

Accelerating the recovery from the COVID-19 pandemic and the full implementation of the 2030 Agenda for Sustainable Development at all levels



25 – 28 October 2022 I Incheon City, Republic of Korea

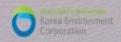






















25-28 October 2022, Incheon, Korea

Penal on

"SDG 9 – Resilient Infrastructure, Inclusive and Sustainable Industrialization, and Innovation"

Lichia Saner-Yiu
Centre for Socio-Eco-Nomic Development



My Focus

"Forth Industrial Revolution (4IR): Pathway to Achieve Inclusive and Sustained industrialisation in the LDCs?"

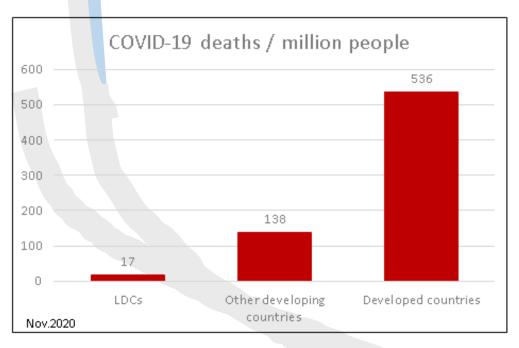
Framing

- ☐ The key SDG principle of "Leaving No One Behind" also applies at the higher aggregate level, such as countries
- ☐ Sustainable economy of scale (i.e., industrialisation) is a necessary first step toward achieving the 2030 Agenda
- Critical role of "productive capacities" in the improved efficiency and effectiveness (higher performance standard) and implementation of SDGs and
- ☐ State of the art of technologies, including advanced digital production (ADP), should be mobilised for the LDCs to support provision of new products, services and circularity and to create new values
- ☐ A comprehensive re-configuration of the productive ecosystem in the LDCs necessary

Why LDCs?

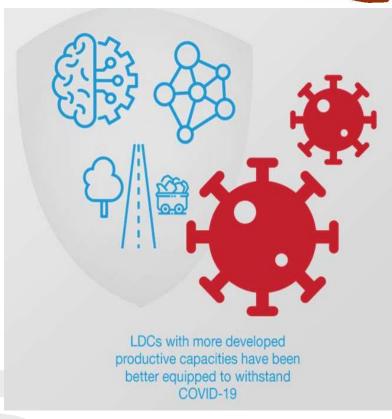
(2021, 1.08 billion pop, 1,770 USD per capita, unemployment rate 5.6%, Souce: WB Data)





Health impact of the COVID-19 pandemic on LDCs has been less serious

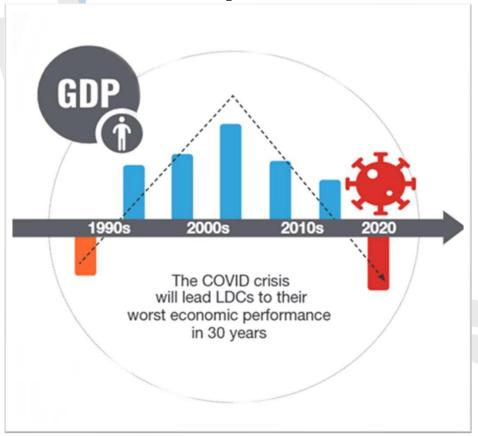
(Source: UNCTAD LDCR 2020)



- Senegal rapid / cheap COVID-19 testing kit
- · Bangladesh PPE production

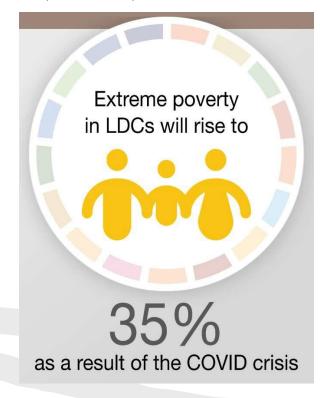
Why LDCs? (2)

Severe economic & social impacts



(Source: UNCTAD LDCR 2020)

□ 377 million people (2020)



□ >4 years of progress being erased (2022)

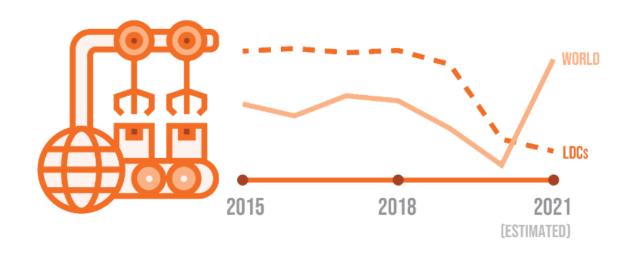
De-industrialisation?

GLOBAL MANUFACTURING

HAS REBOUNDED FROM THE PANDEMIC

BUT LDCs ARE LEFT BEHIND

MANUFACTURING GROWTH





(Source: The SDR 2022, https://sdgs.un.org/goals/goal9)

Strengthening of Productive Capacities in the LDCS: An Imperative

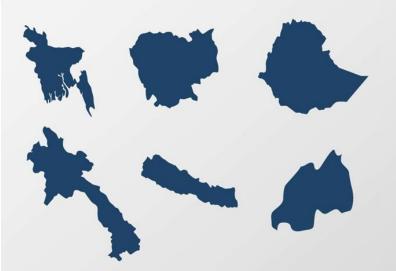
- **■** What are productive capacities?
 - Productive resources (including human)
 - Entrepreneurial capabilities
 - Production linkages (supply and value chains)
- □ Different stages of capacities & economy
 - Factor driven
 - Efficiency driven
 - Innovation driven



Success Story

□Since 2000 a few LDC countries have managed their economic transformation successfully.

e.g. Bangladesh, Cambodia, Ethiopia, Myanmar, Lao PDR, Nepal, Rwanda

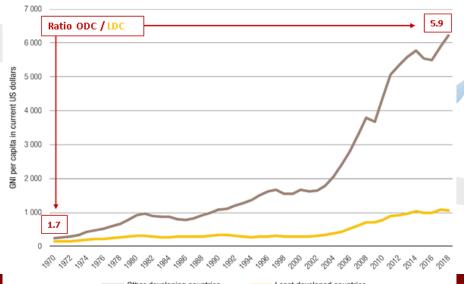


- ¬ industry
- Modern service sectors

Most of LDCs...

- **Low productivity sectors predominate.** such as traditional agriculture and traditional services. In turn, they
 - hold down the standard of living (UNCTAD, 2020 LDCR)
 - Constrain the country's financial capacity to engage in the SDG transition

GNI per capita gap of least developed countries in comparison to other developing countries, average in current US dollars Ratio ODC / LDC 6 000



(Source: UNCTAD LDCR 2020)

4IR contributes to Target 9.2



Target 9.2, Promote inclusive and sustainable industrialization and, by 2030, significantly raise industry's share of employment and gross domestic product, in line with national circumstances, and double its share in least developed countries

4IR and ADP

- □ Fourth Industrial Revolution (4IR) = digital transformation of the value creation processes of agricultural production, manufacturing and services at different levels.
- DADP technologies are at the core of smart factories and new production ecosystems that combine hardware (3D printing, robotics, drone), software (AI, ML, data analytics) and connectivity (IOT, cloud computing) in addition to energy generation and storage.

International Consensus for Rapid Adoption

- No.
- ☐ 2019 Abu Dhabi Declaration adopted at the 18th General Conference of UNIDO
- "New technologies associated with 4IR, with both transformative and disruptive potential, offer great opportunities to advance inclusive economic growth, reduce inequality and contribute to Sustainable Development, resilience and human well-being, to address climate change and safeguard the environment in the framework of a circular economy as one of the means to achieve sustainable development" (Clause 11).

Digital Technologies as Potential Accelerators?

- Digital technologies could make it possible for LDCs to leapfrog development stages by shortening the learning curve. Some examples in Tanzania (drones and medicine), Tanzania (ICT for drug store inventory management)
- □ Policy challenge:
 Prioritising SDG 9 that will increase production capacities and productivity gains while support social and environmental objectives

Digital Technologies as Potential Accelerators? -2





By an large, LDC's hopes to leapfrog did not happen – mobile use increased, but producers' (firms and farms) adoption of ADTs "insipient" (Source: Rolf Traeger, 2021, Lar

(Source: Rolf Traeger, 2021, Launching of LDCR)

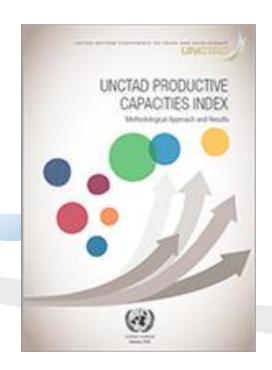
PCI

UNCTAD has developed a Productive Capacity Index (PCI, https://unctad.org/topic/least-

<u>developed-countries/productive-capacities-index</u>) -

first comprehensive attempt to measure productive capacities in all

economies and construct a multidimensional index that can provide country-specific insights and diagnostics of productive capacity development.



Weaknesses of PC in LDCs (UNCTAD, 2020 LDCR, based on PCI)





Policy Dilemmas



Incremental transformation vs Discontinuous transformation?

Push for digitalisation - winners and losers? Youth engagement and participation - STEM

+ Entrepreunerial capacities versus older

workforce

S&T poverty (availability, access, human capital, demands) vs other societal needs



(Forbes Sep 19, 2013, 11:07am EDT)

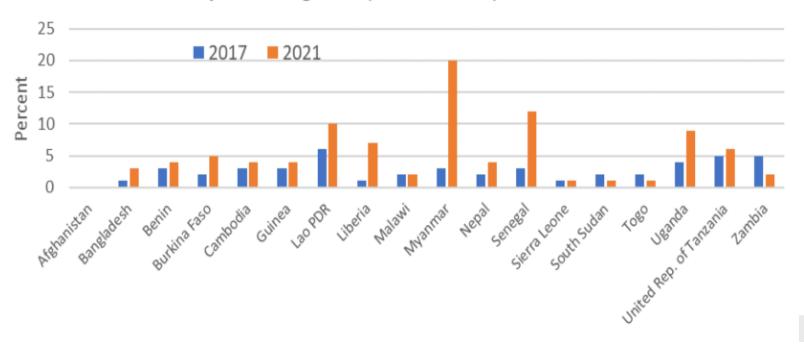
Good Practices



- □Cape Verde youth skill development coupled with mentoring and business incubation in digital economy
- □Business facilitation M-PESA, non bank banking service
- □Innovative business models & cooperative platforms
- □Targeting women and girls

E-commerce and Supply Side of the Trade

Figure 1: Share of people aged 15+ who used a mobile phone or the internet to buy something online, selected LDCs, 2017 and 2021



https://www.un.org/technologybank/news/ldc-insight-4-strengthening-digital-capacities-least-developed-countries-even-more-urgent-post

Partnerships for Technology Transfer

- □ Target 17.6, Enhance North-South, South-South triangular regional and international cooperation on and access to science, technology and innovation and enhance knowledge sharing on mutually agreed terms, including through improved coordination among existing mechanisms, in particular at the United Nations level, and through a global technology facilitation mechanismTarget
- □ Target 17.8, Fully operationalize the technology bank and science, technology and innovation capacity-building mechanism for least developed countries by 2017 and enhance the use of enabling technology, in particular information and communications technology

Partnerships for Technology Transfer



Target 17.16, Enhance the Global Partnership for Sustainable Development, complemented by multi-stakeholder partnerships that mobilize and share knowledge, expertise, technology and financial resources, to support the achievement of the Sustainable Development Goals in all countries, in particular developing countries

☐ The elephant in the room, "IPRs" and the role of World Intellectual Property Organisation (WIPO)

4IR contributes to Target 9.2



Target 9.2, Promote inclusive and sustainable industrialization and, by 2030, significantly raise industry's share of employment and gross domestic product, in line with national circumstances, and double its share in least developed countries

UNIDO 4IR THEORY OF CHANGE 2022-2030





EXTERNAL

FACTORSGlobal political and

financial commitment

for the 2030 Agenda

and SDGs



4IR INTERVENTION FOR POST-COVID RECOVERY

Mainstream approach

WOMEN, YOUTH, ELDERLY CITIZENS AND LEAVE NO ON

Bielen

Contextual Intervention

LDCs, MICs, SIDs, SSTIC, ECONOMI TRANSITION & REGIONAL DIFFEREN

Interconnected focus areas

SMART N

Resilient Manufacturing, Mining, Mobility

SMART CLIMATE & CIRCULAR ECONOMY Environmental Technologies

SMART ENERGY

Energy Efficient To

SMART AGRI-FOOD Sustainable Agribusiness

4IR Strategy 2022-2030: Results

= RESULT 0. (UNIDO) Internal capacity on technologies and digital transformation are

strengthened = RESULT 1. (MICRO) Innovative, inclusive and sustainable businesses through technologies

= RESULT 2. (MESO) Technology and innovation industrial ecosystems strengthened

= RESULT 3. (MACRO) Capacity to design innovation policies incorporating tech. enhanced

ISID INCLUSIVE AND SUSTAINANCE DEVELOPMENT

MAKING THE 4IR WORK FOR ALL

Smart production for advanced climate action

Increased firm-level

competitiveness,

productivity and

resilience

Digital transformation

of firms, through 4IR

strategies covering

product, process,

business cases, and

logistics

Boosted digitalization

at firm-level

Innovation and the 4IR harnessed for economic development

Strengthened

innovation ecosystem

through improved

linkages between

stakeholders and

institutions

Expanded capacity to

build 4IR-related skills

Livelihoods improved using 4IR technologies

IR technologies

Adopted technologies

Improved business
environment and
dynamic
entrepreneurship

Adopted technologies
and innovation policies
for advancing
knowledge-driven
economy

Established regulatory framework, norms and standards for agile governance

Partnerships and investment to advance national 4IR and innovation industrial programmes

Innovation Ecosystem, Skills and Capacity Building, Governance, Partnerships, Investment & Infrastructure

Technical Cooperation

4IR capacity-building

for firms / 4IR

implementation tools &

methodologies

Policy Analysis & Advice

Norms & Standards

Convening & Partnerships

Research & policy advice for technology policies and strategies

UNIDO's 4IR Capacity-Building & Digital Transformation

Sector specific 4IR

diagnostics; innovation

and technology advice

Impact dimensions

We influence

Outcomes

Outputs

Inputs

We influence directly

MICRO, MESO and MACRO

Member State context)

UNIDO delivers

UNIDO provides

Macroeconomic and

regulatory stability

Stakeholders engagement in 4IR strategies and policies

Access to basic levels of 4IR infrastructure

Access to basic skills and education

Member States and donors are supportive of 4IR programmatic approach across functions



