ENHANCING MEDITERRANEAN INTEGRATION: A NEW VISION FOR THE MEDITERRANEAN

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WORLDWIDE CHANGES IN THE WORLD OF TECHNOLOGY AND DEVELOPMENT: IMPLICATIONS FOR MEDITERRANEAN COUNTRIES

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First, I would like to join my co-panelists and former colleagues and friends to thank Dr. Blanca Moreno-Dodson—Head of the Center for Mediterranean Integration (CMI) for bringing us together within the context of the release of her excellent and timely report: *Enhancing Mediterranean Integration—A New Vision for the Mediterranean*;

The report was written and is released at a time when there is a need, *a great need*, to revitalize the “*Barcelona Declaration*” for the emergence of a new cooperation framework that enhances productivity growth and income convergence on both sides of the Mediterranean Sea;
The report is also very germane because it emphasizes development cooperation models that do not exacerbate the risk of climate change—climate-resilient growth and economic integration models;

The report is also released at a time of rapid technological changes in a world, increasingly reflected in advances in artificial intelligence (AI) and big data;

In addition to boosting productivity and competitiveness as it has been the case since the first industrial revolution, technology is permeating all aspects of economic development, production processes, trade, finance and services industry;
Rapid technological changes is accelerating the process of structural transformation in a world where manufactured goods with increasing technological content have become the major drivers of global trade, accounting for over 75% of global trade;

Technological changes have shaped and are redefining trade, with the rise of global value chains (GVCs) and global supply chains (GSCs)—vectors of efficiency gains and global economic and financial integration;

Despite challenges triggered by the trade war and increasing calls for the reordering of GSCs post-Covid-19, GSCs and GVCs will continue to be major forces for integration and drivers of global growth;
Technological changes have been key drivers of global integration and will be a game changer in the process of regional integration, especially in the Mediterranean countries confronting high unemployment rates and deficit of diversification of sources of growth;

These patterns of trade and growth have sustained income divergence between countries on both sides of the Mediterranean Sea and fueled migration pressures and undermined integration;

Perhaps the technological gaps between countries in the north of the Mediterranean Sea is the roots of challenges faced by these countries on the path to integration;
GDP per capita

Figures in constant 2010 (US$)

- Egypt
- France

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What role would technology play in the new vision for the Mediterranean is the key question;

To answer the question, it is perhaps important to provide an overview of the rapidly-changing world of technology and development;

Recent decades have seen accelerating pace in the development and adoption of new technologies;

Rapid technological changes involves among other, technologies like big data, the internet of things, machine learning, artificial intelligence, robotics, 3D printing, biotechnology, nanotechnology, renewable energy technologies, satellite and drone technologies;
Global quarterly artificial intelligence funding (millions of dollars) and number of deals, first quarter 2012-first quarter 2017

Source: UN/DESA, based on data from CB Insights. 2017/03 - The 2016 Review: Startups See Record High In Deals And Funding.
Since 2001, MIT Technology Review has chosen the 10 most important breakthrough technologies of the year; For some of the items on this year’s list the connection is obvious: consumer devices, including watches and phones, infused with AI; climate-change attribution made possible by improved computer modeling and data gathered from worldwide atmospheric monitoring systems; and cheap, pint-size satellites; Others on the list, including quantum supremacy, molecules discovered using AI, and even anti-aging treatments and hyper-personalized drugs, are due largely to the computational power available to researchers;
These advances are creating *tipping points*—moments at which technologies such as robotics, AI, biology, nanotechnology and 3D printing cross a threshold and trigger sudden significant changes;

Many things we take for granted today—infinitesimal knowledge and information for actionable transactions available in the web, mobile phones made more powerful every year, billions of connected smart sensors monitor in real time everywhere from the state of the planet to our heartbeats and sleeps—would have seemed impossible just two decades ago;
These advances in technology have accelerated and deepened the process of globalization and are giving a different meaning to economic integration;

Trading blocs are no longer defined by geographical proximity and requirements of geographical continuity;

Distance is no longer a constraining factor as illustrated by the globalization of production processes—Global values chains and supply chains;

Technology which has been a major driver of productivity and competitiveness has dramatically changed the patterns of trade and integration;

Manufacturing is the new dividing line between rich and poor, developed and developing countries;
Manufactures % of Exports
Expansion of industrial output has become even more correlated with technology, and the end result has been globalization in the push for sectoral and structural transformation;

Through sectoral and structural transformation countries have successfully diversified their sources of growth and trade—boosting manufacturing output to enhance their integration at the regional and global level without fueling migration pressures;

Today manufactured goods account for more than 75% of global trade and is the dividing line between countries in the North of the Mediterranean Sea and those in the South.
Distribution of GVC by level of linkages

Source: WDR 2020 team, based on the GVC taxonomy for 2015 (see box 1.3 in chapter 1).

Note: The type of a country’s GVC linkages is based on (1) the extent of its GVC participation, (2) its sectoral specialization in trade, and (3) its engagement in innovation. Details are provided in figure 1.6 in chapter 1.
Technological advances, most notably in the areas of information and communication technology, logistics and networks have dramatically changed the dynamics of production processes, given birth to the rise of just-in-time GSCs and sustaining the growth of regional value chains (RVCs) and global value chains (GVCs);

Cars we are driving and cell phones we are carrying are the output of very fluid and efficient transnational networks;

For instance, Samsung is making mobile phones with parts from at least 2500 suppliers across the globe;
Where do the bicycles come from?

- **Saddle exports**
  - China: US$100 million
  - Italy: US$85 million
  - Spain: US$16 million

- **Frame exports**
  - China: US$977 million
  - Vietnam: US$147 million
  - Italy: US$66 million

- **Brake exports**
  - Japan: US$200 million
  - Singapore: US$172 million
  - Malaysia: US$152 million

- **Wheel exports**
  - China: US$170 million
  - Italy: US$28 million
  - France: US$26 million

- **Pedal and crank exports**
  - Japan: US$150 million
  - China: US$137 million
  - Singapore: US$117 million

Source: WDR 2020 team, using data from UN Comtrade database. See appendix A for a description of the databases used in this Report.
Boeing Global Supply Chain

THE COMPANIES

U.S.
- Boeing
- Spirit
- Vought
- GE
- Goodrich

CANADA
- Boeing
- Messier-Dowty

AUSTRALIA
- Boeing

ASIA
- Kawasaki
- Mitsubishi
- Fuji
- KAL-ASD
- Chengdu Aircraft Industrial

EUROPE
- Messier-Dowty
- Rolls-Royce
- Latecoere
- Alenia
- Saab

WING TIPS
- Korea

MOVABLE TRAILING EDGE
- Australia

TAIL FIN
- Fredericksen, Washington

Rudder
- Chengdu, China

HORIZONTAL STABILIZER
- Foggia, Italy
- Salt Lake City, UT

AFT FUSELAGE
- Charleston, S.C.

CENTER WING BOX
- Nagoya, Japan

LANDING GEAR
- Gloucester, UK

MAIN LANDING GEAR WHEEL WELL
- Nagoya, Japan

ENGINE NACELLES
- Chula Vista, CA
- Grottaglie, Italy

CENTER FUSELAGE
- Nagoya, Japan

FORWARD FUSELAGE
- Wichita, Kansas

WING/BODY FAIRING
- Landing Gear Doors
- Winnipeg, Canada
- CARGO/ACCESS DOORS
- Sweden

ENGINES
- GE-Engenue, Ohio
- Rolls-Royce-Derby, UK
Global value chains which now account for more than 50% of global trade have permeated all aspects of production—basics and advanced manufacturing; Vietnam is producing large components of cell phones, many African countries which have the raw materials are not; A few African countries have integrated a few networks of global value chains; Morocco and Tunisia are involved in the automotive global value chains; But more need to be done to take advantage of tremendous benefits offered by GVCs to enhance the process of global income convergence;
GDP per capita grows most rapidly when countries break into limited manufacturing GVC

The prospects of income convergence associated with the integration global value chains and vertical integration can create the right conditions for a frictionless integration within the Mediterranean;

But the benefits of such a frictionless model of integration are not just measured in terms of per capital income growth and welfare improvement, both of which will ultimately reduce South-North as well as urban-rural migration pressures, they also include technology transfers and narrowing technological gaps between countries in the North and South of the Mediterranean Sea;
But what are the conditions for success on that path of frictionless integration—the New Vision for the Mediterranean?

- Sustained investment in hard and soft infrastructure, especially human capital with emphasis in the fields of sciences and engineering is perhaps the first and most important step;

- The brain power has been the major catalyst of the dramatically accelerated technological advances over the last decades;

- These advances are also due to a suite of enabling technologies from computing power to data storage, to the scale performance of internet;
A full brain-activity map and connectome by 2020 and by 2040 it will be routine to read and write data to billions of neurons. By 2040, 1 billion people will have their whole genome sequenced and get constant updates of their immunomes and microbiomes.

GEORGE CHURCH
Geneticist at Harvard Medical School, Cambridge, Massachusetts

The promise for the future is a world where robots are as common as cars and phones, a world where everybody can have a robot and robots are pervasively integrated in the fabric of life.

DANIELA RUS
Head of the Computer Science and Artificial Intelligence Laboratory at the Massachusetts Institute of Technology, Cambridge

In the next couple of generations, we will see the first phase of true personal, assistive robots in the home and other human environments. There will be a huge opportunity to better the quality of life, for example by freeing up people from work.

FEI-FEI LI
Head of the Stanford Artificial Intelligence Laboratory, California

Tomorrow’s scientists will have armies of virtual graduate students, doing lab work, statistical analysis, literature search and even paper-writing for them.

PEDRO DOMINICOS
Machine-learning researcher, University of Washington, Seattle
**DRIVERS**

By 2020, the number of connected sensors and devices in buildings, cities, and farms — the ‘Internet of Things’ — will be twice that of the human population.

**BIOLGY BOOMS**

Conceptual and technological advances are driving progress in biology. DNA sequencing costs have fallen at an exponential rate and the number of sequences has soared since 1995 (see inset). Similar advances are happening in neuroscience and biological nanotechnology.

**LIKE IT, PRINT IT**

3D printing is becoming cheaper and quicker — one factor that could disrupt manufacturing and allow once-pricy robotics to be more priced.

**RISE OF ROBOTS**

Purchases of robots are set to rocket as their capabilities increase and costs fall, a trend driven by massive investments in artificial intelligence and robotics by the military and by competing giants such as Google.

**FUTURE FOCUS**

Expert predictions

A possible ‘Cambrian explosion’ in robotics with a rapid period of incredible machine diversification. Robots communicating with each other at speeds that are 100 million times faster than humans might allow swarms of robots to build on each other’s learning experiences at lightning speed.

**GILL PRATT**

Head of the Toyota Research Institute, Palo Alto, California
In that realm, investments that improve connectivity and expand broadband networks by modernizing communications, roads, railways and ports will be key to a successful integration;

Still, less-costly policy reforms to boost trade and investment are also critical to the success on the path of global integration as well as a frictionless integration within the Mediterranean;

Some of these policy reforms include:
- Strengthening the rule of law and improving the business environment;
- Liberalizing roads, sea and air transports;
❑ Developing specific policies and strategies on various dimensions of rapid technological changes—for instance, the Development Strategy of Morocco and Cabo Verde places special emphasis on renewable energy;

❑ Building digital competencies to close digital divides;

❑ Strengthening capacity for technology foresight and assessment;

❑ Fostering international collaboration, including North-South and South-South collaboration to address rapid technological changes;
Conclusion

The continental trade integration reform underpinned by the African Continental Free Trade Agreement (AfCFTA) is a major step towards a frictionless integration between countries in the North and those in the South of the Mediterranean Sea;

By merging Africa’s relatively small markets into of the largest in the world, the AfCFTA is enabling investors to capitalize on greater economies of scale;

A few countries in the North of the Sea—Germany through Volkswagen Assembly Plant in Rwanda and France through Peugeot in Kenya—are already taking advantage of opportunities offered by the AfCFTA;
The AfCFTA has the potential to enhance the transition towards the new vision of a frictionless integration between Africa and Europe in a generational shift towards climate-resilient growth models and should supported by countries in the North of the Sea through the development of RVCs to accelerate integration of Africa’s integration into GVCs;

More than closing technological gaps to accelerate income convergence and reduce South-North migration pressures, it will further enhance the process of Mediterranean integration—the new vision of a frictionless integration within the Mediterranean;
“The best way to predict your future is to create it”, US President Abraham Lincoln, once said;

For countries on both sides of the Mediterranean Sea that future is one of “a frictionless integration—the New Vision of the Mediterranean”

Creating the conditions for accelerated income convergence on both sides of the Mediterranean Sea will get us closer to that dreamed future;

Thank you!