SCIENCE, TECHNOLOGY AND INNOVATION FOR STRUCTURAL ECONOMIC TRANSFORMATION OF LANDLOCKED DEVELOPING COUNTRIES

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Outline of presentation

- Challenges of LLDCs and the imperative of STI
- Overview of global STI Initiatives relevant to LLDCs
- Regulatory environment & STI policies in LLDCs
- Status of STI development in LLDCs
- STI and trade facilitation in LLDCs
- Main recommendations from the background paper for midterm review of VPoA
Challenges of LLDCs & the imperative of STI

- 32 LLDCs: Africa (16 countries), Asia (10 countries), Europe (4 countries), and South America (2 countries)
- Constraints include:
  - Lack of access to the sea
  - Geographical remoteness
  - Poor physical infrastructure
  - High transaction and transport costs
  - Trade restriction
  - Commodity dependent and low value goods

* Each of these constraints has STI solutions
Overview of global STI Initiatives relevant to LLDCs

* Only few global STI initiatives pay attention to the peculiar needs of LLDCs??

- Global forum initiative (GFI) which emanated from a United Nations and World Bank Forum on STI for development in 2007
- Technology facilitation mechanism (TFM) which was conceived during the United Nations Conference on Sustainable Development (UNCSD) in 2012, Rio +20.
- The TFM was aimed at supporting the implementation of SDGs
Establishment and objectives of TFM

After a series of multilateral negotiations, the TFM was established in July 2015 by an agreement within the context of Addis Ababa Action Agenda (AAAA) of the Third International Conference on Financing for Development (FfD3) (See paragraph 123 of AAAA).

The objectives of TFM are:
1. Support the achievement of the SDGs;
2. Provide a multi-stakeholder collaboration to achieve SDGs;
3. Strengthen coherence and synergies among science and technology initiatives within the UN system
Why STI policies?

- To correct global anomalies in allocation of attention and resources to what matters most for development of LLDCs: *global support for STI investments in LLDCs*

- To implement appropriate *market* and *other* interventions that can rectify structural weaknesses and imbalances in LLDCs economies

- An overview of structural weaknesses of LLDCs are shown in the following charts:
Figure 1: Structure of production in LLDCs, 2012-2017
Figure 2: Manufacturing share in merchandise exports and imports of LLDCs
Figure 3: High-technology exports (% of manufactured exports)
Figure 4: Trend in sectoral distribution of employment in LLDCs, 2012-2018
Regulatory environment and STI policies in LLDCs

- STI policies in LLDCs have in recent years shifted in focus to a more realistic problem-solving approach to STI.

- The effectiveness of the regulatory environment for STI policies depends on rules and regulation, strength of institutions, and level of infrastructural development.

- The existence of modern transparent institutions, functional infrastructural and good judicial system, foster innovative competition and the development of STI in the economy.

- Since the adoption of VPoA and the 2030 Agenda, many countries (including LLDCs) have sought for appropriate STI policies and regulatory frameworks that meet their needs and structurally transform their economies.
Regulatory environment and STI policies in LLDCs

- Only ten of the 32 LLDCs have a policy document specially dedicated for the promotion of investments in STI.
- Nineteen LLDCs have STI policies embedded in broader development plan or economic policy frameworks.
- The governments of Botswana, Kazakhstan, Bolivia, and Armenia recorded high GDP growth rates because of economic reforms implemented have strong government regulations that positively affected investments in STI with support from the organized private sector (UNESCO, 2018).
Status of STI development in LLDCs

Three criteria specified by UNECA (2018) for analyzing STI actors’ competences and capacity to innovate define the status of STI development in LLDCs:

- Science base and structure of investments in scientific activities;
- Business R&D and innovation activities;
- Technological learning experiences and opportunities

*The following charts depicts the status of STI development in LLDCs*
Trend in science base and structure of investments in scientific activities

Figure 5: School enrolment, primary (% net)

Source: WDI, 2018
Trend in science base and structure of investments in scientific activities

Figure 6: Children out of school (% of primary school age)

Source: WDI, 2018
Trend in science base and structure of investments in scientific activities

Figure 7: Literacy rate (% of people ages 15 and above)

Source: WDI, 2018
Trend in science base and structure of investments in scientific activities

Figure 8: Government expenditure on education, total (% of GDP)

Source: WDI, 2018
Business R&D and innovation activities

Trend in research and development

Figure 9: R&D expenditure as a percentage of GDP

Source: UNESCO Institute for Statistics (UIS)
Business R&D and innovation activities

Figure 10: Researchers per million inhabitants (FTE)

Source: UNESCO Institute for Statistics (UIS)
Technological learning experiences and opportunities

Figure 11: Fixed Broadband subscription per 100 people

Source: WDI, 2018
Technological learning experiences and opportunities

Figure 12: Individuals using the internet (%)

Source: WDI, 2018
Technological learning experiences and opportunities

Figure 20: Population covered at least by 3G network

Source: ITU, 2018
STI and Trade Facilitation

According to UN-OHRLLS and UN-ESCAP (2019), 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
- modernization of border posts and customs services.

Internet can facilitate trade through expansion of ICT infrastructure, fostering skills and entrepreneurship, and supportive governance (Internet Society, 2017).
Conclusions

- The findings reveal that the pace of economic structural change has been very slow among LLDCs in spite of the implementation of VPoA, and the national and international commitments for the realization of the global 2030 development agenda.

- Changes observed in key economic indicators, especially in the structure of production in LLDCs, are too marginal to suggest that structural economic change is about to take root and possibly increase in pace of occurrence.

- STI investments are critical to diversification and structural transformation of the economies of LLDCs, and global STI initiatives need to put more focus on building local technological capability in LLDCs.
Recommendations and the way forward

*Six key recommendations aimed at providing practical solutions that would foster the employment of STI for structural economic transformation in LLDCs are:*

1. Embark on aggressive reform for structural economic change
2. Improve education investments
3. Improve R&D expenditure
4. Support for STI investments must be sincere at local and international levels
5. Improve support for LLDCs in international STI initiatives
6. Special support mechanism for African LLDCs
Thank you!