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GREEN JOBS AND SKILLS IN LATIN AMERICA: A LOOK AT THE LINKEDIN DATA

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KEY IDEAS

• The transition to low-carbon economies presents an opportunity for job creation.

• The prevalence and demand for green skills are rising in Latin America and the Caribbean. Environmental services is the fastest growing skill in all countries and industries.

• Agriculture is the industry with the highest green skills penetration in the region’s countries.

• Most jobs that require green skills are not traditional green jobs, which shows the need to increase these skills in different economic sectors.

• The green hiring rate has seen rapid growth since 2020, suggesting a significant shift due to the pandemic.

• However, the green hiring rate is below the region’s aggregate hiring rate.

• It is essential to redesign specific strategies by country and industry to accelerate the economic transformation needed to address climate change.
I. The Shift in the Economic and Labor Paradigm

The world is transforming economic activities to increase the environmental sustainability of available natural resources. The challenge presented by climate change is causing a productive transformation derived from actions of mitigation (reduction of greenhouse gases) and actions to increase the sustainability of natural resources (water, forests, etc.). In this transformation, economies will develop new industries and economic activities, others will tend to disappear, and others will change substantially. We are amid an economic paradigm shift, with creative destruction of the economy that implies a new demand for new skills, a decline in the demand for others and the need to reconvert a good part of human capital. The latter will result from the necessary changes to create new occupations and skills of workers, and adapt existing ones.

This productive transformation will have different trends due to the commitment of governments and the private sector. Their commitment is to develop economic activities with greater efficiency, less pollution, lower emissions, and less impact on public health. This commitment calls for a new approach. We are moving from using traditional market and education signals (positions, grades, degrees, and schools) to focusing on individual skills and abilities to facilitate this transformation. This transformation will require new sources of information to monitor changes and the observed impact on economic activities, both new ones and the modification of existing ones.
II. How does LinkedIn classify green skills?

One of the new sources of information is LinkedIn, a platform used by a subset of the workforce, particularly high-skilled workers in knowledge-intensive sectors. However, its selection of indicators provides accurate, disaggregated, and timely data at a rate that traditional sources cannot match. With over 800 million users, this platform is a global leader in connecting members of the global workforce. LinkedIn members publish information on their job changes and skills. Once anonymized and aggregated, these data facilitate measurement of labor markets indicators, and a skill penetration rate that can be tracked over time and compared by sectors and countries. This includes general skills and "green skills" (described below) and their behavior in a set of Latin American countries.

LinkedIn has developed different concepts to analyze trends within the green job sector. This includes skills, employment, and green talent. In the first case, the platform defines three categories of green skills:

- **Core**: directly related to sustainability promotion activities (e.g. pollution prevention).
- **Ambivalent**: it can be used for sustainability or not (e.g. fleet management).
- **Adjacent**: can support acquiring basic and ambivalent green skills (such as biology).

**The platform catalogs the jobs published by its users in three categories:**

- **Green**: one that cannot be performed without extensive knowledge of green skills (e.g. solar energy consultant).
- **Greening**: can be performed without green skills, but typically require some green skills.
- **Greening potential jobs**: can be performed without green skills, but occasionally require some level of green skills (e.g., logistics manager).
- **Not green**: one that does not require green skills (e.g. nurse).

Green talent is based on the classification of skills and jobs, and it refers to members who add at least one core green skill or have a green job or a greening job. These definitions do not necessarily coincide with those used by the authorities or even the IDB Group to classify sustainable activities.

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1. See LinkedIn Report. IDB Labor Observatory.
2. See Global Green Skills Report 2022, LinkedIn
Thanks to the Data Partnership, the green skills, jobs, and talent data calculated by LinkedIn have been shared with the IDB. The alliance between firms and multilateral agencies allows the information available for Latin America and the Caribbean to explore the platform’s non-traditional data, which complements the analysis based on traditional employment in the region. The data provides a unique and valuable insight into the trends of the workforce in the region. Details of the data by country, industry and skills are available at the IDB Labor Observatory.

III. LinkedIn User’s Green Skills in Latin America and the Caribbean

The definition of green skills and green talent, represents an important challenge since the classifications require equivalences between regions of the same country and among countries. There is also a challenge of global representation, for each country and for each industry, since the platform users are a subset of the workforce, especially high-income people working in knowledge-intensive sectors. To solve these challenges, LinkedIn defines each by country and industry. We identified 41 green skills for the six countries with sufficient information for the classification between 2015 and 2020 (Argentina, Brazil, Chile, Colombia, Mexico and Peru). Figure 1 shows these countries’ five green skills with the highest compound annual growth rate, or CAGR, the mean annual growth rate of each skill from 2015 to 2020.

3. The Data Development Alliance is a collaboration between international organizations and technology companies that facilitates the efficient and responsible use of third-party data in international development. This alliance is based on standardized legal, information technology and governance procedures. See https://datapartnership.org/

4. For more details, see LinkedIn’s quarterly report for Latin America and the Caribbean of the Labor Observatory. The indicator selection provides accurate, disaggregated, and timely data at a rate that traditional sources cannot match.

5. The 20 fastest green skills growing in each country between 2015 and 2020 are included (measured by the annualized growth rate). The skill must be in the top 50th percentile of all green skills added in 2020 and have a minimum of 100 members in the country adding the skill in 2020. Includes agronomy, energy management, environment, health and security (EHS), environmental awareness, environmental compliance standards, environmental consulting, environmental education, environmental engineering, environmental problem solving, environmental law, environmental monitoring, environmental services HSE management systems, environmental risk analysis, environmental risk recognition, hazardous waste management, natural resources, transportation systems, environmental health and safety, ecological agriculture, photovoltaic software, photovoltaic infrastructure, radiation safety, renewable energy, solar energy, solid waste management, stormwater management, sustainable agriculture, sustainable development, sustainable tourism, tree planting, waste management, water supply, water treatment, wildlife management, wildlife biology.

6. Included are the 20 fastest growing green skills by industry group in Latin America and the Caribbean from 2015 to 2020 (measured by annualized growth rate). The skill must be in the top 50th percentile of all green skills aggregated in 2020 and have a minimum of 100 industry members aggregating the skill in 2020.
Environmental services have the highest growth in these countries, while there is a significant variation in the rest of the skills.

**FIGURE 1 – FASTEST GROWING GREEN SKILLS BY COUNTRY, 2015-2020**

| Country     | Environmental Services | Environment, Health, and Safety | Environmental Education | Solar Energy | Sustainable Tourism | Risk recognition | Tree plantation | Photovoltaic systems | Wildlife | Solid waste | Natural resources | Ecological agriculture | Occupational Safety and Health Administration | Environmental Services | Environment, Health, and Safety | Security and health at work | Occupational Safety and Health Administration | Environmental Services | Environmental engineering | Occupational Safety and Health Administration | Environment, Health, and Safety | Security and health at work |
|-------------|------------------------|---------------------------------|--------------------------|--------------|---------------------|-----------------|-----------------|--------------------|-----------------|----------------|-----------------|--------------------------|--------------------------|--------------------------|------------------------|---------------------------|------------------------|--------------------------|-----------------------------|--------------------------|--------------------------|
| Argentina   |                        |                                 |                          |              |                     |                 |                 |                    |                 |                |                 |                          |                          |                          |                        |                          |                        |                      |                          |                          |                        |                          |
| Brazil      |                        |                                 |                          |              |                     |                 |                 |                    |                 |                |                 |                          |                          |                          |                        |                          |                        |                      |                          |                          |                        |                          |
| Chile       |                        |                                 |                          |              |                     |                 |                 |                    |                 |                |                 |                          |                          |                          |                        |                          |                        |                      |                          |                          |                        |                          |
| Colombia    |                        |                                 |                          |              |                     |                 |                 |                    |                 |                |                 |                          |                          |                          |                        |                          |                        |                      |                          |                          |                        |                          |
| Mexico      |                        |                                 |                          |              |                     |                 |                 |                    |                 |                |                 |                          |                          |                          |                        |                          |                        |                      |                          |                          |                        |                          |
| Peru        |                        |                                 |                          |              |                     |                 |                 |                    |                 |                |                 |                          |                          |                          |                        |                          |                        |                      |                          |                          |                        |                          |

*Source:* Prepared by the authors based on LinkedIn data provided through the Data Partnership.

*Note:* Growth as measured by CAGR.

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7. For the use of skills by country and by industry, LinkedIn, through the Data Partnership, shared with the authors data on exchange rates of the indicator, but not the indicator.
A total of 7 industries concentrate on the growth of the green skills industry, including construction, consumer goods, corporate services, education, energy and mining, manufacturing, and public administration. The graph below shows the fastest growing skills in these industries.

**FIGURE 2 ● AVERAGE ANNUAL GROWTH BY SELECT SKILLS INDUSTRY, 2015-2020**

Despite these green skills growth in the selected industries, we find that the penetration levels of these skills in different industries significantly differ. Figure 3 shows LinkedIn's Green Skills Penetration Index\(^\text{8}\) for industries with concentrated green skills growth. This penetration is given by the characteristics of the skills described in member profiles on the platform.

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\(^8\) Provides a measure of the green skill intensity and reflects the number of green skills present in the top 50 most representative skills (skill genome) of that entity. Note that this calculation begins at the occupation level for each country-industry pair and skill penetration rates within a country-industry pair are averaged to provide the overall country-industry green skill penetration rate.
The graph above shows that, except for agriculture, the penetration of green skills in various industries has remained stable and even decreased. The “non-green skills” used in these industries have grown more than proportionally relative to the “green skills” – core, adjacent, and ambivalent – in recent years. The differences suggest that the demand for green skills in most member profiles in these industries is not increasing at the growth rate of the other skills, which may delay their sustainability. This information is key to identifying what improvements can be made in these industries to intensify their sustainability in the future.
IV. Green Hiring Rate in Times of COVID-19

In addition to measuring the growth of green skills and the penetration rate of these skills, LinkedIn has developed a measure to know the rate of “green hiring.” LinkedIn's overall hiring rate is the proportion of new hires registered by users of the platform divided by the number of users of the platform. In the case of green jobs, LinkedIn uses the same ratio, but only for users who can be considered as green talent (an essential green skill or have a green job or with green potential).

The measurement of the green hiring rate for Latin America shows that the pandemic has been a strong catalyst for the growth of these skills, particularly in Brazil and Mexico. Figure 4 shows the behavior of the hiring rate reported by LinkedIn for these countries, in addition to Argentina, Chile, Colombia, Costa Rica and Peru.

**FIGURE 4 ▪ GREEN HIRE RATE, 2016-2021**

Until 2018, the hiring level of green jobs did not significantly grow. During the pandemic, at the beginning of 2020, hiring dropped substantially and the green hiring rate showed its
lowest value reported. After that drop, green hiring experienced sustained growth with significant differences among countries. In this context, Brazil stands out for its increase in this type of employment, well above the other countries.

This data can be compared to LinkedIn’s overall hiring rate and thus contrast the employability of users with green talent with the universe of users. Figure 5 shows the difference between the two hiring rates. As can be seen, the green hiring rate had a less dynamic growth compared to the general rate for almost all countries, despite the rapid growth shown in Figure 4. Chile and Mexico are the two countries where this situation is different, since in the first case, the green hiring rate is higher than the general rate and, in the Mexican case, they are almost identical.

FIGURE 5  • DIFFERENCE BETWEEN THE AGGREGATE HIRING RATE AND THE GREEN HIRING RATE BY COUNTRY, 2020-2021

Source: Prepared by the authors based on LinkedIn data provided through the Data Partnership.
Note: This measure is the subtraction of the green hiring rate minus the overall hiring rate for each country. So, positive values mean that the green hiring rate is higher than the overall hiring rate, and negative values mean the opposite.
These results show that, despite the growth observed after the pandemic, Latin America has many areas of opportunity to promote green jobs in the region. Following the strengthening of countries’ environmental commitments during the COP26 in Glasgow, promoting green jobs and green skills should be one of the focuses of public policy to achieve a sustained and sustainable economic recovery.

**FIGURE 6 ▪ AGGREGATE HIRING RATE AND GREEN HIRING RATE BY COUNTRY, 2020-2021**

*Source:* Prepared by the authors based on LinkedIn data provided through the Data Partnership.
V. Conclusions

Green skills are critical in achieving a successful transition to lower net carbon and environmentally friendly economies. This report analyzes data generated by LinkedIn on green skills and green jobs in Latin America and the Caribbean to provide helpful information to help in this transition.

The shift towards hiring for the green economy is already underway worldwide, as LinkedIn has shown in its 2022 Global Green Skills Report. Globally, the demand for talent with green skills has been steadily increasing as governments and businesses step up their commitments and actions to achieve their climate and sustainability goals. Unfortunately, this trend is not the same for Latin America, as this growth was relatively slow between 2017 and 2020. The data presented in this report shows that the hiring of green talent is increasing in Latin America, but not yet at the pace needed to achieve a faster and more successful transition. It also analyzes the differences in the green transition for each country and sector, including how agriculture, corporate services, manufacturing, energy, mining, and construction are the greenest skills-intensive sectors in the region. The data shows that few industries are transforming, most revealing sluggish growth in green skills. Green skills intensity must increase in all sectors and countries to generate the necessary supply and meet the demand required to achieve climate targets for emissions reductions and adapt economic activities to climate change.

LinkedIn’s green skills and jobs data provides a unique opportunity, as it highlights the scale of the challenge, and sheds light on the way forward. That is, we can better understand the workforce needs and skills required for the transition in specific sectors and countries.

The report makes the need to move faster and close the green skills gap, upgrade these skills, and enable the shift to more green jobs clear. LinkedIn type of data will allow the transition to net-zero emissions to be fair and inclusive. In the following installments, analyses will be conducted on the gaps in green jobs by income, gender, and education levels. Scholars and analysts would use the information to develop policy recommendations to accompany this transition.
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