

# report

## THE MEDITERRANEAN IN THE ERA OF THE FOURTH INDUSTRIAL REVOLUTION

The impact of digitalization on human capital and mobility



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1-2 October 2019, Bardo National Museum, Tunis

### Introduction

The MED Confederation held its 2019 Annual Conference, untitled “The Mediterranean in the Era of the Fourth Industrial Revolution” at the Bardo National Museum of Tunis, Tunisia, on 1-2 October 2019. The event, which gathered members of the MED Confederation alliance, high-level representatives and experts from the public and private sectors was co-organised by the Tunisian Caisse des Dépôts et Consignations (CDC) and the European Institute of the Mediterranean (IEMed) as General Secretariat of the MED Confederation. While analysing the impact of the digitalisation on human capital and mobility in the Mediterranean, the Annual Conference of the MED Confederation was also the opportunity to strengthen the alliance and its commitment to promote socioeconomic cooperation, economic integration, social progress and cultural exchange in the Mediterranean region.



The following report summarises the discussions and outcomes of the 2019 Annual Conference of the MED Confederation. The event was designed around four sessions dedicated to explore the socioeconomic implications of the Fourth Industrial Revolution wrought by the digitalisation, to understand how mobility and financial inclusion can become drivers for economic growth and shared wealth, to analyse the digitalisation of the labour market, drawing from lessons learned from the Third Industrial Revolution, and ultimately to tackle the need to reshape the education system according current and future trends to boost the human capital of tomorrow in the Mediterranean region.

## Welcome Addresses

**Chris De Noose**, President of the MED Confederation and Director of the World Savings and Retail Banking Institute and the European Savings and Retail Banking Group (WSBI-ESBG); **Jalloul Ayed**, Honorary President of MED Confederation and former Minister of Economy of Tunisia; **Boutheina Ben Yaghlane**, Vice-President of MED Confederation and General Manager of Caisse des Dépôts et Consignations; **Jean-Louis Guigou**, Chairman of the Institut de Prospective économique du Monde méditerranéen, and finally, **Josep Ferré**, Acting Director General of the European Institute of the Mediterranean, were invited to open the conference, setting out the main challenges of the Fourth Industrial Revolution in the Mediterranean and introducing reflexions and prospects about the impact of digitalisation on human capital and mobility in the region.

Their interventions stressed that innovations brought by digitalisation and the Fourth Industrial Revolution (artificial intelligence, big data, connected objects, robotics, nanotechnologies, block chain etc.) have been sweeping over every aspect of our lives with a direct and destabilising impact on all economic sectors and the labour market. Indeed, the workforce needs to adapt to a fast-paced changing environment while company leaders must constantly readjust their business plans to avoid lagging behind. In order to ensure that these changes brought in by digitalisation are viewed as opportunities rather than threats, it was claimed that change-oriented mind-sets must be encouraged, while access to tools, knowledge and technology through innovative education and reinforced training should be provided to the workforce.

The youth, especially in the South of the Mediterranean, has a decisive role to play in this respect. New generations, especially the urban youth, are highly connected and very comfortable with technological innovations, to the point that they are today referred to as “digital natives”. Therefore, it was asked to the participants of the conference to reflect upon ways to direct this dynamism towards productive economies in the region, without ignoring that digitalisation

and connectivity are urban phenomena that call for strategies to bridge the digital divide in its generational and territorial aspects.



Jalloul Ayed, Honorary President of the MED Confederation

Tackling the impact of the Fourth Industrial Revolution on mobility, it was emphasised that globalisation has had a positive effect on human mobility, providing faster, less costly means of transportation, as well as information and communication technologies (ICT) enabling the emergence of widespread networks of contacts which facilitate continuous and stable communication with communities of origin. In that context, how to take advantage of digitalisation to enhance the connection between diasporas and their countries of origin, especially in their legitimate role as economic development agents, was one of the questions raised by the speakers. On another hand, it was mentioned that the issue of the brain drain phenomenon must be addressed by southern Mediterranean countries in order to be able to initiate a process of transition to a knowledge-based economy.

Whilst reflecting on ways to help people tackle financial exclusion, economic uncertainty and social exclusion in the region, speakers put forward the argument that local networks of SMEs, considered as the backbone of the Mediterranean, must take part in the process of digitalisation to play a major

role in our innovation driven future. For that purpose, SMEs need to be supported by the public sector through fiscal friendly policies, guarantee schemes and proper training of human capital.

Finally, the speakers warned on the dangers to miss the boat of the digital revolution in the South of the Mediterranean and therefore lag behind if not enough awareness was raised on this matter. They acknowledged the opportunities arising from this Fourth Industrial Revolution, notably creating technological and digital hubs in North of Africa or fostering job creation, and the need to seize them while building partnerships across the Mediterranean. They therefore invited participants of the conference to suggest new avenues of reflection to meet the socio-economic challenges the region is, and will be facing in the context of the Fourth Industrial Revolution.

## Socioeconomic implications of the 4<sup>th</sup> Industrial Revolution in the Mediterranean region

The speakers of the first session introduced the Fourth Industrial Revolution as a continuation of the third one, but with new technologies merging to blur the lines between physical, digital and biological spheres, and impacting all economies and societies at an exponential speed. Automation, artificial intelligence (AI), 3-D printing, nanotechnology, the use of big data, or the block chain are indeed deeply transforming production processes, exchanges, industries and institutions.

On one hand, this Fourth Industrial Revolution is indisputably providing opportunities for cost-savings and productivity gains, thus leading to prospects of higher global incomes and quality of life. Indeed, it is likely to lead to a supply-side miracle in terms of productivity: many costs will be further reduced to reach a zero marginal cost, according to economists. Moreover, new technologies are disrupting existing industry value chains, creating new markets and boosting competition to the consumers' advantage in terms of quality, speed and price. In addition, innovations such as the fintech also create perspectives of achieving financial inclusion through digital solutions while the blockchain allows reducing the cost and enhancing transparency of payment systems.

On another hand, this revolution comes with the potential to leave behind the economies, governments, companies and individuals that are unable to adapt to this fast-paced and ever changing environment. It affects old-fashioned industries that need to rethink their production systems to avoid being evicted by more agile and innovative competitors. The destruction of these outdated industries takes its toll on workers, at a time when low-skills labour is also threatened by the development of AI and robotics, which further broaden automation and labour substitution. Although the scale of these creative destruction waves is still uncertain, it seems clear that it will produce a displacement of workers, especially in intensive labour-based economies, carrying the potential to trigger inequalities. The capacity of the markets to

create jobs could be drastically affected, in both Southern and Northern Mediterranean economies already suffering from insufficient job creation. In addition and as mentioned in the opening session, generational and territorial divides are prone to be further exacerbated by the development of new technologies that are primarily mastered by urban educated youth populations. Beyond these considerations, the Fourth Industrial Revolution is also carrying risks related to cybersecurity or misinformation due to its heavy reliance on digital and connected technologies.



The key global challenge ahead formulated by the speakers is therefore to being able to adapt to the transformations engendered by the Fourth Industrial Revolution with the aim to:

- Unleash the tremendous potential for sustainable growth and embrace its exciting capabilities;
- Avoid that its disruptive features pave the ground for much greater inequalities, exclusion, undemocratic trends and major security breaches.

In order to meet this challenge, speakers suggested crucial measures to take in the context of both northern and southern Mediterranean countries. They stressed the need for the states of the region to promote an enabling environment to accompany the current economic transformations to ensure that



the potential for inclusive and sustainable growth is unleashed at its fullest extent. Although the main actors of this revolution are definitely not governments but young innovative and talented people, participants acknowledged that the public sector has a secondary but just as important role to play in providing a favourable background made of adapted legislations, financial incentives, and good educational settings. This was considered as particularly important at the time when young graduates from Southern Mediterranean countries, having acquired skills abroad, choose to come back to their countries of origin, driven by a commitment known as “tech for good”: they see gaps in their societies and therefore want to use technology to enhance the reach of social enterprises.

In this regard, a speaker suggested the creation of a network of incubators at the scale of the Mediterranean region, thought as hubs in which those with good ideas are nurtured, have access to mentors, resources and actually develop their ideas to the stage they can reach the market. She indeed stressed the commonalities between young like-minded engineers across Mediterranean sub-regions (Spain-Morocco, Tunisia-Malta-Italy, France-Algeria) and advocated for initiatives fostering the development of start-up models in these transnational areas. Another speaker highlighted the need for a harmonized code of business conduct within the Mediterranean region as an incentive for investments, while also suggesting the creation of a Mediterranean digital alliance with networked companies learning from each other. Indeed, Euro-Mediterranean alliances were deemed crucial in a digital era where competition is global.

When tackling the challenge of job destruction and displacement of workers, two approaches were highlighted by the participants: the need to update the education models and to design and implement adequate active labour market policies. Education systems must therefore change to give workers skills that are more in tune with current times, enhancing their employability while putting greater emphasis on what makes them different from the machines. That means that, going beyond knowledge, they should be able to teach soft skills such as creative and leadership thinking, interpersonal empathy, crisis management and

cognitive and emotional intelligence. Education and training policies would be one way to tackle inequalities induced by the displacement of jobs. Another one would take the form of fiscal policies taxing robots and machines taking over jobs currently developed by human beings.

Finally, participants stressed the need for a new governance including the regulation of new technologies as crucial to safeguard the democratic features of our societies, as well as to build trust in new industries and institutions through transparency and accountability. For instance, data control and protection was referred to as a critical issue, which must retain the attention of the governments. Promoting policies that protect the users of new technologies and their rights is of paramount importance in order to ensure trust and freedom as conditions for innovation, creativity and economic growth. A speaker advocated for new hybrid models of governance between the public sector and the private sector dealing with private data or public information, which ensure that the citizens can hold the latter accountable.



Rym Ayadi, Founder and President of the Euro-Mediterranean Economists Association, debating the socioeconomic implications of the 4th Industrial Revolution

Participants therefore acknowledged that the Mediterranean region does have an opportunity to leverage new technologies in a way that takes advantage of the blossoming of start-ups, fintech, technological innovations, provided that the business environments, education systems and policies, and the governance match the potential of the current transformations appropriately. And without forgetting to put humans at the centre of this revolution.

## Mobility and financial inclusion as drivers for economic growth and shared wealth

In the Mediterranean region, the immigration configuration along the South-North axis is well established and has continued to prevail in the recent years. The root causes leading youth people from Southern Mediterranean countries to emigrate to Europe have not disappeared and political instability and poor economic performances unable to ensure sufficient job creation and inclusive growth, are still the main drivers of this phenomena. Violent conflicts and human rights abuses also have an important role in triggering human movements from the South to the North of the Mediterranean. As a result, millions of people from Southern Mediterranean countries live in Europe forming diasporas linked by human, cultural, economic and also financial ties to their countries of origin.

Yet, in addition to this well-known configuration, participants in this second session put emphasis on the reinforcement of the brain-drain phenomena that took place in the last decade. According to the figures provided, nowadays around 35% of the migrants from the Maghreb to Europe are high value-added profiles while they were 22.3% in 2010 and 17.6% in 2000. To better illustrate this phenomena, it was claimed that more than 800 teacher-researchers have left Tunisia in 2017, while more than 800 Moroccan engineers leave their country every year. The reasons behind this trend are to be found in the lack of high-skilled jobs, attractive career prospects and political and economic stability that their home countries fail to offer them. In addition, the speakers highlighted the fact that European countries are also involved in an intense competition to attract high-skilled workers from these countries, through attractive legal frameworks (mainly visa facilitation, e.g. “FrenchTech Visa”) and fiscal benefits (impatriates’ fiscal regimes), making the retention of talents even more difficult, if not impossible for Southern Mediterranean countries.

If these migrants generally do not wish to come back to their countries of origin (the rate of returns is below 7% in Tunisia), they nevertheless express their will to help their relatives cope with daily demands, and more broadly to contribute to the development of their country of origin. This support is embodied by financial

flows directed towards the South of the Mediterranean, in other words remittances, which are a constant feature of the interaction of diasporas with countries of origin. The impact of migrant remittances is increasingly economically important for the receiving countries; they represent on average 6.5% of GDP in the countries of the MENA region according to the World Bank, and are surpassing the Official Development Aid directed to these countries. They have a powerful role in alleviating poverty and maintaining social stability. A speaker raised the particularly telling example of Lebanon which is receiving diaspora remittances reaching an amount of 15.3% of his GDP (World Bank, 2018). This sum is undoubtedly of paramount importance to avoid a definitive collapse of the country's economy.



Boutheina Ben Yaghlane, Vice-President of the MED Confederation and General Manager of the Caisse des Dépôts et Consignations, addressing the panellists.

However, these financial flows are not directly contributing to the development of productive economies. In fact, migrant remittances are primarily allocated to daily consumption: taking the case of immigrants in Italy, 79% of the remittances they send are used for consumption purposes (including for education and health), while 21% are for investment, mainly in the real estate sector. Participants of the session therefore acknowledged the need to find means to encourage the conversion of these financial inflows to investment with the aim to foster economic development.

The speakers identified three main obstacles hampering remittances and the maximisation of their impact on the financing of the economies of the Southern Mediterranean countries. First, they highlighted the high transactional cost of transnational money transfers through official channels (10% of the amount on average). They therefore advocated for lower transaction costs through a better connection between the payment systems of European and Southern Mediterranean countries, as well as a greater competition between money transfer companies. Secondly, they mentioned that migrants perceive the current regulatory and legal frameworks of transnational financial transfers as discouraging remittances, especially the cost of the anti-laundering and anti-terrorism regulations. Finally, the lack of trust in the financial products and the system in general, related to a perceived deficit of transparency, was also evoked as an additional deterrent factor. These legal and financial obstacles are therefore pushing migrants to resort to alternative and informal ways such as door-to-door solutions or trusted networks less likely to foster productive investments.

Consequently, experts pointed out means to overcome these obstacles and channel the migrant remittances to productive investment. First and foremost, financial inclusion (access to a bank account and financial services such as secure payments, savings, credit, insurance) is a decisive factor for the valorisation of the remittances in a development perspective. Achieving a greater financial inclusion is indeed a precondition for taking an active role in the economic life (economic citizenship). It improves security, transparency and contributes to reducing vulnerabilities and informal economy. It has therefore a fundamental social dimension since it gives access to health, housing, education. A greater use of banks for remittances directed to the Southern Mediterranean countries would therefore foster more secure transfers and a better channelling of these funds into productive investments. However, one must not forget that financial education remains the pre-condition for financial inclusion, as recalled by an expert. Both can be achieved by taking advantage of the opportunities provided by digitalisation: on one hand, digitalisation is a powerful tool in order to disseminate financial education messages, especially

in remote areas; on another hand, it makes a further reduction of transactional costs possible while developing innovative, transparent and secure financial products, making it more attractive for migrants and the receiving agents to resort to bank accounts.



Finally, panellists presented several interesting initiatives in line with the aim to accelerate and facilitate the diasporas' contribution to the development of their countries of origin. For instance, diaspora bonds were mentioned as an important innovation in terms of finance for development. However, they are currently under-valued due to the lack of guarantees in terms of effectiveness and accountability. The underlying idea is to develop attractive dedicated investment funds for migrants. Crowdfunding is also another relevant means to channel remittances to the productive economy through the support to small-scale entrepreneurship projects. Examples such as Afrikwiti, an equity crowdfunding online platform created by different African diasporas members were considered as particularly relevant at a time when access to finance for MSMEs is proving difficult to achieve in the region.

## The Digitalisation of the Labour Market in the Mediterranean: Lessons learned from the 3<sup>rd</sup> Industrial Revolution and projections moving forward

One of the main features of the Fourth Industrial Revolution is undoubtedly the greater role given to technology in the production processes, by enlarging the scope of automation, especially through the development of artificial intelligence and robotics. Its impact on the general level of employment still needs to be assessed. On the contrary, one cannot deny that digitalisation is affecting not only the type of jobs that are created and the set of skills they require, but also the way they are carried out.

Experts were invited to explore the consequences of the digitalisation and technological change on human capital and the labour market in the Mediterranean region. They deemed necessary to put the concerns raised by their potential impacts in a historical perspective. Indeed, precedent industrial revolutions and the development of machines and technology all raised concerns in terms of job destruction. The concept of “technological unemployment” was even popularised by John Maynard Keynes in the 1930s. However, participants agreed that the impact of technology is much greater today than in the previous industrial revolutions.

Its net impact on employment gave rise to discrepancies among the experts, thus illustrating the uncertainty surrounding this issue. Some of them were claiming that the Fourth Industrial Revolution and digitalisation would lead to a positive balance in job creation, while others were referring to studies predicting that between 10 to 15% of the existing jobs are at risk of being replaced by machines at the global level in the coming years. However, it was admitted that adjustments to technological change have resulted in major sectoral employment shifts – mainly the destruction of low-skilled jobs and the creation of high-skilled jobs –, posing serious challenges to the economies of the region, especially in the Southern Mediterranean countries.



In that context, adaptation to technological change will prove to be indeed more complex and challenging for the countries of the MENA region. In advanced countries, particularly those experiencing a decline in the working population, technological change leading to fewer needs in labour is perceived as favourable to maintain high level of production. The question arises differently in the MENA region where countries are facing demographic growth, a young working population, and high unemployment rates, especially among this youth. Moreover, their regulatory frameworks seem to be deeply unsuited to the current and future major shifts in labour markets requiring a mobile and flexible workforce.

There is therefore an important need for adaptation reforms to avoid an increase of structural unemployment in both Northern and Southern Mediterranean countries. First of all, governments should measure the importance to invest in human capital, especially beyond initial education, to enable workers to adapt to reallocation shifts and to address skills mismatch. Adequate training, reskilling and redeployment programmes would allow, for example, unemployed engineering graduates in Tunisia to find opportunities in the ICT sector which is currently not satisfying its recruitment needs. Social partners should be encouraged to engage with this issue that concerns them first and foremost. As touched upon by the last session, this investment in human capital must include a complete reform of the education systems that would take into account the necessary skills for the digital world.

While the impact of technological change and digitalisation on the labour market is likely to favour the most flexible, mobile and high-skilled workers, the most disadvantaged and vulnerable ones will be at risk of being economically excluded and socially marginalised. In order to avoid the rise of greater inequalities, governments should resort to redistribution policies based on a greater taxation on capital, especially on the machinery contributing to labour displacement, as mentioned in the previous session.

Finally, structural reforms must be implemented by the countries of the MENA region, not only in the labour market but directed towards achieving a more inclusive and sustainable growth that would help addressing the issue of job creation. Poor enabling and business environments, the lack of good governance, the lack of access to finance, or the prevalence of corruption discouraging FDIs are indeed constraints affecting employment performances in the Southern shore of the Mediterranean.

## Reshaping the education system of today to boost the human capital of tomorrow

Workplaces are increasingly exposed to digitalisation. Only a handful of occupations are not yet incorporating the use of information and communication technologies. Thus, the growing role of digitalisation in the working places of today and tomorrow requires a workforce capable of absorbing these technological changes, demonstrating capacity for adaptation and flexibility in order to thrive in this new global and dynamic environment. The pervasiveness of digitalisation is indeed changing the set of skills needed to match the demands of the labour market. Three different kind of skills will therefore have to be strengthened:

- Basic digital skills that every citizen must have in order to be able to use digital technologies and participate to the society of the digital era. Citizens unable to acquire these skills (especially older generations) will be at risk of marginalisation;
- Specific digital skills that workers will need to acquire in order to seize the benefits of technological change, foster innovation, sustain productivity and contribute to growth;
- Soft skills complementary of digital skills in the way that they are specific to humans: problem-solving, creative and critical thinking, leadership, communication, creativity, empathy, synthesis etc. These skills are transversal: it means that they are not related to specific categories of jobs but are relevant for most of social situations and works settings.

While education policies should ensure that every citizen is prepared to thrive in the new digital world, there is a mismatch between what is taught in the classrooms and the skills abovementioned, which leads experts of the panel to the conclusion that educations systems, as we know them today in the Mediterranean countries, are not adapted to the digital era. Indeed, in the Mediterranean region, we have education systems focused on the transmission of knowledge, thus targeting the lowest of cognitive skills. Experts noticed for instance the absence of a critical thinking approach in the curricula of the

Southern Mediterranean countries. They advocated for a change of paradigm in the education curricula which would put an emphasis on skills and competences development, while at the same time ensuring that students acquire the ability to engage with the world critically.



Ariadna Bardolet (La Caixa Banking Foundation), Carmel Borg (University of Malta) and Hamid Ben Aziza (Mediterranean Universities Union)

However, education systems are not ready to face this change of paradigm. Indeed, they are simply not even adapted to the digital transformations and when they do introduce digital tools in the classrooms, it reinforces existing transmissions patterns and old-fashion pedagogy. What is therefore really needed is a complete overhaul of the system including its organisational restructuring, and the transformation of the teaching and learning practices towards a co-production of knowledge supported by a competency-based model. Changing skill needs would need to be constantly assessed in order to anticipate them and adapt the pathways offered to the students.

Beyond the formal education systems, policies fostering training, reskill and upskill will have a fundamental role to play in allowing workers to keep their skills up to date, thus enhancing their mobility on the labour markets and

allowing them to avoid marginalisation. Efficient incentives would have to be offered to workers to undergo lifelong learning. The creation of learning communities involving workers, industries, trade unions, business organisations, universities was suggested to that end.

Reshaping the education systems is of utmost importance in order to allow workers to thrive in the labour market of the digital era. It is also critical to ensure that citizens are equipped with the necessary tools to engage critically with their societies. Finally, it is fundamental to prevent the emergence of growing inequalities and socio-economic exclusion.



## Conclusions and recommendations

The Fourth Industrial Revolution is set to deeply affect the economies and societies of the Mediterranean countries. It represents both an opportunity and a risk for them. Indeed, it comes with the opportunity to foster sustainable growth and inclusive development if they prove able to adapt to and anticipate the technological changes through:

- the adoption of policies enhancing legal and financial enabling environments (adapted and harmonized codes of business conduct; networks of incubators; digital alliances of companies);
- the implementation of adequate active labour market policies (training, reskill and upskill schemes);
- a good governance fostering the accountability of the public and private sectors while including the regulation of new technologies in a way that safeguard rights and freedoms;
- improving financial inclusion thanks to the new opportunities offered by digitalisation and through financial education;
- investing in human capital to ensure that it can adapt to the transformations implied by the digital era while preventing and reducing inequalities;
- reshaping the education system to a skills-based model enabling future workers to thrive in labour markets, also providing them with the soft skills that would allow them to engage critically with the world, while offering businesses a high-skilled workforce in position to significantly contribute to the prosperity of the digital economy.

This report was written by the European Institute of the Mediterranean (IEMed) as General Secretariat of the MED Confederation.

