of Afghanistan, Lao PDR, Moldova, and Nepal. For the three oil, gas and minerals rich LLDCs namely Azerbaijan, Kazakhstan, and Mongolia, fuels, ores and metals dominate the total merchandise exports. Exports of manufactures as a proportion of total merchandise exports tend to be quite low except in Kyrgyzstan, Macedonia, FYR and Nepal. As a proportion of manufactured exports, high-technology exports do not feature prominently in the LLDCs in general except for Kazakhstan and Lao PDR, again reflecting their dependence on exports of natural resources and semi-processed agricultural products and low value added manufactures. The continuing trade dependence on a narrow range

of transit countries reflects LLDCs' low export mix, undiversified economic structures and high trade costs in reaching distant markets.

Intra-LLDC trade has continued to remain quite slow, except in the case of Kyrgyzstan which depends on border trade for meeting most of its export and import requirements. Poor quality of transport infrastructure, missing links in transit infrastructure and absence of trade complementarities largely explain the absence of intra-LLDC trade. LLDCs therefore tend to trade more with non-LLDC transit countries, immediate neighbors and developed countries.

LLDCs have adopted a wide range of trade facilitation measures in improving their trade competitiveness. Trade facilitation is important for reducing high trade costs, promoting economic diversification and bringing about structural change. Some of the trade facilitation measures and tools that LLDCs have adopted include cross-border paperless trade, e-based transit and transport facilitation tools, single-stop inspections, single windows for documentation, electronic payment system and transparency and modernization of border posts and customs services. Some progress has been made in establishing or strengthening national committees on trade facilitation with the involvement of all relevant stakeholders, including the private sector as part of the WTO Trade Facilitation Agreement (WTO TFA).

Several LLDCs have made significant progress in acceding to the WTO TFA. Armenia acceded to WTO TFA on 20 March 2017 and notified its A, B and C category commitments. Azerbaijan is actively considering accession to WTO. Bhutan has an observer status with WTO and established the National Trade and Transport Facilitation Committee with the participation of all relevant stakeholders. Mongolia acceded to WTO TFA in November 2016 and established the National Trade facilitation Committee in August 2017. Nepal has notified 2.1 percent of activities under Category A, 12.2 percent of activities under Category B and 85.7 percent of activities under Category C.

Despite concerted efforts by the LLDCs and their development partners, the total share of their exports in global exports has remained insignificant. Even this share is mainly composed of low-value added manufactures and unprocessed or semi-processed natural resources. They continue to rely on limited number of destination countries, and their participation in global exports is constrained by a narrowly-based manufacturing capacity, lack of sophisticated/differentiated products, transit barriers and institutional weaknesses including poor business environment.

Means of implementation

Considerable financial resources would be needed in closing the infrastructure gaps in the LLDCs. In addition to raising resources through direct taxation and other instruments, they have used ODA and FDI as key sources for infrastructure development and transport connectivity.

The recent experience of Euro-Asian LLDCs has been mixed in raising domestic resources through central government taxes. All of them have tax/GDP ratios that fall below 20 percent with five of them showing a worsening collection rate in 2016 compared to 2010. Government expenditure as a percentage of GDP has remained high in most of the LLDCs. In most LLDCs, domestic savings as a percentage of GDP is insufficient to meet their infrastructure requirements. As a consequence, ODA and FDI will remain important sources for financing infrastructure development in the LLDCs. But the prospects are mixed. Net ODA flows to the 14 Euro-Asian LLDCs fell from \$9,398 million in 2014 to \$8,674 million in 2017 with all except Lao PDR, Mongolia, Nepal and Uzbekistan experiencing moderate to significant drops in ODA receipts.

In terms of FDI, inflows to the 14 Euro-Asian LLDCs have fluctuated over the years, reaching a peak of \$17,016 million in 2010. It then fell to \$10,775 million in 2015 and then to \$10,647 in 2017. All the LLDCs except Afghanistan, Bhutan and Nepal saw significant inflows of FDI, fueling their infrastructure development. Most of the FDI to Euro-Asian LLDCs went to resource rich ones like Azerbaijan (\$2,867.00 million in 2017), Kazakhstan (\$4,633.74), Lao PDR (\$813.03) and Mongolia (\$1494.35) with energy sector featuring prominently in case of Azerbaijan and Kazakhstan and the minerals sector in case of Mongolia. In case of Bhutan and Lao PDR, most of the FDI went to hydropower sector.

Another form of private resource is remittance inflows which have emerged as one of the most important sources of resource for the Euro-Asian LLDCs. Remittances to developing countries is estimated to have increased by 10.8 percent and reached a record high of \$528 billion in 2018 with global remittances reaching \$689 billion, a growth of 10.3 percent over 2017. Remittance flows to Central Asia – where half of the Euro-Asian LLDCs are located – grew by 20 percent and to South Asia by 13.5 percent.

In recent times, several infrastructure development funds and initiatives such as China's US\$40 billion New Silk Road Fund and the Belt and Road Initiative, World Bank-led Global Infrastructure Forum, Asian Development Bank's Central Asia Regional Economic Cooperation initiative, and the Asian Infrastructure Development Bank have become available which LLDCs can access. Several LLDCs have utilized public-private partnerships in mobilizing resources for infrastructure development. South-South Cooperation and triangular cooperation arrangements have also facilitated the mobilization of financial resources for infrastructure development.

Despite these efforts and increase in the number of facilities, significant infrastructure financing gaps remain, calling for strengthened international support measures, development of implementation capacity and reform of policy and regulatory frameworks including the creation of an enabling environment to increase investment in infrastructure development.

Going Forward

As the VPoA nears its mid-term review, LLDCs have continued to face daunting internal and external challenges to develop infrastructure and increase their participation in international trade. Although significant progress has been made by the Euro-Asian LLDCs in improving transport infrastructure and international trade, they will continue to need strong support from the international community to overcome the challenges and constraints they encountered in implementing the VPoA.

In taking the VPoA implementation process forward, the Euro-Asian LLDCs need to integrate fully infrastructure development and maintenance and trade and transport facilitation in national development strategies and planning process. There is need to improve and harmonize customs administrations, streamline border crossing procedures and apply ICT solutions including paperless trade and single window environment.

LLDCs and transit countries should develop and upgrade international transport and transit corridors covering all modes of transport, taking into account the special needs of the LLDCs. There is also need for strengthening greater cooperation between LLDCs and transit countries in developing transit infrastructure and promoting intra-LLDC trade.

LLDCs should strengthen their efforts in mobilizing increased domestic resources and bring about necessary tax administration reforms to meet the growing infrastructure financing needs. LLDCs would also have to find innovative solutions in combining domestic resources with ODA, FDI, remittances and other forms of external financial flows in building sustainable and resilient transport infrastructure.

Measures are needed to diversify the economic structures of LLDCs, export base and destination markets including through transfer of technologies, finance and integration into regional and global value chains. In this regard, increased efforts are required to improve the effectiveness of trade and cooperation agreements as platforms for increased regional integration and cooperation.

LLDCs with support from their development partners should adopt new and innovative technologies including electronic seal (eSeal) and radio frequency identification device (RFID) which can be effective in reducing time costs in moving freight from one point to another. Increased support measures are also needed in the adoption of transport facilitation models such as Model on Integrated Controls at Border Crossings, Electronic Cargo Tracking Systems, Cross-border Paperless Trade facilitation and Single Window Systems to promote cross-border rail and road connectivity.

WTO FTA can play a critical role in improving the trade capacity of the LLDCs. With support from the international community, LLDCs that are yet to become members of WTO should do so. Development partners should also support LLDCs in strengthening capacities of LLDCs and the transit countries to ratify and implement WTO Trade Facilitation Agreement.

UN-OHRLLS, UNECE, UNESCAP, the International Think Tank for LLDCs and other relevant development partners should strengthen their technical assistance for the LLDCs in the implementation of the VPoA. The international community needs to live up to its commitments made in various international forums including the UN 2030 Agenda and the Addis Agenda on Finance for Development so that LLDCs can make accelerated progress in realizing the priorities of VPoA.

I. Introduction

The Euro-Asian landlocked developing countries¹ are some of the most vulnerable countries in the world, facing multitude of development challenges in achieving sustainable development and realizing the priorities set in the Vienna Programme of Action (VPoA) for Landlocked Developing Countries for the Decade 2014-2024. With no direct territorial access to the sea, they are isolated from important world markets and face high transport and transit costs, resulting in significant loss in their competitiveness. This physical isolation and a variety of transport and transit barriers including underdeveloped trade and transit infrastructure make it virtually impossible for them to benefit from regional and global integration process. With a high degree of dependence on global markets for the exports of natural resources and low- value added manufactured goods, the Euro-Asian LLDCs remain highly exposed to global economic trends and events which, among others, have by and large slowed down their progress towards achieving sustainable development. Lack of efficient transport infrastructure, transit barriers, weak trade capacity and an undiversified export structure have further complicated their efforts in achieving sustainable growth and development. As the mid-term review of the VPoA approaches, the Euro-Asian LLDCs need to take stock of the progress they have made in implementing the VPoA and constraints encountered in a number of priority areas, including infrastructure development and maintenance and international trade and trade facilitation - priorities that are central to their development process. LLDCs also recognize that achievement of the Sustainable Development Goals (SDGs) crucially depends on the timely and effective implementation of the VPoA.

This report reviews and analyses the status of progress made in transport connectivity, international trade and trade facilitation by the LLDCs in Euro-Asia region. The report serves as an important background document to facilitate the midterm review on the implementation of the VPoA. It is divided in five Sections. After the Introductory Section I, the report in Section II presents a brief overview of the recent social and economic performance of the Euro-Asian LLDCs. It reviews the progress made and obstacles and constraints encountered in promoting transport connectivity and building resilient transport infrastructure in support of accelerated progress in SDGs. The Section takes into account the LLDCs' different resource endowments and the nature of structural impediments they face. Where data permit, this Section provides both a regional and sub-regional assessment in promoting transport connectivity and building resilient infrastructure. This Section also discusses the

¹ Armenia, Afghanistan, Azerbaijan, Bhutan, Kazakhstan, Kyrgyzstan, Lao People's Democratic Republic, Mongolia, Nepal, Republic of Moldova, Tajikistan, TFYR of Macedonia, Turkmenistan and Uzbekistan

opportunities, best practices and lessons learnt in infrastructure development, highlighting their impact on SDGs. Section III presents a review of international trade and trade facilitation in implementing VPoA. Like the previous Section, it takes into account the LLDCs' different resource endowments and the nature of structural impediments they face in presenting the review results. Where data permit, this Section also provides a regional and sub-regional assessment of all the issues included in this section. Experiences gathered in implementing programmes such as the Asian Highway network, Trans-Asian Railway network, Belt and Road Initiative (BRI), Central Asia Regional Economic Cooperation (CAREC), Bangladesh-Bhutan-India-Nepal (BBIN) Motor Vehicle Agreement, the Greater Mekong Subregion Economic Cooperation Programme (GMS) are utilized to inform policy conclusions in promoting infrastructure development and international trade and trade facilitation. Section IV makes an assessment of the progress made in means of implementation to develop transport connectivity and improve trade and trade facilitation – including domestic resources, Official Development Assistance (ODA), foreign direct investment (FDI), private-public partnership, South-South Cooperation and international support measures from UN system and other organizations. Section V offers selected conclusions and some policy options, delineating the responsibilities of the LLDCs, transit countries and the LLDCs' development partners in implementing the VPoA priority areas on infrastructure development and maintenance and international trade and trade facilitation. Sub-regional variations in progress made and challenges encountered will underpin framing any specific recommendations.

II. Review of transport connectivity and building resilient transport infrastructure to support accelerated progress towards achieving SDGs

Both the UN Agenda for Sustainable Development and VPoA recognize that transport connectivity and resilient transport infrastructure are vitally important for achieving accelerated progress towards sustainable development. Efficient transport connectivity and resilient transport infrastructure are important means through which LLDCs can build up their productive capacity, attract investment including foreign direct investment, compete in international markets and support social development and climate action. Most of the LLDCs have stepped up investments in their physical infrastructure and undertaken rail and road projects to connect with other neighboring LLDCs or with other transit countries. Several transport/economic programmes/corridors have been initiated including the Asian Highway network, Trans-Asian Railway network, BRI, Central Asia Regional Economic Cooperation (CAREC), Bangladesh-Bhutan-India-Nepal (BBIN) Motor Vehicle

Agreement, the Greater Mekong Subregion Economic Cooperation Programme, Central Asia Road Links (CARs) Programme which have contributed to their growth and development. New funds and programmes have been established which can be accessed by the LLDCs to support infrastructure development and promote transport connectivity with other LLDCs, transit countries and beyond.

A. Recent economic and social progress in LLDCs: A brief overview

The 14 Euro-Asian LLDCs are a diverse group, spanning over two continents and several time zones. In terms of land area and population, these LLDCs display considerable variations with Armenia occupying a land area of 28,470 sq. km being the smallest and Kazakhstan with a land area of 2,699,700 sq. km forms the biggest in this group². Kazakhstan with a GDP (current US prices) of \$159.4 billion in 2017 also dominates this group in terms of economic size, followed by Uzbekistan (\$48.7) and Turkmenistan (\$42.4 billion) (Table 1). At the other extreme, the economies of Bhutan, Kyrgyzstan, Moldova and Tajikistan have GDP in single digits, reflecting the limited size of their domestic markets which reinforce their structural constraints of being landlocked and isolated from global markets.

Table 1: Output and growth in output

Country Name	Gross domestic product		Gross domestic product		Gross domestic product			
	average annual % growth		\$ billions		% growth			
	1990-2000	2000-2017	2010	2017	2016	2017	2018e *	2019f **
Afghanistan	..	7.9	15.9	20.8	2.4	2.7	2.4	2.7
Armenia	-1.9	5.8	9.3	11.5	0.2	7.5	5.3	4.3
Azerbaijan	-6.3	10.2	52.9	40.7	-3.1	0.1	1.1	3.6
Bhutan	5.2	7.6	1.6	2.5	7.4	5.8	4.6	7.6
Kazakhstan	-4.1	6.4	148	159.4	1.1	4.1	3.8	3.5
Kyrgyz Republic	-4.1	4.4	4.8	7.6	4.3	4.6	3.1	3.4
Lao PDR	6.4	7.5	7.1	16.9	7	6.9	6.5	6.6
Macedonia, FYR	-0.8	3.1	9.4	11.3	2.8	0.2	2.5	2.9
Moldova	-2.7	4.4	5.8	8.1	4.5	4.5	4.8	3.8
Mongolia	1	7.9	7.2	11.5	1.4	5.4	5.9	6.6
Nepal	-4.9	4.1	18	24.5	0.6	7.9	6.3	5.9
Tajikistan	-10.4	7.4	5.6	7.1	6.9	7.1	6	6
Turkmenistan	-3.2	9.4	22.8	42.4	6.2	6.5	6.2	5.6
Uzbekistan	-0.2	7.7	39.3	48.7	7.8	5.3	5	5.1

* e = estimated

** f = forecast

Sources: World Bank, *World Development Indicators*, <http://wdi.worldbank.org/table/WVI1>. Accessed on 12 December 2018
World Bank, *Global Economic Prospects: Darkening Skies*, January 2019

GDP growth rates in recent years have been highly affected by external conditions, particularly for the oil, gas and mineral exporting LLDCs such as Azerbaijan, Kazakhstan, Mongolia and Turkmenistan (Table 1). The Euro-Asian LLDCs except Bhutan, Lao PDR and Nepal went through a particularly challenging time during 1990-2000 when they suffered negative

² UNCTAD, *UNCTADSTAT: Country Profiles*, 2019

growth rates. It was a lost decade for them. Growth started picking up from 2000 and they returned to positive growth, some of them growing robustly such as Azerbaijan averaging 10 percent, Turkmenistan at 9.4 percent and Mongolia at 7.9 percent during 2000-2017. Their engagement in global trade also varies significantly with Kazakhstan's exports of goods and services amounting to \$55,730 million in 2017, compared to \$714 million for Bhutan at the other extreme. These LLDCs by and large depend on export of commodities, semi processed agricultural products and low value added manufactures for exports, keeping them vulnerable to international movements in prices. The sectoral shares of GDP also underline the fragility of these countries where agriculture and services sectors mostly account for the largest sources of value added in the economy. Several of them depend on remittances to sustain growth and development. Most of them have succeeded in reducing income poverty significantly (Table 2). Latest available data indicate that it remains high in Lao PDR, Turkmenistan and Uzbekistan, although more recent situation could be significantly different in these 3 LLDCs. Progress in human development has been slow with most of them scoring quite low in Human Development Index (HDI) global ranking.

Table 2: Incidence of Poverty and HDI in LLDCs

Country Name	Population below \$1.90 a day		Human Development Index (HDI) *		
		%	Value 2017	HDI Rank 2017	HDI Rank 2016
Afghanistan	..	..	0.498	168	168
Armenia	2016	1.8	0.755	83	84
Azerbaijan	2005	0	0.57	80	80
Bhutan	2017	1.5	0.612	134	135
Kazakhstan	2015	0	0.8	58	60
Kyrgyz Republic	2016	1.4	0.672	122	121
Lao PDR	2012	22.7	0.601	139	137
Macedonia, FYR	2014	5	0.757	80	81
Moldova	2016	0.2	0.7	112	110
Mongolia	2016	0.5	0.741	92	92
Nepal	2010	15	0.754	149	148
Tajikistan	2015	4.8	0.65	127	127
Turkmenistan	1998	51.4	0.706	108	106
Uzbekistan	2003	62.1	0.71	105	107

* HDI is a composite index of life expectancy at birth (years, SDG 3), expected years of schooling (SDG 4.3) mean years of schooling (SDG 4.6) and gross national income per capita (2011 PPP \$, SDG 8.5)

Sources: World Bank, *World Development Indicators*, <http://wdi.worldbank.org/table/WV1>. Accessed on 12 December 2018
United Nations Development Programme, *Human Development Indices and Indicators: 2018 Statistical Update*

B. Progress made in infrastructure development and maintenance

The Euro-Asian LLDCs have made significant progress in the development of transit transport infrastructure and maintenance including rail, road, air, waterways and energy pipelines. Several successful initiatives have already started bearing results. Progress has been made in completing missing links and improving the quality of infrastructure, although significant challenges remain. Several LLDCs have adopted new and innovative policies and programmes including transport policy reforms and institution of appropriate regulatory frameworks and adoption of innovative approaches such as road funds or public-private-partnerships for infrastructure financing. Gains have been made in terms of reduced time costs and distance covered due to the development of infrastructure and transit transport networks, improvements in the quality of roads and railway links such as paved roads and modernization of railway systems. LLDCs continue to encounter challenges and constraints including institutional bottlenecks and lack of skilled human resources in developing their infrastructure and improving connectivity.

Infrastructure development and maintenance remains one of the most critical priority areas for building up LLDCs' productive capacity, access global markets, integrate with regional and global markets and attract foreign capital including foreign direct investment. Recognizing this importance, VPoA has laid out several specific objectives to mobilize national and international action: (a) significantly increase the quality of roads, including increasing the share of paved roads, by nationally appropriate standards; (b) expand and upgrade the railway infrastructure in landlocked developing countries, where applicable; and (c) complete missing links in the regional road and railway transit transport networks. LLDCs have continued to invest in their infrastructure and connectivity by undertaking a large number of infrastructure projects and programmes, encompassing a wide spectrum of activities including development of roads, railways, dry ports, air links, logistics services, information superhighways and energy connectivity³.

The Euro-Asian LLDCs have been supported by UNESCAP and UNECE in developing their transport infrastructure. For instance, UNESCAP has continued to support the Euro-Asian LLDCs within the frameworks of the Intergovernmental Agreements on Asian Highway network, Trans-Asian Railway network and Dry Ports. Similarly, UNECE has been acting the custodian of 58 transport-related legal instruments and that 147 UN Member States are contracting parties to at least one of these. In the field of transport

³ See OHRLLS, *Country Reports on Implementation of Vienna Programme of Action for the landlocked developing countries*, December 2018, for detailed discussions

infrastructure development, the Euro-Asian Transport Links (EATL) has identified 9 rail and road links, 17 water transport links, 52 inland river ports and 70 maritime ports; prioritized over 300 infrastructure investment projects; conducted an in-depth analysis of non-physical obstacles to Euro-Asian transport. UNECE also played a key role in creating a Unified Railway Law which will eventually allow railway operators to work within a single legal regime connecting the European and Asian LLDCs along a single axis.

1. Transport infrastructure and maintenance

1.1 Roads

LLDCs in general have made significant progress in developing their roads infrastructure and transport connectivity, although many gaps and challenges remain in terms of poor quality of infrastructure and missing links. Presently, there are no data on **road indicators** for the LLDCs⁴. Calculations done by Office of the High Representative for the Least Developed Countries, Landlocked Developing Countries and Small Island Developing States (UNOHRLLS) based on the most recent data covering 2009 to 2015 indicate that LLDCs as a group has a density (km per 1000 sq. km) of 19.1, constituting just 9.97 percent of transit countries paved roads and 12.64 percent of global paved roads respectively⁵, although these figures conceal significantly large differences between regional groups of LLDCs. Employing a slightly different approach, one estimate suggests a paved road density of 4.7 per 1000 people for selected Asia-Pacific LLDCs⁶, indicating huge scope for further expansion of road network.

The Asian Highway Network, supported by UNESCAP, covers 143,000 km across 32 countries, an outcome which has not changed from the situation prevailing in 2014. Moreover, some 7% of its routes still do not meet the minimum desirable class-III standards and that there are many missing links along the network. Several operational and regulatory requirements, including road permits for bilateral transport, have constrained the performance of the network.

LLDCs have responded quite robustly to meet their road transport infrastructure needs and several **achievements have been made with concrete results**. **Afghanistan** is poised to become a land bridge between South Asia and Central Asia and unlock the potential of trade

⁴ United Nations General Assembly, *Implementation of the Vienna Programme of Action for Landlocked Developing Countries for the Decade 2014-2024*, A/73/297, 3 August 2018.

⁵ *Ibid*

⁶ Branchoux, Candice; Lin Fang and Yusuke Tateno, *Estimating Infrastructure Financing Needs in the Asia-Pacific Least Developed Countries, Landlocked Developing Countries, and Small Island Developing States*, *Economies* 2018, www.mdpi.com/journal/economies, accessed on 11 January 2019

complementarity between these two regions. A World Bank estimate, reported in Afghanistan's country report, indicates that \$5.2 billion in traded goods could be transited through the country. Afghanistan has pursued this strategy through two major regional cooperation platforms: Regional Economic Cooperation Conference on Afghanistan (RECCA) and Heart of Asia – Istanbul Process (HoA-IP). New initiatives under RECCA include Center for Research and Evaluation; RECCA Chamber of Commerce and Industries; Women's Economic Empowerment Initiative⁷. The on-going work on major transit and transport corridors in and around Afghanistan include the Lapis Lazuli Route, Chabahar Corridor, Five Nations Railway, and BRI and Afghanistan. The country is also engaged in efforts to utilize the TIR system with neighbouring and regional countries including through pilot shipments. It has adopted the National Infrastructure Plan and efforts are on-going in areas such as infrastructure development and adoption of PPP Law and Policy, the latter to close the infrastructure investment gaps.

The Lapis Lazuli Route Agreement was finalized and subsequently signed by Afghanistan, Turkmenistan, Azerbaijan, Georgia and Turkey on 15 November 2017 in Ashgabat⁸. Under this corridor, Afghanistan opened a new international trade route on 13 December 2018 with the aim of linking up directly with Central Asia and Europe⁹. The route, known as the Lapis Lazuli corridor, represents the latest effort in a series of energy and transport projects that will make Afghanistan a hub at the heart of Central Asia. The corridor includes roads, rail and maritime routes and runs from Afghanistan to Turkmenistan, Azerbaijan and Georgia, crosses the Black Sea to Turkey and finally enters Europe. The agreement covers both hard and soft infrastructure including areas such as infrastructure facilities for multimodal transport, transport cooperation, visa facilitation and simplification of customs procedures.

The Government of **Armenia** has been promoting public-private partnerships for infrastructure development¹⁰ with a focus on transport, energy and telecommunications. It is in the process of drafting a new Public Private Partnership (PPP) Law. In the road sector, Armenia begun the construction of the North-South Road Corridor with an investment outlay of US\$1.5 billion¹¹.

⁷ Islamic Republic of Afghanistan, Office of the Chief Executive and Ministry of Foreign Affairs, *Vienna Programme of Action for Landlocked Developing Countries for the Decade 2014-2024: Afghanistan Country Report*, February 2019

⁸ *Ibid*

⁹ Bdnews24.com, *Afghanistan opens new trade route with aim of building link to Europe*, m.bdnews24.com/en/detail/economy/..., accessed on 17 January 2019

¹⁰ Republic of Armenia, Ministry of Economic Development and Investments, *National Plan of Action of the Republic of Armenia in the Framework of Implementation of the Vienna Programme of Action for Landlocked Developing Countries for the Decade 2014-2024*, December 2018

¹¹ The Economist Intelligence Unit 2016, *"One Belt, One Road": An economic roadmap*

Azerbaijan is actively modernizing and upgrading its motorways system. Presently, it has 18,994 km of motorways¹². It is upgrading AH-8, connecting Hajigabul-Bahramtapa-Horadiz-Minjivan to Armenian border. It has also started several road projects involving new construction, rehabilitation and upgrading its AH-5 (East-West Baku Alat-Qazakh-Georgia border). During 2003-2013, it constructed and upgraded major highways on Baku-Iranian Border, Baku-Georgia-Border, and Baku-Russian Federation Border. During this time, over 7000 kms of motorways were constructed and rehabilitated. During 2003-2014, Azerbaijan invested \$21 billion for transport sector including \$13.6 billion for road transport (of which \$3.2 billion in loans from international financial institutions), \$1.3 billion for maritime transport and \$2.7 billion for aviation. More recently, the completion of 105-km line section between Kars (Turkey) and Akhalkalaki (Georgia) has improved Azerbaijan's access to the Mediterranean Sea particularly to some of Turkey's ports located along the Mediterranean Sea¹³.

Bhutan has launched the Bhutan Transport 2040: Integrated Strategic Vision and stepped up its efforts in improving both the surface and air transport services¹⁴. As of June 2018, more than 18,396 km of roads have been built as part of the National Highway network, linking Thimpu with central and eastern districts. A series of north-south links have also been built to the border with India. Some 11,196 km of farm roads have also been built across Bhutan. It has allocated \$17.9 million on maintaining its road infrastructure during the 11th Five Year Plan. Bhutan is working towards a low emission transport system with emphasis on electric vehicles and establishment of quick charging stations and provision of other incentives. Bhutan has adopted a Nationally Appropriate Mitigation Action Plan for its transport sector to control air pollution generated by light vehicles and is presently looking into the possibility of introducing a Bus Rapid Transit system in its cities.

Kazakhstan is at the crossroad of Europe, China and South Asia with enormous transit and transport potential¹⁵. During the last 10 years, Kazakhstan has reconstructed 6,300 km of automobile roads and the capacity of the Caspian port has been increased to 26 million tons. Together with investments in rail and port facilities, Kazakhstan is now at the center of strategic corridors that directly connect Asia and Europe. One of the flagship road projects is the international transport corridor

¹² Permanent Mission of the Republic of Azerbaijan to the United Nations, *National Report on the Implementation of the Vienna Programme of Action in Azerbaijan*, December 2018

¹³ The Economist Intelligence Unit 2016, *"One Belt, One Road": An economic roadmap*

¹⁴ Royal Government of Bhutan, *National Report: Mid-term Review of the Vienna Programme of Action for Landlocked Developing Countries for the Decade 2014-2024*, December 2018

¹⁵ Permanent Representative to the United Nations, *Kazakhstan National Report on Implementation of the Vienna Programme of Action*, December 2018

“Western Europe-Western China, forming the shortest road route to Europe with the cargo transportation time reduced to 10 to 12 days. This will lead to increased transport connectivity along the Western Europe – Western China Road Corridor within Almaty Oblast. Two more projects which will significantly improve Kazakhstan’s infrastructure are the Centre South Road Corridor, being built at an estimated cost of US\$2.56 billion and the Almaty ring road at an investment cost of US\$680 million¹⁶.

Kyrgyzstan has a bilateral agreement on road transport with the Russian Federation, China, Islamic Republic of Iran, Turkey and Pakistan.

In **Lao PDR**, the adoption of the Logistics Master Plan in 2015 has seen considerable progress in the development of roads, expressways, logistics dry port and special economic zones¹⁷. Lao PDR has about 60,000 km of roads in 2017, of which only 19 percent is paved.

Mongolia has undertaken a number of projects to improve its domestic as well as cross-border connectivity with its neighboring countries including the construction of roads along AH-4 and the Millennium road, the latter aligning itself with AH-32. Another notable project which is at planning stage is Mongolia’s Trans-Mongolia Rail- Ovoot extension, at an investment cost of US\$1.3 billion. Mongolia has agreed to establish the Mongolia-Russia-China economic corridor, a trilateral multifaceted cooperation programme that aligns its “Development Road” programme to the Belt and Road Initiative¹⁸.

Nepal has prioritized road transport sector as the main thrust area as it accounts for 92 percent of Nepal’s trade. By the end of 2017-2018 Financial Year, Nepal was able to increase the length of strategic roads to 29, 639 km which includes 9,534 km black topped roads, 6,956 km graveled roads and 9,534 km earthen roads. It has completed or in the process of completing several road projects including conversion of the East-West Highway (EWH) into a four-lane highway, widen the 87 km of the EWH, and the Galchhi-Trishuli-Rasuwasgadhi highway, connecting Nepal with China¹⁹.

Tajikistan has set the goals of becoming a transit country; participate in the development of New Silk Road; and improve conditions for international transport corridors. It has adopted the National Strategy of

¹⁶ The Economist Intelligence Unit 2016, “One Belt, One Road”: An economic roadmap

¹⁷ Lao People’s Democratic Republic, *Mid-term Review of Vienna Programme of Action (2014-2024)*, Vientiane, 4 February 2019

¹⁸ Government of Mongolia, *National Report on Implementation of the Vienna Programme of Action*, December 2018

¹⁹ Government of Nepal, *A Report on the Status of Implementation of the Vienna Programme of Action in Nepal: Nepal’s Mid-Term Review*, December 2018

Development 2030 which includes development of transport corridors, investment in transport infrastructure and expansion of new information and communication services. Other key priorities of Tajikistan include development of transit transport corridors; aligning transport facilities with international standards; construction of modern border terminals; acquisition of vehicles for international transport; reduce the dependence on transit routes of one country; creating border transport and logistics centres; and bringing roads and bridges up to international standards. Tajikistan has attracted around \$2 billion to invest in (re-)construction of over 2100 km of roads, 31 km of tunnels, 240 bridges, and 132 km railroads.

The country has constructed or improved some 1650 km of highways, improving its connectivity with border points with China, Kyrgyzstan and Uzbekistan. Several other projects have been undertaken for completion by 2025 within the frameworks of Asian Highway network, CAREC, Eurasian Economic Community and the Transport Corridor Europe Caucasus Asia. Key challenges faced by Tajikistan included limited railway access to other countries; weak links between international transport corridors and the internal road network; absence of a network of transport and logistics centres; non-compliance with the requirements of international standards for safety and operation of transport; the growth of air pollution and lack of emission controls and quality checks for compliance with environmental standards and regulations.

Despite these achievements by the Euro-Asian LLDCs, development of road infrastructure has continued to face several **constraints and challenges**. In most instances, roads in LLDCs remain underdeveloped and insufficiently connected both internally as well as with their neighbors and transit partners with uneven quality. In many LLDCs, roads are not built for all-weathers. As a result, roads get damaged or washed away in adverse weather conditions. Time spent on transporting goods and people on roads is also very high due to missing links and poor quality with adverse impacts on trade volume and trade costs. Lack of sufficient human resources and skilled managers have hampered the development of roads of international standards, particularly highways and interstate motorways. Complex land property rights also hampers development of national road systems as acquiring lands is both a long and costly process, most often leading to inordinate delays in construction and escalation of costs. In many instances, lack of coordination and overlapping functions and responsibilities amongst Ministries/Departments has appeared as a major constraint in national efforts to build well-functioning national road and highway systems. Efficiency of national road system is also constrained by lack of road connectivity with rural and framing areas with adverse impacts on rural

incomes and productivity. Maintenance of national road systems is also a major challenge as most of the road development projects are financed either by development partners and national budgetary resources where very little allocation is made for meeting future maintenance costs, resulting in poor maintenance and gradual decay of road quality. Poor quality of roads also has increased road fatalities in several LLDCs. Inadequate emission standards have also come under scrutiny as and pollution-related diseases have increased considerably in recent times. In several LLDCs, difficult topography as in Bhutan, Lao PDR and Nepal and local conflicts as in Afghanistan have hampered the development of roads infrastructure. National highway systems have encountered difficulties in connecting with transit countries due to a plethora of factors, including absence of effective regional and sub regional agreements, absence of agreed standards, regulations and frameworks, and scarcity of investment funds. Development of inter-country road and highway networks face the added problem of apportioning costs and benefits between participating LLDCs and their neighbors. Development of inter-country road transport systems is hampered by restrictive transport services policies and underdeveloped logistics hubs.

LLDCs, transit countries and their development partners need to undertake certain measures on an urgent basis to develop their road and highways. Some of the recommendations that could be considered for developing roads include the following:

- LLDCs need to have very clear national road development policies, programmes and action plans and integrate those in their national development strategies and long term planning process with specific objective of increasing the share of paved roads in the national transport system.
- Construction of roads and national highway systems including corridors along the transit routes should be aligned with efforts in achieving sustainable development goals and promoting green growth strategies.
- LLDCs should liberalize road transport services and allow more private sector participation in this sector.
- LLDCs and transit countries should complete missing links in regional road networks and promote multilateral and regional permit systems in road transport and increase multilateral quota systems among LLDCs and transit countries.
- LLDCs, transit countries and their development partners need to strengthen their efforts in improving road connectivity with a particular emphasis on upgrading the existing road systems to international standards.

- Build new roads and complete missing links and adopt new and innovative technologies for managing road infrastructure and controlling traffic movements.
- Transit countries should come forward with enough financial resources and concrete plans to complete the missing links and build cross-border infrastructure facilities including roads.
- Bilateral and regional agreements and frameworks should be used as platforms for cross-border cooperation in road network development.
- Funding agencies should make clear commitment to the LLDCs and allocate sufficient funds, both for construction as well as maintenance of roads systems.
- National Governments need to match external resources with sufficient allocation in national budgets including raising resources through user-fees and licensing fees, part of which can be set aside for upgrading and maintenance of roads and highways.
- LLDCs need to undertake urgent regulatory reforms where necessary, and establish national regulatory authorities with clear roles and responsibilities.

1.2 Railways

In the **railways** sector, very little **progress** seems to have taken place in terms of constructing **additional rail lines** from 2014 to 2016 (Table 3). Total route-km in several LLDCs have remained more or less the same in 2016 compared to 2014 with some gains in Kazakhstan and Uzbekistan. In several LLDCs, the total route-km decreased, possibly due to closure of uneconomic lines or construction of more efficient alternative transport infrastructure. UNESCAP estimates suggest that transit cargo moves with an average speed of 300-400 km per 24 hours on most corridors in North, Central and South-East Asia. This translates into 12.5 to 16.6 km per hour, a highly uneconomical outcome. While some reductions in time spent at border-crossing points have been achieved, average time spent at borders on CAREC Corridors by road increased by 69% between 2014 and 2017. The Trans-Asian Railway Network, supported by UNESCAP, connects 28 countries and covers 118,000 km. Some 10.5% of the network is awaiting to be constructed with missing links and differing levels of operational readiness along the network. The UNECE supported Euro-Asian Transport Links project (EATL) has connected nearly 40 countries in Europe and Asia. Findings under Phase III of the project indicate that on-time delivery was the principal factor now driving the increase in Euro-Asian freight flows. The share of rail transport is growing rapidly with the introduction of container “block trains” and the train routes between China and Europe have been growing rapidly from almost non-existent 10 years ago to connecting 35

Chinese cities with 34 European cities today. Euro-Asian rail freight transport transit time has more than halved over the past decade.

Table 3: Railways connectivity

Country Name	Railways						
	Rail lines			Passengers carried		Goods hauled	
	total route-km			million passenger-km		million ton-km	
	2014	2015	2016	2015	2016	2015	2016
Afghanistan	..	..	..	..	..	932	..
Armenia	703	703	679	44	50	807	640
Azerbaijan	2,066	2,068	2,074	490	519	9,407	6,211
Bhutan	..	..	..	..	..	337	..
Kazakhstan	14,767	14,767	15,530	16,932	18,165	253,683	188,159
Kyrgyz Republic	417	..	424	73	41	978	807
Lao PDR	..	..	..	..	..	..	..
Macedonia, FYR	699	683	683	178	99	425	423
Moldova	1,156	1,151	1,151	181	122	1,175	793
Mongolia	1,823	1,810	1,810	1357	956	30,808	12,371
Nepal	..	..	..	..	..	5239	..
Tajikistan	621	..	597	23	18	1635	228
Turkmenistan	3,115	..	3,115	1,757	2,336	19,209	13,327
Uzbekistan	4,192	..	4,304	3,334	3,934	3,084	22,937

Sources: World Bank, *World Development Indicators*, <http://ndb.worldbank.org/table/WVI>. Accessed on 14 December 2018
 OHRLLS, *Statistical Annex on Selected Indicators to Monitor the VPA*, 2017.

Most of the **achievements and progress** in this sector appears to have been made in terms of modernizing and upgrading the existing networks and completing missing gaps. As a consequence, the total number of passengers carried seems to have gone up in most instances with some loss in passenger traffic in several LLDCs. In terms of goods hauled, railways suffered losses in all the LLDCs in 2016 compared to 2015, possibly due to increased competition from new roads being built in the LLDCs. Most of the setback in freight carried by railways was noted in Azerbaijan, Mongolia, Tajikistan, Turkmenistan and Uzbekistan in 2016.

Euro-Asian LLDCs have made some notable **achievements** in developing their **rail transport infrastructure**. For **Afghanistan**, the Five Nations Railway with 902 km of rail within its territory will connect it with China, Kyrgyzstan, Islamic Republic of Iran and Tajikistan. The construction of the 75 km single rail has connected the country with Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan, expanding their domestic markets and fostering closer economic cooperation. Another 205 km railway link is being built from Sangan (Islamic Republic of Iran) to Herat (Afghanistan). A 13 km railway link become operationalized between the Turghundi Cross Border Station to

Sehetabat in Turkmenistan in February 2018²⁰. Afghanistan and China signed an MOU in May 2016 to boost various areas of cooperation between them under BRI. The first train traveled from western China to Afghanistan in August-September 2016 through Kazakhstan and Uzbekistan. These developments have brightened Afghanistan's potential to become the land bridge between Central Asia and South Asia.

Azerbaijan has adopted the programme on modernization of railway transport 2010-2020 under which it plans to develop the railway infrastructure on East-West corridor in conformity to international standards. The programme will include works on track renewal, electrification of rail lines, signaling and communication systems, and procurements of new locomotives and rail cars. Azerbaijan's transport and transit policy as to develop new infrastructure, diversify transport corridors, rational usage of transit corridors, government support for transport projects, harmonizing the legal and institutional framework, widespread introduction of transport and logistics systems to facilitate the transport and movement of goods. Azerbaijan is actively taking part in the Trans-European and Trans-Asian networks and implementation of projects along the East-West and North-South transport corridors to increase its transit potential. Azerbaijan established the Transit Transport Coordinating Council in 2015 which helped the country to reduce cost of transportation, simplify transit procedures and reduce tariffs at Aktau and Turkmenbashi ports. Azerbaijan participates in TRACECA and BRI, and concluded an agreement with Afghanistan, Georgia, Turkey and Turkmenistan on creation of Lapis Lazuli transit route and opened Absheron Logistics Center near Baku in 2018. Another notable achievement has been the opening of the Baku-Tbilisi-Kars railway route on 30 October 2017 which is "the shortest and most reliable route connecting Europe with Asia"²¹. This is a major rail project which will help in removing critical bottlenecks and filling missing links. It has the capacity to handle 1 million passengers and 6.5 million tons of freight at the first phase. Another important initiative in which Azerbaijan is playing a key role is the Astara-Rasht Railway link. Azerbaijan and Islamic Republic of Iran signed the financing agreement in Baku on 28 March 2018. This route will complete one of the missing links in the 7,200 km long International North-South Transport Corridor (INSTC) which will connect Azerbaijan with India, Islamic Republic of Iran and Russian Federation by sea, rail and road.

²⁰ Islamic Republic of Afghanistan, Office of the Chief Executive and Ministry of Foreign Affairs, *Vienna Programme of Action for Landlocked Developing Countries for the Decade 2014-2024: Afghanistan Country Report*, February 2019

²¹ Permanent Representative to the United Nations, *Kazakhstan National Report on Implementation of the Vienna Programme of Action*, December 2018

Kazakhstan has become the main transit country between Europe and Asia as the country has invested heavily in building its basic transit infrastructure with significant economic impact. Presently, more than 18 regular transit routes for container trains between China and Europe run through Kazakhstan with the volume of container traffic doubling every year. In 2018, the country saw a 55 percent increase in container shipment from the level in 2017 with 310,800 Twenty-foot Equivalent Unit (TUE) containers using the China-EU-China route. For 2019, it is planned to achieve the transit traffic volume in the amount of 18 million tons with the volume of transit container traffic reaching 1,200,000 TEU²².

Kyrgyzstan's railroads have a total track length of 425 km with poor interconnections and missing links. It is quite insufficient to meet the growing transport needs of Kyrgyzstan. Two railway projects are planned: China-Kyrgyzstan-Uzbekistan railroad, and Balykchy-Kochkor-Kera-Keche railroad, both of which have the potential to improve its domestic connectivity as well as increase its access to other LLDCs and its transit neighbor, China. International transport corridors that are of interest to Kyrgyzstan include the Bishkek-Osh, Osh-Sarytash-Irkeshtam, Osh-Sarytash-Karmyk, and Bishkek-Naryn-Torugart. It is presently building a North-South transit road artery²³.

In **Lao PDR**, six main railway projects are being implemented under the Lao PDR Railway Strategic Plan of 2016-2030. The Lao PDR-China rail link (Boten-Luang Prabang-Vientiane capital) is being built as part of China's China-Indochina Peninsula Economic Corridor under BRI, covering 409 km which is expected to be completed by 2021²⁴. Another rail project in the pipeline will connect Vientiane with Vung Ang Port in Vietnam with a total length of 452 km which is the shortest line from Lao PDR to the por. Once completed, it will significantly reduce transportation cost for the Lao businesses.

Mongolia has completed 51 percent of the construction work of the Tevan Tolgoi-Gashunn Sukait rail line as of December 2018. It has also completed the feasibility study of the Erdenet-Ovoot and Huh-Bichigt railway line and presently conducting the surveys of the Bogdkahn railway line and the Zuunbayan-Khangai railway line.

²² See *Kazakhstan National Report on Implementation of the Vienna Programme of Action* for a detailed discussion of initiatives taken by Kazakhstan in developing its infrastructure and connectivity

²³ Republic of Kyrgyzstan, *National Report of the Republic of Kyrgyzstan on Implementation of the Vienna Programme of Action for Landlocked Developing Countries for the Decade 2014-2024*, December 2018

²⁴ Lao People's Democratic Republic, *Mid-term Review of Vienna Programme of Action (2014-2024)*, Vientiane, 4 February 2019

Nepal has strengthened its efforts in developing its railway infrastructure. With establishment of the Department of Railways in FY 2010/11, several railways infrastructure projects have been undertaken with assistance from China and India. China Railway First Survey Design Institute Group has completed the pre-feasibility study of the Kathmandu-Kerung rail project. India and Nepal signed a Memorandum of Understanding on preliminary engineering/traffic survey of the proposed Kathmandu-Raxaul railway line. This follows the successful completion of five cross-border railway links between India and Nepal. India has taken several initiatives for strengthening rail connectivity with Bangladesh and Nepal and launched container trucks using radio frequency identification device (RFID) between Kolkata and Birgunj in April 2018.

LLDCs have encountered several **constraints and challenges** in developing their railway connectivity, both internally as well as with their transit neighbours. Railways by and large remain a public good with lumpy and big investment requirements where private sector is not generally interested in building the required infrastructure. As a result, railways sector depends mainly on public sector investment for its growth and development. The resource rich LLDCs have generally found it easier to raise such resources and attract matching funds from donor agencies and foreign investors. LLDCs which are not resource rich particularly those which are also LDCs depend largely on external resources to develop their rail networks.

In general, lack of political will and/or bureaucratic inertia have constrained the development of rail corridors particularly in South Asia, leaving LLDCs such as Afghanistan, Bhutan and Nepal largely isolated from regional integration process. For example, on the southern corridor of Trans-Asian Rail network, container trains are running only between Pakistan, Iran (Islamic Republic of) and Turkey under the ECO initiative, bypassing Afghanistan. Several LLDCs continue to face skills gap in implementing mega rail transport projects, relying on external expertise to close the gaps. Cross-border transport barriers remain major constraints which are further complicated by lack of technical skills in the line Ministries/Departments to implement some of the cutting edge transport facilitation tools and measures. Overlapping responsibilities and proliferation of agencies and entities dealing with rail connectivity issues have also constrained the development of railway networks.

Some of the key recommendations that could be considered in developing and maintaining the rail networks in the LLDCs include the following:

- Integrate railway development policies and programmes in national development strategies and planning process.
- Significantly expand and upgrade railway infrastructure wherever necessary.
- Complete missing links in national and regional railway transit transport networks.
- Support sustainable rail transit systems by upgrading and maintaining networks.
- Promote development of rail corridors along transit routes and adopt cross-border facilitation mechanisms including one-stop border crossings arrangements.
- Harmonize rail gauges between LLDCs and transit countries to facilitate regional rail connectivity.
- Develop logistics hubs including container terminals to promote freight traffic.
- Adopt new and innovative technologies including electronic seal (eSeal) and radio frequency identification device (RFID) which can go a long way in reducing time costs in moving freight from one point to another.
- Support adoption of transport facilitation models namely, Secure Cross Border Transport Model, Efficient Cross Border Transport Model, Model on Integrated Controls at Border Crossings, Electronic Cargo Tracking Systems, Models for Harmonization of Transport Documents, and Cross-border Paperless Trade facilitation and Single Window Systems to promote cross-border rail and road connectivity.

1.3 Dry ports

Supported by UNESCAP and UNECE, **dry ports** are becoming increasingly popular with the LLDCs, particularly along their borders with transit countries. The Intergovernmental Agreement of Dry Ports covers 247 dry ports in 27 countries and provides a framework for a common approach to dry port development and operation in the region.

An integral part of multimodal transport systems, dry ports create synergy between economies and become hubs for economic activities with backward and forward linkages. Dry ports have the potential to transform landlocked developing countries into land-linked developing countries with increased access to external markets. Some notable **achievements** have been made during the last few years. Several LLDCs have signed the ESCAP Intergovernmental Agreement on Dry Ports which came into force on 23 April 2016. As of 31 July 2018, 17 member States of ESCAP signed the agreement and 13 have become parties through ratification, acceptance, approval or

accession, including several LLDCs. Opportunities exist to connect Afghanistan's eight functional dry ports including those located in Kabul, Jalalabad and Kandahar with the Chabahar port in the Islamic Republic of Iran. A 218 km road link is expected to connect Delaram (India) with Zaranj (Afghanistan), which is adjacent to the border of the Islamic Republic of Iran. Kazakhstan completed the construction of a dry port and related infrastructure in the east of the country, bordering China, as part of the Khorgos-Eastern Gate Free Economic Zone initiative. It has a total area of 129 hectares and integrated with logistics and industrial zones. This dry port provides customers a full range of transport and logistics services under the "one-stop-shop" principle including customs and brokerage services. Kazakhstan in partnership with China established the Khorgos Inland Dry Port with each holding 35 percent and 65 percent equity respectively in the port. Nepal has built three such ports at Birgunj, Bhairahwa and Biratnagar. These dry port constitute excellent examples for other interested LLDCs contemplating establishment of similar facilities.

Several **constraints** have continued to be faced by the LLDCs in promoting dry ports as part of their multi-modal transport systems. Lack of financial resources and shortage of skilled personnel have hampered the development of dry ports in the LLDCs. Poor logistics services, inadequate transport network and physical infrastructure at border points including dearth of bonded warehouses are some of the critical bottlenecks which prevent utilization of dry ports potential. In several instances, participating countries have not made sufficient and reciprocal progress in developing infrastructure at their border points.

Some recommendations that could be considered in overcoming the constraints faced by the LLDCs and developing their dry ports could include the following:

- LLDCs which are yet to sign should do so and ratify the ESCAP Intergovernmental Agreement on Dry Ports.
- LLDCs should proactively address issues related to the location, management and operations of the dry ports and delineate their functions and clarify ownership structures including the extent of private ownership.
- Provide incentives to private operators including low cost land and tax breaks.
- Provide training to create pools of skilled personnel and managers and establish retention mechanisms.
- Secure funding including from development partners and transit countries in establishing and running the dry ports.

- Establish nodal agencies which can coordinate all matters related to the operation and management of dry ports including ensuring policy coherence.

1.4 Inland waterways and access to sea ports

Inland waterways play a key role in most of the Euro-Asian LLDCs in transporting goods and passengers. Several LLDCs have considerable waterways including Afghanistan 1200 km, Kazakhstan 4000 km, Kyrgyzstan 600 km, Lao PDR 4,600 km, Mongolia 580 km, Moldova 558 km, Tajikistan 200 km, Turkmenistan 1300 km, and Uzbekistan 1100 km. Apart from carrying passengers and providing livelihood opportunities to people living along these waterways, they are vitally important in transporting consumer and capital goods particularly bulk items to hinterlands and remote areas.

Several constraints and challenges have adversely affected the development and growth of these inland waterways in the LLDCs including reduction of water level at low periods and gradual siltation of their major rivers and canals. Inland waterways are generally owned and managed by public sector entities while the private carries out most of the transport activities. Constraints related to mobilizing sufficient financial resources to dredge the waterways and ensuring proper operation, management and regulation have hampered the development of these waterways.

Access to sea ports – which are located in transit/coastal countries – is fundamental to the development of the LLDCs and their efforts in becoming linked with international markets. Access to sea ports is one of the most important preconditions for improving the competitiveness of LLDCs in international markets, both for exporting their merchandise products as well as importing critical industrial raw materials, plants and machineries. Some progress has been made in this regard. To access these ports, LLDCs need the cooperation and support from their transit neighbours.

Azerbaijan is constructing the New International Sea Trade Port Complex in Alyat settlement of Baku²⁵. It is located about 70 km from the capital city and located at the intersection of “East-West” and “North-South” transport corridors with direct access to main railways and highways in Azerbaijan. The port is expected to be built in an area covering 400-hectre of land including 100-hectre set aside for development of an international logistics centre. The port will be

²⁵ Permanent Mission of the Republic of Azerbaijan to the United Nations, *National Report on the Implementation of the Vienna Programme of Action in Azerbaijan*, December 2018

completed in three phases, first of which has been completed with a capacity of 15 million tons of cargo and 100,000 containers per year.

Inland waterway development remains a challenge in **Lao PDR** with the Mekong River and its tributaries flowing through the country for over 2000 km. During the dry season, the navigable length gets significantly reduced for river transportation to 1,300 km.

The Islamic Republic of **Iran** 's Chabahar port when completely developed will link it to Afghanistan and Central Asia, vastly reducing time and distance in connecting with markets in Central Asia and beyond. The International Transport and Transit Corridor Agreement, also known as the Chabahar Agreement was signed in Tehran in May 2016 among Afghanistan, India and Islamic Republic of Iran. When completed, the Chabahar port is expected to handle 20 million tons of trade annually.

Nepal has cooperation agreement to access the Visakhapatnam port in India. It also has obtained access to two sea ports in Bangladesh since 1976 and five transit points for transit cargoes from Nepal as part of the Trade and Transit agreement between the two countries. Presently, Nepal is using only one land route. Nepal and China signed the Transit Agreement in 2016 which took note of Nepal's right to easy access to and from the sea. They have also agreed to enhance connectivity including accessing sea ports in China within the Trans-Himalayan Multi-Dimensional Connectivity Network.

While the development and management of these sea ports are firmly in the hands of transit countries, there is scope for joint development of such port facilities whereby the participating LLDCs can derive significant benefits. Resource rich LLDCs have in particular the financial means to undertake such joint ventures with support from their development partners and transit countries. **Kazakhstan** for example has undertaken a project to build a terminal in the port of Bander Abbas, located in the Islamic Republic of Iran, a transit country. The project has several phases. The first phase will see the creation of a logistics company to consolidate cargo capabilities which was registered in Iran in June 2017. The second phase will see the construction of the terminal itself. Kazakhstan is cooperation with India is also looking into the feasibility of building a terminal in the port of Mundra in India.

Several constraints have hampered the progress in accessing sea ports located in transit and coastal countries. One is transit security and safety of goods as well as vehicle operators within the transit country (s). Some transit countries do not allow road carriers to go beyond some specific cities and block access to their sea ports. In some instances, transport

operators from LLDCs have to cross multiple transit countries to access sea ports which make it extremely difficult to do so in the absence of binding transport cooperation agreements.

Several recommendations could be considered for further developing the inland waterways and ensuring access to sea ports in transit/coastal countries:

- Allocate more investment resources to make inland waterways navigable during the entire year.
- Encourage increased private sector participation in the development and operation of inland waterways.
- Adopt new and innovative technologies to improve the operational efficiencies of inland water vessels and inland port facilities.
- Encourage transit and coastal countries to cooperate with LLDCs in ensuring their full right to access sea ports located in these countries.
- Support development of transit infrastructure and removal of trade and transport barriers in facilitating LLDCs' access to the sea ports.
- Increase funding support by international financial institutions and other bilateral funding agencies/arrangements in building transit infrastructure in accessing sea ports.

1.5 Aviation

Aviation is a key means through which LLDCs can maintain contact with countries beyond their borders. It provides access to international markets without going through transit countries. In **air** connectivity, there appears to be slow progress overall from 2014 to 2017 in registered carrier departures worldwide (Table 4). Several LLDCs including Afghanistan, Azerbaijan, Kazakhstan, Kyrgyzstan, Lao PDR, Moldova, Turkmenistan and Uzbekistan enjoyed robust growth in the number of passengers carried in 2017 compared to 2015. In air freight, very little movement seems to have taken place except perhaps in Azerbaijan and Uzbekistan.

Table 4: Aviation connectivity

Country Name	Air					
	Registered carrier departures worldwide		Passengers carried		Air freight	
	thousands		thousands		million ton-km	
	2014	2017	2015	2017	2015	2017
Afghanistan	26	24	1,930	1,859	33.1	25
Armenia	..	..	..	..	..	..
Azerbaijan	22	25	1,800	2,331	41.95	751
Bhutan	9	8	160	293	0.54	1
Kazakhstan	91	65	5,080	5,653	37.67	49
Kyrgyz Republic	17	27	630	1,127	0.07	0
Lao PDR	13	10	1,180	1,196	1.36	1
Macedonia, FYR	..	..	..	..	..	..
Moldova	8	14	1,010	1,093	0.49	1
Mongolia	6	5	540	603	7.13	8
Nepal	20	34	510	780	4.54	6
Tajikistan	8	5	800	796	0.11	4
Turkmenistan	6	11	2,140	1,280	0	6
Uzbekistan	2.3	22	2,490	2,582	114.33	127

Sources: World Bank, *World Development Indicators*, <http://wdi.worldbank.org/table/WV1>. Accessed on 14 December 2016
OHRLLS, *Statistical Annex on Selected Indicators to Monitor the VPA, 2017*

Key issues and challenges that have constrained development of aviation industry in LLDCs include the extent to which LLDCs and transit and other countries are willing to liberalize their air transport services, removal of restrictions on ownership in national airlines, full liberalization of frequencies, tariffs and capacity, and mobilization of sufficient financial resources to build new aviation facilities, upgrade existing ones and maintain all related facilities including through public private partnerships. Skilled personnel to run national airlines and manage aviation infrastructure including airports and ancillary facilities are also a significant challenge for the LLDCs. Most of the national airlines also need urgent fleet renewal and development and upgrading of airports and other facilities that meet internationally agreed safety and operational standards.

Some recommendations that could be considered include the following:

- Strictly adhere to ICAO safety standards and protocols.
- Mobilize financial resources including through public-private partnerships in developing new airports and upgrading existing ones.
- Streamline management structures of national airlines including those engaged in air freight and cargo movement.

- Gradually liberalize air transport services, remove restrictions on ownership and promote private sector participation in national aviation systems.
- Invest in skills development and retention programmes.

2. Energy infrastructure

Energy infrastructure and access to affordable, reliable and renewable and related technologies are critically important for LLDCs in achieving economic growth, industrial development, manufacturing diversification, and establishing export-oriented enterprises. Overall, Euro-Asian LLDCs need to increase renewable energy consumption, which was lower than total LLDC average. However, Euro-Asian LLDCs as a whole seems to have done much better than their counterparts in other regions of the world. Significant progress has been made in areas such as oil and gas line connectivity, hydro power production and connectivity, and increased public-private partnerships.

In improving access to electricity, the region seems to have done better which grew to 96% of the population for LLDCs in the region, compared to 61.7% for all LLDCs. Access to electricity was quite high as early as in 2014, reaching 100 percent in 10 of the 14 LLDCs in this group (Table 5). Notable exceptions were Lao PDR, a hydro-power surplus country, and Mongolia and Nepal, reflecting the difficult to reach terrain in the latter two LLDCs. In terms of consumption per capita, at least two LLDCs namely Kazakhstan and Macedonia FYR have exceeded the world average of 3127.36 kWh per capita in 2014. It is particularly low in Nepal (139.1 kwh. per capita) with Moldova and Tajikistan falling below 50 percent of the global average.

Table 5: Energy access: electricity

Country Name	Electric power				
	Access to electricity		Consumption per capita		Transmission and distribution losses
	% of population		kWh		% of output
	2014	2016	2012	2014	2014
Afghanistan	89.5	84.0	..	..	..
Armenia	100.0	100.0	1894.0	1965.8	12.0
Azerbaijan	100.0	100.0	2053.0	2202.4	13.6
Bhutan	100.0	100.0	..	..	..
Kazakhstan	100.0	100.0	5181.0	5600.2	6.7
Kyrgyz Republic	99.8	100.0	1809.0	1941.2	23.7
Lao PDR	78.1	81.0	..	..	..
Macedonia, FYR	100.0	100.0	3681.0	3497.0	19.9
Moldova	100.0	100.0	1515.0	1386.2	21.5
Mongolia	85.6	82.0	1594.0	2017.5	14.8
Nepal	84.9	91.0	118.0	139.1	32.2
Tajikistan	100.0	100.0	1735.0	1479.8	17.0
Turkmenistan	100.0	100.0	2429.0	2678.8	12.5
Uzbekistan	100.0	100.0	1611.0	1645.4	8.8

Source: World Bank, World Development Indicators, <http://ndb.worldbank.org/table/5.11>. Accessed on 14 December 2018
OHRLS, Statistical Annex on Selected Indicators to Monitor the VPoA, 2017

Several LLDCs particularly oil and gas rich LLDCs and their transit neighbors have undertaken oil and gas projects and made significant progress in energy development and energy connectivity. **Afghanistan** is an active member of the Turkmenistan-Afghanistan-Pakistan-India Gas pipeline project, Central Asia-South Asia Regional Energy Market CASA 1000, and Turkmenistan-Afghanistan-Pakistan 500-KV energy project.

Azerbaijan inaugurated the Southern Gas Corridor project at Sangachal Terminal on 29 May 2018. This project will contribute significantly to enhance Europe's energy security. As part of this corridor, the Trans-Anatolian Natural Gas Pipeline (TANAP) was opened in Eskisehir on 12 June 2018. The Shah Deniz II gas field, being jointly developed by Azerbaijan, Georgia and Turkey at an investment outlay of US\$28 billion²⁶, delivered its first commercial gas to Turkey on 30 June 2018. 74.6 percent of the work on the Trans-Adriatic pipeline (TAP) being constructed under the Southern Gas Corridor was completed by February 2018. Azerbaijan is developing several other gas and oil fields including Azeri and Chiragli fields and the deep-water part of the Gunashli field which are likely to significantly contribute to the energy security of participating LLDCs and transit countries and destination markets in EU.

²⁶ The Economist Intelligent Unit, "One Belt, One Road": An Economic Road Map, March 2016.

Bhutan has identified affordable, reliable and renewable energy as priority for sustainable development. It has adopted the Sustainable Hydropower Development Policy 2008 which sets out the framework and guidelines for sustainable use of its hydropower potential. 96.6% of the households in Bhutan used electricity as the main source of energy for lighting in 2017. It has a hydropower potential of 30,000 MW, of which only 23,760 MW are techno-economically feasible. With current installed capacity of 1600 MW, 70 percent of which is exported to India, Bhutan becomes an energy importing country during the dry season. The country also faces significant resource gaps in realizing the investments needed to ensure access to affordable, reliable, sustainable and modern energy. The commissioning of the Punatsangchhu I and II and the Mangdechhu hydro power projects, Bhutan's installed capacity is expected to go up to 5000 MW by 2020 which should ease its energy security situation and boost energy exports, although it remains highly vulnerable to climate change consequences. Bhutan has undertaken detailed studies for various energy projects and other renewable energy sources are being promoted to meet growing domestic demand. Other initiatives such as promotion of efficient cooking stoves, installation of biogas plants, promotion and distribution LED bulbs; promotion of regional hydropower energy cooperation with Bangladesh and India to combat global warming are underway.

Kyrgyzstan possesses ample reserves of energy resources including major coal reserves and hydropower, the latter accounting for 30 percent of the entire hydropower resources of Central Asia and estimated to be 245.2 billion kWh. Work has begun on the international project CASA- 1000 (Central Asia- South Asia 1000 MW) which includes the construction of a power distribution system that will link Kyrgyzstan and Tajikistan with the Islamic Republic of Iran and Pakistan. Kyrgyzstan has introduced a number of legislation and regulatory measures to harness its energy potential and improve energy connectivity.

In **Lao PDR**, hydropower production went up from 302 ktoe in 2000 to 1,232 ktoe in 2015. Due to its abundant water resources, the country is expected to operate 100 hydropower plants with combined installed generation capacity of 28,000 MW and annual power output of about 77,000 million kWh by 2020. The country exports most of its electricity to Thailand but has to import energy during dry season.

Nepal has succeeded in overcoming its perennial power crisis. It has enormous potential in hydropower generation, estimated to be 43, 130 MW that is economically viable. The Government has renewed its efforts in developing and expanding hydropower electricity.

Presently, 88 power projects are being implemented. Private sector is playing a critical role in Nepal's energy sector.

In early 2018, **Turkmenistan** announced the start of work on the Afghan side of the \$10 billion Galkynysh gas project - world's second biggest gas field - that will feed the TAPI (Turkmenistan-Afghanistan-Pakistan-India) gas pipeline²⁷. Supported by the United States and the Asian Development Bank, the project was delayed for years due to difficulties in crossing Afghanistan and then connecting to Pakistan and India. The project is expected to help diversify Turkmenistan's gas export markets and reduce its dependence on China and Russian Federation, two of its biggest buyers of natural gas.

With an investment outlay of US\$6.7 billion, Uzbekistan, Tajikistan, Kyrgyz Republic and China are constructing the Central Asia-China Gas Pipeline, Line D. Georgia's Shaukhevi Hydropower Plant (cost US\$417 million), Armenia's Vorotan Hydropower Plant (US\$250 million), and Mongolia's Newcom Salkhit Wind Farm (US\$120 million)²⁸ are few other examples of major energy projects which have either been completed or awaiting completion.

The LLDCs continue to face several challenges in developing energy infrastructure and connectivity. Lack of long-term energy development strategy, policies and programmes have hindered the growth of energy sector. Outdated and inefficient grid and transmission systems result in transmission and distribution loss. Transmission and distribution systems are often managed and run inefficiently, leading to considerable financial losses for energy companies which are mostly state-owned in the LLDCs. Cross-border energy trade is still at its early stages of development, often lack of investment resources acting as a binding constraint. Revenue generated by exploitation of oil and gas resources are most often diverted to nonproductive use.

LLDCs could consider several recommendations in promoting energy connectivity and energy security including:

- Support expansion and upgrading of supply, transmission and distribution infrastructure.
- Adopt modern and renewable energy sources.

²⁷ Hindustan Times, *Work Begins on Afghan section of gas pipeline to Pakistan, India: Turkmenistan*, <http://www.hindustantimes.com/world-news/work-begins>. Updated: 23 February 2018, accessed on 17 January 2019

²⁸ *Ibid.*

- Set aside part of revenue generated by oil and gas resources for developing country's energy infrastructure.
- Strengthen cross-border energy trade and transit through installation of new transmission lines.
- Adopt national strategies and policies and programmes to promote modern, reliable and renewable energy.
- Increase investments in improving energy efficiency and facilitate green energy development.
- Invest in skills, knowledge and efficient energy technology and innovations.
- Encourage private sector participation in the development of country's energy sector.

3. ICT connectivity

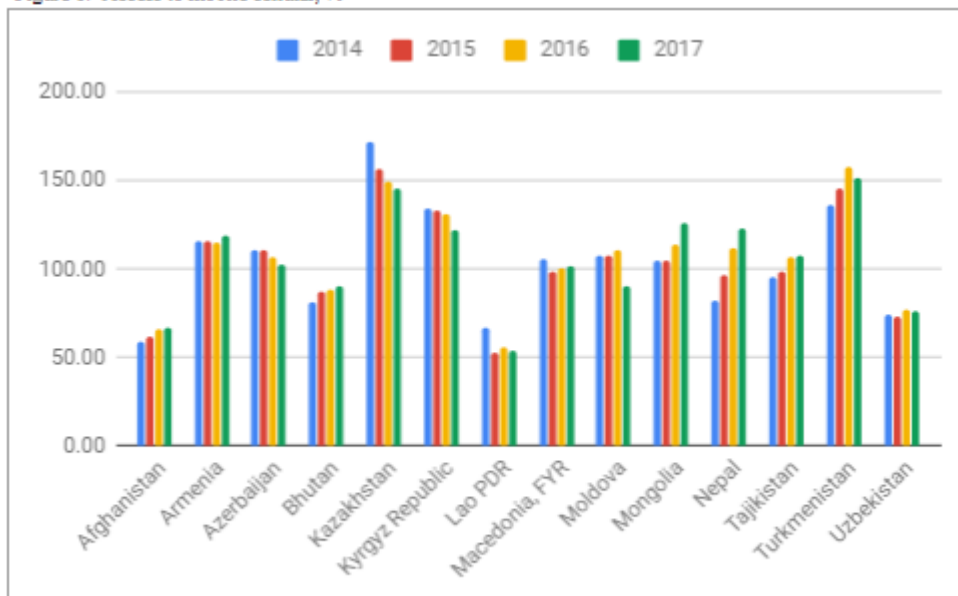
Information and communications technology (ICT) have become an integral part of infrastructure in promoting sustainable development in the LLDCs. VPoA calls on the LLDCs to develop and implement national broadband policies, promote open and affordable access to Internet for all, and actively engage in addressing the digital divide. Most of the LLDCs began with very high levels of mobile use in 2014 and continued to maintain those levels in 2017 (Table 6, Figure 1).

Table 6: Access to telephone and mobile

Country Name	Fixed telephone				Mobile cellular			
	Subscription per 100 habitants				Subscription per 100 people			
	2014	2015	2016	2017	2014	2015	2016	2017
Afghanistan	0.31	0.33	0.33	0.33	58.80	61.60	66.00	67.40
Armenia	19.71	18.90	18.18	17.24	115.90	115.90	114.80	119.00
Azerbaijan	18.89	18.67	17.47	17.18	110.90	111.30	106.30	103.00
Bhutan	3.07	2.77	2.65	2.60	81.60	87.00	88.80	90.50
Kazakhstan	24.89	23.37	21.85	20.25	172.20	156.90	150.00	145.40
Kyrgyz Republic	7.67	6.96	6.42	5.99	134.50	132.80	131.40	121.90
Lao PDR	14.00	14.44	18.74	16.41	67.00	53.10	55.40	54.10
Macedonia, FYR	18.46	17.84	17.70	17.59	105.50	98.80	100.70	101.90
Moldova	29.93	29.57	28.85	28.23	108.00	108.00	111.00	90.40
Mongolia	7.81	8.59	7.44	9.51	105.10	105.00	113.60	126.40
Nepal	2.96	2.96	2.96	2.94	81.90	96.70	111.70	123.20
Tajikistan	5.27	5.35	5.36	5.37	95.10	98.60	106.70	107.60
Turkmenistan	11.42	11.64	11.74	11.84	135.80	145.90	157.70	151.40
Uzbekistan	8.22	9.09	10.85	10.79	73.80	73.30	77.30	76.00

Sources: World Bank, World Development Indicators, <http://wdi.worldbank.org/table/5.11>. Accessed on 14 December 2018
 OHRLLS, Statistical Annex on Selected Indicators to Monitor the VPoA, 2017
 International Telecommunications Union, Statistics <https://www.itu.int/en/ITU-D/Statistics/Pages/stat/default.aspx>. Accessed on 1 February 2019

Figure 1: Access to mobile cellular, %



Source: Based on Table 6

Access to internet improved significantly in 2017 from the levels achieved in 2015 with several LLDCs achieving quite high levels of internet access by 2017 with Armenia (64.3 percent), Azerbaijan (79 percent), Kazakhstan (76.4 percent), Macedonia FYR (72.2 percent), Moldova (71 percent) and Uzbekistan (46.8 percent) leading the group (Table 7, Figure 2). Although from low levels in 2014, fixed broadband subscriptions per 100 population in 2017 also saw increases in most of the LLDCs (Figure 3). Fixed broadband prices in general are coming down and the gap between developed and developing countries is narrowing²⁹, more could be achieved if prices of basic broadband packages could be brought down in line with the purchasing capacities of people, particularly in those LLDCs which are also LDCs.

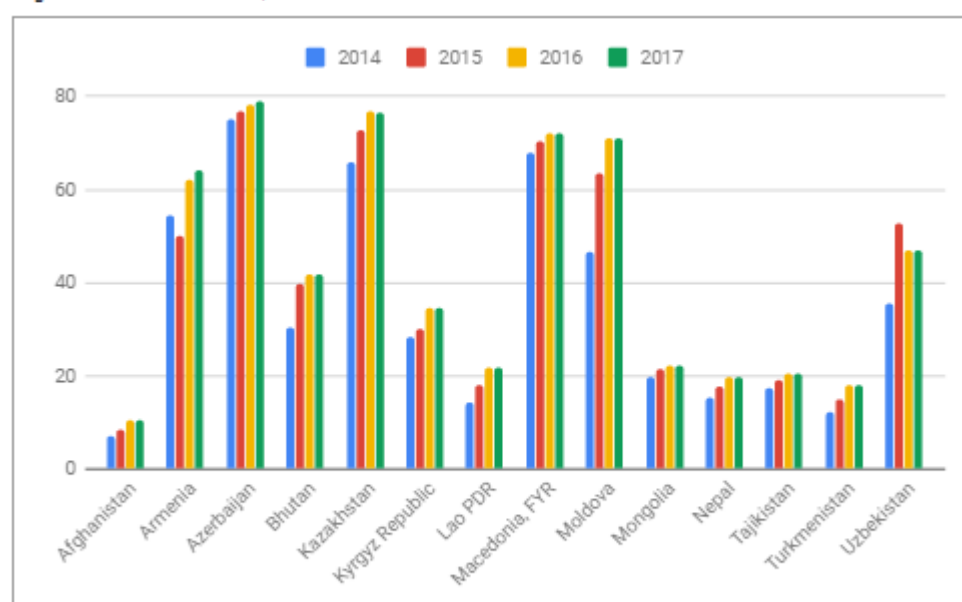
²⁹ International Telecommunications Union, *Measuring the Information Society Report Volume 1 2018*, <https://www.itu.int/en/ITU-D/Statistics/Documents/publication/misr2018>. Accessed on 4 February 2019.

Table 7: Access to internet

Country Name	Internet use				Fixed broadband			
	Individuals using the Internet (% of population)				Subscription per 100 inhabitants			
	2014	2015	2016	2017	2014	2015	2016	2017
Afghanistan	7	8.3	10.6	10.6	0	0.02	0.03	0.08
Armenia	54.6	50.1	62	64.3	9.39	9.82	10.23	10.76
Azerbaijan	75	77	78.1	79	19.97	10.75	18.55	18.37
Bhutan	30.3	39.8	41.8	41.8	3.22	3.54	2.07	2.07
Kazakhstan	66	72.9	76.8	76.4	12.28	12.96	13.06	14.15
Kyrgyz Republic	28.3	30.2	34.5	34.5	2.96	3.61	4.04	4.27
Lao PDR	14.3	18.2	21.9	21.9	0.17	0.18	0.36	0.4
Macedonia, FYR	68.1	70.4	72.2	72.2	17.04	17.43	10.48	11.89
Moldova	46.6	63.3	71	71	12.51	13.14	13.73	14.42
Mongolia	19.9	21.4	22.3	22.3	6.75	6.99	7.47	9.27
Nepal	15.4	17.6	19.7	19.7	0.88	1.06	0.77	1.72
Tajikistan	17.5	19	20.5	20.5	0.07	0.07	0.07	0.07
Turkmenistan	12.2	15	18	18	0.04	0.05	0.07	0.09
Uzbekistan	35.5	52.8	46.8	46.8	2.69	5.77	8.73	10.4

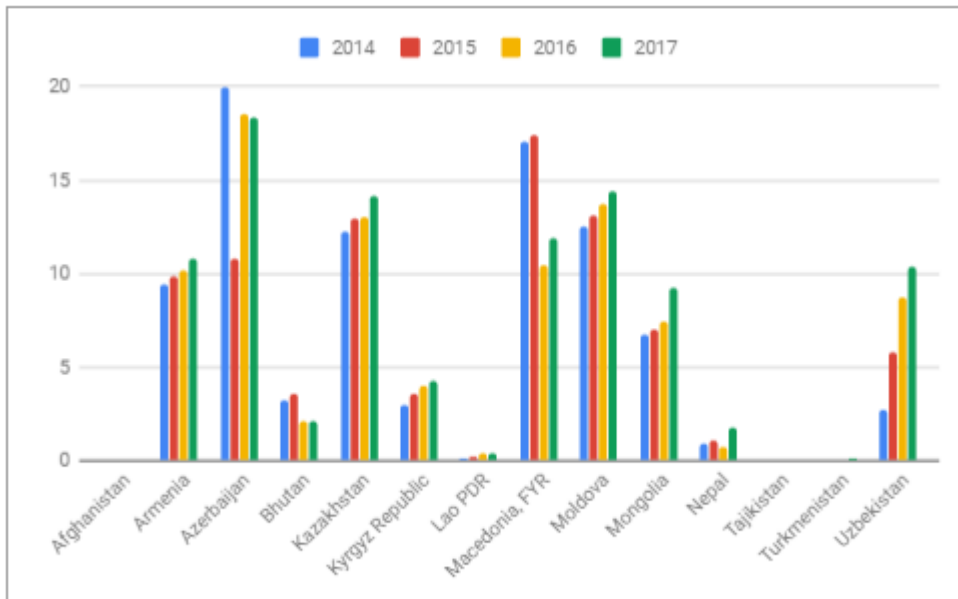
Sources: World Bank, World Development Indicators, <http://wdi.worldbank.org/table/WI1>. Accessed on 14 December 2018
 OHRLLS, Statistical Annex on Selected Indicators to Monitor the VPoA, 2017
 International Telecommunications Union, Statistics <https://www.itu.int/en/ITU-D/Statistics/Pages/stat/default.aspx>. Accessed on 1 February 2019

Figure 2: Access to Internet use, %



Source: Based on Table 7

Figure 3: Access to Fixed broadband, %



Source: Based on Table 7

There are some good practices which can be replicated from the more successful LLDCs to those who are lagging behind in ICT development. For example, **Azerbaijan** which has been ranked 34th in the world for the high percentage of internet users by the Global Competitiveness Report 2017-2018, launched numerous government supported programmes to create a sustainable information infrastructure in the country. It has launched a national Strategy on the Development of Information Society, covering important areas such as development of ICT infrastructure and services, new technologies, promotion of e-governance, effective and transparent public administration, ICT skills training, and cyber security.

Bhutan adopted the Telecommunications and Broadband Policy in 2014 which has been guiding and shaping the development of Bhutan's ICT sector. The Government strengthened its efforts during the 11th Five Year Plan towards the establishment of its ICT architecture, focusing on improved accessibility, affordability, reliability and security of ICT and telecom services. All 20 Districts and 205 blocks now have access to cellular connectivity. Its 12th Five Year Plan aims at consolidating the sector through the implementation of its Digital Druklyul Flagship Program.

Kyrgyzstan has launched an ambitious programme to transform its digital environment. It launched the Taza Koom project in 2017 to bring about the digital transformation of Kyrgyzstan society by introducing a series of laws, regulations and institutional reforms. It

is in the process of launching the State e-Services Portal which is expected to simplify the provision of public services and time taken to deliver those services.

Although significant progress has been achieved in promoting ICT connectivity, LLDCs in general have encountered several constraints and challenges in exploiting the full potential of ICT in prompting their growth and development. Lack of a regionally harmonized regulatory framework has worked against provision of ICT services with greater coverage and at affordable prices. Many LLDCs are yet to make broadband policies universal and are some distant away from promoting open and affordable access to internet for all. Several LLDCs continue to face financial constrains in expanding ICT services. LLDCs lag behind in mobile penetration and internet use and face high cost of ICT services and poor-quality regulation.

Recommendations that could be considered for expanding and deepening ICT connectivity in the LLDCs include:

- Support universal access to fixed broadband services
- Reduce broadband prices in line with purchasing capacities of people
- Formulate national broadband policy to improve access to international high-capacity fiber-optic cables and high bandwidth networks
- Encourage open and affordable access to internet for all
- Invest in skills formation programmes and adoption of new technologies.

Despite significant progress, the **quality of transport related infrastructure** remains a challenge in the LLDCs and needs further attention in coming years. The challenges faced by the LLDCs in this regard is captured by World Bank's Logistics Performance Index (LPI) (Table 8). LPI measures the state and quality of a country's trade and transport related infrastructure. It is a weighted average of a country's scores on six key variables, namely (a) efficiency of the clearance process (i.e., speed, simplicity and predictability of formalities) by border control agencies, including customs; (b) quality of trade and transport related infrastructure (e.g., ports, railroads, roads, information technology); (c) ease of arranging competitively priced international shipments; (d) competence and quality of logistics services (e.g., transport operators, customs brokers); (e) ability to track and trace consignments; and (f) timeliness of shipments in reaching destination within the scheduled or expected delivery time. Table 8 shows that, although getting better, the LPI of all Asian LLDCs fall significantly below global standard and several

of them suffered reversals in 2018 compared to their LPI of 2014. Figure 4 further illustrates the situation.

Table 8: International Logistics Performance Index

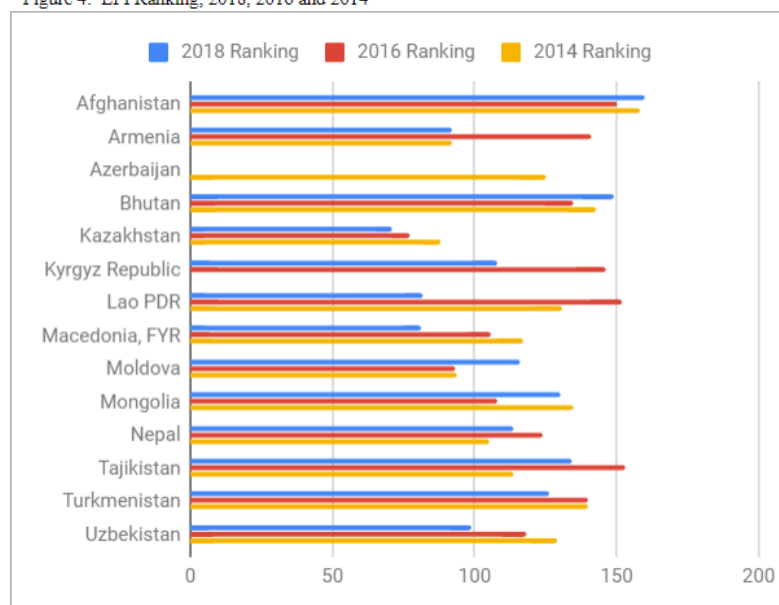
Country Name	Year	LPI Rank	LPI Score *	Customs	Infrastructure	International Shipments	Logistic Competence	Tracking & tracing	Timeliness	2016 Ranking	2014 Ranking
Afghanistan	2018	160	1.95	1.73	1.81	2.1	1.92	1.7	2.38	150	158
Armenia	2018	92	2.61	2.57	2.48	2.65	2.5	2.51	2.9	141	92
Azerbaijan	2018	--	--	--	--	--	--	--	--	--	125
Bhutan	2018	149	2.17	2.14	1.91	1.8	2.35	2.35	2.49	135	143
Kazakhstan	2018	71	2.81	2.66	2.55	2.73	2.58	2.78	3.53	77	88
Kyrgyz Republic	2018	108	2.55	2.75	2.38	2.22	2.36	2.64	2.94	146	149
Lao PDR	2018	82	2.7	2.61	2.44	2.72	2.65	2.91	2.84	152	131
Macedonia, FYR	2018	81	2.7	2.45	2.47	2.84	2.74	2.64	3.03	106	117
Moldova	2018	116	2.46	2.25	2.02	2.69	2.3	2.21	3.07	93	94
Mongolia	2018	130	2.37	2.22	2.1	2.49	2.21	2.1	3.06	108	135
Nepal	2018	114	2.51	2.29	2.19	2.36	2.46	2.65	3.1	124	105
Tajikistan	2018	134	2.34	1.92	2.17	2.31	2.33	2.33	2.95	153	114
Turkmenistan	2018	126	2.41	2.35	2.23	2.29	2.31	2.56	2.72	140	140
Uzbekistan	2018	99	2.58	2.1	2.57	2.42	2.59	2.71	3.09	118	129

* Scale of 1 to 5, 5 being the highest and 1 being the lowest

Source: World Bank, *Global Rankings | Logistics Performance Index, various years*, <http://lpi.worldbank.org/international/global>. Accessed on 11 January 2019

Quality of transport infrastructure therefore remains a serious concern in just about all the LLDCs. High trade and transport costs and delays caused by poor transport systems have reduced the ability of the LLDCs to be competitive and prevent them from taking part in regional trade and investment flows. Underdeveloped and often inefficient logistics services add to their trade costs and make it that much difficult to deliver goods and services on time. Insufficient investment funds in upgrading and properly maintaining existing road and rail networks also pose a binding constraint on their ability to compete internationally.

Figure 4: LPI Ranking, 2018, 2016 and 2014



Source: Based on Table 8

C. Financing needs of infrastructure development and transport connectivity

LLDCs have made good efforts in mobilizing resources for financing their infrastructure needs. In addition to raising resources through direct taxation and other instruments, they have used ODA and FDI as key sources for leveraging resources for infrastructure development and transport connectivity. In recent times, several infrastructure development funds and initiatives such as China's US\$40 billion New Silk Road Fund and the Belt and Road Initiative, World Bank-led Global Infrastructure Forum, Asian Development Bank's Central Asia Regional Economic Cooperation initiative, and the Asian Infrastructure Development Bank with an initial capital of US\$100 billion have become available to them to tap into for external resources. LLDCs have also utilized public-private partnerships in mobilizing resources for infrastructure development. South-South Cooperation and triangular cooperation arrangements have also facilitated the mobilization of financial resources for infrastructure development in the LLDCs. Despite these efforts and increase in the number of facilities, significant infrastructure financing gaps remain, calling for strengthened international support measures, development of implementation capacity and reform of policy and regulatory frameworks including the creation of an enabling environment to increase investment in the infrastructure development.

Considerable financial resources would be needed in closing the infrastructure gaps in the LLDCs. Several estimates have been offered at the regional level. An earlier ESCAP estimate³⁰ showed that the Asia-Pacific developing countries would need \$800 to \$900 billion annually to meet their infrastructure investment gaps in transport, ICT, water and sanitation, and access to electricity. An ADB study in 2017 estimated that \$26 trillion over 2016-29 - \$33 billion per year - would be needed to meet the infrastructure requirements of Asian developing countries³¹. More recently, it has been estimated that the Euro-Asian LLDCs (excluding Macedonia FYR and Moldova) would require \$16,072 million to meet their investment needs in four areas: transport (\$5,604 million), energy (\$5,398 million), ICT (\$2,785 million) and water supply and sanitation (\$2,286 million) per year over a period from 2018 to 2030, accounting for 4.3 percent of their combined GDP³². Of the investment needs, the

³⁰ UN ESCAP, *Financing for Transformation: From Agenda to Action on Sustainable Development in Asia and the Pacific*, <https://www.unescap.org/resources/financing-transformation-agenda-action-sustainable-development-asia-and-pacific>

³¹ Asian Development Bank, *Meeting Asia's Infrastructure Needs*, 2007, Manila

³² Branchoux, Candice; Lin Fang and Yusuke Tateno, *Estimating Infrastructure Financing Needs in the Asia-Pacific Least Developed Countries, Landlocked Developing Countries, and Small*

estimate suggest that more than one-third of the infrastructure spending would have to go towards maintaining existing assets. As a percentage of GDP, total infrastructure investment needs in the Euro-Asian LLDCs (excluding Macedonia FYR and Moldova) would be: Afghanistan 26.3%, Armenia 2.7%, Azerbaijan 2.4%, Bhutan 7.5%, Kazakhstan 2.0%, Kyrgyzstan 15.4%, Lao PDR 10.0%, Mongolia 5.0%, Nepal 19.1%, Tajikistan 16%, Turkmenistan 4.7% and Uzbekistan 7.0%³³. One of the key challenges faced by the LLDCs is the insufficient data and information as well as local underdeveloped capacity in estimating accurately the infrastructure investments gaps they presently face.

III. Review of international trade and trade facilitation

VPoA accords high priority to **international trade** in expanding the LLDCs' participation in global trade and building their productive capacity. Participation is also vitally important for LLDCs to connect with international value chains, diversify their economy and bring about their structural transformation. LLDCs have undertaken a wide variety of measures to improve their trade capacity and harness the potential of international trade as an engine for their growth and development. They have invested in infrastructure and trade connectivity to reduce their isolation from international markets and undertaken trade policy reforms to boost their competitiveness. Despite these, the share of LLDCs in global exports remains insignificant. Even this share is mainly composed of low-value added manufactures and unprocessed or semi-processed natural resources. They continue to rely on limited number of destination countries, and their participation in global exports is constrained by a narrowly-based manufacturing capacity, lack of sophisticated/differentiated products, transit barriers and institutional weaknesses including poor business environment. Low quality infrastructure and missing links also hamper their participation in global trade. Resource endowments and specific structural challenges influence the composition, direction and trends in their trade performance.

A. Slow progress in export performance and trade diversification

VPoA accords high importance to expanding the participation of the LLDCs in international trade and value chains. The specific objectives of VPoA are³⁴: to significantly increase the participation of landlocked developing countries in global trade, with a focus on substantially increasing exports; to significantly increase the value added and

Island Developing States, Economies 2018, www.mdpi.com/journal/economies, accessed on 11 January 2019

³³ *Ibid*

³⁴ General Assembly, Vienna Programme of Action for Landlocked Developing Countries for the Decade 2014-2024, A/CONF.225/L.1*, 3 November 2014.

manufactured component, of the exports of landlocked developing countries, with the objective of substantially diversifying their markets and products; and to further strengthen economic and financial ties between landlocked developing countries and other countries in the same region so as to gradually and consistently increase the share of landlocked developing countries in intraregional trade.

LLDCs continue to face severe difficulties in diversifying their export structure and deepening their trade capacity based on growth in productive capacity and structural change. In assessing their trade performance, LLDCs can broadly be divided into three groups: oil, gas and minerals rich LLDCs, hydropower rich LLDCs, and LLDCs that are net importers of natural resources including oil and gas and largely depend on agriculture and low value-added manufactured goods for export earnings. Many of them also depend on remittances for export earnings and financing their import needs. For example, oil and gas rich LLDCs such as Azerbaijan, Kazakhstan and Turkmenistan have an export structure dominated by mineral fuels, lubricants and related materials. Bhutan, Lao PDR and Nepal rely heavily on the export of hydropower and are dependent on their immediate neighbours for sustaining their energy exports. Similarly, mineral rich Mongolia depends on the export of its mineral resources with China and Russian Federation being its main trade partners. Volatility in commodity prices pose serious challenges to the resource rich LLDCs while the advent of new technologies including increased use of artificial intelligence (AI) in manufacturing and process industries pose fresh challenges to those LLDCs which rely on agricultural products and low-value added labour intensive exports for sustaining growth and development.

International trade plays a key role in the economic growth and development of the LLDCs. In several LLDCs such as Azerbaijan, Macedonia FYR, Moldova, Mongolia, **trade in goods and services** account for bulk of their GDP, ranging from 91 percent to more than 100 percent. As shown in Table 9, export and import of goods and services have fluctuated from 2010 to 2017 in several LLDCs, reflecting their dependence on external conditions and domestic imperatives. Afghanistan, Azerbaijan and Kazakhstan suffered major reversals in their export performance in terms of values from the levels in 2010 to the levels in 2017 (Figure 5). In terms of annual growth of export volume, Afghanistan, Azerbaijan, Bhutan, Kazakhstan, Kyrgyzstan, Nepal, Tajikistan and Uzbekistan performed poorly during 2006-2016 (Table 10). In terms of growth in export value, notable progress was achieved by Armenia (6.4 percent), Lao PDR (15.2 percent), Macedonia FYR (6 percent), Moldova (7.2 percent), Mongolia (13.5 percent), and Turkmenistan (8 percent) during the same period. Imports by LLDCs by and large have tended to go up over time (Table 10, Figure 6).

Table 9: Exports and imports of goods and services

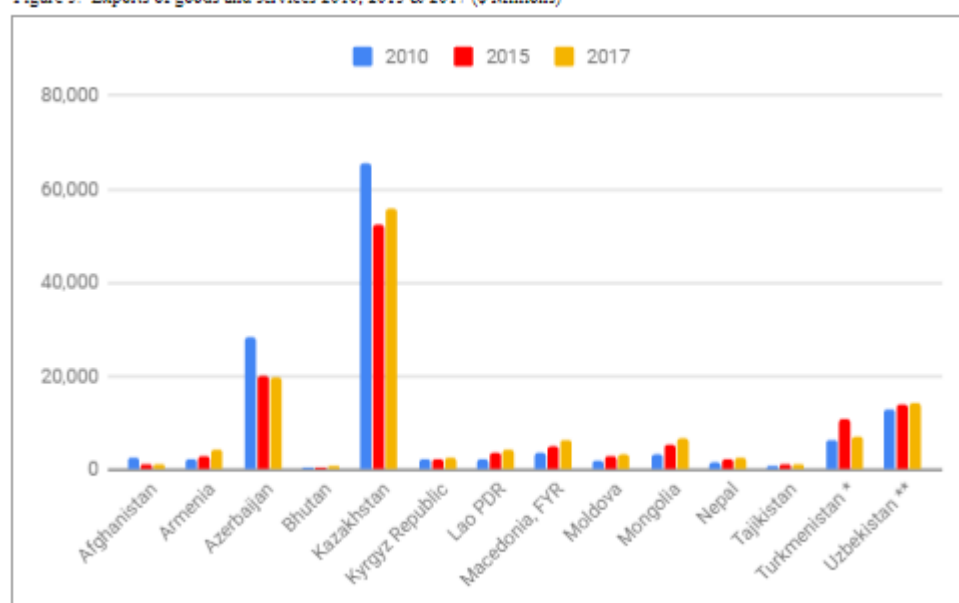
Country Name	Goods and services					
	Exports			Imports		
	\$ millions			\$ millions		
	2010	2015	2017	2010	2015	2017
Afghanistan	2,556	1,302	1,220	5,909	9,269	8,192
Armenia	2,211	2,997	4,273	4,537	4,847	5,818
Azerbaijan	28,235	20,030	19,840	10,236	17,890	17,105
Bhutan	590	674	714	935	1,256	1,235
Kazakhstan	65,511	52,432	55,730	44,260	42,150	42,699
Kyrgyz Republic	2,202	2,295	2,592	3,736	5,126	5,074
Lao PDR	2,257	3,613	4,183	2,324	5,875	5,359
Macedonia, FYR	3,606	5,058	6,260	5,463	7,569	7,834
Moldova	1,953	2,939	3,110	4,208	4,834	5,364
Mongolia	3,394	5,358	6,801	3,869	5,112	6,523
Nepal	1,572	2,151	2,434	5,879	7,813	11,617
Tajikistan	843	1,143	1,125	3,304	3,930	2,928
Turkmenistan *	6500	11000	7000	5700	8000	6000
Uzbekistan **	13023	13782	14106	9175	11655	13236

* = Merchandise exports and imports, estimated

** = Estimated exports and imports for 2015 & 2017

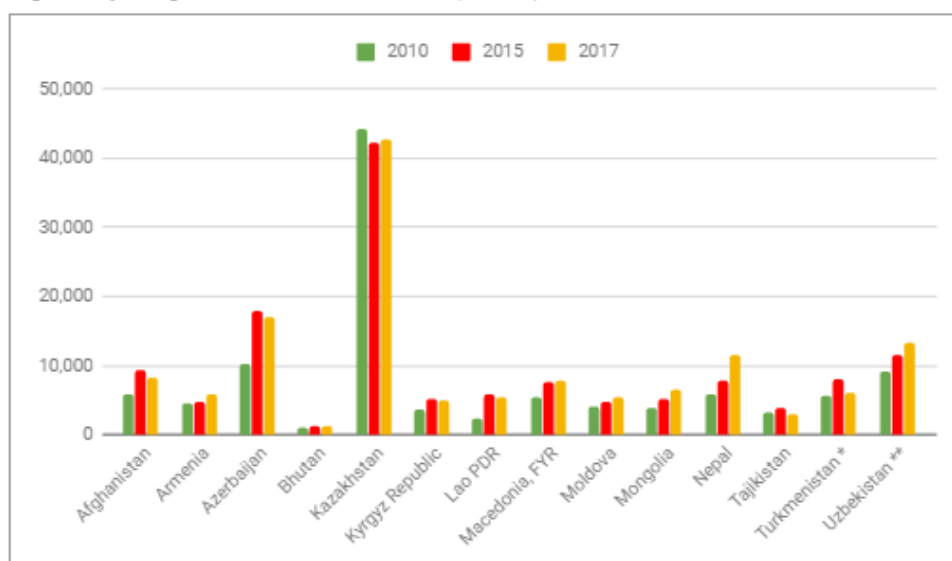
Sources: World Bank, *World Development Indicators*, <http://wdi.worldbank.org/table/WVI.1>. Accessed on 14 December 2018
 UNCTAD, *UNCTADstat*, <http://unctadstat.unctad.org/>. Accessed on 1 February 2019

Figure 5: Exports of goods and services 2010, 2015 & 2017 (\$ Millions)



Source: Based on Table 9

Figure 6: Imports of goods and services 2010, 2015 & 2017 (\$ Millions)



Source: Based on Table 9

Table 10: Trends in exports and imports

Country Name	Export volume	Import volume	Export value	Import value	High-technology exports	
	average annual % growth	average annual % growth	average annual % growth	average annual % growth	\$ millions	% of manufactured exports
	2006-2016	2006-2016	2006-2016	2006-2016	2016	2016
Afghanistan	-0.7	11.1	3.2	12.9	..	..
Armenia	5	1.4	6.4	2.5	21	5.9
Azerbaijan	0.6	5.1	-0.3	6.2	9	2.1
Bhutan	0.8	8.2	0.6	9.5	..	..
Kazakhstan	1.5	0.5	1.6	1.7	2,058	30.4
Kyrgyz Republic	-0.2	5.3	3.2	7.6	63	18.5
Lao PDR	13.5	17	15.2	18.9	275	33.6
Macedonia, FYR	3.5	2.1	6	4.3	77	2
Moldova	9.3	4.1	7.2	3.6	14	3.1
Mongolia	12.4	8.1	13.5	9.9	35	16.3
Nepal	-3.7	9.9	-1.5	12	3	0.6
Tajikistan	-3.6	5.6	-4	7.6	..	..
Turkmenistan	8.3	9.3	8	10.8	..	..
Uzbekistan	1.4	7.8	4	8.8	..	..

Source: World Bank, *World Development Indicators*, <http://wdi.worldbank.org/table/WK1>. Accessed on 14 December 2018

Although several LLDCs such as Armenia, Azerbaijan, Kazakhstan, Lao PDR, Mongolia and Uzbekistan have been able to add value to natural resources and agricultural products, overall there has been **slow progress in increasing value addition of exports**. The share of manufactured exports in absolute value has progressed slowly if at all (Table 11). Azerbaijan suffered one of the biggest declines in this group when its manufactured exports dropped from \$26.5 billion in 2010 to \$15.8 billion in 2017. Similar declines were recorded by

Kazakhstan, Nepal and Uzbekistan, although not at the same scale. Only Lao PDR and Mongolia managed to more than double their exports values from 2010 to 2017.

Table 11: Merchandise exports

Country Name	Merchandise exports		Food		Agricultural raw materials		Fuels		Ores and metals		Manufactures	
	\$ millions		% of total		% of total		% of total		% of total		% of total	
	2010	2017	2010	2017	2010	2017	2010	2017	2010	2017	2010	2017
Afghanistan	388	780	40	56.9	10.8	16.4	..	3.5	0.3	1.1	19.6	6.6
Armenia	1,011	2,243	16.7	32.7	1.1	0.6	3.1	3.8	52.5	42.9	24.2	20
Azerbaijan	26,476	15,800	2.8	4.8	0.1	0.3	94.5	90.1	0.1	1.4	2.5	3.4
Bhutan	641	590	7.2	..	0.2	..	1.2	..	21.9	..	69.5	..
Kazakhstan	59,971	48,342	3.4	4.9	0.2	0.3	72.8	63.4	11.4	15.2	12.2	16.1
Kyrgyz Republic	1,756	1,791	30	21.3	5.3	3.1	15.3	8.1	4.2	17	38.4	50.4
Lao PDR	1,746	3,950	26	30.6	2.1	3.2	0.9	0.3	54.9	38.6	16	27.3
Macedonia, FYR	3,351	..	16.3	10.3	0.5	0.5	7.7	1.5	7.4	5.3	68.1	82.3
Moldova	1,541	2,425	72	63.9	1	0.6	0.3	0.1	4.1	1.4	22.6	34
Mongolia	2,899	6,201	..	1.9	..	6.9	..	31.7	..	54.2	..	5.2
Nepal	856	750	20.2	26.1	3.9	3.8	0	0	4	1.7	71.9	68.3
Tajikistan	1,195	1,200	..	..	..	..	..	..	..	..	..	..
Turkmenistan	6,500	7,000	..	..	..	..	..	..	..	..	..	..
Uzbekistan	11,695	10,500	..	..	..	..	..	..	..	..	..	..

Source: World Bank, *World Development Indicators*, <http://ndb.worldbank.org/table/WY1>. Accessed on 13 December 2018

As a **proportion of merchandise exports**, food and agricultural raw materials dominate in Afghanistan (73.3 percent in 2017), Lao PDR (33.8 percent), Moldova (64.5 percent), and Nepal (30 percent). Exports of fuels, ores and metals dominate the total merchandise exports of Azerbaijan (92.5 percent in 2017), Kazakhstan (78.6 percent), and Mongolia 85.9 percent) (Table 11), three of the oil, gas and mineral rich LLDCs. Exports of manufactures as a proportion of total merchandise exports tend to be quite low except in Kyrgyzstan, Macedonia, FYR and Nepal. As a proportion of manufactured exports, high-technology exports do not feature prominently in the LLDCs in general except for Kazakhstan (30.4 percent) and Lao PDR (33.6 percent), again reflecting their dependence on exports of natural resources and semi-processed agricultural products and low value added manufactures. For several Euro and Central Asian LLDCs, EU remains the biggest export market. The continuing trade dependence on a narrow range of transit countries reflects LLDCs' low export mix, undiversified economic structures and high trade costs in reaching distant markets.

In terms of **diversification of export products**, **Afghanistan's** efforts have included the implementation of a new National Export Strategy, a National Trade Policy and a WTO Post-Accession Strategy. The New National Export Strategy contains four objectives: encourage the development of a productive, resilient private sector; promote a conducive business environment; enhance in-market support and strengthen enterprise capabilities; and support state and peace building through inclusive and equitable economic growth. **Armenia's** export basket mainly consisted of mineral products, processed foods, precious stones and metals, base metals and textiles

articles³⁵. There has been a significant growth in the export of textile articles and chemical products in total exports since 2014. **Azerbaijan** has set export diversification as one of its long term priorities including increase of non-oil products in its total exports. It has built up new enterprises, strengthened its technological infrastructure and improved the competitiveness of its local products in global markets. It now trades with 187 countries and has succeeded in increasing export products by 28.3 percent. The fastest growing non-oil exports include iron/steel structures, parts, tubes, electric wires, chemical products and transformers. **Bhutan** has succeeded in achieving some degree of export diversification from primary products to higher value added products, although its export basket is still dominated by a narrow range of commodities with top ten products accounting for 81.5 percent of total exports during 2012-2016. Apart from electricity, Bhutan exports Ferro-silicon, steel, Portland cement, calcium carbide, silicon carbide, cardamom, dolomite and gypsum. **Mongolia** adopted the Mongolia Export Program in September 2017 to stabilize a favourable legal and financial environment for Mongolia's non-mining exports, support value-addition processing and strengthen export competitiveness³⁶.

In terms of **merchandise imports**, all the Euro-Asian LLDCs except Kazakhstan have registered increases from the values in 2010 to 2017 (Table 12). Food imports as a proportion of merchandise imports have gone up in several LLDCs with significant declines of in the imports of fuels in Afghanistan, Armenia, Kazakhstan, Kyrgyzstan, Lao PDR, Macedonia, Moldova, and Nepal, possibly reflecting slowing down in economic activity.

Table 12: Merchandise imports

Country Name	Merchandise imports		Food		Agricultural raw materials		Fuels		Ores and metals		Manufactures	
	\$ millions		% of total		% of total		% of total		% of total		% of total	
	2010	2017	2010	2017	2010	2017	2010	2017	2010	2017	2010	2017
Afghanistan	5,154	7,700	13.7	23.6	0	..	20.9	15.4	0.3	0.6	19.1	24.6
Armenia	3,783	4,183	18	18.4	0.9	1.2	18	15.7	3.4	2.4	53.9	62.2
Azerbaijan	6,746	8,600	18.5	18.9	1.7	1.7	1.2	4.4	1.7	1	76.3	68.4
Bhutan	854	1,000	11.5	..	2.2	..	15.2	..	10.2	..	60.8	..
Kazakhstan	31,107	29,305	9.5	11.3	0.6	0.6	10	6	1.2	3.9	78.7	77.9
Kyrgyz Republic	3,223	4,481	16.9	14.3	1.2	0.9	26.6	14.2	0.9	0.9	53.8	69.7
Lao PDR	2,060	5,100	11.8	13.3	0.2	0.3	26.4	15.3	1.6	1.2	59.9	69.8
Macedonia, FYR	5,474	..	12.4	10.8	1	0.9	17.7	9.8	7.1	15.1	61.7	63.3
Moldova	3,855	4,832	14.9	14	1.3	1.4	20.6	11.3	0.9	2	62.3	66.5
Mongolia	3,278	4,336	..	15.1	..	0.4	..	20.2	..	0.3	..	64
Nepal	5,133	10,500	14.2	18.1	1.9	1.4	18.2	15.7	3.6	4	62.1	60.8
Tajikistan	2,657	2,700	..	..	..	..	..	..	..	..	..	..
Turkmenistan	5,700	6,000	..	..	..	..	..	..	..	..	..	..
Uzbekistan	8,689	12,000	..	..	..	..	..	..	..	..	..	..

Source: World Bank, *World Development Indicators*, <http://ndf.worldbank.org/table/WF1>. Accessed on 13 December 2018

³⁵ Republic of Armenia, Ministry of Economic Development and Investments, *National Plan of Action of the Republic of Armenia in the Framework of Implementation of the Vienna Programme*

³⁶ Government of Mongolia, *National Report of Mongolia on Implementation of the Vienna Programme of Action*, December 2018

Available information indicates that **intra-LLDC trade** is very low, except in the case of Kyrgyzstan which depends on border trade for meeting most of its export and import requirements. Poor quality of transport infrastructure, missing links in transit infrastructure and absence of trade complementarities largely explain the absence of intra-LLDC trade. LLDCs therefore tend to trade more with **non-LLDC transit countries, immediate neighbors and developed countries**. For **Armenia**, the largest export market was EU with 28.2 percent and CIS with 25.8 percent (of which Russian Federation accounted for 24.2 percent) in 2017. For **Azerbaijan**, developed countries such as Italy, USA, Israel, Canada, France, and Germany are the dominant trade partners for oil exports. Non-oil exports - which are quite low in total exports - principally go to Afghanistan, Kazakhstan, Turkmenistan, Turkey, Russian Federation and Georgia. China and Russia are the dominant trade partners for Mongolia.

For **Bhutan**, India is the largest trading partner which absorbed 85.5 percent of Bhutan's exports in 2016 and accounted for 82 percent of its total imports. Bangladesh which took in 10.79 percent of Bhutan's exports has emerged as an important trading partner of Bhutan.

In case of **Lao PDR**, China and Thailand have been the major trading partners. This trade relationship is being further strengthened with the establishment of specialized economic zones along the China-Lao and Thailand-Lao borders, construction of the China-Lao rail link as part of the BRI and the operationalization of the ASEAN Economic Community 2015. Lao PDR is a party to the Cross-Border Transport Agreement which covers the GMS countries.

On 29 January 2016, **Kyrgyzstan** received GSP + status from the European Commission which will significantly facilitate the expansion of its exports to EU.

In case of **Nepal**, India was its biggest trading partner with free movement of goods, services and labour. China is rapidly becoming another major trade partner for Nepal. India and China absorbed \$440.9 million of Nepal's exports and accounted for \$7.8 billion of its imports.

Success in export markets critically depends on favorable **business environment** where both public sector entities as well as private sector entrepreneurs can operate efficiently and productively. All LLDCs have improved their rankings in 2019 compared to their rankings in 2018 (Table 13). Afghanistan, Armenia and Azerbaijan, and Kyrgyzstan have made impressive gains in global rankings in promoting better business environment. There was some reversal for Nepal, possibly reflecting some of the lingering effects of the

devastating earthquake of 2015. Table 14 sets out the performance of the LLDCs (except Turkmenistan) in 6 key areas of doing business. In terms of setting up a business, there is scope for improvement in reducing starting cost in Afghanistan (82.3 percent of per capita income), Bhutan (3.9 percent), Lao PDR (3.5 percent), Nepal (24.9 percent) and Tajikistan (19.3 percent). Days taken to build a warehouse, getting electricity, enforcing contracts, and resolving insolvency run into hundreds which clearly are a huge incentive for doing business. LLDCs would therefore have to invest more in improving their business environment if they want to make significant inroads into export markets and improve growth prospects.

Table 13: Ease of doing business ranking, 2019

Country Name	Rank	EODB Score	EODB Score Change
Afghanistan	167	47.77	10.64
Armenia	41	75.37	2.06
Azerbaijan	25	78.64	7.1
Bhutan	81	66.08	0.2
Kazakhstan	28	77.89	0.73
Kyrgyz Republic	70	68.33	2.57
Lao PDR	154	51.26	0.11
Mongolia	74	67.74	0.27
Nepal	110	59.63	-0.32
Tajikistan	126	57.11	0.08
Turkmenistan	--	--	--
Uzbekistan	76	67.4	1.08

Source: World Bank, *Ease of doing business 2019*.

http://www.worldbank.org/content/dam/doingBusiness/media/Annual-Reports/English/DB2019-report_web-version.pdf. Accessed on 12 December 2018

Table 14: Doing business, 2017

Country Name	Starting a business			Registering property		Dealing with construction permits		Getting electricity	Enforcing contracts	Resolving insolvency
	Number of procedures	Time required	Cost	Number of procedures	Time required	Number of procedures to build a warehouse	Time required to build a warehouse	Time required	Time required	Time required
		days	% of per capita income		days		days	days	days	years
Afghanistan	3	7.5	82.3	9	250	13	354	114	1,642	2
Armenia	4	4.5	0.9	3	7	19	98	127	570	1.9
Azerbaijan	4	4.5	1.8	3	5.5	21	242	69	277	1.5
Bhutan	8	12	3.9	3	77	21	150	61	225	..
Kazakhstan	5	9	0.3	3	3.3	19	123	77	370	1.5
Kyrgyz Republic	4	10	2.1	3	3.5	11	142	125	410	1.5
Lao PDR	8	67	3.5	4	53	11	83	134	443	..
Macedonia, FYR	4	7	0.1	7	30	11	96	97	634	1.5
Moldova	4	5	5.6	5	5.5	28	276	87	585	2.8
Mongolia	6	10	1.4	5	10.5	17	137	79	374	4
Nepal	7	16.5	24.9	4	6	12	117	70	910	2
Tajikistan	4	11	19.3	5	36	25	182	133	430	1.7
Turkmenistan	..	..	..	..	..	..	..	..	..	..
Uzbekistan	3	5	3.1	9	46	17	246	88	225	2

Source: World Bank, *World Development Indicators*, <http://ndi.worldbank.org/table/WY1>. Accessed on 14 December 2018

Looking forward, it is clear that the period from 2014 (the year of the adoption of the VPoA) to 2018 has been a period of both opportunities and challenges for the Euro-Asian LLDCs. In addition to domestic challenges, the overall lackluster trade performance of the LLDCs can be attributed to the continuing uncertainty in international oil market³⁷, the restructuring of China's economy which has seen a shift away from import of key ores and metals from several LLDCs particularly Mongolia, the projected slowing down of the global economy that has seen softening of international trade and manufacturing activity, trade tensions, and financial market pressures in some large emerging markets³⁸ and the recent slowdown in the economic performance of several of their key trading partners particularly China and the Russian Federation. Many of the LLDCs have continued to face very high trade costs which are 4 to 7 times higher than those faced by non-LLDCs, adversely affecting their trade competitiveness.

Transit trade is vitally important for their overall trade performance, and gaining access to maritime routes³⁹ through sea ports remains a key challenge for their trade performance which will need to be addressed in a more concerted way during the coming years. Energy exporters such as Azerbaijan, Kazakhstan, Turkmenistan and Uzbekistan recovered as international commodity prices recovered but face new challenges as uncertainty returns to energy markets. Energy importers such as Armenia, Kyrgyzstan and Tajikistan benefited from the falling oil and gas prices but their unemployment rose as migrant labor returned home and remittances fell, aggravating an already fragile economic and social situation. Being an important mineral resource exporter, Mongolia enjoyed a boom when mineral prices went up but was soon faced with severe contraction in their export earnings and standards of living as commodity plummeted. Only Bhutan and Lao PDR have maintained their growth momentum as they have stable and growing markets for export of hydropower to India and Thailand respectively. Recent agreement with India and Bangladesh has improved Bhutan's chances of exporting its hydropower to Bangladesh and secure additional investments in its energy sector from Bangladesh. China has granted overland access to several of its sea ports to Nepal which should improve its export potential and reduce trade costs.

B. Trade facilitation in improving international competitiveness

Trade facilitation plays a crucial role improving the trade competitiveness of the LLDCs and boosting their exports. Trade

³⁷ The Economist, *Turbulent Times: Measuring Real-Time Shifts in Volatile oil Market*, 2018

³⁸ The World Bank, *Global Economic Prospects 2019*, Press Release dated January 8, 2019

³⁹ Some 80 percent of global merchandise trade is conducted through maritime routes.

facilitation is important for reducing high trade costs that the LLDCs face, holding back their export potential. Trade facilitation is also vitally important in promoting economic diversification and bringing about structural change. Recognizing the importance of trade facilitation, LLDCs have adopted a wide range of measures at simplifying trade regulations, documents and procedures with support from their development partners and transit countries. Some of the trade facilitation measures and tools that LLDCs have adopted include cross-border paperless trade, e-based transit and transport facilitation tools, single-stop inspections, single windows for documentation, electronic payment and transparency and modernization of border posts and customs services. Some progress has been made in establishing or strengthening national committees on trade facilitation with the involvement of all relevant stakeholders, including the private sector as part of the WTO Trade Facilitation Agreement (WTO TFA).

Following the Bali Ministerial Conference, WTO members adopted a Protocol of Agreement to insert the new Trade Facilitation Agreement into Annex 1A of the WTO Agreement. The WTO TFA came into force on 22 February 2017 when more than two-thirds of the WTO Membership ratified a Protocol of Amendment and notified the WTO of their acceptance of this Protocol⁴⁰. WTO received 13 ratifications in 2018 and 139 out of 164 WTO Members had completed this process as of 9 November 2018. Category A, B and C notifications become due as the TFA entered into force. 54 developing countries had notified their B and C categories by 9 November 2018. 21 LDCs had notified their B and C categories by February 2018.

Several LLDCs have **made significant progress in acceding** to the WTO TFA. **Armenia** acceded to WTO TFA on 20 March 2017 and notified its A, B and C category commitments⁴¹. The country has already implemented the major part of the B category commitments and is in the process of notifying WTO on the remainder part of B category implementation progress. Armenia is collecting information on international best practices with a view to launching the process of establishing its national committee on trade facilitation. **Azerbaijan** is actively considering accession to WTO.

Bhutan has an observer status with WTO and organized four Working Party Meetings as part of its internal consultation process. The country has established a national level committee called the National Trade and Transport Facilitation Committee with the

⁴⁰ WTO, *Workplan 2019/TFAF – Trade Facilitation Agreement Facility*, <http://www.tfafacility.org/workplan-2019>, accessed on 11 January 2019

⁴¹ Republic of Armenia, Ministry of Economic Development and Investments, *National Plan of Action of the Republic of Armenia in the Framework of Implementation of the Vienna Programme*

participation of all relevant stakeholders. Mongolia acceded to WTO TFA in November 2016 and established the National Trade facilitation Committee in August 2017. It has adopted the Mid-term (2018-2022) Trade Facilitation Road Map and the Strategy Plan for the Committee. Mongolia submitted its B and C Category commitments to WTO in August 2017. It has received technical assistance from a number of development partners including UNCTAD, EU, ADB, and WB in improving its capacity in trade facilitation. Nepal ratified the WTO TFA on 13 January 2017. Nepal has notified 2.1 percent of activities under Category A, 12.2 percent of activities under Category B and 85.7 percent of activities under Category C.

Trade facilitation has significantly been strengthened with the introduction of ICT solutions to trade, transport and business transactions which have opened up new opportunities for the LLDCs. Several of the LLDCs have adopted ICT solutions in streamlining customs clearance procedures and formalities, reducing the number of documents, and improving vehicle movements speedily and less expensively. E-banking has been adopted in making payments of taxes and customs duties at border crossing points. A number of LLDCs have adopted the Single Window facilitation tools and Automated System of Customs Data (ASYCUDA) which have greatly improved customs clearance and procedures. Using these facilitation tools, they have been able to improve their trade portals, stream line their customs procedures and reduce paper work.

Azerbaijan had completed the establishment of single window facilities at the country's customs border check points by 2009. Similarly, **Bhutan** has instituted the Bhutan Automated Customs System and identified the National Single Window as one of the key initiatives in its 12th Five Year Plan to provide seamless end to end facilitation of cross border trade. **Kazakhstan** introduced several measures including the system for electronic declaration and modernization of its customs information and management system. **Kyrgyzstan** set up the Single Window Center for Foreign Trade to boost trade efficiency and **Lao PDR** launched its Trade Facilitation Strategic Plan in 2011 under which it established the E-Customs Automated System for Customs Data (ASYCUDA) at its border posts. Other notable progress of Lao PDR included the establishment of Lao Trade Portal (LTP) in 2012; ratification of WTO TFA in 2015; Accession to the Revised Kyoto Convention (RKC) in 2016; countrywide automation of customs procedures; electronic payment of customs duties; successful launch of Single-Stop Inspection facility in 2016 with Vietnam; piloting of the National Single Window program; initiating Authorized Economic Operators (AEO) program; and establishment of Trade Facilitation Committee. Nepal has set up the

ASYCUDA at its 13 customs offices. Nepal has set up the ASYCUDA at its 13 customs offices.

LLDCs have received technical support from ESCAP, ADB, WTO and World Bank in adopting trade facilitation measures. Initiatives such as ESCAP's paperless trade facilitation initiative, ESCAP-World Bank Trade Cost data base and the ESCAP/ADB Trade and Transport Facilitation Monitoring Mechanism (TTFMM) have provided important support to the LLDCs. The LLDCs as a group need to do more in improving and harmonizing their customs administrations, streamlining border crossing procedures and applying ICT solutions including introduction of paperless trade and implementation of single window environment.

C. Regional and sub-regional cooperation frameworks and agreements: a brief status

LLDCs fully recognize the importance of regional cooperation and bilateral, trilateral and multilateral trading agreements and cooperation frameworks in boosting exports and expand their domestic markets. Most of the LLDCs have actively sought to utilize opportunities offered by several regional and sub-regional transport and transit facilitation agreements and strengthen their participation in regional value chains. These agreements and frameworks have included the Eurasian Economic Union (EAEU)⁴², ASEAN⁴³ Agreements on Transport Facilitation, South Asian Free Trade Agreement (SAFTA), the Agreements of the Commonwealth of Independent States (CIS)⁴⁴, the Eurasian Economic Community (EurAsEC)⁴⁵, Economic Cooperation Organization (ECO)⁴⁶ Transit Transport Framework Agreement 1998⁴⁷, and Greater Mekong Subregional programme (GMS⁴⁸) Agreement for Facilitation of Cross-border Transport of Goods and People, 1999.

⁴² EAEU members are: Armenia, Belarus, Kazakhstan, Kyrgyzstan and Russian Federation.

⁴³ Association of Southeast Asian Nations (ASEAN) with member countries of Brunei Darussalam, Cambodia, Indonesia, Lao PDR, Malaysia, Myanmar, Philippines, Singapore, Thailand and Viet Nam.

⁴⁴ CIS member-states are: Azerbaijan, Armenia, Belarus, Kazakhstan, Kyrgyzstan, Moldova, Russian Federation, Tajikistan, Turkmenistan, Ukraine and Uzbekistan.

⁴⁵ EurAsEC member-states are: Belarus, Kazakhstan, Kyrgyzstan, Russian Federation, Tajikistan and Uzbekistan.

⁴⁶ ECO - Economic Cooperation Organization comprises of Afghanistan, Azerbaijan, Islamic Republic of Iran, Kazakhstan, Kyrgyzstan, Pakistan, Tajikistan, Turkey, Turkmenistan and Uzbekistan.

⁴⁷ The Agreement has been signed by Afghanistan, Azerbaijan, Islamic Republic of Iran, Kazakhstan, Kyrgyzstan, Pakistan, Tajikistan, Turkey and Turkmenistan, and ratified by Afghanistan, Azerbaijan, Islamic Republic of Iran, Kazakhstan, Kyrgyzstan, Pakistan, Tajikistan and Turkey.

⁴⁸ GMS - Greater Mekong Subregion includes Cambodia, China, Lao PDR, Myanmar, Thailand and Viet Nam.

Armenia officially joined the Eurasian Economic Union (EAEU) in January 2015. The union aims, among others, to create a common market for goods, capital and labour, and promote harmonization of policies in areas such as energy and transport. Common transport, agriculture and energy policies with provisions for a single currency and greater integration are also planned. Within EAEU, Armenia is negotiating free trade agreements with Israel, Serbia, Singapore, Egypt and India. Armenia has maintained its free-trade agreements with Belarus, Georgia, Kazakhstan, Kyrgyzstan, Moldova, Russian Federation, Turkmenistan, Tajikistan and Uzbekistan. Armenia signed the Comprehensive and Enhanced Partnership Agreement with EU on 24 November 2017 which it ratified on 1 April 2018.

Bhutan has a Free Trade Agreement with India which was originally signed in 1972 and renewed five times, most recent being in 2016. It has also entered into a bilateral preferential trade agreement with Bangladesh, a bilateral economic cooperation agreement with Thailand and is in the process of concluding a bilateral trade agreement with Nepal. Bhutan is also a member of the Bay of Bengal Initiative for Multi-sectoral Technical and Economic Cooperation (BIMSTEC) and is part of the Framework Agreement on the BIMSTEC Free Trade Area (FTA).

In South-East Asia, the ASEAN Agreements on Transport Facilitation and other agreements covering customs, facilitation of goods in transit, establishment of ASEAN Single Window, framework agreement on multimodal transport and the framework on facilitation of inter-state transport, have been facilitating transport of goods in transit, harmonizing and simplifying regulations and requirements, and establishing an integrated efficient transit transport system.

Under the Commonwealth of Independent States (CIS), a large number of agreements have been formulated and signed, and most of them ratified. ECO Transit Transport Framework Agreement was signed in 1998 and came into force in May 2007. This agreement covers transit transport by road, rail, inland waterway, and access by port and aims to provide necessary facilities, ensuring safety, avoiding unnecessary delays, fraud/tax evasion, and harmonizing administrative rules and procedures.

Launched by ADB in 1992, the Greater Mekong Subregional cooperation (GMS) has actively promoting economic relations between and among Lao PDR, Thailand and Vietnam. Cambodia and China joined the grouping, making it one of the largest subregional cooperation initiatives. Sub-regional projects in transport, energy, telecommunications, environment, human resources development, tourism, trade, private sector investment, and agriculture have been implemented. The Agreement for the Facilitation of Cross-Border

Transport of Goods and People promotes cross-border transport of goods and movement of people, and supports simplification and harmonization of regulations, procedures and requirements, and promotes multimodal transport.

Bangladesh, Bhutan, Nepal and India (BBIN) signed a Motor Vehicles Agreement on 15 June 2015, with the aim of facilitating movement of cargo across their borders.

Effectiveness of these trade and transport facilitation agreements, bilateral free trade agreement and free trade agreements have been limited as a large number of them have remained dormant. Overlapping and often complicated issues or arrangements that go beyond trade/transport/transit facilitation have slowed down the process of integration. Problematic areas have included failure to agree on phasing out of duties and tariffs and designation of traffic rights, border crossings points and destination ports, transport routes, technical requirements of vehicles, temporary admission, safety and security, and many more.

IV. Means of implementation

LLDCs need strong support from their development partners and transit neighbours in developing their infrastructure, building resilient transport connectivity, improving their trade capacity and adopting trade facilitation measures and tools. As noted earlier, significant amounts of financial resources are needed to meet their infrastructure deficits. In addition to mobilizing domestic resources and promoting FDI, LLDCs will need to better leverage ODA, harness the potential of their private sector and utilize opportunities offered by regional cooperation programmes and arrangements. To close the infrastructure investment gaps, they also need to identify bankable projects to secure financial and technical resources from multilateral initiatives such as the Asian Infrastructure Investment Bank, the World Bank's Global Infrastructure Facility, the ASEAN Infrastructure Fund and the SAARC Development Fund.

A. Domestic resource mobilization

Domestic financial resources are critically needed to meet the infrastructure investment needs in the LLDCs. Direct and indirect taxes have been the traditional sources of domestic revenue. Increasingly, many LLDCs are using innovative approaches to raise revenue and finance part of their infrastructure development needs. As incomes rise in the LLDCs, government efforts to raise revenue should ease over time. Resource-rich LLDCs can also use part of their resource-rents to finance their infrastructure needs. A tax/GDP ratio exceeding 20 percent is generally considered to be the minimum threshold required for meeting government revenue and capital expenditure. However, infrastructure

projects are generally long-term in nature and require lumpy investments which require additional funding from other private, bilateral and multilateral sources.

The recent experience of Euro-Asian LLDCs in raising domestic resources through central government taxes portray a mixed picture. All of them have tax/GDP ratios that fall below 20 percent with five of them showing a worsening collection rate in 2016 compared to 2010 (Table 15, Figure 7). Government expenditure as a percentage of GDP has remained high in most of the LLDCs (Figure 8). Savings as a percentage of GDP ranges from a low of 17 percent in Lao PDR to a high of 44 percent Nepal⁴⁹ in 2017 (Figure 9). In most LLDCs, domestic savings as a percentage of GDP is insufficient to meet their growing development needs including meeting their infrastructure gaps. LLDCs as a group would have to strengthen their efforts in raising domestic savings. In addition to carrying out reforms in tax administration, they would have to incentivize an increasing number of their citizens and business enterprises to pay taxes on their incomes. Indirect taxes including user fees could be introduced and strengthened where necessary to raise more resources.

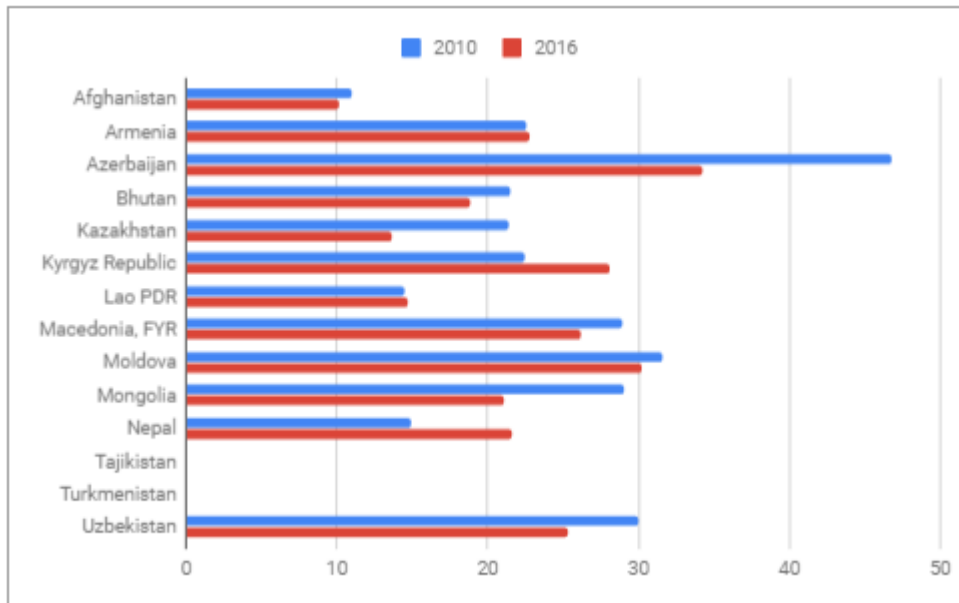
Table 15: Government revenue and expenditure

Country Name	Revenue		Expense		Tax revenue collected by central government		Gross savings	
	% of GDP		% of GDP		% of GDP		% of GDP	
	2010	2016	2010	2016	2010	2016	2010	2017
Afghanistan	11	10.1	50.6	36.9	9.1	7.6	0	18
Armenia	22.6	22.8	23	25.7	17.1	21.3	16	18
Azerbaijan	46.8	34.2	20.9	24.8	12.2	15.6	45	28
Bhutan	21.5	18.9	21.7	16.6	13.1	13.2	34	25
Kazakhstan	21.4	13.6	16.5	15.7	13.7	9.9	30	24
Kyrgyz Republic	22.5	28.1	21.4	27	..	16.9	20	30
Lao PDR	14.5	14.7	11	13.9	13	12.9	10	17
Macedonia, FYR	28.9	26.2	30.1	27.6	16.9	16.8	24	31
Moldova	31.6	30.2	35	31.3	18.2	19.3	14	15
Mongolia	29	21.1	22.9	27.4	19.6	11.3	27	26
Nepal	14.9	21.6	15.6	16.5	13.3	18.7	38	44
Tajikistan	..	..	..	..	..	..	38	33
Turkmenistan	..	..	..	..	..	..	..	..
Uzbekistan	30	25.3	18.8	18.4	16.2	17.3	..	..

Source: World Bank, *World Development Indicators*, <http://wdi.worldbank.org/table/WI.1>. Accessed on 14 December 2018

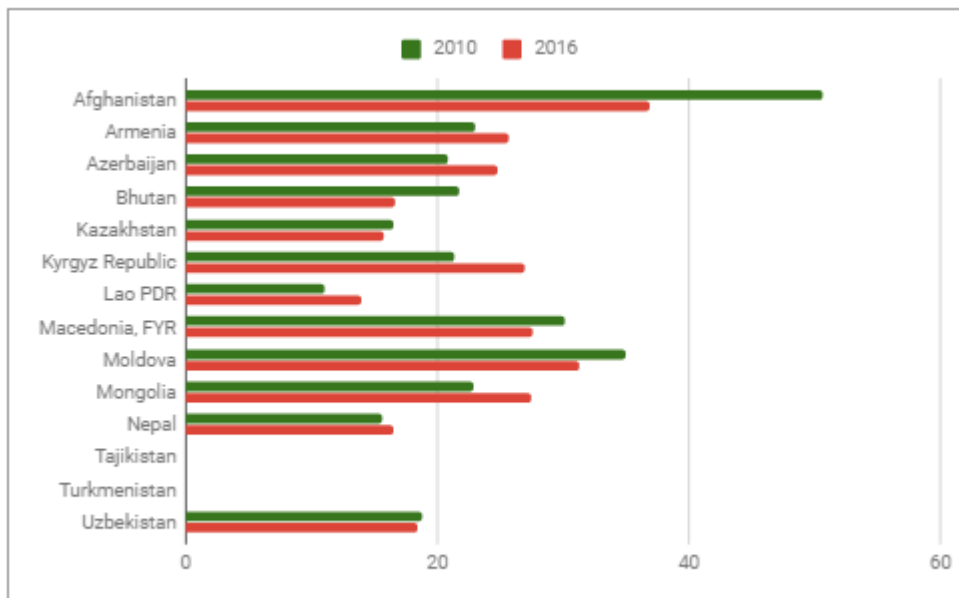
⁴⁹ Nepal's savings a percentage of its GDP has been rising steadily since 2001 when it was 18.55 percent

Figure 7: Government Revenue, % of GDP



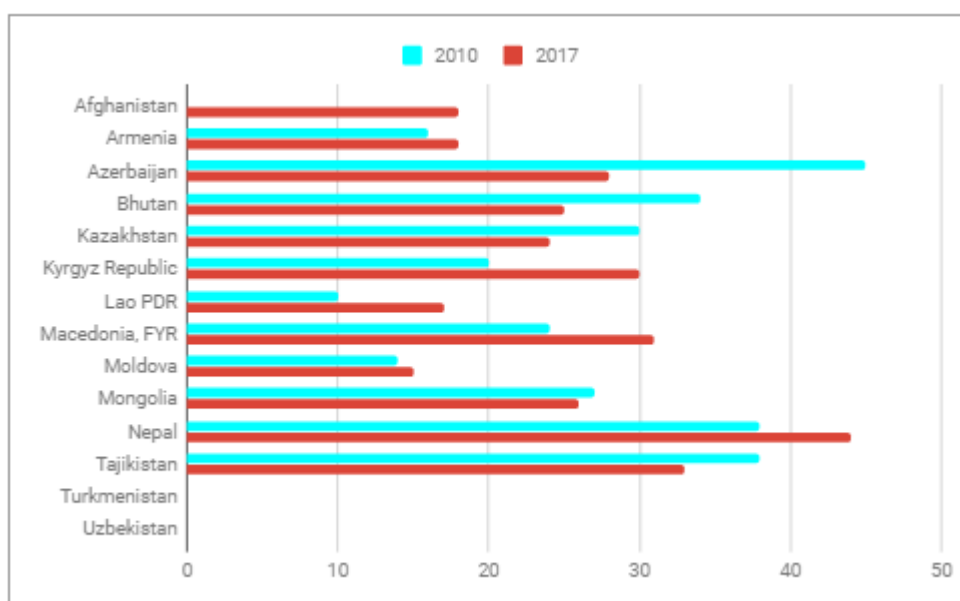
Source: Based on Table 15

Figure 8: Government Expenditure, % of GDP



Sources: Based on Table 15

Figure 9: Gross Savings, % of GDP



Sources: Based on Table 15

B. Official development assistance

ODA has continued to play a critical role in meeting infrastructure investment needs of the LLDCs and improving their trade capacity. Net ODA receipts by developing countries in Asia fell from \$53,800 million in 2014 to \$48,769 million in 2017⁵⁰. Net ODA flows to the 14 Euro-Asian LLDCs fell from \$9,398 million in 2014 to \$8,674 million in 2017 (Table 16, Figure 10). Lao PDR, Mongolia, Nepal and Uzbekistan all others saw moderate to significant drops in ODA receipts. Table 17 gives the distribution of ODA received from different sources in 2016. For several LLDCs such as Bhutan, Kyrgyzstan, Lao PDR, Macedonia FYR and Uzbekistan, ODA from bilateral sources exceeded the amounts received from multilateral sources. Armenia, Kazakhstan, Nepal and Uzbekistan dominated the multilateral sources in this group. Non-concessional ODA from regional development banks was becoming important for several LLDCs. Clearly, the ODA environment for the Euro-Asian LLDCs was changing rapidly.

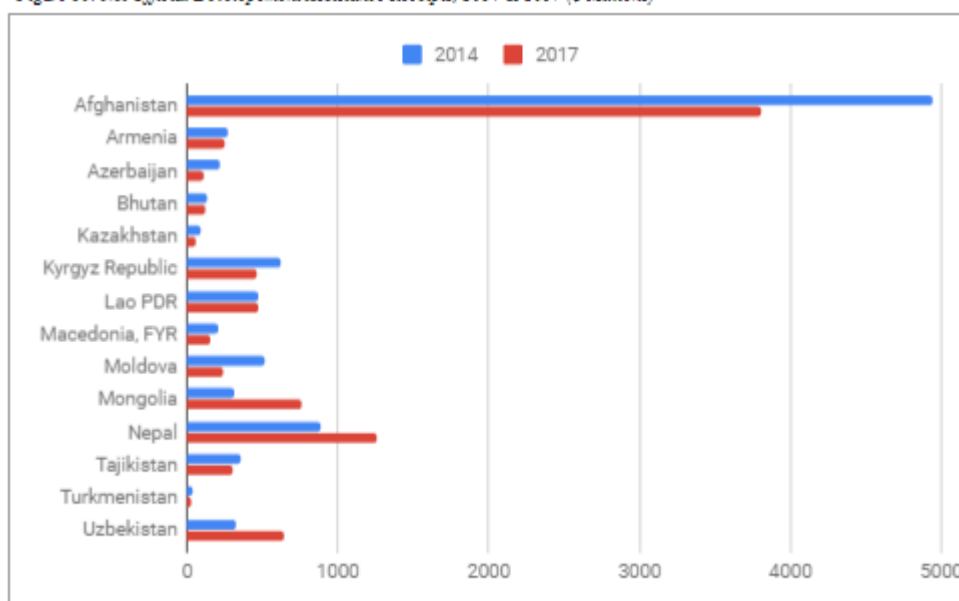
⁵⁰ OECD, *Statistics on resource flows to developing countries*, www.oecd.org/dac/stats/statisticsonresourcedlowstodevelopingcountries.htm, accessed on 17 January 2019.

Table 16: Net Official Development Assistance Receipts

Country Name	\$ million	
	2014	2017
Afghanistan	4943	3804
Armenia	267	255
Azerbaijan	217	116
Bhutan	131	119
Kazakhstan	93	59
Kyrgyz Republic	627	461
Lao PDR	474	476
Macedonia, FYR	212	150
Moldova	518	241
Mongolia	317	764
Nepal	884	1258
Tajikistan	356	304
Turkmenistan	34	29
Uzbekistan	325	638

Source: OECD, *Statistics on resource flows to developing countries*, <http://www.oecd.org/dac/stats/statistics-on-resource-flows-to-developing-countries.htm>. Accessed on 17 January 2019

Figure 10: Net Official Development Assistance Receipts, 2014 & 2017 (\$ Millions)



Source: Based on Table 16

Table 17: Official development assistance, 2016 (\$ millions)

Country Name	Total		International financial institutions						
	From bilateral sources	From multilateral sources	World Bank, IDA	World Bank, IBRD	IMF, Concessional	IMF, Non concessional	Regional development banks, Concessional	Regional development banks, Nonconcessional	Regional development banks, Other institutions
Afghanistan	0.9	-4	-3.3	0	-14.7	0	0.1	0	-0.9
Armenia	120.3	460.1	-8.9	182.6	-17.5	25.3	18.9	110.6	156.8
Azerbaijan	16.5	822	-35.6	161.6	0	0	-0.9	680.9	16
Bhutan	326.4	1.3	-0.4	0	0	0	-6.9	8.8	-0.1
Kazakhstan	12.6	1,091.10	0	1,061.50	0	0	-0.3	53.6	-23.7
Kyrgyz Republic	222.3	20.2	-2	0	5.6	0	10.1	0.8	11.2
Lao PDR	471.9	-35.7	-3.9	0	0	0	-24.4	-0.3	-7.1
Macedonia, FYR	109	-10.4	-14.1	-2.3	0	0	0	26.5	-20.4
Moldova	57.8	111.3	41.4	39.8	-38.6	1.7	0	10.8	20.7
Mongolia	58.3	79.2	2	0	0	0	0.9	79.8	-3.6
Nepal	-6.4	194.8	120.4	0	-17.8	0	74.5	0	-0.2
Tajikistan	-49	-21.1	-1.2	0	-20	0	-13.5	-4.2	2.5
Turkmenistan	-9.1	16.6	0	-2	0	0	0	18.6	0
Uzbekistan	573.5	366.7	105.3	92.3	0	0	60.9	80.1	28

Source: World Bank *World Development Indicators*, <http://wdi.worldbank.org/table/WDI/>. Accessed on 14 December 2018

While resource-rich LLDCs may be in a better position to secure development finance from non-concessional sources including from private banks, non-resource rich LLDCs particularly those which are also LDCs will need significant external concessional assistance as they have limited capacities to raise domestic and other forms of competitive resources on their own. For this group of LLDCs, concessional ODA is also vitally needed to leverage resources from other sources such as foreign direct investment, public-private sector partnerships, and blended finance.

C. Regional infrastructure development initiatives

As noted earlier, several global and regional initiatives have supported the development and maintenance of transport corridors, providing significant financial resources to the LLDCs. The BRI, ADB's CAREC, Silk Road Fund, Asian Infrastructure Investment Bank, the New Development Bank, ASEAN Infrastructure Fund, and World Bank's Central Asia Road links (CARs) programme are some of the initiatives which can be accessed by the LLDCs.

BRI and CAREC have been particularly active in developing transport corridors that are becoming an important part of the landscape and economic wellbeing of the LLDCs. Vast networks of roads, railways, ports and logistics hubs are emerging in the LLDCs, putting reform and harmonization of trade and transport policies and processes and simplification of customs and border crossing procedures at the forefront of policy agenda. The establishment of these corridors have also necessitated the formation of bilateral, trilateral and multilateral cooperation frameworks and arrangements to ensure their smooth and efficient operations. These transport corridors are also public goods which cannot be managed and operated by a single institution or a country, highlighting the need for increased regional cooperation.

China-led Belt and Road Initiative and the Asian Development Bank-led Central Asia Economic Cooperation (CAREC) programme are two sets of transport corridors which are connecting the Euro-Asian LLDCs with Asia and Europe. Launched in 2013, BRI consists of six economic corridors that go through Asia, Europe and Africa. These are: (1) The New Eurasia Land Bridge Economic Corridor, a rail link from China to Rotterdam in Holland, passing through Kazakhstan, Russian Federation, Belarus and Poland; (2) The China-Mongolia-Russia Economic Corridor consisting of both rail and road networks; (3) China-Central Asia-West Asia Economic Corridor which will pass from China through Kazakhstan to Kyrgyzstan, Tajikistan, Uzbekistan and Turkmenistan as well as Islamic Republic of Iran and Turkey; (4) China-Indochina Peninsula Economic Corridor, a network of rail/road links, ports and special economic zones to connect all 3 countries in Indochina with China and Thailand. The China-Lao rail link will be connected with Thailand, Malaysia and Singapore to form the Kunming-Singapore railway corridor; (5) China-Pakistan Economic Corridor under China Pakistan Economic Cooperation (CPEC) agreement that will build a network of highways, railways, oil and natural gas pipelines and optic fibre networks spanning from Kashgar in China to Gwadar Port in Pakistan; and (6) Bangladesh-China-India-Myanmar Economic Corridor, a network of road and rail links jointly proposed by China and India.

BRI with an estimated \$1 trillion investment fund has proven to be a significant source of infrastructure finance in the Central Asian LLDCs. For example, Kazakhstan has become the major beneficiary in Central Asia with an estimated investment of \$14 billion under BRI⁵¹. China and Kazakhstan have undertaken 51 bilateral projects with an estimated value of \$27 billion which includes the China-Kazakhstan Crude oil pipeline at an estimated outlay of \$3 billion⁵².

CAREC Program is a partnership between 11 countries and development partners to promote growth and development in Central Asia. So far, it has mobilized \$31.5 billion in investments in transport, energy and trade in CAREC participating countries⁵³. The programme consists of 6 economic corridors that connect the participating LLDCs with important markets. Corridor 1: Links Europe and East Asia through Russian Federation, Kazakhstan and Kyrgyzstan; Corridor 2: Connects the Caucuses and the Mediterranean to East Asia, covering Azerbaijan, Kazakhstan, Turkmenistan, Uzbekistan, Tajikistan, Kyrgyzstan and China; Corridor 3: Connects Russian Federation with the Middle East and South Asia, going through Afghanistan, Kazakhstan, Kyrgyzstan,

⁵¹ Cohen, Ariel and James Grant, *Future Calling: Infrastructure Development in Central Asia – Unlocking Growth in the Heart of Eurasia*, October 2018, www.IITCnet.org

⁵² *Ibid*

⁵³ CAREC Programme, <https://www.carecprogram.org>, accessed on 11 January 2019

Tajikistan, Turkmenistan and Uzbekistan; Corridor 4: Links Russian Federation with Asia through Mongolia and China; Corridor 5: Links East Asia with the Middle East and South Asia through China, Kyrgyzstan, Tajikistan and Afghanistan; and Corridor 6: Links Europe and Russian Federation, going through Afghanistan, Kazakhstan, Tajikistan and Uzbekistan. So far, investments under CAREC programme include: \$5.65 billion in transport and energy in Uzbekistan, \$569 million in transport in Turkmenistan, \$1.4 billion in transport, trade and energy in Tajikistan, \$588 million in transport and trade in Mongolia, \$1.36 billion in transport, trade and energy in Kyrgyzstan, \$8.55 billion in transport, trade and energy in Kazakhstan, \$4.45 billion in transport, trade and energy in Afghanistan, and \$5.88 billion in transport and energy in Azerbaijan. From its inception in 2001 to 2017, it has invested in 185 projects⁵⁴.

Two issues appear to be important in fully utilizing the resources available under these initiatives to close the infrastructure investment gaps in LLDCs. Firstly, many LLDCs lack institutional capacity in formulating and implementing bankable mega infrastructure investment projects, making them dependent on external expertise and technology which can be both costly as well as time consuming to mobilize for many of them. Secondly, lack of coordination and cooperation between different ministries/departments dealing with transport infrastructure can complicate prioritization of investment projects and lead to delays in project implementation and cost overruns.

D. Foreign direct investment

FDI inflows to the 14 Euro-Asian LLDCs have fluctuated over the years, reaching a peak of \$17,016.39 million in 2010 when \$11,550.72 million was invested in Kazakhstan alone (Table 18). It then fell to \$10,775.46 million in 2015 and \$10,646.94 in 2017. All the LLDCs except Afghanistan, Bhutan and Nepal saw significant inflows of FDI into their economies, fueling their infrastructure development. Most of the FDI in this group went to resource rich LLDCs like Azerbaijan (\$2,867.00 million in 2017), Kazakhstan (\$4,633.74), Lao PDR (\$813.03) and Mongolia (\$1494.35) with energy sector featuring prominently in case of Azerbaijan and Kazakhstan and the minerals sector in case of Mongolia. In case of Bhutan and Lao PDR, most of their FDI went to hydropower sector. Non-oil exporting LLDCs like Uzbekistan have seen most of their FDI going to manufacturing, agro-processing and infrastructure development projects. There is considerable volatility in net FDI inflows to both oil and non-oil exporting LLDCs with the latter group experiencing such volatility more intensely than the other group.

⁵⁴ *Ibid*

Table 18: FDI inflows

Country Name	Financial inflows (millions of US\$ unless otherwise specified)			
	2005	2010	2015	2017
Afghanistan	271	54.2	163.1	53.94
Armenia	292.07	529.32	178.3	245.72
Azerbaijan	1 679.92	563	4 047.70	2 867.00
Bhutan	6.21	75.54	17.09	10.27
Kazakhstan	1 971.22	11 550.72	3 859.92	4 633.74
Kyrgyz Republic	42.57	437.59	1 141.88	93.79
Lao PDR	27.7	278.8	1 118.68	813.03
Macedonia, FYR	..	..	..	..
Moldova	..	..	..	..
Mongolia	187.62	1 691.42	94.23	1 494.35
Nepal	2.45	86.63	51.56	198
Tajikistan	14.21	112.72	396.51	141.33
Turkmenistan	..	..	..	..
Uzbekistan	191.6	1 636.45	66.49	95.77

Source: UNCTAD, UNCTADstat, <http://unctadstat.unctad.org/>. Accessed on 11 January 2019

E. Remittances

Remittance inflows have emerged as one of the most important sources of resource for the developing countries including the Euro-Asian LLDCs. Remittances to developing countries is estimated to have increased by 10.8 percent and reached a record high of \$528 billion in 2018⁵⁵ with global remittances reaching \$689 billion, a growth of 10.3 percent over 2017⁵⁶. Remittance flows to Central Asia – where half of the Euro-Asian LLDCs are located – grew by 20 percent and to South Asia by 13.5 percent. All Euro-Asian LLDCs benefited from this surge in remittance inflows (Table 19). Nepal with \$6929 million in 2017 remained the biggest recipient of remittance inflow in this group and was estimated to receive a record \$8210 million in 2018 (Figure 11). Nepal was followed by Uzbekistan \$2974 million, Kyrgyzstan \$2486 million, Tajikistan \$2255 million, Moldova \$1640 million, Armenia \$1539 million and Azerbaijan \$1133 million, all in 2017. Remittance inflows constitute a significant part of GDP in many of these LLDCs, with these inflows accounting for 15.5 per cent of GDP in Armenia, 35.1 percent in Kyrgyzstan, 20.5 percent in Moldova, 30.1 percent in Nepal, and 32.2 percent in Tajikistan (Table 19). Apart from meeting domestic consumption and investment needs at household level, these external

⁵⁵ The World Bank, *Migration and Remittance: Recent Development and Outlook*, December 2018. <https://www.knomad.org/publication/migration-and-developmen-brief-30>, accessed on 17 January 2019

⁵⁶ *Ibid*

resources contribute significantly to augment total national financial resources to meet growing infrastructure investment needs in the recipient LLDCs.

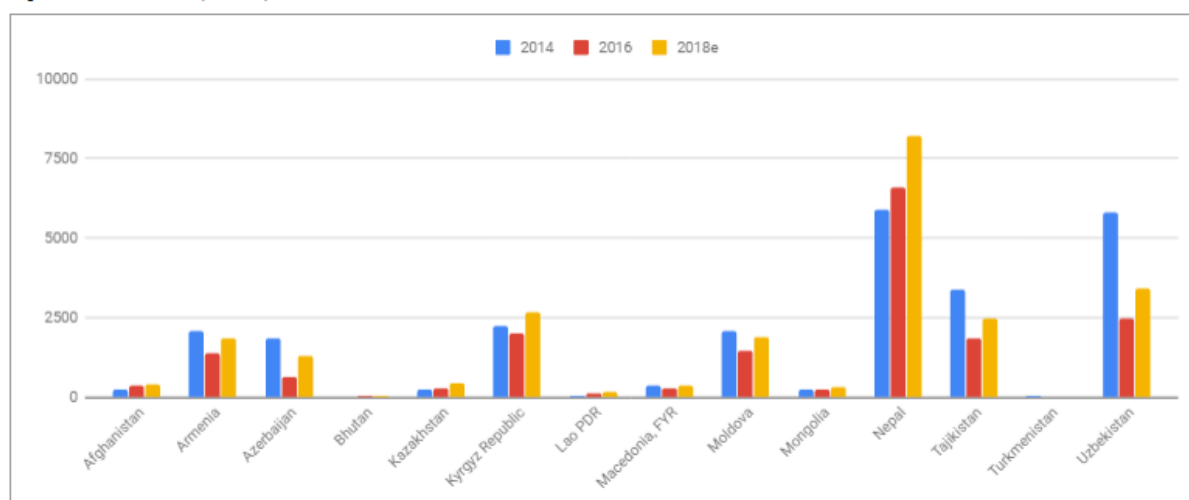
Table 19: Remittance Inflows, (\$ Millions)

Country Name	2014	2015	2016	2017	2018e	% of GDP 2018
Afghanistan	250	341	368	378	384	1.8
Armenia	2079	1491	1382	1539	1868	15.5
Azerbaijan	1846	1270	643	1133	1292	2.8
Bhutan	14	20	34	43	48	1.9
Kazakhstan	229	194	275	355	430	0.2
Kyrgyz Republic	2243	1688	1995	2486	2662	35.1
Lao PDR	40	93	116	139	149	0.8
Macedonia, FYR	367	307	291	314	360	1.2
Moldova	2076	1540	1464	1640	1886	20.5
Mongolia	255	261	260	273	332	2.7
Nepal	5889	6730	6612	6929	8210	30.1
Tajikistan	3384	2259	1867	2255	2465	32.2
Turkmenistan	30	16	9	9	9	0
Uzbekistan	5828	3062	2479	2974	3416	8.5

e = estimated

Source: World Bank Group, *Migration and Remittances: Recent Developments and Outlook December 2018*, <http://www.knomad.org/publication/migration-and-development-brief-30>. Accessed on 17 January 2019

Figure 11: Remittance Inflows, (\$ Millions)



Source: Based on Table 19

V. Conclusions and recommendations

Selected key conclusions

- LLDCs continue to face daunting internal and external challenges to develop their infrastructure.
- Significant progress have been made by the Euro-Asian LLDCs in implementing the Vienna Programme of Action for the decade 2014-2024 and notable achievements have been made in several areas.
- LLDCs and the international community need to further strengthen their efforts in implementing the VPoA so that LLDCs can realize the development goals as enshrined in the VPoA and the UN Sustainable Development Agenda.
- Commodity dependent LLDCs rely heavily on the export of their natural resources to develop their infrastructure and support sustainable development.
- Producers of low value added manufactures face the danger of their cost advantage disappearing in the face of new technologies and organizational structures.
- Global trading environment is in a flux with threats of trade wars looming large. There are also opportunities for LLDCs to harvest, particularly new and emerging forms of financial and technological resources for infrastructure development and availability of ICT-based trade facilitation tools and platforms to improve their trade competitiveness.
- Quality of trade and transport infrastructure is a serious concern in just about all the LLDCs. High trade and transport costs and delays caused by poor transport systems have reduced the ability of the LLDCs to be competitive and prevented them from taking part in regional trade and investment flows.
- Underdeveloped and often inefficient logistics services add to their trade costs and make it that much difficult to deliver goods and services on time.
- Insufficient investment funds in upgrading and properly maintaining existing road, rail, ICT and energy networks pose a binding constraint on their ability to compete internationally.

Selected key recommendations

IMPROVING TRANSPORT CONNECTIVITY

- Integrate fully the VPoA and the SDGs in the national development strategies with a special focus on creating

sustainable and resilient transport infrastructure, improving trade capacity and achieving accelerated growth and development.

- Make infrastructure development and maintenance and trade and transport facilitation an integral part of national development strategies and planning process.
- Fully integrate the trans-boundary transport and infrastructure corridors in the national development strategies, plans and programmes.
- Formulate and implement infrastructure development and maintenance policies and programmes in upgrading and properly maintaining existing road and rail networks in collaboration with transit developing countries and development partners.
- Improve and harmonize customs administrations, streamlining border crossing procedures and applying ICT solutions including introduction of paperless trade and implementation of single window environment.
- LLDCs and transit countries should develop and upgrade international transport and transit corridors covering all modes of transport, taking into account the special needs of the LLDCs.
- International community particularly the regional financial intuitions, UN system and other development partners should strengthen their technical assistance programs for improving the institutional capacities of the LLDCs to formulate and implement bankable infrastructure development projects.
- Strengthen greater cooperation between LLDCs and transit countries in increasing cross-border power grid connectivity and fostering greater energy security including exchange of information on country experiences and best practices. OHRLLS, UNESCAP and UNECE should facilitate such exchange of information and best practices.
- Make ICT infrastructure development an integral part of national development process and formulate and implement relevant policies and programmes in collaboration with private sector, development partners and development financial institutions. ITU, OHRLLS, UNESCAP and UNECE should extend their assistance to the LLDCs in that regard.
- Support universal access to fixed broadband services.
- Reduce broadband prices in line with purchasing capacities of people.
- Formulate national broadband policy to improve access to international high-capacity fiber-optic cables and high bandwidth networks.
- Encourage open and affordable access to internet for all.
- Invest in skills formation programmes and adoption of new and innovative technologies.

- LLDCs and their development partners including the regional and international financial institutions, regional organizations and bilateral development agencies should strengthen their efforts to mobilize and allocate more resources for infrastructure development and maintenance.
- Mobilize increased domestic resources and bring about necessary tax administration reforms to meet the growing infrastructure financing needs.
- Streamline regulatory and governance structures so that private sector is incentivized to increase their participation in infrastructure development projects and programmes.
- Find innovative solutions in combining domestic resources with ODA, FDI, remittances and other forms of external financial flows including blended finance in building sustainable and resilient transport infrastructure and improving their connectivity in roads, railways, aviation, energy, telecommunications and ICT.

INTERNATIONAL TRADE AND TRADE FACILITATION

- Strengthen efforts in diversifying the economic structures of LLDCs and their exports and destination markets including through transfer of technologies, finance and integration into regional and global value chains.
- Improve the effectiveness of trade and cooperation agreements as platforms for increased regional integration and cooperation.
- LLDCs that are yet to become members of WTO should do so with support from the international community in the accession process.
- Strengthen the capacities of LLDCs and the transit countries to ratify and implement WTO Trade Facilitation Agreement.
- Strengthen the technical, financial and capacity-building provisions in the WTO TFA.
- LLDCs should be proactive in indicating their capacity needs under Category C of the Agreement.
- Extend technical support to those LLDCs which are yet to set up national committee on trade facilitation.
- Harmonize and improve customs administrations and streamline border-crossing procedures.
- Adopt new and innovative technologies including electronic seal (eSeal) and radio frequency identification device (RFID) which can go a long way in reducing time costs in moving freight from one point to another.
- Support adoption of transport facilitation models namely, Secure Cross Border Transport Model, Efficient Cross Border Transport Model, Model on Integrated Controls at Border Crossings, Electronic Cargo Tracking Systems, Models for Harmonization of

Transport Documents, and Cross-border Paperless Trade facilitation and Single Window Systems to promote cross-border rail and road connectivity.

- Improve business environment in the LLDCs by addressing the critical infrastructural and policy gaps including their human resources and institutional capacity development needs.
- International community needs to provide strong support in the implementation of the VPoA. While national efforts will be of paramount importance, there is need to ensure that the international community lives up to its commitments made in various international forums including the UN 2030 Agenda and the Addis Agenda on Finance for Development. UN-OHRLLS, UNECE, UNESCAP, the International Think Tank for LLDCs and other relevant development partners are encouraged to strengthen their technical assistance for the LLDCs in that regard.

END