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Technology, rurality and gender… false friends, but not enemies!

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Abstract

Guaranteeing gender equality in the access and use of Information and Communication Technologies (ICT) has become today a determining element in the achievement of food security and as a consequence of the achievement of rural development, which constitutes one of the goals of the Food and Agriculture Organization of the United Nations (FAO). Indeed, the fight against digital gender gaps and other gaps in a general way allow a greater contribution in the agri-food sector, which is becoming increasingly digitized and technological. In fact, the objective of the study is to analyse the impact that have determined gaps, such as: force labour participation rate, literacy rate, pay rate and ICT study rate, on the participation rate gap in the agricultural sector. For this reason, a multiple linear regression is proposed that considers 64 countries and subsequently the situation of four of these countries is examined in more detail: France, Spain, Morocco and Algeria. The results of this show the existence of a positive correlation between our variables but also the effect that some socio-economic and cultural factors have on this achievement.

Keywords

Rural development, digital divide, social equality, ICT, sustainable development

Introduction and objectives

In most countries, rural women are not seen as equals in the development process, despite making up half the world's population, and it is generally in rural areas where socio-economic disparities between men and women are more acute and visible (Cruz Souza and Silva, 2008). According to UN Women (2018), agriculture remains the most important employment sector for women living in developing countries and rural areas, with very low or no social protection or labour rights. In this study it has been found that fewer than 15% of people who own farmland in the world are women, 64% of women working in agriculture have low incomes, only 2% of rural women in poor countries finish high school, and that the majority of the 3.7 billion people not on the Internet are rural women and girls. Rural women are therefore often left in the shadow of men.

Today's rural women must play a key role in the economic and social development of the rural environment, as it is facing increasing challenges and transformations. These transformations include technological and digital shifts that have completely overhauled traditional ways of life over the past two generations and made things simpler and easier for those who can and know how to leverage them (Brossard, 2016; Guèye, 2000). Information and communication technologies (ICTs) have improved the lives of farmers, from crop control to market price tracking, dissemination of good practices and better access to banking services. However, these developments have not impacted all areas equally, as mindsets and stereotypes continue to cause gender segregation within the rural world. These segregations mean rural women are unable to contribute in the same way as men due to the 'digital divide', harming them and restricting them to performing basic roles, generally considered as simple family help (Wright and Annes, 2016).

Indeed, it is rare to find rural women leading groups of producers or farmers because they are excluded from positions of high responsibility, lack empowerment and have low levels of education, especially the technological training that has become an essential part of farming productivity (Bryant and Pini, 2006; Sangeetha et al., 2013; Charatsari et al. 2013).

In reality, gender inequalities continue to be a serious problem in the digital economy, as does the gap between urban and rural populations. Opportunities for rural women, whether older or not, are hampered by access to ICTs and other country-specific inequalities. The aim of

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this study is to unpack the impact of the labour force participation rate gap, literacy rate gap, pay gap, and gap in the ICT study rate on the participation rate gap in the agricultural sector. Data from 64 countries, selected according to the availability of the same information in the same period extracted from WEF (2020) and ILOSAT WB (2020) (See the annexe), was considered for analysis and later drawn from four closely related Mediterranean countries: France, Spain, Algeria and Morocco.

Studying the situation of rural women in these four countries was not a coincidence but a decision motivated by the relationship the two European countries had and continue to have with the two North African ones. The aim was to explore whether practices inherited by the formerly occupied North African countries apply across all areas, including social and economic areas, or are encapsulated in just a number of cultural footprints (gastronomic, linguistic, traditional, etc.) or ones related to the commercial relations that bind Morocco and Algeria fairly closely to Spain and France. The decision to draw a comparative analysis of the four countries was also an objective and conscious acknowledgement of the fact that they have a shared history and common interests, in addition to being geographically close to each other.

Theoretical framework

Women represent an essential resource that must be strengthened in order to support a development model, particularly rural women who are disconnected from many sectors and penalised for not being involved in various areas. ONU Mujeres (2020) supports this idea, stating, "Rural women are key agents for achieving the transformational economic, environmental and social changes required for sustainable development. But limited access to credit, health care and education are among the many challenges they face."

Several authors, including Wright and Annes (2016) and Varela-Candamio et al. (2018), take issue with the social factors that cause this segregation, such as stereotypes or inequality in the division of tasks between the genders, and which propel rural women into the role of 'helper' instead of 'worker', despite the multiple roles they play as producers, consultants, consumers and the person responsible for the family's nutritional issues. Other studies, such as those by Sampedro and Camarero (2007) and Spain's Instituto de la Mujer (2015), suggest that the greater invisibility of rural women's work is down to two core reasons: the importance of family businesses where women are traditionally integrated in the form of 'family support', and a very closed local labour market that makes it hard to onboard them.

All these factors compel rural women to face the dilemma of either adapting to the scarce employment and training opportunities afforded by their environment or travelling every day/permanently moving to larger centres where there are more possibilities (Camarero and Sampedro, 2008). This leads to a flight of human capital (rural exodus) that weakens the social and productive fabric of the regions and threatens the sustainability of their natural and cultural resources (Cruz Souza and Silva, 2008; FIAP, 2000; Stock, 2017; Tsiaousi and Partalidou, 2020).

In addition to training and job opportunities, access to and use of ICTs are sparser in rural areas than urban ones, particularly for women lacking the necessary infrastructure and/or skills.

In this regard, the Instituto de la Mujer (2015) recommends the use of ICTs: a) to provide socio-occupational guidance, b) for the training of rural women and c) to promote women-led ventures. Indeed, these tools can facilitate work-life balance issues by reducing effort and space, gaining time and creating added production value. In other words, ICTs can be tapped to combat the handicaps, stereotypes and mapping of female and male roles that leave rural women unseen in the sector (Iradukunda et al., 2019).

Farmar-Browers (2010) says that childrearing and work related to family health issues are a predefined and dominant role for rural women but that when it comes to farming-related decision-making, this predominance is harder to pin down. Ashby et al. (2009) add that women in the rural world have little decision-making power over farming matters. This invisibility is also due to the fact that women have a harder time accessing the world of work and resources because of a lack of time since they take on the domestic tasks (caring for dependants and children) and even perform tasks on the farm or in the family business and incorporate them into the domestic routine as a further responsibility (Herrero, 2012).

In general, rural areas are characterised by being isolated, quite conservative and not always very economically developed. These three elements make access to technological training and access to and use of ICTs harder than in urban areas where there are more financial and material resources (either computer and digitised material or means of transport facilitating travel to university or work).

The International Monetary Fund (FMI, 2018) indicates that equal participation by both genders would have very important benefits for global economies, potentially up to 34% in some countries. Similarly, the International Labour Organization (OIT, 2017) says fighting the gender gap would inject an added USD 5.8 trillion to the global economy. It specifies that boosting women's labour force participation, including in the ICT sector, would also provide capital in the form of taxes for countries. Another study by the European Union (2018) confirms that on boarding women in the digital innovation sector could bring returns of up to EUR 16 trillion annually to EU GDP. Palmer (1978) had already confirmed the advantages that technologies have for rural women, finding that innovations impact all stages of the crop cycle, from work related to readying the land to the end process, i.e., the availability of food on the consumer's table. Examples include drip irrigation technologies that have the potential to increase crop yields or the monitoring using drones which is playing an important role in developing the smart agriculture (Rao

et al., 2021: Issad et al., 2021; Maikhuri et al., 2011; Vijesh et al., 2020; Kotzé, 2003).

All these considerations make ICTs a key factor in enabling rural women to exchange information, as they let them share experiences and promote the sustainable-development work the female population does in different places around the world (Instituto de la Mujer, 2015).

Methodology

The objective of this work is to examine the existence of a correlation between the independent variables and the dependent variable that is defined below in this section. To do this, first the statistical data of primary and secondary information are compiled from official databases, scientific journals and official organizations (World Economic Forum and ILO).

After collecting these data by country, a database is cleaned and set up, saving only the countries whose data are complete. To consolidate the comprehensive database of the program and ensure its reliability, the MATLAB® processing software from Mathworks has been used (Matlab, 2021).

Once the hypotheses have been defined and the cause-effect relationship model that gives structure to this research has been established, a robust multiple linear regression is carried out, defined by the following formula (Pardo and Ruiz, 2005):

$$\boldsymbol{Y} = \boldsymbol{\beta}_0 + \boldsymbol{\beta}_1 \boldsymbol{X}_1 + \boldsymbol{\beta}_2 \boldsymbol{X}_{2+\ldots\ldots+} \boldsymbol{\epsilon}$$

The purpose of this multiple linear regression is to evaluate the effect of each independent variable in the presence of the rest (Gil, 2018). For this, the Pearson coefficient is used, which is the correlation coefficient most used to measure linear dependence, and confirm the significance of the correlation between these variables or the degree to which they are associated (Johnston, 1975; Pardo and Ruiz, 2005; Gil, 2018). The value of the correlation index varies in the interval [-1,1], the sign indicating the direction of the relationship. To determine the goodness of fit of the model, the R^2 (coefficient of determination) will be used.

The objective of this study consists in analysing that the exogenous variable Y (Participation Rate Gap in the Agricultural Sector) is influenced by the variables x1 (Labour Force Participation Rate Gap), x2 (Literacy Rate Gap), x3 (Pay Gap), x4 (Gap in the ICT Study Rate).

In addition to this multiple linear regression, the analysis of these variables in four Mediterranean countries is particularized in the discussion: France, Spain, Morocco and Algeria in order to see how they behave in terms of gender gaps based on cultural and social aspects, economic and political of each one of them.

Results

Multiple linear regression results

In this section the four independents variables are analysed: The Labour Force Participation Rate Gap, the Literacy Rate Gap, the Pay Gap, and the Gap in the ICT Study Rate, with the dependent variable which is the Participation Rate Gap in the Agricultural Sector. The results of our model can be summarized in the following table (Table 1):

This correlation is presented in graph 1 and 2 below (Figures 1 and 2):

Our model shows the existence of a positive correlation between PRGAS and the other independent variables. The significance of this correlation is confirmed first by the Pearson coefficient which is positive, but also graphically where a straight line fitted to the model is seen.

On the other hand, it is highlighted that the value of P for this variable is also lower than the low p value (0.05), which affirmed the existence of a correlation between our gaps.

The equation shows that the coefficients of the gaps analysed are the following:

$$\mathbf{PRGAS} = \mathbf{0.24} + \mathbf{0.61}\,\boldsymbol{LFPRG_i} - \mathbf{1.23}\,\boldsymbol{LRG_i} - \mathbf{0.36}\boldsymbol{PG_i} + \mathbf{0.11}\boldsymbol{GICTSR_i}$$

According to the results obtained, PRGAS shows a significant correlation with LFPRG, LRG, PG, GICTSR, with a Pearson correlation coefficient of 0.24. These data explain the model to 67.1%, which leads us to conclude that there will be other variables that affect the gap of participation of women in Agriculture.

Comparison between the four countries

The four chosen countries have different socioeconomic situations and so their development in the agricultural sector is also partly down to geography and political strategy. According to data from the FAO (2019), although they have very similar-sized rural populations of between 9.1% and 13.6% (12.8% in France, 9.1% in Spain, 13.6% in Morocco and 11.5% in Algeria), the proportion of jobs in agriculture is very different (2.6% in France, 8.0% in Spain, 38.3% in Morocco and 9.4% in Algeria), with more pronounced disparities in women's employment (1.6% in France, 5.8% in Spain, 59.4% in Morocco and 3.2% in Algeria). This is due to several factors, including the level of education and orientation each country tends to have. Table 2 presents the educational situation of the four countries, considering level of literacy (percentage of the population over the age of 15 able to read, write and make simple arithmetic calculations), percentage of children enrolled in primary, secondary and tertiary education (the latter considered according to the context of each country depending on whether military service is required and the proportion of students who study abroad) and, finally, university enrolment rate by branch of education:

Table 2 shows the difference in literacy rates between the European and the North African countries. Although not very low in the latter two, in France and Spain it is higher. The table also shows that gender inequality around literacy is more visible in Morocco and Algeria compared to the other two. CREAR (2013) says Morocco has shown an increase in gross enrolment rates, with encouraging figures in relation to education.

Table 1. Models of robust linear regressions.

Variables	Definition	Formulation	Coefficient	Std.Error	t-Statistic	*P* value
Y = PRGAS	Participation Rate Gap in the Agricultural Sector: The difference between the rate of men minus the rate of women who work in Agriculture.	$PRGAS = RMAS - RWAS$ $RMAS = \frac{Men\ in\ agriculture}{Total\ men\ employed} * 100$ $RWAS = \frac{Women\ in\ agriculture}{Total\ women\ employed} * 100$				
X1 = LFPRG	Labour Force Participation Rate Gap: The difference between the labour force participation rate of men minus the participation rate of women.	$LFPRG = LFM - LFW$ $LFM = \frac{Participation\ of\ men\ in\ the\ work\ force}{Total\ men} * 100$ $LFW = \frac{Participation\ of\ women\ in\ the\ work\ force}{Total\ women} * 100$	0.6143	0.097493	6.301	4.0725_e-08
X2 = LRG	Literacy Rate Gap: The difference between the literacy rate for men minus the literacy rate for women.	$LRG = LRM - LRW$ $LRM = \frac{Literacy\ Men}{Total\ men} * 100$ $LRW = \frac{Literacy\ Women}{Total\ women} * 100$	-1.2264	0.17534	-6.9941	2.7687_e-09
X3 = PG	Pay Gap: The difference between the income of men minus the income of women.	$PG = IM - IW$ $IM = \frac{\mathbf{Salary\ Men}}{\mathbf{Total\ men}} * 100$ $IW = \frac{\mathbf{Salary\ Women}}{\mathbf{Total\ women}} * 100$	-0.36215	0.075803	-4.7776	1.2164_e-05
X4 = GICTSR	Gap in the ICT Study Rate: The difference between the ICT study rate for men and the ICT study rate for women.	$GICTSR = ICTSRM - ICTSRW$ $ICTSRM = \frac{ICT\ Studies\ Men}{Total\ men} * 100$ $ICTSRW = \frac{ICT\ Studies\ Women}{Total\ women} * 100$	0.10945	0.036853	2.9699	0.0043021
Interception			0.23666	3.3888	0.069835	0.94456

Number of observations: 64, **Error degrees of freedom:** 59
Root Mean Squared Error: 7.01.
R-Squared: 0.671, Adjusted R-Squared: −0.649.
F-statistic vs. constant model: 31.1, p-value = 116_e-13.
Source: Own elaboration based on data from WEF (2020) and ILOSAT WB (2020).

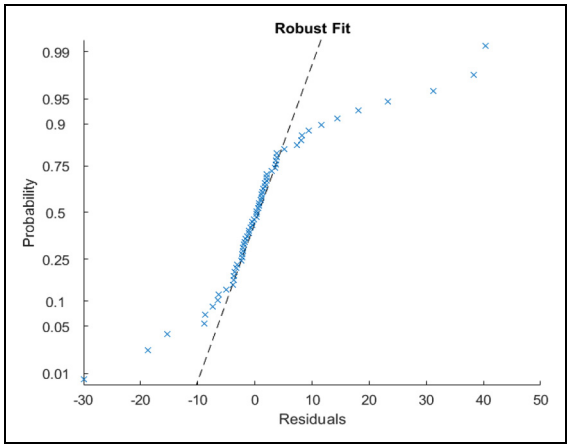

Figure 1. Robust model.

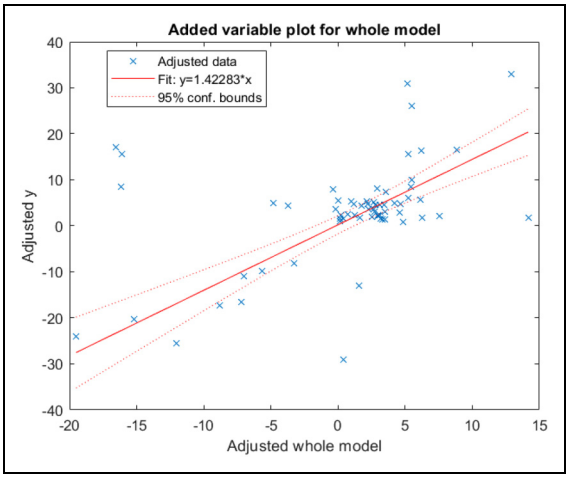

Figure 2. Fitted robust model. **Source:** Own elaboration based on data from WEF (2020) and ILOSAT WB (2020).

However, we can see that at all three levels of education (primary, secondary and tertiary) the rate of women is almost the same as or higher than that of men, especially with regards tertiary studies, where women prevail. This can be explained by several reasons, including women's perseverance in their studies and their good results that allow them to reach this stage of education in greater numbers and with better grades. Puertas (2015) indicates that in Spain the percentage of female graduates exceeds that of male ones and in many cases with better academic records.

In the case of Algeria and Morocco, there is more social pressure influenced by organisational factors. For example, the number of women in tertiary education in Morocco falls because of drop outs, since in some conservative families the women are considered to be of marriageable age. El Mejdoubi (2008) adds that distance from the centre of education, lack of transport, topographic challenges and paucity of grants are also behind dropout rates, especially for girls.

In the case of Algeria, there are more women than men in tertiary studies (almost twice the number) because of mass dropout rates among the latter. This is sometimes because they have to work and take care of the family if the father is ill or has died. This theory was supported by Silvia (1999), who said that household economic situations affect dropout rates, since lack of work among parents prevents young people from staying in school and pushes many teenagers to leave and enter the labour market (Alvarez et al., 2017). This is closely related to Algeria's history, where it was mainly men who fought for independence from France (1830–1962) and during the era of terrorism (the 'black decade' of 1989–2001), making them more vulnerable in terms of health and life expectancy and forcing them to take responsibility for the family and enter the job market at a very young age. Another factor was also the duty for young, highly educated men (university students) to do military service, particularly scientists and technicians, which led them to stop studying early to avoid this obligation (Bulletin Officiel Algérien, 2014).

As for STEM studies, women's engagement is low across all the countries except Algeria, which has a higher rate amongst women than France, Spain or Morocco for the reason given above (mandatory military service for men with technical careers). It should be noted here that the most important figure, and where there is the most female presence, is in the natural sciences, mathematics and statistics, while in ICT women are less present than men across all the countries, although the difference is more noticeable in the two European ones. Women represent only 17% of people studying or working in ICTs in the European Union (Eurostat, 2016) and in the case of Spain only 32.3% of enrolments (Fundación CYD, 2020), despite girls outperforming boys in digital skills (Unión Europea, 2019). These differences in choice of study speciality affect the degree of labour market integration, especially in agriculture. This can be seen in Table 3, comparing the employment and unemployment situation across the four countries.

Table 3 shows that labour force participation among the four countries is highest in Spain, followed by France, Morocco and finally Algeria. However, the Spanish unemployment rate is also the highest, followed by Algeria, France and then Morocco.

As for the population's involvement in the agricultural sector, we can see it is much stronger in Morocco, with 37.5%; followed by Algeria, at 12.8%; Spain, with 4.1%; and France, at 2.9%.

This table shows an uptick in the trend towards the service sector in all four countries, although here it is the other way round, as France and Spain have the highest figures, unlike in the farming industry where Moroccans and Algerians prevail.

Finally, the following table compares the four countries' performance considering the four variables around women's participation in agriculture and technologies studies, such as the proportion of women studying ICT which is measured by the percentage of male/female

Table 2. Comparison of level of education and specialities by gender .

Educational achievement % (2020)	France		Spain		Morocco		Algeria	
Level and specialization	Female	Male	Female	Male	Female	Male	Female	Male
Educational attainment								
Literacy rate	99.0%	99.0%	98.0%	98.9%	64.6%	83.3%	75.3%	87.4%
Enrolment in primary education	99.1%	98.5%	97.6%	96.9%	97.0%	96.8%	95.5%	97.2%
Enrolment in secondary education	95.3%	94.0%	97.8%	96.1%	64.5%	64.5%	50.0%	50.0%
Enrolment in tertiary education	72.8%	58.7%	97.0%	81.1%	35.7%	36.2%	64.4%	38.8%
Graduates by degree type								
Agri, forestry and veterinary, attainment	**1.14%**	**1.91%**	**0.99%**	**1.62%**	**0.30%**	**0.36%**	**1.59%**	**0.87%**
Arts and humanities, attainment	11.54%	6.56%	9.60%	8.39%	14.53%	13.99%	25.97	11.36%
Business, admin and law, attainment	34.94%	31.11%	18.94%	18.84%	20.89%	20.83%	17.65%	23.52%
Education, attainment	5.44%	2.12%	22.35%	8.84%	1.46%	2.59%	3.57	1.58%
Health and welfare, attainment	20.35%	9.14%	21.30%	10.13%	5.07%	1.84%	3.01%	3.6%
Services, attainment	3.21%	3.52%	6.10%	8.89%	0.67%	0.54%	0.14%	0.37%
Social sci, journalism and information, attainment	8.85%	5.89%	8.11%	5.75%	10.85%	7.2%	8.15%	13.23%
Engineering, manufacturing and construction, attainment	6.93%	25.08%	6.78%	23.54%	5.08%	6.58%	16.57%	31.96%
Information and comm technologies, attainment	**0.89%**	**5.77%**	**0.92%**	**7.81%**	**2.99%**	**4.02%**	**1.99%**	**3.77%**
Natural sci, mathematics and statistics, attainment	6.67%	8.87%	4.73%	5.98%	9.68%	9.67%	12.33%	4.56%
STEMS	14.49%	39.72%	12.44%	37.34%	17.75%	20.28%	30.89%	40.30%

Source: The Global Gender Gap Report (World Economic Forum, 2020).

Table 3. Employment and unemployment across the four countries.

	Employment (2017)			**Unemployment**	
Country	**Activity rate (15 years and over)**	**Employment rate in agriculture**	**Employment rate in services**	**Unemployment rate (Between 15 and 24 years old) 2017**	**Neither schooling nor employed (% NEET) 2012–2017**
France	55,2	2,9	76,8	23,6	11,8
Spain	57,8	4,1	76,4	39,4	14,6
Morocco	49	37,5	43	18	-
Algeria	41,4	12,8	40,2	23,9	21,2

Source: UNDP (2018).

graduates from tertiary education graduating from Information and Communication Technologies programme:

The results of Table 4 show some differences between the European countries and those of the Maghreb. In the case of Spain and France, the values of the different criteria are very similar, so the differences are not significant. However, Morocco and Algeria show very different values, especially in labour force participation and income. It should be noted that the percentage of female graduates in both Morocco and Algeria is higher than that of Spain and France. It is also observed that Moroccan women tend to participate to a greater extent in the agricultural sector, unlike Algerian women who have an inclination to participate in other sectors, such as services (ILOSAT World Bank, 2020).

These differences observed in terms of participation of women in agriculture in each country is due to the four independent variables analysed. In other words, greater the reduction of the four gaps, greater is the participation of women in agriculture.

Discussion

The results of our study showed a correlation between women's participation in agriculture and other gaps. These gender inequalities represent a serious problem in the digital economy and especially in the rural world where mind-sets remain traditional and women's contributions are not valued, and where infrastructure has shortcomings and differences compared to the urban world (UPA, 2019). It has also been highlighted in the linear regression that the variables literacy rate gap, and the pay gap, are those that have the most impact on the result. This is explained by the fact that they constitute two basic and essential needs, contrary to the two other gaps which are complementary to closing the participation gap in the agriculture sector.

Several authors support the existence of this correlation between our variables, including the European Parliament (2018), which emphasises the importance of giving access to technology and training since they lead to "renewed growth, a vibrant business culture and growing revenues".

Table 4. Comparison of women's participation across the four countries.

	Spain	France	Morocco	Algeria
Participation of women in agriculture (%)	23.07	27.70	39.86	5.95
Participation of women in the labor force (%)	52.15	50.56	24.96	15.23
Literacy of women (%)	98	99	64.6	75.3
Women's income ($)	27.70	30.90	3.00	3.90
Women who study ICT (%)	0.92	0.89	2.99	1.99

Source: Own elaboration based on data from WEF (2020) and ILOSAT WB (2020).

Indeed, illiteracy and the limited ability to tap complex devices, in addition to cultural issues, are seen as barriers to receiving and leveraging information effectively through ICTs (this applies also to older people who are more present in the rural world), as well as digital literacy in rural institutions and communities. These points must be developed considering local needs and constraints and by providing discrimination-free training opportunities to enhance individual and collective decision-making capabilities.

Authors such as Trujillo (2009) say a lack of education negatively impacts agrifood sector competitiveness and that studies in Asia and Africa show that farmers with at least five years' education (the minimum required to achieve a level of literacy) produce, on average, about 10% more than their uneducated counterparts.

ILOSTAT (2020) highlights the need to remove the barriers women face when accessing decent work and indicates that bolstering their labour force participation in rural areas is an absolute necessity for rural development. This promotion of women's engagement in work would in turn make it possible to eliminate some of the other gaps, such as the technological and salary ones. In reality, rural women have less access to ICTs (phones, computers, laptops, Wi-Fi) because they are more conformist, live in areas without connectivity and are generally poor. Indeed, the price of accessing ICTs can be very high in some areas and countries. Mobile rates are a huge burden on vulnerable groups such as women, young people, older farmers and people living in more remote areas (Philip et al., 2017).

A very clear difference has also been observed between the results of the four countries due to socioeconomic factors specific to each culture, including wage and equality policies and social obstacles that limit participation in the academic and work environment. However, it is important to emphasise that some factors are common to many countries regardless of their culture or economy, such as stereotypes instilled since childhood, work-life balance problems due to a lack of joint responsibility, the glass ceiling and the vertical and horizontal segregations that prevent women from accessing certain positions or advantages despite having the same skills as men (Rubio, 2008).

Lastly, the role played by technology in women's empowerment across all countries -developed, developing or underdeveloped- and especially rural women, should be emphasised, since the agricultural sector needs to become more digital-savvy (Hay and Pearce, 2014).

Takeaways

Inequalities generally remain a serious problem in the digital economy and opportunities for rural women to access ICTs are hampered by high prices and other imbalances. It is worth remembering that many of the factors restricting male farmers from adopting sustainable and productive practices constrain women even more. The barriers they face because of their gender limit their ability to innovate and be more productive (Manzano-Agugliaro et al., 2013).

Gender issues should therefore be addressed systematically in the planning phase of sustainable development. Rural women know their needs and interests better than anyone, so it is important to listen to them and on board their insights. In this regard, CERAI (2011) says women must engage effectively, visibly and in a recognised manner in their own development and that of their community.

According to the Instituto Internacional de desarrollo sostenible (2017), women's role in the agricultural sector could be improved by extending their involvement beyond the production stage to the processing, distribution and marketing phases traditionally dominated by men. Women should harness opportunities across value chains to make their products better paid. But increasing women's engagement in other activities requires developing their commercial and business skills, as well as improving their access to financial assistance and smoothing their path to microfinancing and cooperatives.

Also, raising the profile of female references should play a key role in promoting gender equality, since the sparse information provided often continues to convey stereotypes (Kalpana Sastry and Manikandan, 2002).

It is important to note that the rise of digitisation and advancement of technology enable rural women to better connect with the world around them and step up their engagement in the rural world of work, and that this can be achieved by adapting content that is meaningful to them, whether in terms of language or needs.

In short, it is important to remember that ICTs can reduce socioeconomic gender differences in rural areas and offer several advantages in terms of agricultural output. Keeping women in rural areas is key to contributing to their development and to fighting the depopulation and masculinisation affecting many rural areas. This has been confirmed by Brossard Leiva (2016), who says the uptake of technology in farming can drive improved yields thanks to better land management, proper use of inputs and climate forecasting due to early warnings.

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