Managing Rural Employment for Sustainability and Efficiency of Agriculture

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Abstract

Demand for agricultural labour use is persistent regardless of the improvements. There are many agricultural activities that call incorporation of low-skilled labour. With rising technology incorporation, demand for high-skilled labour rises. Keeping low-skilled workers in the sector is also important for macroeconomic concerns as management of unemployment or providing sustainable income for rural population to keep this population away from internal migration to city centres. Yet, there are effective factors in keeping this population in rural and in agricultural activities. Some of these factors were evaluated in this paper. The effect of recent COVID-19 process and in-boarder or foreign labour migration was searched and evaluated due to changing labour composition and varying costs. Thereafter, the gender problem related to women's over existence in agricultural activities and their intention to move out like as the young generations were evaluated depending on the recent literature and figures.

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1. Introduction

Even though many improvements do lead rising mechanisation and incorporation of IT technologies, agriculture has still been considered as a labour-endowed economic activity. It seems that awaiting technological improvements have been approaching sooner than expected everywhere in the world. However, labour force requirements of agricultural activities will not decline critically worldwide.

In addition to securing agricultural and food supplied for all, agricultural sustainability is essential to maintain the rural-urban balance. Rising income levels or expectations for future uprising mainly leads keeping rural population in rural and maintaining agricultural activities. On the contrary, declinations do lead migration from rural to urban. This population shift does not only refer to potential supply security problems, it also means potential rise in urban unemployment rates (Parlakci Dogan, 2020). Therefore, regardless of the technological progresses that ease farmers' lives, the farmers should continue to be essential for agricultural sustainability.

The urban-rural distribution of the population needs to be evaluated in order to comment on sustainability of agricultural activities. Due to records of the ILO, we know that 57 % of the world population lived in rural areas by 1990 and this figure declined to 44 % in 2020 and expected to decline further to 40 % by 2030 (Anonymous, 2020a). This reduction is expected to affect the world in two dimensions. One is reducing rural contribution to economy via declining agricultural production of all kinds. The second effect is related with over-urbanisation. Over-urbanisation may be read as more food security risks due to rising demand in contrast to declining supplies.

The relationship between agricultural sustainability and employment in agricultural and rural tasks were evaluated in this paper with its two specific dimensions. One is related with the migrating labour force due to several reasons and the second considers gender aspect as a driving force of maintenance of activities in almost everywhere in the world.

Therefore, the research aims to discuss and evaluate the impact of migration including the domestic movement of masses and differing male-female composition of the agricultural labour force. Previous studies and current secondary data recorded were used for evaluation.

2. Migration and Employment in Agriculture

Migration of labour force is important for agricultural processes bilaterally. While developed or agriculturally endowed western or European countries

accept mostly temporary or seasonal labour contribution from outside, many developing countries experience outflow of labourers. There is internal movement of unskilled labour due to the seasonal requirements as well, which is valid for all countries. It is considered as contributory to assess both sides of labour flows and their impacts.

The inflow to developed countries is being controlled legally and mostly immigrant workers are allowed to get involved in labour intensive activities like harvest or transfer of outputs. These workers do not obtain permanent residency in the countries they move for economic reasons and they mostly receive temporary working permits during execution of activities. The effects of seasonal migration to the countries and sectors shall be considered briefly. Within this analysis, the intention is to differentiate the persistent seasonal migration and contemporary process attached to the COVID-19 pandemic and its effects. Following COVID-19 based interpretation, Turkish agriculture was evaluated with respect to incorporation of refugees in agricultural activities as an example to assess impact of sudden and heavy migration.

There have been some specific shifts in the history. Appearance and dispersion of COVID-19 all around the world has been recorded as one of those shifts. In accordance with devastating socio-economic changes, migration of low-skilled labour had become a concern.

On the other edge, many labour-intensive farm tasks do depend on seasonal migration. Lack of seasonal agricultural workers as cultivars migrating from Northern Africa or Eastern European countries like Bulgaria or Romania affected the harvest processes in southern Italy inversely within the COVID-19 process (Tagliacozzo, 2021). Under normal conditions, number of seasonal migrants has been 40 thousand in the winter and 60 thousand in spring and summer periods. This agricultural labour movement declined drastically due to mobility restrictions and economic activity in 2020. Maintenance of production and harvest activities were only assured through substantial medical services provision by the state authorities and NGOs, which brought up rising costs for the farmers and the sector.

In general terms, many agrarian countries allowed easy permit renewals in order to keep or call seasonal workers during the pandemic, even if their economy does not depend fully on agriculture. These countries can be exemplified as New Zealand, Canada, Chile and Israel and they also offered additional health and consultancy services for agro-food supply security (Triandafyllidou, 2022). As an instance, Canadian agriculture depends on mostly seasonal labour force supplied by Mexico and Jamaica and some other Caribbean countries. The labour supply is managed under Seasonal Agricultural Worker Program (SAWP). These mobile workers, who at most work 8 months per year and most of whom receive renewal of job-contracts by their agro-entrepreneurs, almost have no right to receive permanent residency.

Contemporarily Canadian agricultural labour needs are being met by two programmes. In addition to 50 years of cooperation under SAWP, Temporary Foreign Worker (TFW) programme is supplementary. TWF allows incoming labour for at most 2 years and for one time, while SAWP can be renewed (Anonymous, 2021).

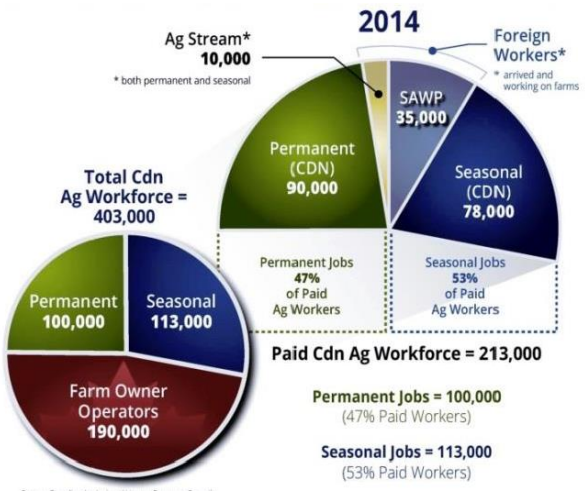

Figure 1. Labour Force Migration in Canada in 2014 (Anonymous, 2021).

SAWP reported the internal and external migration facts for 2014 as an instance (Anonymous, 2017). It was understood that 53 % of the agricultural labour used was temporary then. The SAWP contribution to overall force was 16 % and there was internal migration referring to 37 %.

However, for sustainability of the sector, these farm workers received exceptions from the Canadian government. They were also monitored respecting health protection acts as the initial massive COVID exposures were observed in farm operators (Macklin, 2022). As vegetable production, animal breeding slaughter and packing have been the duties described for these incomers, they had to be treated more after recognition of their vulnerability to the disease. In 2020, due to rising labour costs attributed to quarantine measures, especially number of TFWs involved in activities declined and local workers were exchanged with TFWs. Yet, the less productive local labour led to declinations in agricultural income as well (Laure, 2020). The recent statistics indicated that Canada accepted 61.735 foreign workers for agricultural production and 30.695 for food and beverages industry in 2021 with a 10 % annual rise following COVID-19 declinations (Anonymous, 2022).

It can be said that the pandemic process contributed to rising agro-food prices due to rising labour costs. Or else, the sector started to incorporate locals rather than paying and caring more to migrant workers. Especially low-skilled labour force transfer to the US was intervened while professional or technical knowledge bearers maintained their roles embracing health care services as well (Rosińska, and Pellerito, 2022).

The impact to Europe is important as well. Being the most significant agro-producers and traders of the EU, Spain and Italy got affected from the lock-downs and restrictions critically. Italy got affected from supply shocks and lost around 34 billion Euros, while Spain faced with declination in migrant labourers from 2019 to 2020 (Corrado and Palumbo, 2022). As the restrictions remained within the EU, Spanish agricultural income declined due to COVID-19. Yet, non-EU short term migrants were not accepted back to their countries (e.g. Morocco, Bulgarian Romans) and the migrant related health problems posed stress on the rural society. Rather than labour shortages, the countries accepted more European migration. This requested and used mobile workers led to rising costs and prices due to problems related with housing as well as diseases related concerns. However, right of the migrating

workers were neglected mostly in exchange of food security. Yet, the northern countries as Germany or the Netherlands enforced migrated rural workers to leave at the initial phase (Sahin Mencutek, 2022; Hansen, 2020). However, many of those remained in the country they moved to work in farms as they did not get approval from their homelands. Thus, even if not reported, humanitarian problems became a part of COVID-19 related effects in the society (Corrado and Palumbo, 2022).

In addition to developed countries, overpopulated agrarian countries as India experienced COVID-19 related employment problems in the sector (Irudaya Rajan and Bhagat, 2022). Internal migration is essential for all sorts of labour dependent sectors in India. With the lock-down that started in March 2020, labour endowed production got disrupted. On the other hand, the workers that only depend on seasonal jobs had lost their security (Irudaya Rajan and Bhagat, 2022; Rajan and Heller, 2020). By June 2020, Indian government had to reverse the lock-down decisions and mobility restrictions for rural workers in order to empower urban industries. Besides, the migrants also faced with additional problems due to their own food and shelter requirements within the pandemic and these posed additional risks to the sector in accordance with the migrant labourers (Srivastava, 2020).

The changing agricultural labour flows were considered up until here emphasizing the COVID-19 process. However, flows out of agriculture are almost more important in terms of rural development and agricultural supplies. Young generations mainly intend to leave the sector and move to the urban centres. This tendency is not completely related to the expertise or education/job status of the individuals. With evolving technology and opportunities, less people intend to stay in agriculture.

Due to FAO stats, both rural and urban population is still in a rising tendency since the base year that was taken as 1990. However, when the change was overviewed, it can be seen that rise in urban population is more and speedy. The average change for five years is more than 11 % for urban population, the percentage change is below 2 % for the rural population. The impact of the pandemic can also be seen here when 2020 and 2021 is compared. The rise for rural population was 0,02 % while it was 1,81 % for the urban residents. Therefore, the movement from villages to city centres can be confirmed especially in the developed world as these figures represent the world population.

Table 1. Aggregate Rural – Urban Population (1990-2021) (FAO, 2022)

World	**1990**	**1995**	**2000**	**2005**
Rural	3,040,715,364	3,175,969,181	3,276,699,476	3,326,253,520
Urban	2,290,228,096	2,575,505,235	2,868,307,513	3,215,905,863
World	**2010**	**2015**	**2020**	**2021**
Rural	3,363,301,013	3,401,511,157	3,416,488,365	3,417,047,481
Urban	3,594,868,146	3,981,497,663	4,378,993,944	4,458,417,153

Besides, it is evident from the below graph that until 2005 the urban population was lower than rural population. However, the former passed number of rural residents in 2005.

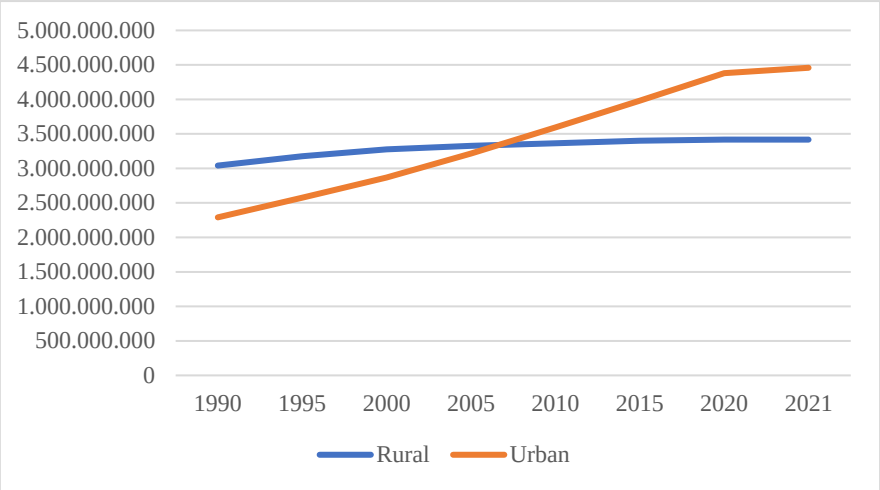

Figure 2. Rural – Urban Population (FAO, 2022)

Following the overall change, the percentage change for decades between 2000 and 2020 were calculated and demonstrated in the below table respecting the main continents. The statistics inferred that, both rural and urban population had risen in Africa and Australia and New Zealand. However, the rise is higher for urban population in percentile evaluation even in these continents where rural operations are particularly important for the economy and sustainability concerns.

Table 2. Decennial Population Change in Continents (%) (FAO,2022)*

AFRICA				**AUSTRALIA - NEW ZEALAND**				**EUROPE**			
2010 - 2000		**2020 - 2010**		**2010 - 2000**		**2020 - 2010**		**2010 - 2000**		**2020 - 2010**	
Rural	**Urban**	**Rural**	**Urban**	**Rural**	**Urban**	**Rural**	**Urban**	**Rural**	**Urban**	**Rural**	**Urban**
21	43	19	44	10	17	7	15	-5	4	-6	4
ASIA				**AMERICAS**							
2010 - 2000		**2020 - 2010**		**2010 - 2000**		**2020 - 2010**					
Rural	**Urban**	**Rural**	**Urban**	**Rural**	**Urban**	**Rural**	**Urban**				
-1	34	-2	26	0	16	-2	13				

*Calculated by the author based on FAO data.

When the remaining world is considered, it is evident that number of rural residents had declined during the last two decades and the declination fastened up in the last decade.

Finally, the situation in Türkiye was demonstrated and evaluated as an interim country between Europe and Asia and as an agrarian country residing in the Mediterranean.

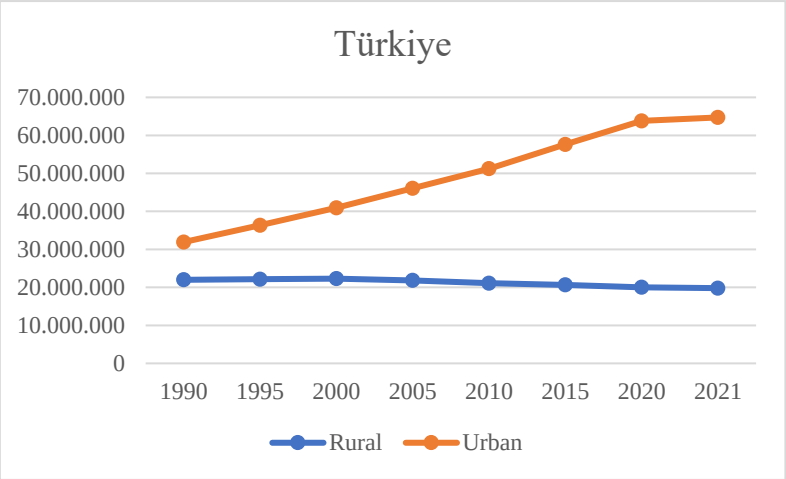

Figure 3. Changing Rural-Urban Population in Türkiye (FAO, 2022)

Taking the base years similarly, rural population has been in steady declination, while urban population has been rising. Accordingly, the number of people involved in agricultural activities is downsizing. Between 2000 and 2020, the average declination in rural population was around 2 %. On the other hand urban sites had experienced more than 12 % rise in population on average.

Table 3. Population Change in 5 years in Türkiye (%) (FAO, 2022)

Five Years	Rural	Urban
1995-1990	0.70	13.82
2000-1995	0.65	12.68
2005-2000	-2.06	12.51
2010-2005	-3.37	11.20
2015-2010	-2.12	12.48
2020-2015	-3.01	10.74
2021-2020	-1.15	1.42

In consideration of Turkish labour market, the refugees and their position should be visited briefly as well. The number of incoming Syrians has been significant in Türkiye. While the migration started in 2011, by 2021 the registered Syrian refugees counted more than 3,7 million and the recent statistic appeared as 3,5 million due to Ministry of Interior (Anonymous, 2023). It was noted that by 2016, 83 % of Syrian guests at working age was holding agricultural jobs and mostly they were employed for seasonal activities (Kavak, 2016). Research maintained in Izmir demonstrated that many unskilled refugees were involved in agricultural production and harvest processes.

The refugees under temporary protection have been accepted by the Ministry of Interior and given work permits after 6 months of residency. However, agriculture was exempted from working permission processes. Agricultural employment under informal conditions seemed to be easier for these people as the sector does not require complete work permits and eligible for informal employment (Sivis and Yildiz, 2019). Yet, the informal economy and inclusion of

Syrians to seasonal agricultural works led to loss of welfare for Turkish agricultural workers and contributed development of 'working poor class (Eder and Ozkul, 2016). Actually, agriculture is the sector where informal employment is the highest with around 80 %, where locals/natives had lost a lot of seasonal recruitment opportunities (Oztek, 2021). Besides, official training was concerned for agricultural employment of these refugees as well. The FAO initiated an on-the job training project by 2015 to support 6.200 people in the south-eastern regions of Türkiye half of whom were chosen from refugees (Anonymous, 2020b). Therefore, the illegality has been intervened but the results were not demonstrated yet.

Following this migration related evaluation, the gender based challenges in agricultural labour would also provide insights for evaluation of sustainability.

3. Gender and Employment in Agriculture

Gender differentiation is important in interpretation of the total employment and employment in agricultural activities. Concerning all economic activities, the unemployment rates are higher for females. Many sectors still consider female workers as unprofitable and verify their ideas through maternity leaves or household tasks even in the developed world. Accordingly, keeping less educated women in the rural, even without payment is considered as more beneficial (Petrongolo and Ronchi, 2020).

Actually, the literature infers lower unemployment for females in the rural livelihoods in underdeveloped countries or countries at early stages of development under informal economy conditions (Demir, 2021). The unpaid family worker of the household is not recorded as unemployed for agricultural practices. In developing world, this is a long-way problem. Half of the Indian working women were employed in family farms by 2005 and this was followed with low wage employment by 27 % (Sarkar et al. 2019).

Ghana is a Western African country dependent on rural economics. By 2014, 82.5 % of the population were living in rural, mostly involved in breeding and aggregate sales of maize and cassava. It was noted that women focus more on production of food crops and men were involved in cash crop production Yet, paid private sector employment rate was low with 12 % for women and 29.5 % for men, while the shares were 4.5 % for women and 13 % for men in the rural by 2015 (Krumbiegel et al., 2020). The recent evaluations suggest empowerment of women more through inclusion to cash crop production and export oriented processes more.

The statistics published by the ILO emphasize the gender differences respecting education and job market position for rural and urban (Anonymous, 2019). The traditional gender roles lead differing results for rural and urban districts in the world. It can be seen that rural unemployment is lower than the urban. But rural unemployment is lower for women (26 %) than men (35 %) by 2019.

Table 4. Employment Status due to gender and rural/urban status (%) (Anonymous, 2019).

POSITION IN THE JOB MARKET	World (%)		Women (%)		Men (%)	
	Rural	Urban	Rural	Urban	Rural	Urban
Underemployment	46	26	46	26	47	27
Unemployment	32	46	26	41	35	50
Eligible to work	22	28	28	33	18	23

When the same figures were overviewed for youth for 2019, the gender gaps can be seen. The underdevelopment rates are much higher in rural for both genders. But male unemployment seems higher both for rural and urban. This is significantly related to existence in the job market. Number of men that registered and in seek of a job is more than women mostly. Simultaneously, many women working in unpaid conditions assume themselves as they hold a job throughout the world.

Taking Türkiye as a reference, the aggregate unemployment and sectoral unemployment were considered and discussed briefly hereafter.

The aggregate unemployment figures for Türkiye were demonstrated below for 2013-2021.

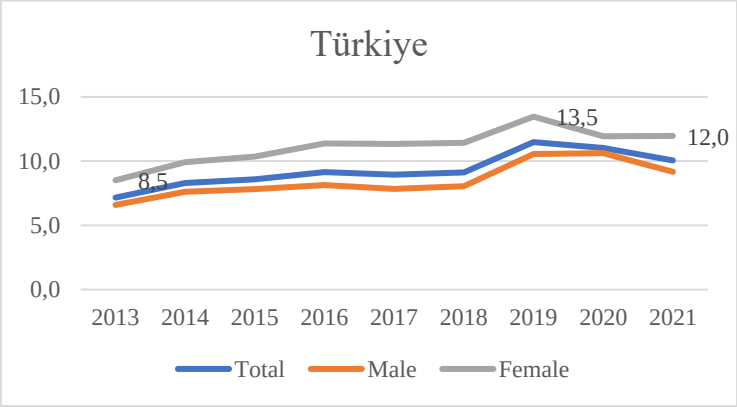

Figure 4. Changing Unemployment by Gender in Türkiye (Anonymous, (2019)).

According to ILO statistics, it can be said that the partly fluctuating unemployment rates were and are higher for females in Türkiye. The shift to non-agrarian paid jobs is visible in Türkiye in the urban districts. However, the share of urban employment was 38 % for women in 2018. Therefore, working women still faces with patriarchal relations in the society (Kocabicak, 2022). Thus, working women mostly take place in rural and in agriculture off-paid.

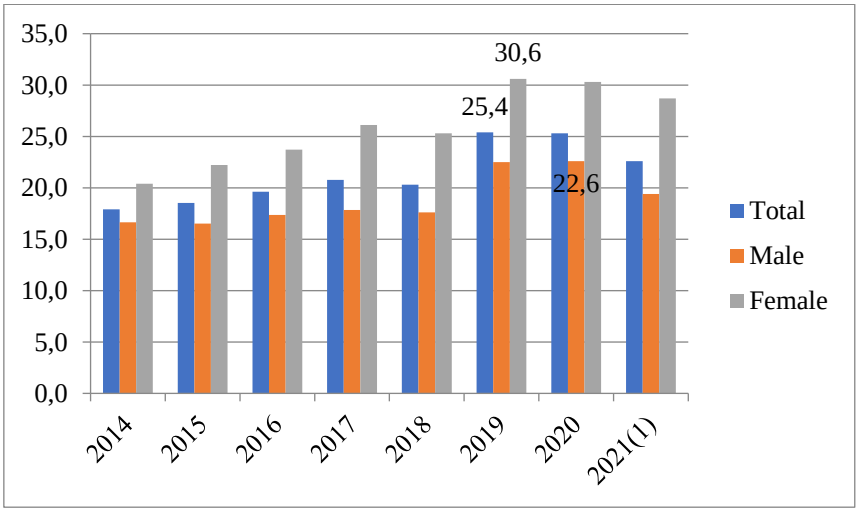

Figure 5. Changing Unemployment by Gender for Youth Population in Türkiye (Anonymous, (2019)).

The youth unemployment has the same variation due to gender differences in Türkiye. Yet, the rates are far high when compared with the aggregate statistics. The highest rates were recorded on 2019 (30.6 %) for

females and on 2020 (22,6 %) for males. While the shift is also related with the pandemic process, it is inevitable to notice that the unemployment rates for young individuals are more than that of the society's averages.

The female's share can be viewed from rural to urban perspective. The data withdrawn from ILO enables evaluation of share of women labourers that reside in rural of Türkiye and signs a declination as demonstrated below.

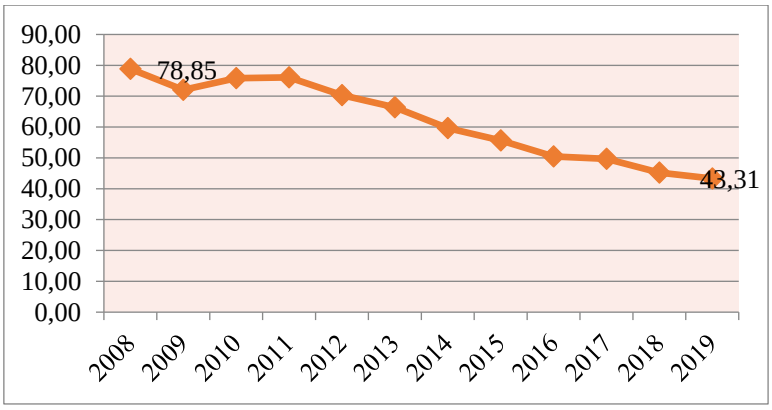

Figure 6. Share of Women Working in Agriculture in the Rural Districts (%) – 2008-2019 (Anonymous, (2020a))

The ILO data infers that number of women working in agricultural activities and living in rural areas has been in declination. The share of women contributing to agricultural activities was 78.85 % in 2008. The share declined to 43.31 % steadily until 2019. The shift has been towards urban centres and services sector.

Finally, female's employment status in agriculture in rural and urban can be visited from the same data. The table confirms the declination in the rural agricultural activities and involved female workers. However, the agricultural workers in the urban centres do not show a rising tendency. While 28.26 % of working women were in rural agricultural activities in 2008, the share declined to 15.51 % by 2019. The share of women employment in agriculture as a sum of rural and urban was more than 40 % in 2008 which declined to 25 %. Yet, the declination is not related with a movement out of urban enterprises. Therefore, this signifies the movement out of the sector once more.

Table 5. Female Agricultural Worker's Share in the Total Working Population (%) (Anonymous, (2020a)).

Female (%)	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**
Rural	28.26	25.83	27.19	27.24	25.15	23.76
Urban	12.00	11.96	12.01	12.03	11.95	11.79
Female (%)	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**
Rural	21.37	19.96	18.10	17.81	16.21	15.51
Urban	11.40	11.05	10.49	10.39	9.82	9.54

4. Results and Evaluation

It is almost evident that most of the population in rural districts either work in agriculture or run their own agricultural enterprises. Self-employment is rather widespread in the sector and in rural areas (Fields, 2019). However, supporting self-employment in agriculture and keeping the population in rural is essential. The declination in the share of people living in rural districts, towns and villages and most probably depending on agriculture for survival is important for maintenance of agricultural activities and keeping urban unemployment under control.

With this paper the intention was to evaluate agricultural labour supplies and its relationship with sustainability. There appeared two specific topics to consider employment in agriculture. The recent impacts of internal/external movement to agriculture sector were evaluated residing on COVID-19 and incoming refugees. The movement related to the shift of time and young generations' reluctance to stay in agricultural activities in the rural areas. The status of women in agriculture was considered as a second aspect.

In migration aspect, it is visible that seasonal migration for on-farm activities got disturbed in developed countries since the onset of COVID-19. These countries had to make additional health services expenses to keep workers that cannot be sent back their homelands on the one edge. Just on the opposite end, employing national workers in on-farm activities lead to rising labour cost and prices. For countries accepting outsiders for cheap farm work, the effects of lock-downs was negative on agriculture and food markets.

COVID-19 posed a compulsory ban of agricultural worker movements. However, refugee movements also affected the prices and welfare of national workers as they lost their reach to seasonal on site income. This situation may add on the tension of rising social costs of refugee hosting and should be managed properly.

In addition to voluntary or involuntary labour movements, the historical/traditional gender role and its changing composition worth to be considered. Till the end of 20th century, women had been the secret or even visible hand behind all agricultural activities. Their role has been managing all tasks of the family farm or small lands without getting paid. However, there is a significant movement of women out of agriculture. This may partly be related with mechanisation of agriculture and technological development. However, it mostly refers to urban migration of rural residents from villages, farmlands. These both mean potential reduction in national supplies, and rising demand from city centres.

As a whole, the migration and gender transition need to be monitored and the rural population needs to be kept within the sector. Main requisites are related with:

- Developing social security systems in agricultural activities maintained in rural areas,
- Getting prepared for unforeseen problems and occasions in order to prevent migration to the city centres,
- Coordinating the entry and stay of foreign employees in agriculture and rural areas,
- Minimisation of seasonality of activities and out of sector labour needs,
- Modernisation of women's role and acceptance in rural via increasing educational and social opportunities,
- Treating rural unemployment and hidden unemployment seriously.

These suggestions include very broad ideas. However, the labour market statistics of the world and agrarian countries infer taking these suggestions seriously. Therefore, agricultural and rural employment policies should be more important for public organisations. Development, implementation and monitoring of sustainable employment policies are essential for sustainability of agriculture as for macroeconomic stability.

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