



International
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The future of work, employment and skills in Latin America and the Caribbean

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This paper analyses the “stylized facts” of the current realities in the world of production and the world of work in Latin America and the Caribbean. It groups the key factors that can be considered as the main drivers of change and determinants of the future of work in the region. It suggests the need for a more integrated and renewed view of the nexus of productive development-technology-innovation-education-skills-employment and employability. And it argues the need for new, broader pacts that express this vision, along with institutional reforms that translate it into concrete, sustainable actions and State policies.

I. The determinants of the future of work

In an effort to organize ideas about the complex reality of the world of work and the factors that influence it, one can identify five groups of factors that have a decisive influence on the present and future of work: (1) demographic and population factors; (2) technological factors; (3) the productive development (or underdevelopment) of countries; (4) new enterprise models and forms of contracting; and (5) the political views of social actors and social dialogue processes.

1) Demographic and population factors

Because of the law of large numbers and the stability of demographic structures demography is one of the most exact sciences, at least in the absence of catastrophes. Figure 1 shows the huge demographic transition in the region in the 150 years between 1950 and 2100. The trend toward an aging population is notable: in 1960, of a total population of 162 million, 3%, or some 5 million, were senior citizens (age 65 or over); in 2000, the total population had grown to 512 million, of whom 6%, some 30 million people, were senior citizens. In 2050, a total population of 776 million is expected, of which 20%, 155 million people, will be senior citizens. And in 2100, the percentage of senior citizens will be 30%, about 204 million people, of a total of 680 million inhabitants.

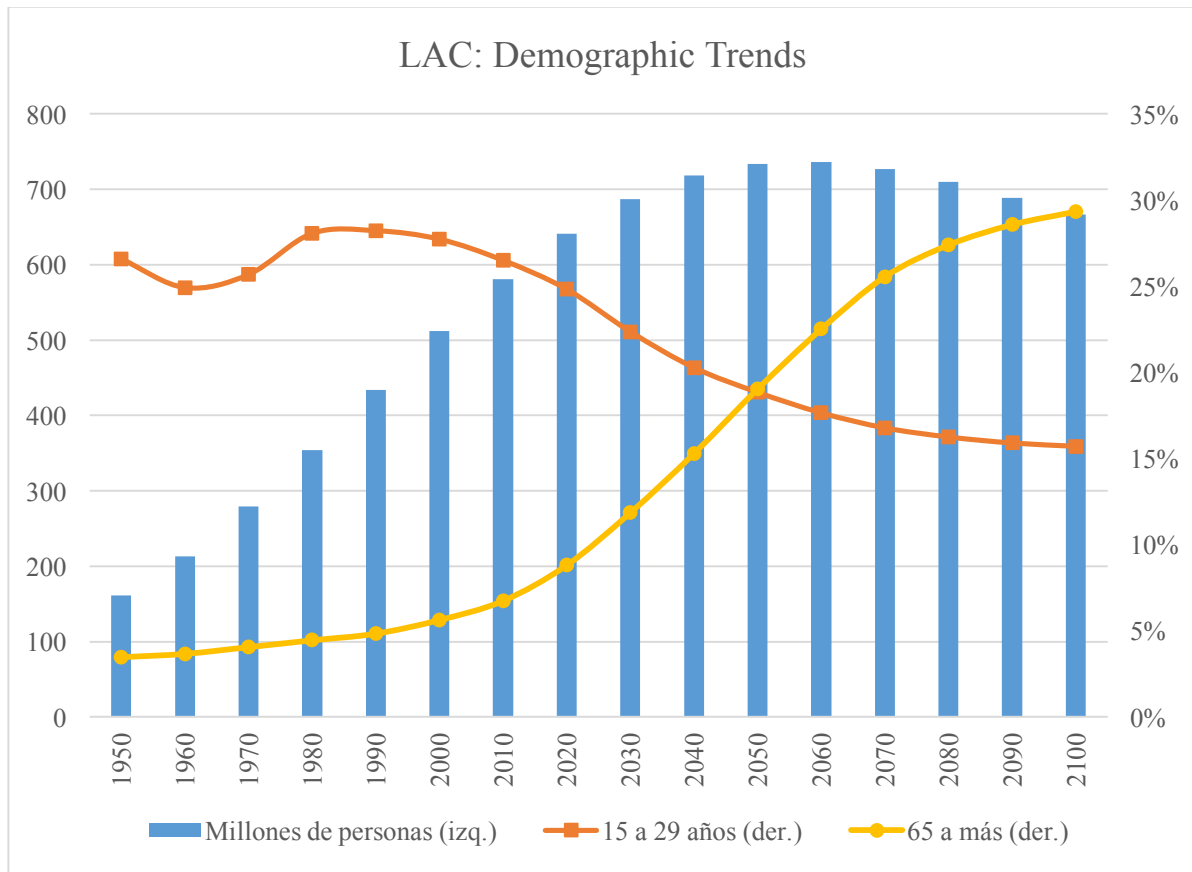
Meanwhile, the young population (ages 15 to 29), has been decreasing since the late 1990s, a trend that has become more pronounced since 2010. Although this population still represents 29% of the total population, that proportion will decrease to 22% by 2050. In fact, 2050 will be a milestone, as that will be the year in which the proportion of adults over age 65 will begin to exceed the proportion of young people between ages 15 and 29 for the first time in the region's history.

What does this mean for the world of work in Latin America and the Caribbean? Nothing less than revolutionary changes. The dizzying growth of the population of senior citizens will bring—

and this is already occurring in several countries—high growth in demand for occupations in the health and care economy, such as doctors, nurses, physiotherapists, hospital services and those related to "assisted living." Meanwhile, a majority of countries in the region are still experiencing the so-called "demographic dividend": the potential advantage of a large young population entering the work force. But this possible "injection" into growth and welfare is only possible if young people receive an education and there are low rates of youth unemployment. High rates of youth unemployment and a high proportions of NEETs (young people who are Not in Education, Employment or Training, known as "NINIs" in Spanish) suggest that countries are not taking full advantage of the demographic dividend).¹

The transition that is now occurring, and which will continue until 2050 and beyond, implies the disappearance of that dividend, and the growth of the "dependency ratio": an increasing proportion of senior citizens will depend on a decreasing proportion of young people for their standard of living and their pension income, with accompanying financial pressure on social protection systems.

Figure 1: Latin America and the Caribbean: Demographic Trends



Source: CELADE

¹ http://www.ilo.org/americas/publicaciones/WCMS_235577/lang--es/index.htm

2) Technological factors

The academic world, social networks and the media are saturated with articles about what the World Economic Forum has called the 4th Industrial Revolution. And it is true that a new wave of technological changes is impacting nearly all areas of production: manufacturing, services, agriculture.

For example, a report by McKinsey in 2013² evaluated more than 100 possible candidate technologies to identify 12 with the greatest potential for causing economic and social disruption. The following list resulted: (1) the Internet and its impact on information and communications; (2) automation of knowledge work; (3) the Internet of Things; (4) cloud technology; (5) advanced robotics; (6) self-driving vehicles; (7) biotechnology and next-generation genomics; (8) energy storage; (9) 3D printing; (10) advanced materials; (11) advanced oil and gas exploration; and (12) renewable energy. All of these technologies are having and will have massive economic and social impacts on business models and on the way in which humanity works, innovates, lives, interacts and studies or becomes educated.

So what are the impacts of the 4th Industrial Revolution on the world of work? Much has been written, and undoubtedly will continue to be written, to address this question. The conversation about impacts of technological revolutions breaks down into three main themes: First, **disruption**, or the dynamics of job destruction and creation that has always been part of technological progress, but is now accelerated. This is not one technological revolution, but several ones happening simultaneously, and the speed of change is, if not exponential, as many argue, at least dizzying. The question is whether the net balance between job creation and job destruction will create "technological unemployment", or if economic systems will be able to absorb the disruption without an increase in unemployment or underemployment.

There are two views in this regard. The pessimistic view argues that the changes are exponential and that productive systems and political institutions are lagging behind the speed of the changes and will be unable to adapt. Authors such as McAfee and Brynjolfson (2014)³ and Martin Ford (2015)⁴ hold this view. In a widely cited work, Frey and Osborne (2015)⁵ estimate that 47% of occupations in the United States are at risk of disappearing in the next 10 to 15 years.

The optimistic view emphasizes that other technological revolutions in the past have destroyed jobs, but they have also created new ones. According to this view, there is no reason to think that "this time will be different", and what we lack is sociological or "economic imagination" to anticipate the wonderful world of new possibilities that lies ahead. The truth is that this debate falls into the sphere of futurology. Neither side can provide evidence "in advance" to support either position, and it is easy to devise scenarios of either Armageddon or technological fantasy.

² <http://www.mckinsey.com/business-functions/business-technology/our-insights/disruptive-technologies>

³ <https://www.amazon.com/Second-Machine-Age-Prosperity-Technologies/dp/1480577472>

⁴ <https://www.amazon.com/Rise-Robots-Technology-Threat-Jobless/dp/1480574775>

⁵ http://www.oxfordmartin.ox.ac.uk/downloads/academic/The_Future_of_Employment.pdf

What is certain is that we are living in an age of accelerated changes and disruptions, of which technological change and innovation is one of its main drivers, and this creates a second group of impacts, the **accelerated transformation of occupations and skills requirements**: the demand for new, advanced skills is increasing, and the obsolescence of existing skills is accelerating. There is a debate about the extent to which new "intelligent machines" replace or rather supplement humans as "intelligent assistants". This line of argument and analysis has been based on the distinction between routine tasks, on the assumption that these can be automated easily, and non-routine tasks, which are supposed to be difficult or impossible to automate, or between manual and cognitive labour, based on similar assumptions.

Nevertheless, the advance of artificial intelligence, voice recognition and other technologies continues to offer a surprising ability or promise to produce "machines" that are able to carry out non-routine tasks, learn, and make forays into grey areas in the definition of "cognitive". Optimists say this nonetheless will open a broad field in which intelligent machines can supplement and multiply human skills, while new jobs and occupations for humans are created. In the area of robotics, there has also been an impact in the balance between "in-sourcing" and "out-sourcing" in global value chains, because some processes that lend themselves to automation are returning to developed countries ("in-sourcing"), where they can now develop with little labour and high productivity based on robots.

The convergence of the Internet of Things, artificial intelligence, robotics and 3D printing is creating a new production paradigm called **Industry 4.0**. The consequences for the future of production and employment are massive: increasingly there are "smart products" (telephones, buildings, wearables, cars) that will "talk" to the "mother ship" and have a permanent connection between information and control centers and the individual consumer. This is also allowing, in some lines the production, the manufacture of customized products in small batches, at the same price as mass production. Increasingly logistics is also becoming "smart": from maintenance, to client service to post-sales service. Value chains are becoming more connected and just in time. Intelligent factories are more and more a reality: networked machines that "talk" among themselves and that combine the physical world of the transformation of materials with the virtual world of just in time information and control; all of this can raise productivity and increase flexibility for production and design. The convergence of technologies is also producing a trend towards "distributed manufacturing", a new stage in the decentralization of production with the diminished importance of economies of scale in some lines of activity. And this will also impact traditional hierarchies in the organization of production and enterprise size, creating new opportunities for Small and Medium Sized Enterprises which can be smart, distributed in networks of distributed manufacturing, and competitive even if small. All of these are complex trends with multiple and multidimensional impacts in the world of work. But Industry 4.0 is already happening.

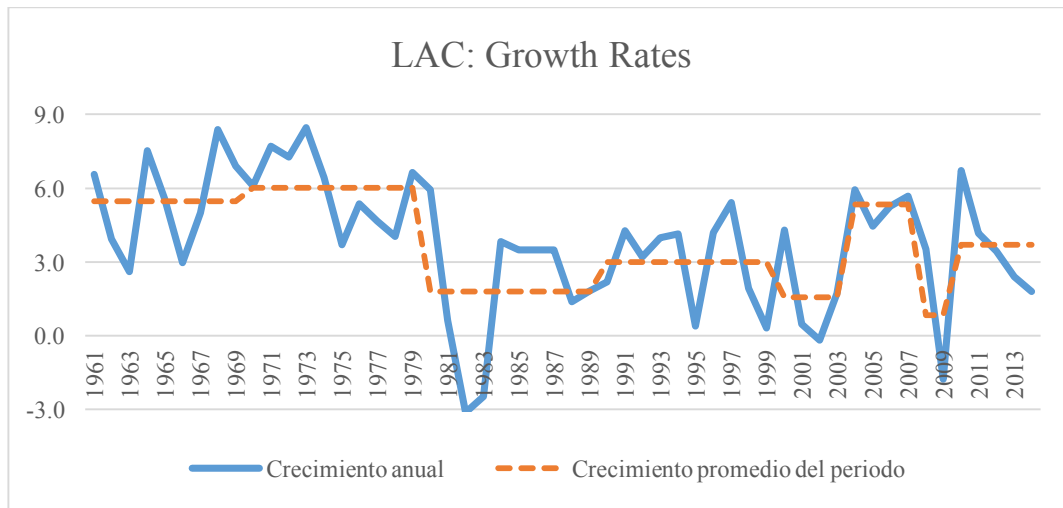
The third group of impacts is the **risk of greater inequality**: highly skilled and "connected" workers win, while the low-skilled and "disconnected" tend to lose. A large subject in itself.

3) Productive development (or under-development) of countries

In a region in which 47% of working people labour under informal conditions, in which poverty is still 29%, in which average productivity is half or less that of leading countries, with a productivity gap that is expanding instead of shrinking, and which is still highly dependent on raw materials' exports, a better future of work depends on countries implementing policies for productive development, innovation and human talent that diversify production structures, accelerate the growth of productivity, and of a more sustained, inclusive and sustainable pattern of growth with more and better jobs. This is why Goal 8 of the Sustainable Development Goals is of such critical importance. Viewed through the lens of the three desirable characteristics of growth established by Goal 8, it is clear that the growth of the region's countries has been neither sustained nor sufficiently inclusive and sustainable. Figure 2 shows the pattern of high volatility of growth that characterizes the region.

With regard to inclusivity, the data for informality and poverty, as well as gender gaps and the exclusion of indigenous peoples, among other issues, show clearly the extent to which the pattern of growth is far from one that creates greater equality and inclusion, instead of the other way around. For example, Figure 3 shows the high predominance of self-employment (28%) and employment in microenterprises (another 28%), in structure by enterprise size in the region. Much of the region's informality and poverty are concentrated in that 56% of self-employment and microenterprise employment.

Figure 2: Volatility of growth, 1961-2013

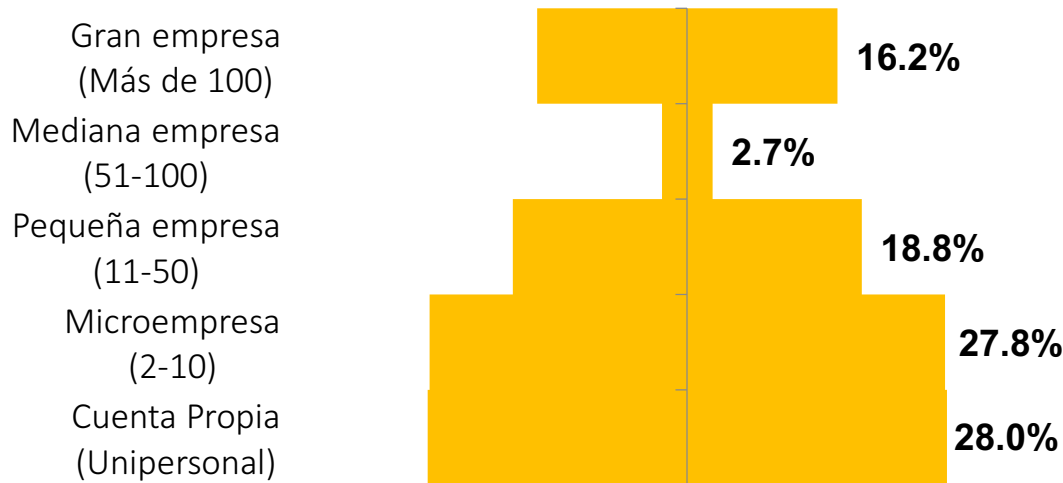


Source: Compiled based on ECLAC data

This type of structure, with few medium and large enterprises, constitutes a brake on productivity growth. As argued in the ILO report, "Small Enterprises, Large Gaps", it would be important to

have more formal employment in medium and large enterprises to close the decent work gaps.⁶

Figure 3: Structure of Employment by Enterprise Size



Source: ILO (2015) *Small Enterprises, Large Gaps*, Lima, Peru

It is true that the middle classes have grown in some countries, but the recurring cycles of deceleration or the "new normal" of mediocre growth disappoint expectations of constant improvement and upward mobility for the middle classes, complicating governance and politics, undermining trust in government and politicians and increasing conflict.

It is important to understand that extreme inequality, that can undermine social cohesion and contribute to a sense that "all citizens are not in the same boat", is not just a matter of social policy and progressive taxation but of productive under-development, because inequalities are rooted in what ECLAC for decades has called "structural heterogeneity"—that very heterogeneous profile of growth and productivity that combines a few sectors, activities and territorial areas of high productivity and high wages with a great majority of sectors, activities and territorial areas of low productivity and low wages. Governments and societies have been slow to understand that combating inequality is not just a matter of social policies, but requires policies for productive development.

Fortunately, understanding of this point is improving, and there is now a return, although still weak, to focusing attention on policies for increasing productivity, accelerating productive transformation, and investing in innovation and the development of human talent.⁷

⁶ http://www.ilo.org/americas/publicaciones/WCMS_423684/lang--en/index.htm

⁷ See J.M. Salazar-Xirinachs, I. Nübler and R. Kozul-Wright (2014) *Transforming Economies: Making Industrial Policy Work for Growth, Jobs and Development*. http://www.ilo.org/global/publications/books/WCMS_242878/lang--en/index.htm

4) New enterprise models and forms of contracting

New technologies are making major innovations in business models possible. There has been an explosion in what is known by many names, including the "gig economy", "on-demand economy" and "sharing economy".⁸ In Jazz argot, a "gig" is a "musical commitment" in which musicians are hired for one-time performances, and this is not an entirely inaccurate description of what some "on-line platforms" or "apps" do, as they are places where temporary positions are common and organizations hire independent workers to provide services.

What can be foreseen—indeed, it is already having a strong impact—is a radical change in the classical employment relationships (long-term relationships with an enterprise, regulated by a clear contract that specifies employment conditions and provides well-defined labour rights, including access to social security—health insurance and pensions) toward a variety of new forms of employment, such as independent work or self-employment; temporary work and part-time work; work for hire or on demand; and a variety of forms of "outsourcing". For example, several studies predict that by 2020, between 30% and 40% of North American workers will be independent contractors.

These new developments pose the fundamental question of how to regulate these new situations, and how to ensure that in this new world of work, all workers have the basic protections granted by classical labour rights.

One example illustrates the dilemmas. Omar, an Uber cab driver in Los Angeles, was attacked by a passenger and had to go to hospital. Omar asked Uber to pay his medical and hospital bills. But in the new collaborative economy, workers lack the classical protections associated with standard labour relations (work hours, unemployment insurance, minimum wage, health insurance, pension). Situations such as this one have sparked an intense legal debate and numerous lawsuits, which revolve around the issue of whether workers in the new collaborative platforms have been erroneously classified as "independent contractors".⁹ In this debate, two options are normally discussed: (a) establish a new category of "independent workers" and protect them with special legislation; or (b) recognize that they are de facto employees and protect them under existing legislation. Given the wide variety of situations, this is a multifaceted debate that has only just begun.

The risks and conditions of the collaborative economy (low income, lack of social security, health insurance and pensions) apply not only to workers in this new economy, but also to temporary, contract and part-time workers, and of course to the millions of informal workers in Latin America (in retail sales and construction).¹⁰ The challenge, therefore, is not only to regulate the "new collaborative economy," but to ensure that all workers have basic protections.

⁸ https://www.amazon.com/Sharing-Economy-Employment-Crowd-Based-Capitalism/dp/0262034573/ref=sr_1_1?ie=UTF8&qid=1474724532&sr=8-1&keywords=the+sharing+economy

⁹ <http://civickunkworks.com/watch-elizabeth-warren-explain-why-america-needs-to-have-a-conversation-about-the-future-of-work/>

¹⁰ http://www.ilo.org/wcmsp5/groups/public/---ed_protect/---protrav/---travail/documents/meetingdocument/wcms_338262.pdf

This includes challenges, such as: how to expand coverage and make it easier for all workers to contribute to social security and to be insured against disability and illness? How to ensure that health and pension benefits belong to the worker and are not linked with the employer? What financial and legal mechanisms can be established so those benefits follow the worker throughout his or her working life, regardless of employment status (portability of benefits)? How to achieve representation, freedom to organize and freedom to bargain collectively for workers in the "collaborative economy"? How those workers can advance their interests?. A variety of initiatives are already emerging in the United States and Europe. To organize the "voice" and participation of non-organized workers in the new collaborative economy, the rallying cry of 21st-century "crowd-based capitalism" appears to be "Independent workers of the world, unite!"

5) Political mindsets of social actors and social dialogue processes

The rate of penetration of technologies and their impacts; the possibility of accelerated, sustained and inclusive processes of learning, productive development and structural transformation; and regulatory frameworks to cover the new business models and forms of contracting are not "forces of nature" that no one can influence. They are social and political institutions in a broad sense, which provide incentives and opportunities for both economic and social innovations. As Acemoglu and Robinson (2012) argue, these institutions can be inclusive, benefiting the large majority, or exclusive and extractive, benefiting a relatively small elite. Whether a country's institutional situation goes one way or the other is strongly influenced by the political views and mindsets of the main social actors and by the existence and quality social dialogue processes and institutions, including public-private partnerships and forms of collaboration to discuss and work together towards development goals. These are the institutions and processes that integrate and define a society's governance mechanisms.

In other words, the future of work must not be viewed deterministically, as the result of technological or other forces over which societies have no control. That future will depend largely on the ability of societies to offer adequate collective responses to impacts that can be anticipated and to guide and accelerate processes of change in positive directions.

II. Skills and the agenda for enhancing human talent

Human capital and skills are vectors that connect several of the most important challenges that the region faces, mentioned above related to the future of work and employment: the slow growth of productivity; low rates of innovation; inequality; social exclusion; and the capabilities to take advantage of technological revolutions. The agenda for investment and for enhancing human talent is therefore strategic and is at the core of productive development and job quality.

This agenda for enhancing skills and human talent for productive development and the growth of productivity in the region's countries should address at least five action areas:¹¹

¹¹ <https://www.weforum.org/agenda/2015/05/6-ways-latin-america-can-close-its-skills-gap/>

First, aligning education systems with productive development policies (PDPs). High-performance Asian countries, including Korea, not only have had a vision of long-range productive transformation, but they have also aligned their education and training systems with that vision, including sectoral strategies for skills development, with close cooperation between industry and institutions for vocational training. In Latin America, several factors have impeded such alignment; perhaps the most important one has been timidity about having clear strategies for productive transformation and innovation, and reluctance in the past 20 years to adopt industrial policies. It is no surprise, therefore, that the region's countries show low indicators in the area of innovation and productivity. Shortcomings in skills and innovation reinforce one another, because the lack of skilled workers has a negative effect on innovation, while low levels of innovation inhibit demand for highly skilled workers, contributing to the vicious circle of low productivity. Low productivity is also explained by the predominance of microenterprises and small-scale enterprises, which have human resources with lower educational levels than medium and large enterprises.

It is no surprise, then, that a cultural preference for studies in non-scientific fields predominates. If there is no clear national vision of productive development, in which public policy is committed to the growth of certain sectors, or high-technology clusters, or renewable energy, or services such as tourism, or specific agricultural activities, in partnership with the respective industries, there will be no positive signals; rather, there will be few incentives for young people and their families to choose to study fields such as specialized engineering or other "hard sciences". This is exacerbated by the fact that many universities in the region traditionally have emphasized the social sciences and the humanities and have been indifferent to, or have openly resisted, a "productivist" or technological approach to the choice of careers and fields of study. Skills-development policies achieve more satisfactory outcomes when there is a clear vision and there are solid policies for productive transformation and innovation, including policies for sectoral skills with the active participation of the private sector.

Second, improving the coverage, quality and relevance of education and vocational training. Latin America and the Caribbean have made notable progress in coverage and enrolment rates. Nevertheless, enrolment in early childhood education remains low at 66%, compared to 83% in the OECD. Enrolment is also low in secondary school (74%, compared to 91% for the OECD) and tertiary education (42%, compared to 71% for the OECD). These are major gaps that must be closed. The gap in secondary education is of particular concern, as recent studies show that countries in which the educational achievement structure lacks a middle level (low proportion of secondary education) have far fewer skills and less flexibility for achieving productive transformation and diversification. The most serious problems are in the areas of **quality and relevance**. The eight Latin American countries that participated in the OECD's PISA tests fell into the lower third of the ranking of 65 countries in the three areas tested (mathematics, sciences and reading).

A third action area is to modernize vocational training models. Various assessments indicate serious shortcomings and gaps in vocational training systems in the region. The Inter-American Development Bank is the most critical, and maintains that these systems "tend to be outdated, discredited and disconnected from the needs of the private sector", that "their operations are

ineffective, their coverage rates fall short, and levels of quality and relevance are low". It also states that these deficiencies are a key factor that explains the shortage of skills that characterizes the region. Other assessments by institutions such as the Andean Development Corporation, World Bank, ILO and ECLAC are perhaps less drastic in their conclusions, but they point to similar institutional problems and empirical shortcomings.

Some figures speak for themselves. On average, public expenditure on training amounts to barely 0.4% of regional GDP. Only a small percentage of workers receive some type of training: 15% in Chile, 24% in Colombia, 10% in the Dominican Republic, 5.5% in Honduras, 4.3% in Panama and 24% in Uruguay. According to World Bank business surveys, only 3% of enterprises offer training to their workers. Changing this situation is one of the key challenges for productive development in Latin America and the Caribbean, and it requires significant reforms in models and systems for vocational training, including greater attention to so-called soft or socio-emotional skills.

Fourth, there is a need for closer public-private cooperation and more proactive action by the private sector. Quality problems and the skills gap are linked to the *major disconnect between the world of education and the world of work*. Addressing these disconnects is a public policy issue, though not exclusively. It is also largely a matter of private-sector participation and responsibility. Traditionally, the business sector has depended on governments to educate and train their future employees. These traditional separations, however, no longer work well and should change: partly because in the new era of exponential technological changes traditional education and training systems are no longer able to offer the skilled graduates that enterprises need, but also because it is not very realistic for companies to think that future workers are completely prepared to take their positions without prior training through apprenticeships in the enterprise.

Enterprise participation in education and vocational training can take many forms: apprenticeships, internships and other on-the-job experience programs, observation of the work, career presentations and professional networking, workplace visits, business mentors, contests organized by enterprises, and enrichment of study plans. The dual education approach and apprenticeship programs are especially effective forms of training which should be given much higher priority in Latin America and the Caribbean than it has received so far.

Finally, it is important to redouble efforts to promote entrepreneurship as a skill. There is evidence of cultural barriers in Latin America and the Caribbean that are detrimental to the entrepreneurial spirit. Most MBA students in Latin America say their plan is not to start a business, but to get a job in a large, multinational company. Meanwhile, most public policies have focused on supporting established micro- and small enterprises rather than start-ups. It is important to provide ecosystems for entrepreneurship with an integrated vision: from enterprise-development services to business incubators, from legal frameworks that foster an entrepreneurial spirit to orientation and financial services. Entrepreneurial talent is one of the most valuable skills and a relatively scarce resource, and Latin America and the Caribbean can ill afford to waste it.

III. Conclusion

In short, the future of work in the region will be brighter insofar as there are *clear policies for productive development and human talent*, to transform a growth model that is still highly dependent on raw materials, through a common vision forged in solid social dialogue processes. Policies for productive development and human talent must also go hand in hand with labour market policies, and vice versa. Either without the other is weak.

New pacts are needed that reflect this renewed and more integrated view of the nexus of productive development, technology, innovation, education, skills, employment and employability, and institutional reforms, and which translate them into concrete action. This implies strengthening venues for policy dialogue, as well as reviewing rationales and institutions for collective action.