



# Regular employees in agriculture: how to describe and improve their working conditions

Franziska Zimmert<sup>\*</sup> , Rita Saleh

Agroscope, Tänikon 1, Ettenhausen, CH-8356, Switzerland

## ARTICLE INFO

### Keywords:

Non-family farm employees  
Farming  
Working conditions  
Social sustainability

## ABSTRACT

Farming in Switzerland is still mainly dependent on family work. Nevertheless, non-family employment is gaining importance, and farm managers have to think about recruiting methods, since a labor shortage can be observed in this sector. Due to the lack of relevant data, little is known about the working conditions of employees in agriculture. In this paper, we descriptively compare the working conditions of non-family employees at farms to those in the hospitality sector, which has similar working conditions and is a competitor in employment for the agriculture sector. Based on this analysis, we use linear regression to examine which factors determine the duration of employment in these two sectors. We use data from a 1 % representative sample of the Swiss resident population (2015–2020), which is mainly characterized by regular employment. Hence, we provide insights into a specific, comparatively less-studied subgroup: persons who are permanent residents and therefore partially integrated into national labour market institutions. While our dataset does not capture all qualitative facets of job quality, it does measure several core dimensions consistently, including wages, contractual and actual working hours, timing of work, and indicators related to employment stability. These measurable facets provide a transparent entry point for describing job quality patterns among farm employees and situating them within broader debates on decent work and social sustainability, responding to growing attention to labor standards in agriculture. Our analyses identify four key challenges for non-family employment in the agricultural sector: the high proportion of already retired employees, low wages, long working hours and a comparatively low level of education. Further, the results suggest that a higher income and fixed working time models are positively related to longer employment duration in farming.

## 1. Introduction

The farm workforce relies substantially on non-family employees (Dufty et al., 2019; Dupraz and Latruffe, 2015) especially since natives and family workers tend to leave farming for other opportunities (Ryan, 2023). In many countries, the proportion of non-family employees in the total farm workforce is steadily increasing, including in Switzerland (Federal Statistical Office, 2021). However, quantitative research on the socio-economic situation of non-family farm employees is scarce (Mann, 2024). Data on farm employees are rather difficult to obtain due to the nature of temporary employment and the migrant status of some employees (Contzen et al., 2025; Meemken et al., 2024, 2025). Conducting research directly with non-family farm employees requires resources to capture the diversity of foreign employees who often do not speak national languages. Besides national reports, which inform on the share and on some of the basic demographics and characteristics of non-family

employees, little is known about the working conditions of non-family farm employees in terms of their skillfulness, working conditions and wages earned. Therefore, there is a need to examine their workload and socio-economic situation, which would contribute to evaluating social sustainability of farms in terms of labor and work conditions.

Social sustainability has been recognized as a central pillar of sustainability in the agriculture sector even though it is still conceptually contested (Janker and Mann, 2020; Valiance et al., 2011). Recent reviews show that social sustainability is often defined through broad normative goals (e.g., equity, well-being, fairness), but empirical research remains inconsistent, with indicators dispersed across studies and assessment tools (Baffoe and Mutisya, 2015; Desiderio et al., 2022; Janker and Mann, 2020; Rööös et al., 2019; Sannou et al., 2023). Most social sustainability indicators are operationalized on the farm-level and labor and working conditions recur as one of the most frequently invoked social dimensions (Sannou et al., 2023). Existing literature

<sup>\*</sup> Corresponding author.

E-mail address: [franziska.zimmert@agroscope.admin.ch](mailto:franziska.zimmert@agroscope.admin.ch) (F. Zimmert).

therefore use farm work as a core element of the socio-economic and long-run viability of agricultural systems. Farm workload assessments are hence relied upon as indicators of social sustainability (Hostiou et al., 2020; Umstätter et al., 2022). Farm workload is examined in terms of total working hours at the farms depending on farm activities with little consideration of the multidimensionality of farm workload and labor organization (Grenz et al., 2012; Schader et al., 2016; Zahm et al., 2008). It remains undefined which aspects the assessment of labor and farm working conditions should include. Some researchers focus on assessing workload in terms of job satisfaction and working hours (Grenz et al., 2012; Zahm et al., 2008), while other focus on benchmarking working hours to other sectors (FAO., 2013). Other implications of workload, such as time for hobbies and for family (Waney et al., 2014) as well as economic indicators such as income are also prominent in examining the social sustainability of farms (Röös et al., 2019; Sneddon et al., 2006). However, there are two important gaps in existing literature on farm workforce.

On the one hand, existing literature has focused on farm managers' perspectives, rarely accounting for that of farm employees. On the other hand, employment quality aspects on farms are often undermeasured, even though they are central to the decent work agenda. The decent work lens provides a normative benchmark for what work should guarantee (e.g., fair remuneration, security, and protection) and how it should be measured to determine if any deficit in the main elements of decent work and its quality exist (Ghai, 2003; International Labour Organization, 2013). This framework emphasizes that working hours alone do not determine whether work is sustainable but the conditions under which time is worked (timing of work, contractual farming, wages and employment stability) are also central. As this framework has been operationalized in the agriculture studies to identify labor challenges in agriculture and inform policy discussions (Contzen et al., 2025; Fabry et al., 2022; Ghai, 2003; Senkrua, 2024), examining work dimensions among farm employees can provide insights into the working conditions on farms beyond farm households, despite the scarcity and inconsistencies of worker level working conditions and social sustainability (Mann, 2024; Molinero-Gerbeau et al., 2021).

The present study hence provides a baseline empirical portrait of non-family farm employees in Switzerland using nationally representative labor force data (Federal Statistical Office, 2020b) and operationalizes social sustainability through decent work conditions for hired agricultural employment. Labor force surveys rarely capture the full breadth of decent work (e.g., dignity, voice, workplace relations, autonomy, harassment, detailed OSH exposures). However, they often measure core job-quality components consistently. Building on the fact that job quality is multi-dimensional (Cazes et al., 2015), we focus on indicators available in our data that align with key domains emphasized across the decent work framework. We argue that establishing baseline empirical evidence is a necessary first step before more explanatory analyses can be meaningfully pursued. Understanding the socio-economic situation of non-family farm employees is crucial to better understand the farm employment prospects in a changing agriculture landscape (Malanski et al., 2021; Meemken et al., 2024) and the attractiveness of farming as a profession especially in the noted decline in interest in farming (Burton and Fischer, 2015).

First, we aim to determine the characteristics of the non-family farm employees and their roles at farms for a well-developed country. Second, we compare their socio-economic situation to that of employees in the hospitality sector and all other sectors. We selected the hospitality sector for comparison, as this sector is a strategic comparator sharing several labor market characteristics: low wages and challenging work conditions (i.e., being physically demanding with long working hours and seasonal peaks; e.g., Díaz-Carrión et al. [2020]). In addition, the hospitality sector is considered a competitor to the agri-food sector in terms of employment (Hyejin and Swinnen, 2023; World Travel and Tourism Council, 2017). Moreover, the decent work framework has also been explicitly discussed and operationalized in hospitality employment

(Wang and Cheung, 2024) making it a relevant reference sector for interpreting similarly relevant decent work domains such as wages, working time arrangements, and employment stability. This comparison is not intended to suggest equivalence between sectors, but to provide a reference point for interpreting patterns observed in farm employment. Finally, we use linear regression to examine which factors are associated with the duration of employment and draw practical conclusions from this.

## 2. Theoretical framework

In agri-food systems research, social sustainability often lacks consistent worker-centered operationalization. Due to feasibility, the focus has been on farm households, but not on farm employees especially not on foreigners and migrants (Baffoe and Mutisya, 2015; Janker and Mann, 2020; Mann, 2024; Sannou et al., 2023). The decent work concept provides a reference point by specifying the minimum employment conditions required for work to support human well-being and social justice.

Generally, the International Labor Organization (ILO) frames "decent work" as "*opportunities for women and men to obtain decent and productive work in conditions of freedom, equity, security, and human dignity*" (Ghai, 2003). The Decent Work framework often has objectives structured around four pillars: (1) job creation and productive employment, (2) rights at work (including fundamental principles and rights), (3) social protection, and (4) social dialog (Ghai, 2003; International Labour Organization, 2013). Overall, it refers to access to productive employment that provides a fair income and workplace security, ensures social protection for workers and their families, and offers opportunities for personal development and social integration. For monitoring of decent work, ten elements are derived to measure decent work deficits which include employment opportunities, unacceptable work, adequate earnings and productive work, decent working hours, work-life balance, stability and security of work, fair treatment in employment, safe work environment, social protection, and social dialog and workplace relations (International Labour Organization, 2013; Senkrua, 2024).

Ensuring that all workers in agriculture have decent work is key to achieving social sustainability and social justice. However, in farming, there are clear and persistent "decent work deficits" across these pillars, particularly linked to precarious employment (e.g., seasonality of the jobs) alongside labor and skills shortages, which are partly driven by relatively unattractive wages and working-time arrangements compared with other sectors (International Labour Organization, 2023; Ryan, 2023). Accordingly, this study focuses on those decent-work domains with the most evident deficits (i.e., earnings, working time, employment stability, security, and skill-related aspects of productive employment) in line with previous studies which applied the decent work framework in agriculture explicitly or to more general job quality measures (Harrison and Getz, 2015).

It is important to note that a recent review on the application of the decent work framework in agriculture by Contzen et al. (2025) cautions that the ILO decent work concept is not yet fully operational on all levels of workers (such as self-employed farmers) given seasonality, heterogeneous employment forms, blurred boundaries between household and enterprise, and the need to better incorporate workers' subjective experiences. Taking in consideration this limitation of the decent work framework, we use the latter primarily as a normative benchmark and focus empirically on a measurable subset of core domains that are most salient and can be captured consistently in labor force data (mainly adequate earnings (wages), decent working time (contractual and actual hours), and employment stability, security (tenure)) while treating skills as an element of productive employment and prospects.

The analysis of Mann (2024) is most similar to the present study but with the following differences: He analyzes the duration of employment, the wage level, and the quality of employment of non-family employees

on Swiss fruit, wine and vegetable farms with a focus on seasonal employment. The farm managers were interviewed for this purpose, which can lead to biased answers. Our analysis is based on a representative survey of all non-family employees with a focus on the permanent resident population. It primarily reflects regular employment among permanent residents; many seasonal workers and short-permit migrant employees are not covered. Consequently, our analysis does not represent the most vulnerable segments of the farm workforce but instead provides evidence on a comparatively less-studied group which are the non-family farm employees who are partially integrated into Swiss labor market institutions (e.g., Swiss citizens and holders of longer-term residence permits). While the used dataset cannot capture all qualitative facets of job quality (e.g., autonomy, dignity, workplace relations), it does measure several core dimensions consistently, including wages, contractual and actual working hours, timing of work (e.g., shift/on-call/weekend work), and indicators related to employment stability such as tenure. These measurable facets provide a transparent entry point for describing job quality patterns among farm employees and situating them within broader debates on decent work and social sustainability, responding to growing attention to labor standards in agriculture.

### 3. Data and methods

To analyze the situation of non-family employees in farming, we used data from the Swiss Labour Force Survey (SLFS; [Federal Statistical Office, 2020b](#)). Each year, the Federal Statistical Office interviews the permanent resident population older than 15 years about their employment situation. Data from different social insurance registers (old age, survivors', and disability insurance (AVS/AHV), disability pensions (AI/IV), complementary benefits (PC/EL), and unemployment insurance (AC/ALV)) can be merged with the SLFS to obtain more information on the topics of income, unemployment, and retirement ([Federal Statistical Office, 2020a](#)). The 1 % representative sample includes information about the entire working population, such that we can only use a smaller subset of agricultural workers.

#### 3.1. Definition of agricultural employment

As the SLFS informs about the occupation (Swiss Standard Classification of Occupations [CH-ISCO-19](#)) and sector in which the employee works (General Classification of Economic Activities [NOGA-2008](#)), we can filter agricultural (skilled and unskilled) employees (cf. [Tables A.1 and A.2](#) in the Appendix).

We further distinguished between self-employed, family, and non-family employees. In addition, we focused on workers with their main jobs in farming. We observed around 70 non-family employees and up to 800 family farm workers per year. The respective weighted numbers correspond to about 9000 non-family employees per year. The Farm Structure Survey of the Federal Statistical Office, covering all farms in Switzerland, gives a higher number of about 35,000 non-family employees each year. This gap can be explained by the SLFS's focus on the permanent resident population, such that employees with short residence permits (e.g., seasonal employees) are almost not represented in our sample. The Swiss Farmer Union estimates the number of seasonal workers to be about 20,000–25,000, many of whom are foreigners with short residence permits. Furthermore, as we focus on the main occupation, part of this gap is made up of employees with a secondary job in agriculture. This leads us to the conclusion that our analysis is mainly based on regular employees with permanent residences in Switzerland. In fact, almost 70 % of our sample have Swiss citizenship, which is comparable to employees in other sectors (cf. [Table 1](#)). Almost 23 % are settled foreign nationals who have the right to settle in Switzerland without any time restrictions or conditions (C permit). The remaining 10 % resided in Switzerland for a long enough period to earn a residency permit that is renewed annually or biannually (B permit). In addition,

**Table 1**  
Descriptive statistics on socio-economic and job characteristics.

	(Non-family) employees in the		
	farming sector	hospitality sector	other sectors
<b>Type of working contract* (in %)</b>			
Seasonal work	6.1	4.7	0.4
Other type of non-permanent job	11.2	5.1	7.9
Permanent job	82.8	90.2	91.7
<b>Residence permit* (in %)</b>			
Swiss	67.7	55.3	72.8
C permit	22.6	22.8	16.9
B permit	9.8	21.8	10.3
Age (in years)	41.7 (16.4)	36.9 (13.0)	41.7 (12.6)
<b>Working beyond the statutory retirement age (in %)</b>	11.3	1.7	2.3
<b>Male (in %)</b>	64.0	29.1	52.2
<b>Education* (in %)</b>			
Compulsory elementary school	25.7	22.8	8.9
Other school	8.9	7.0	3.7
Apprenticeship	42.0	35.7	36.0
High school diploma	16.1	24.9	23.1
University (or similar)	4.4	9.3	28.0
<b>Occupational position (in %)</b>			
Skilled	55.7	53.0	Information not available
Unskilled	44.3	47.0	Information not available
<b>Economic activity* (in %)</b>			
Arable farming	43.3	Information not applicable	Information not applicable
Animal production	44.2	Information not applicable	Information not applicable
Mixed farming	12.5	Information not applicable	Information not applicable
<b>Tenure (in %)</b>			
< half a year	17.1	20.7	9.4
< one year	6.2	12.1	7.6
< two years	9.9	16.9	11.7
≥ two years	66.7	50.3	71.2
No answer	–	–	0.1
Number of observations	406	2117	198,867

Notes: For variables marked with an asterisk (\*), only categories with more than 10 observations are included. The standard deviation (if applicable) is in parentheses.

Source: Own calculations based on data from the [Federal Statistical Office \(2020a; 2020b\)](#).

more than 80 % have a permanent working contract (cf. [Table 1](#)). As the SLFS is in accordance with international definitions of the International Labour Organization, it can be compared with OECD and EU data. For example, [Ryan \(2023\)](#) found a similar proportion of temporary work (people aged 25–54 for the years 2011–12) for Switzerland.

#### 3.2. Comparison with the hospitality sector

The limited number of observations precludes the use of complex multivariate models without risking unstable estimates. For this reason, we adopted a pure descriptive empirical comparison in our main analysis, which we consider methodologically more appropriate and transparent given the data constraints. Employees in the hospitality sector were chosen as a reference group for non-family workers in farming. As in the agricultural sector, the hospitality sector is usually characterized by a high share of temporary and unskilled work. Moreover, it is often criticized for low wages and generally poor working conditions ([Unia, 2023](#)). This may be only part of the reason why the sector is struggling with a shortage of skilled employees ([Mügglér et al., 2022](#)). The large loss of employees from the sector during the Covid pandemic and the

fact that many found jobs in other sectors have shown that employees are flexible enough to switch between sectors (Schulze, 2022). Thus, the farming sector may be a potential competitor when it comes to filling vacancies. A full list of occupations and economic activities referring to the hospitality sector can be found in Table A.3 in the Appendix.

The SLFS includes a total of about 2100 employees from the hospitality sector for the years 2015–2020. Concerning citizenship, they have similar characteristics to farming employees. The majority has a Swiss passport (55.3 %), and about equal shares have a C or B permit (cf. Table 1). A similar distribution can also be observed for the type of working contract (cf. Table 1). A slightly higher proportion of 90 % indicates having a permanent working contract, and only 10 % have a seasonal or some other type of non-permanent job.

To have a complete overview of the total workforce, we also included employees from all other sectors. The SLFS includes about 33,000 employees from other sectors per year, which corresponds to about 200,000 employees for all years.

### 3.3. Regression analysis

To derive constructive and practical tips that can support employers in their recruitment efforts we analyze which factors are related to the duration of employment (in days) denoted by  $Y$ . By interacting the main regressors  $X$  with a dummy variable for the hospitality sector  $D$ , we can directly deduce whether there are differences between the two sectors. We estimate the following linear equation (1) using OLS.

$$Y = \beta_0 + \beta_1 X_1 + \dots + \beta_k X_k + \gamma_0 D + \gamma_1 D * X_1 + \dots + \gamma_k D * X_k + \varepsilon \quad (1)$$

However, we interpret the coefficients with caution and avoid a causal interpretation due to the small sample size and the limited number of potential confounders.

## 4. Results

In the following section, we present our descriptive and regression findings. First, we present the socio-economic and job characteristics of employees in the farming and hospitality sectors (cf. Table 1) and then compare their working conditions (cf. Table 2). Finally, we show the results from linear regression with the duration of employment as dependent variable.

**Table 2**  
Descriptive statistics on the timing of work.

	(Non-family) employees in the		
	farming sector	hospitality sector	other sectors
<b>Shift work* (in %)</b>			
Yes	6.2	53.9	16.2
<b>Work on call (in %)</b>			
Yes	19.8	16.8	5.0
<b>Work during evening (7 p.m. to midnight; in %)</b>			
Normally	11.0	58.9	13.9
Sometimes	17.1	18.6	24.0
Never	72.0	22.5	62.1
<b>Saturday work (in %)</b>			
Normally	43.7	55.7	15.2
Sometimes (paid)	22.2	25.8	17.7
Never	31.3	17.9	63.7
Sometimes (unpaid)	2.8	0.6	3.4
<b>Sunday work* (in %)</b>			
Normally	21.9	35.9	7.6
Sometimes (paid)	19.8	23.4	11.1
Never	58.3	40.1	78.9
Sometimes (unpaid)	–	0.6	2.4
Number of observations	406	2117	198867

Notes: For variables marked with an asterisk (\*), only categories with more than 10 observations are included.

Source: Own calculations based on data from the Federal Statistical Office (2020a; 2020b).

### 4.1. Descriptive comparison of employment in the farming and hospitality sectors

#### 4.1.1. Age, sex, and education

The average non-family farm employee is about 42 years old and is thus slightly older compared to employees in the hospitality sector. Quite interestingly, we observed a large proportion of about 11 % of agricultural workers being active beyond the statutory retirement age (65 years for men and 64 years for women). In other sectors, only 2 % worked beyond the statutory retirement age.

The majority of non-family agricultural workers in our sample are male (64 %), which applies to only 29 % of employees in the hospitality sector. In all other sectors, the shares are balanced. About one-third hold a degree from elementary or some other school, and more than 40 % have completed vocational training. The remaining 21 % had a higher degree from high school or university (or similar). The proportion of employees with higher levels of education is about 15 percentage points higher in the hospitality sector.

#### 4.1.2. Job characteristics

About 44 % of non-family farm employees in our sample carry out helper activities (“unskilled work”), while more than half can be classified as skilled workers, following the CH-ISCO-19.<sup>1</sup> For employees in the hospitality sector, we can observe similar numbers. The majority of male non-family farm employees carried out skilled work (58 %). This proportion is lower among women (52 %).

Non-family farm employees were more deployed in arable farming (43 %) compared to family farm employees (11 %).<sup>2</sup> In this farming activity, helper jobs (and especially temporary work) are probably more in demand (Bock-Schappelwein, 2023). About half of all unskilled employees have jobs related to arable farming. Almost 80 % of family workers are employed in animal production, of which more than 70 % work on dairy farms. Only 44 % of non-family employees work in animal production, and about half of them work on a dairy farm. The share of skilled workers is also the highest in animal production (about 50 % compared to 36 % in arable farming and 14 % in mixed farming). The remaining 13 % of all non-family farm employees are employed on farms that are involved in different activities without special focus (“mixed farming”).

#### 4.1.3. Employment duration, working hours and timing of work

The majority of farming jobs tend to last quite long. Two-thirds of non-family employees have worked for their current employer for more than 2 years, which is similar to other sectors, but higher than in the hospitality sector.

Non-family employees in farming work, on average, 40 h per week (full-time: 49.7 h; part-time: 22.1 h). In the hospitality sector, agreed-upon hours are, on average, lower, and amount to about 32 weekly hours. Although the part-time share is higher among those employees (57 % versus 43 % in farming), this fact still holds when conditioning on full-time jobs. Full-time employees in the hospitality sector work an average of 42.7 h per week. While many employees in both sectors indicated not having a fixed number of working hours (about 20 %), we also observed variations within one year. In the third quarter (i.e., in summer), employees in the farming and hospitality sectors had the highest workload (cf. Fig. 1), which can be explained by the harvest and the holiday months, respectively. For employees in other sectors, the average agreed-upon working hours are constant across the year and amount to about 35 h per week (including full- and part-time employees).

<sup>1</sup> The proportion of unskilled work is higher (55 %) among those with a temporary working contract.

<sup>2</sup> Statistics on family farm workers can be obtained from the corresponding author upon request.

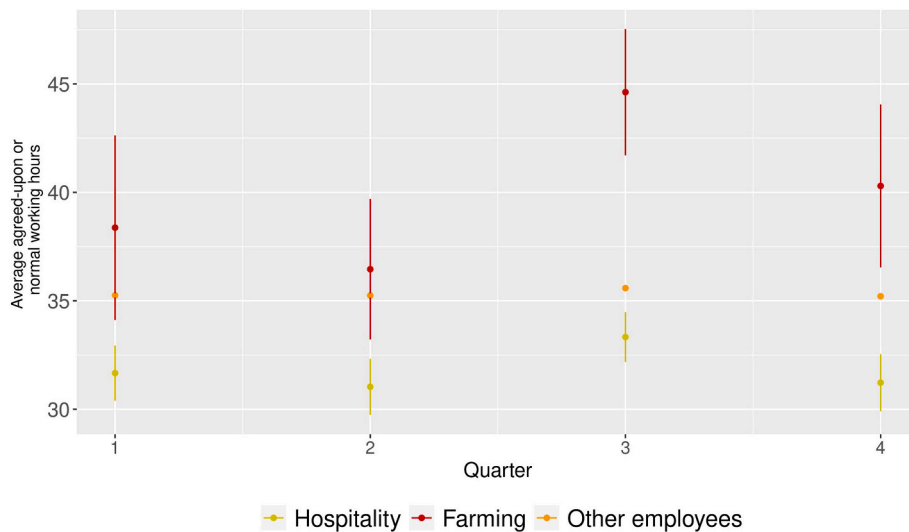


Fig. 1. Average agreed-upon or normal working hours for farm employees and between occupations.

Source: Own calculations based on data from the Federal Statistical Office (2020b). Notes: Working hours refer to the contractually agreed-upon amount of hours. Of the non-family farm employees, 87 (20 %) had varying working hours and did not indicate a value. This share is similar for employees in the hospitality sector. In the hospitality sector, 57 % work part-time, and 43 % of non-family farm employees have part-time contracts.

Working-hour preferences can deviate from those agreed upon. Many employees state that they would like to work less or more (Zimmert and Weber, 2021). Full-time farming employees want, on average, to work 45.9 h (a mismatch of 3.8 h). In contrast, part-time employees have a higher preference of 28.2 h than their agreed-upon hours (a mismatch of -6.1). The same pattern can be observed in the hospitality sector. However, the size of the mismatch is less pronounced.

The amount of work may be one reason why employees feel stressed by their work or develop health problems. However, the timing of the work is also crucial (e.g., Costa, 2010). Table 2 shows that about 20 % of employees in the farming and hospitality sector work on call. Only a minority of farm employees work on shifts. In comparison, more than half of employees in the hospitality sector and about 16 % of employees in other sectors do shift work. In addition, we observed smaller shares of employees working during the evening (7 p.m. to midnight) in the

farming sector (cf. Table 2). Saturday and Sunday work are widespread in the farming and hospitality sectors compared to all other sectors, but this is at a lower level in farming. We also found that employees in dairy farming work more often during the weekend than employees in arable farming. However, their average weekly working hours were about the same.

4.1.4. Income

One-half of our sample working in the farming sector earns less than 20 Swiss francs per hour, which applies only to about 17 % of employees in the hospitality sector and to about 6 % in other sectors (Fig. 2). An hourly wage of more than 25 francs is paid only to about 17 % of farm employees (about 40 % in the hospitality sector). Different skills do not make a big difference in the wage distribution, but this pattern normalizes somewhat upon closer examination of the gross monthly income

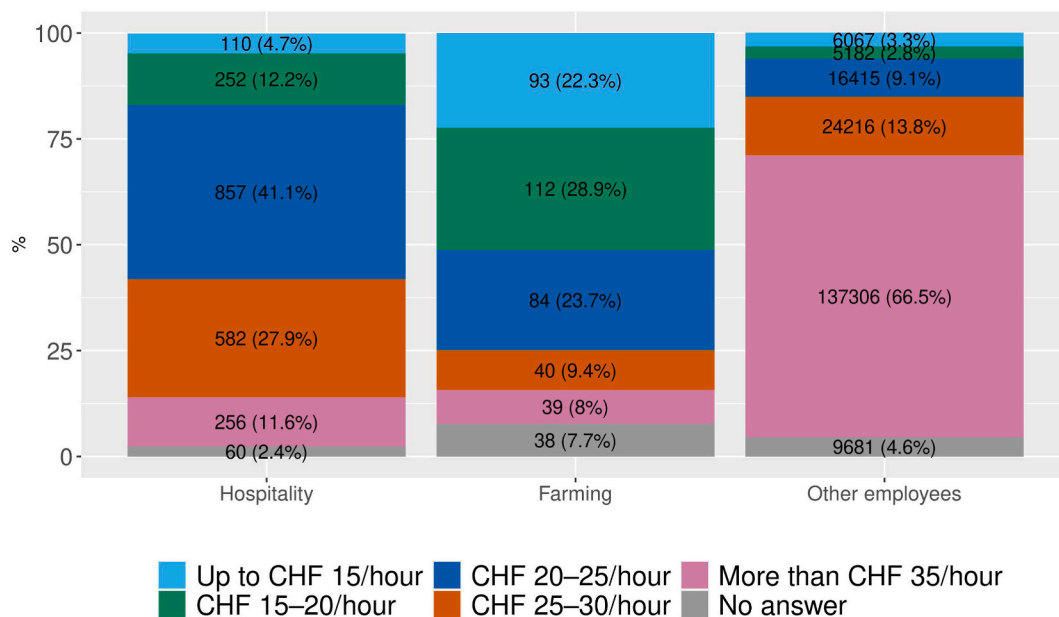


Fig. 2. Distribution of hourly wages between occupations.

Source: Own calculations based on data from the Federal Statistical Office (2020b).

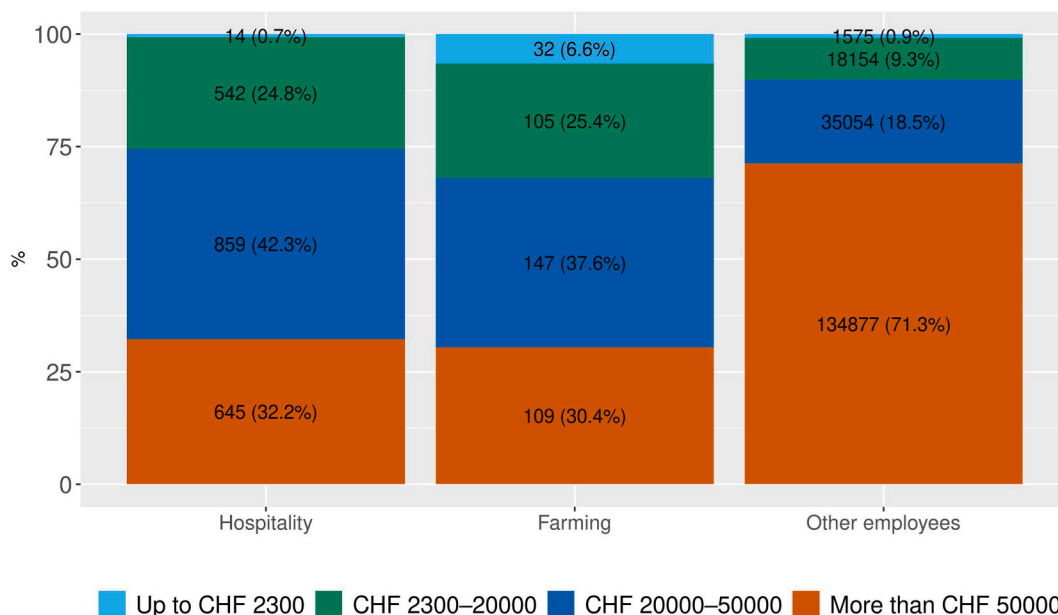


Fig. 3. Distribution of annual gross income between occupations.

Source: Own calculations based on data from the Federal Statistical Office (2020a). Notes: Below the threshold of 2300 CHF, employees are not liable to pay social security contributions. The average gross annual income amounts to 37,373 CHF in the hospitality sector, 35,357 CHF in farming, and 73,959 CHF for other sectors.

(Fig. 3). Since average agreed-upon working hours are higher in farming, thus compensating for the lower hourly wage, the distributions of the gross monthly income are comparable between the farming and hospitality sectors. The only difference is the comparatively large proportion of marginally employed (below the annual income threshold of 2300 Swiss francs) in farming (about 6%). This result also highlights the structural differences between the two sectors. We view this comparison more as a heuristic benchmark than as a definitive cross-sector assessment. Wage differences can have far-reaching causes, for example with regard to the recognition of qualifications or sector-specific institutional conditions such as minimum wages.

Low lifetime earnings and old-age pensions can explain why people decide to continue working beyond the statutory retirement age. Since we have seen that the proportion of working pensioners is high in farming, we compared their number of old-age pensions (AHV-IV) with that of other sectors. For employees in farming, it amounts to about 1750 Swiss francs per month, while for employees in the hospitality sector, it is about 100 Swiss francs higher and at a similar level compared to other employees.<sup>3</sup> As the old-age pension (AHV-IV) covers only part of the Swiss pension system, these figures provide an incomplete view of the actual extent of possible old-age poverty. Furthermore, we find that the share of recipients of an invalidity pension is also slightly higher in farming (6.4% compared to 1.4% in the hospitality sector and 1.8% for other employees).

#### 4.2. Regression analysis: describing the duration of employment

To derive constructive tips that can support employers in their recruitment efforts, we additionally investigated which factors are related to the duration of employment and whether there are differences between the farming and hospitality sectors. The findings from linear regression are depicted in Table 3.

Foreign employees with a residence permit have significantly shorter employment contracts than Swiss employees. In the hospitality industry, however, origin makes less of a difference. The same can be said about

<sup>3</sup> The minimum old-age pension amounts to 1225 Swiss francs, and the maximum is 2450 Swiss francs.

education. Better-educated farm employees tend to stay in their jobs for shorter periods of time. Although better-educated employees in the hospitality sector also have shorter job durations, the relationship is less pronounced. Older employees, on the other hand, and especially employees who have reached the retirement age, have significantly longer periods of employment.

Concerning the working conditions, we find that the gross annual income is positively related to the employment duration. Full-time and shift workers also tend to stay for longer durations, while on-call work has a negative coefficient. This may point to the role of fixed working time models in the agricultural sector. All these factors differ significantly from the hospitality sector, for which they are virtually irrelevant. Other factors appear to be more important here. Finally, due to the small number of observations, we cannot prove a clear relationship between weekend work and the duration of employment.

### 5. Discussion

This study aims to characterize the job situation of regular non-family farm employees, using the hospitality sector as a reference point. Our analyses identify four key challenges for non-family employment in the agricultural sector: the high proportion of already retired employees, low wages, long working hours and a comparatively low level of education.

Furthermore, it seems that farm employees have longer employment durations than those in the hospitality sector, implying that the farming sector offers longer period contracts than the hospitality sector. By contrast, hospitality is widely discussed as facing retention problems, difficult working conditions, and recruitment challenges (including in Switzerland), which helps explain higher turnover and shorter tenure as part of a broader pattern of labor scarcity in the sector (Mügler et al., 2022; Schulze, 2022). However, longer employment durations in farming do not necessarily convey resilience or stability of the farming sector, especially since the analysis is mostly descriptive. Longer employment durations can in specific instances reflect stable employment relationships and satisfactory conditions (e.g., permanent contracts), but they can also reflect limited alternatives and lower sector mobility for farm workers. In fact, a recent study of Romanian seasonal workers in Spain shows that farm workers despite having precarious

**Table 3**  
Results from linear regression describing the duration of employment in farming.

		Coefficient	Standard error	t-value
<b>Type of working contract</b> (Reference: Seasonal work)	Other type of non-permanent job	-4.50	668.85	-0.01
	Permanent job	905.90	532.05	1.70
<b>Residence permit</b> (Reference: Swiss)	C permit	-1241.02	434.28	-2.86
	B permit	-1866.24	515.36	-3.62
<b>Age (in years)</b>		119.87	14.16	8.46
<b>Working beyond the statutory retirement age (in %)</b>	Yes	1131.41	557.20	2.03
<b>Male</b>	Yes	367.76	322.85	1.14
<b>Education</b> (Reference: Compulsory elementary school or other school)	Apprenticeship	-1647.65	364.15	-4.53
	High school diploma or university (or similar)	-1352.94	404.12	-3.35
<b>Monthly gross income (in 1000 Swiss francs)</b>		21.60	7.51	2.88
<b>Full-time job</b>	Yes	798.87	382.35	2.09
<b>Shift-work</b>	Yes	2185.50	616.10	3.55
<b>Work on call</b>	Yes	-923.75	370.84	-2.49
<b>Work during evening (7 p.m. to midnight;</b> Reference: Normally)	Sometimes	715.46	540.85	1.32
	Never	453.62	455.80	1.00
<b>Saturday work</b> (Reference: Normally)	Sometimes (paid or unpaid)	-646.13	421.45	-1.53
	Never	166.56	385.79	0.43
<b>Sunday work</b> (Reference: Normally)	Sometimes (paid or unpaid)	282.98	522.02	0.54
	Never	-588.84	433.68	-1.36
<b>Employed in hospitality sector</b>	Yes	500.18	1125.89	0.44
Number of observations		2368		
Adjusted R-squared		0.319		

Notes: The coefficients correspond to  $\beta$  in Equation (1).  $\gamma$  is not presented in this table. Coefficients that differ statistically significantly from the hospitality sector are marked in bold.

Source: Own calculations based on data from the [Federal Statistical Office \(2020a; 2020b\)](#).

living conditions related to housing issues, low wages and little access to benefits, they still return to their farming jobs in the Spanish regions due to lack of other alternatives (Molinero-Gerbeau et al., 2021). In Switzerland, these constraints seem more pronounced for foreign employees than Swiss residents with the type of contracts offered and could even plausibly drive older employees to have longer employment durations.

In fact, the data show a high share of non-family farm employees working beyond the statutory retirement age. This finding potentially presents the financial vulnerabilities of non-family farm employees due to low incomes during working life. It is not surprising that employees in other sectors have better wages; however, the hourly wage in the farming sector is lower than that in the hospitality sector, pushing non-family farm employees to agree to work longer hours to compensate for the low hourly wage. From a decent work perspective, reliance on longer working hours in farming is a marker of vulnerability even if it leads to a similar gross monthly income compared to other sectors (International Labour Organization, 2023). Furthermore, our regression results show that higher incomes would be a lever for achieving longer-term job durations - a result that has also been shown in previous studies (Mann, 2024).

Furthermore, working schedule and arrangements can impact

employment durations in farming. Farming and hospitality expose employees to different forms of unsocial hours from shift to on-call work. From a social sustainability perspective, weekend and on-call work can be indicative of precarious scheduling if they reduce predictability and restrict recovery time, even when night work is limited (Arlinghaus et al., 2019; International Labour Organization, 2022). Farm employees may prefer fixed working time arrangements, which include shift work but excluding on-call work. However, peaks in working hours during summer are expected due to the nature of harvesting in farming jobs. Our results further show discrepancies between actual and preferred working hours for both employees in the farming and hospitality sectors, although they are less pronounced in the hospitality sector. Non-family farm employees with a full-time working contract desire on average to work about 4 h less, while part-time employees desire on average to work 6 h more. Our data cannot identify causes (e.g., employer constraints, bargaining power, household needs), but they indicate that working-time arrangements may not align well with worker preferences, suggesting room for more flexible yet predictable models. Reynolds (2003) argues that work hours mismatches can be used as an indicator of constraint reflecting under- and overemployment realities. It is important to note that overemployment can have a negative impact on how employees carry out their work but also on their private lives (Reynolds, 2003). Improvements in farming hence may depend particularly on predictability and worker control during peak periods and weekends.

As in other OECD countries, the (formal) level of education among farm employees is rather low compared to other sectors in Switzerland (Ryan, 2023) and employers face difficulties in retaining better-educated employees. This finding can become problematic, as increasing technologization requires a higher number of skilled workers (Christiaensen et al., 2020; Vougioukas and Fountas, 2019). The informal way of acquiring skills (e.g., on-the-job training) could prove to be a solution to the challenges of finding and retaining labor for some farming activities. Therefore, relying on training, the non-family employee is indispensable and could motivate farm managers to enhance their contracts with the employees to ensure their long tenure (Mann, 2024). This saves farm managers' resources by not having to continuously train new employees. However, this way of skill acquisition may be less compatible with emerging and continuously evolving skill requirements, especially digital and technological ones. The agricultural workforce tends to face greater barriers (e.g., language restrictions and immigration status) to participate in further training than workers in other sectors (Arcury et al., 2010; Vázquez et al., 2025). Hence, the challenge is to ensure that pathways for upskilling are accessible. In addition, the data revealed that skilled employees are more often required for animal production, while in plant production, helping jobs are more common. However, as farm incomes are, on average, lower in dairy farming (Hoop et al., 2022), which is the most common farm type in Switzerland, these farms may have to rely more on family work and cannot afford skilled non-family employees. A question arises about the composition of labor in terms of what types of skills exist versus those that are required and which difficulties in hiring farm workers are experienced by farm managers. This information is missing and needs to be addressed to tailor strategies to the difficulties faced and the labor needs identified.

There are important limitations to the present study. The under-representation of seasonal and migrant workers is not a minor limitation, but a fundamental empirical boundary of the dataset used. Hence, our findings do not capture the most vulnerable segments of the agricultural workforce but rather provide insights into a specific subgroup: non-family farm employees who are permanent residents and therefore partially integrated into national labor market institutions. There is a need to collect detailed data on the socioeconomic situation of seasonal employees, especially foreigners, to better understand the total farm workforce and its implications for farm labor and Swiss immigration policies (Meemken et al., 2024). Moreover, the sample of the agriculture subgroup analyzed is small and a primarily descriptive analysis is

conducted with the purpose of characterizing this group. In addition, there are interesting subgroups (e.g., farm employees working in crop production versus animal production) within the data that are represented, but the samples are not sufficient to draw valid conclusions for all variables of interest. For instance, we found that employees in animal production were more likely to work during the weekends than those employed in crop production, although the total working hours were similar between the two types of farm production. Future research should further examine the differences and issues faced by labor in each of the production types to understand tenure challenges faced at each production type and find ways to address them.

## 6. Conclusion and policy recommendations

Using nationally representative labor force data for 2015–2020, this paper provides a characterization of non-family employees whose main job is in Swiss farming and captures decent work indicators against the hospitality and other sectors. The results show that in farming, hourly wages are substantially lower, and similar monthly incomes are reached through longer working hours. This wage-hours trade-off is accompanied by work-time challenges (weekend and on-call work, seasonal peaks), a workforce that is on average older with a comparatively high share of employees working beyond the statutory retirement age, and having lower formal education. Further, results suggest that a higher gross annual income and more structured working-time arrangements are positively related to longer job duration in farming, while on-call work is negatively related. These findings align with a decent work perspective where job quality cannot be inferred from income alone, but must be assessed jointly across adequate earnings, decent working time, predictability, and access to skills development.

Concretely, policies should prioritize the adequacy of hourly wages. There could be considerations for clear compensation rules for weekend or on-call work and peak-season intensity. Predictable scheduling (explicit on-call rules, minimum rest) and support for seasonal planning

arrangements (e.g., via advisory boards) could help in ensuring job quality and hence employment durations in farming. In order to cushion seasonal peaks and distribute working hours more evenly throughout the year, new working models such as the joint employment of workers for several farms could be considered. To develop skills and raise the level of education, shortened or modular training modules could be used, also for career changers. The recognition of foreign qualifications could also be helpful in this regard.

Finally, given the underrepresentation of seasonal and short-permit workers, policymakers should strengthen the monitoring of the “missing” workforce through complementary data collection and harmonized reporting to track decent-work indicators across the overall agricultural labor market.

## Funding information

The research in this paper was not funded.

## CRedit authorship contribution statement

**Franziska Zimmert:** Conceptualization, Formal analysis, Methodology, Validation, Visualization, Writing – original draft, Writing – review & editing. **Rita Saleh:** Conceptualization, Methodology, Writing – original draft, Writing – review & editing.

## Declaration of competing interest

The authors declare no competing interests.

## Acknowledgements

The authors would like to thank Stefan Mann and Nadja El Benni for helpful comments and remarks that have improved the article.

## Appendix

**Table A.1**

List of occupations related to farming included in the present study based on the Swiss Standard Classification of Occupations (CH-ISCO-19)

CH-ISCO-19	Description
60000	skilled workers in agriculture, forestry, and fishing without further specification
61000	skilled workers in agriculture without further specification
61100	gardeners and arable farmers without further specification
61110	vegetable farmers
61120	fruit and berry farmers without further specification
61121	tree and shrub growers without vineyards
61122	tree and shrub growers, vineyards
61140	skilled workers in mixed crop agriculture
<b>61200</b>	<b>livestock farmer without further specification</b>
61210	livestock farmer (without poultry) and dairy farmers without further specification
61211	livestock farmer (without poultry and horses) and dairy farmers
61212	livestock farmer (horses)
61220	livestock farmer (poultry)
61230	beekeepers and silkworm breeders
61290	livestock farmers not elsewhere mentioned
<b>61300</b>	<b>arable and livestock farmer without special focus</b>
<b>92100</b>	<b>unskilled workers in agriculture, forestry and fishing without further specification</b>
92110	unskilled worker in vegetable and fruit farming
92120	unskilled worker in livestock farming
92130	<b>unskilled worker in arable and livestock farming without special focus</b>

© 2023 Federal Statistical Office

Notes: All included occupations are presented with their CH-ISCO-19 codes and descriptions.

**Table A.2**

List of the economic activities in farming included in the present study based on the 2008 General Classification of Economic Activities (NOGA2008)

NOGA2008	Description
011	cultivation of non-perennial plants
012	cultivation of perennial plants
013	plant propagation
014	animal production
015	mixed farming
016	support activities to agriculture and post-harvest crop activities

© 2023 Federal Statistical Office

Notes: All included economic activities are presented with their NOGA2008 codes and descriptions.

**Table A.3**

List of occupations and economic activities in the hospitality sector included in the present study for analysis. All occupations and economic activities included in the Swiss Standard Classification of Occupations (CH-ISCO-19) and General Classification of Economic Activities (NOGA, 2008) with their codes and descriptions.

CH-ISCO-19	Description
51311	chef de service in restaurants
51312	service specialist
51313	service assistant
51320	barkeeper

© 2023 Federal Statistical Office

**NOGA 2008**

551	hotels, inns, and guesthouses
552	holiday accommodation and similar places of accommodation
553	camping sites
559	other accommodation establishments
561	restaurants, pubs, snack bars, cafés, ice cream parlours, etc.
562	caterers and other food service activities
563	servicing of drinks

© 2023 Federal Statistical Office

Notes: All included occupations and activities are presented with their CH-ISCO-19 and NOGA2008 codes and descriptions.

## Data availability

This article uses confidential data from the Swiss Labour Force Survey (SLFS) and information gathered from different social insurance registers (SESAM) maintained by the Federal Statistical Office Switzerland. The authors are not authorized to share this data. However, it can be obtained after application at [info.arbeit@bfs.admin.ch](mailto:info.arbeit@bfs.admin.ch). For further information, please see here. The R code for data preparation and analysis can be obtained from the corresponding author upon request.

## References

- Arcury, T.A., Estrada, J.M., Quandt, S.A., 2010. Overcoming language and literacy barriers in safety and health training of agricultural workers. *J. Agromed.* 15 (3), 236–248. <https://doi.org/10.1080/1059924X.2010.486958>.
- Arlinghaus, A., Bohle, P., Iskra-Golec, I., Jansen, N., Jay, S., Rotenberg, L., 2019. Working time society consensus statements: evidence-based effects of shift work and non-standard working hours on workers, family and community. *Ind. Health* 57 (2), 187–200. <https://doi.org/10.2486/indhealth.SW-4>.
- Baffoe, G., Mutisya, E., 2015. Social sustainability: a review of indicators and empirical application. *Environ. Manag. Sustain. Dev.* 4 (2). <https://doi.org/10.5296/emsd.v4i2.8399>, 246–226.
- Bock-Schappelwein, J., 2023. Herausforderungen für die saisonale Arbeitsmigration in der österreichischen Landwirtschaft seit dem Jahr 2020. In: *Abhängig Beschäftigte in Der Landwirtschaft. Schriftenreihe Für Ländliche Sozialfragen*, vol. 149.
- Burton, R.J.F., Fischer, H., 2015. The succession crisis in European agriculture. *Sociol. Rural.* 55 (2), 155–166. <https://doi.org/10.1111/soru.12080>.
- Cazes, S., Hijzen, A., Saint-Martin, A., 2015. Measuring and Assessing Job Quality: the OECD Job Quality Framework (OECD Social, Employment and Migration Working Papers No. 174). OECD Publishing. <https://doi.org/10.1787/5jrp02kjm1mr-en>.
- Christiaensen, L., Rutledge, Z., Taylor, J., 2020. *The future of work in agriculture: some reflections* (social protection and jobs global practice, Issue. <https://documents1.wor>

[ldbank.org/curated/en/777731585054424384/pdf/The-Future-of-Work-in-Agriculture-Some-Reflections.pdf](https://idbank.org/curated/en/777731585054424384/pdf/The-Future-of-Work-in-Agriculture-Some-Reflections.pdf).

- Contzen, S., Santhanam-Martin, M.B.M., Hostiou, N., Nettle, R., 2025. Revisiting the concept of “decent work” for agriculture. *J. Rural Stud.* 120, 103872. <https://doi.org/10.1016/j.jrurstud.2025.103872>.
- Costa, G., 2010. Shift work and health: current problems and preventive actions. *Safety and Health at Work* 1 (2), 112–123. <https://doi.org/10.5491/shaw.2010.1.2.112>.
- Desiderio, E., Garcia-Herrero, L., Hall, D., Segrè, A., Vittuari, M., 2022. Social sustainability tools and indicators for the food supply chain: a systematic literature review. *Sustain. Prod. Consum.* (30), 527–540. <https://doi.org/10.1016/j.spc.2021.12.015>.
- Dufty, N., Martin, P., &, & Zhao, S. (2019). Demand for farm workers.
- Dupraz, P., Latruffe, L., 2015. Trends in family labour, hired labour and contract work on French field crop farms: the role of the common agricultural policy. *Food Policy* 51, 104–118. <https://doi.org/10.1016/j.foodpol.2015.01.003>.
- Fabry, A., Van den Broeck, G., Maertens, M., 2022. Decent work in global food value chains: evidence from Senegal. *World Dev.* 152, 105790. <https://doi.org/10.1016/j.worlddev.2021.105790>.
- FAO, 2013. SAFA guidelines: sustainability assessment of food and agriculture systems. Food Agric. Organ Unit. Nation. <https://www.fao.org/3/i3957e/i3957e.pdf>.
- Federal Statistical Office, 2021. *Farm Structure Survey, 2021*.
- Federal Statistical Office, 2020a. *Social protection and labour market (SESAM), waves 2015–2020*.
- Federal Statistical Office, 2020b. *Swiss Labour Force Survey (SLFS), waves 2015–2020*.
- Ghai, D., 2003. Decent work: concept and indicators. *Int. Labour Rev.* 142 (2), 113–145. <https://doi.org/10.1111/j.1564-913X.2003.tb00256.x>.
- Grenz, J., Thalman, C., Stämpfli, A., Studer, C., Häni, F.J., 2012. RISE 2.0: the method. response-inducing sustainability evaluation. Bern, Switzerland: School of Agricultural, Forest and Food Sciences (HAFL), Bern University of Applied Sciences. <https://www.hafl.bfh.ch/en/research-consulting/projects/ri2e/>.
- Harrison, J.L., Getz, C., 2015. Farm size and job quality: mixed-methods studies of hired farm work in California and Wisconsin. *Agric. Hum. Val.* 32 (4), 617–634. <https://doi.org/10.1007/s10460-014-9575-6>.
- Hoop, D., Schilknecht, P., Jan, P., Renner, S., Schmid, D., 2022. Landwirtschaftliche Einkommensstatistik 2021: Stichprobe Einkommenssituation. *Agroscope*. <https://ira.agroscope.ch/de-CH/publication/50491>.

- Hostiou, N., Vollet, D., Benoit, M., Delfosse, C., 2020. Employment and farmers' work in European ruminant livestock farms: a review. *J. Rural Stud.* 74, 223–234. <https://doi.org/10.1016/j.jrurstud.2020.01.008>.
- Hyejin, L., Swinnen, J., 2023. Subsidies, competition and growth: evidence from EU regions, agriculture and food chains. [https://kuleuven.limo.libis.be/discovery/fulldisplay?docid=lirias4082777&context=SearchWebhook&vid=32KUL\\_KUL:Lirias&lang=en&search\\_scope=lirias\\_profile&adapt\\_or=SearchWebhook&tab=LIRIAS&query=any,contains,LIRIAS4082777&offset=0](https://kuleuven.limo.libis.be/discovery/fulldisplay?docid=lirias4082777&context=SearchWebhook&vid=32KUL_KUL:Lirias&lang=en&search_scope=lirias_profile&adapt_or=SearchWebhook&tab=LIRIAS&query=any,contains,LIRIAS4082777&offset=0).
- International Labour Organization, 2013. Decent Work Indicators: Guidelines for Producers and Users of Statistical and Legal Framework Indicators.
- International Labour Organization, 2022. Working Time and work–life Balance Around the World. International Labour Office. [https://www.ilo.org/sites/default/files/wcmsp5/groups/public/%40ed\\_protect/%40protrav/%40travail/documents/publication/wcms864222.pdf](https://www.ilo.org/sites/default/files/wcmsp5/groups/public/%40ed_protect/%40protrav/%40travail/documents/publication/wcms864222.pdf).
- International Labour Organization, 2023. Policy guidelines for the promotion of decent work in the agri-food sector: meeting of experts on decent work in the Agri-food sector: an essential part of sustainable food systems *sectoral policies department*. <https://www.ilo.org/sites/default/files/2024-05/Policy%20guidelines%20for%20the%20promotion%20of%20decent%20work%20in%20the%20agri-food%20sector.pdf>.
- Janker, J., Mann, S., 2020. Understanding the social dimension of sustainability in agriculture: a critical review of sustainability assessment tools. *Environ. Dev. Sustain.* 22 (3), 1671–1691. <https://doi.org/10.1007/s10668-018-0282-0>.
- Malanski, P.D., Dedieu, B., Schiavi, S., 2021. Mapping the research domains on work in agriculture: a bibliometric review from scopus database. *J. Rural Stud.* 81, 305–314. <https://doi.org/10.1016/j.jrurstud.2020.10.050>.
- Mann, S., 2024. On the interplay between duration of employment, relational quality and wages—Results about non-family farm workers in Switzerland. *Forum Soc. Econ.* 54 (3), 340–353. <https://doi.org/10.1080/07360932.2024.2347878>.
- Meemken, E.-M., Aremu, O., Fabry, A., Heepen, C., Illien, P., Kammer, M., Laitha, A., 2025. Policy for decent work in agriculture. *Agric. Econ.* 56, 401–418. <https://doi.org/10.1111/agec.70009>.
- Meemken, E.-M., Charlton, D., Christiaensen, L., Maertens, M., Oya, C., Reardon, T., Stemmler, H., 2024. Better data for decent work in the global food system. *Nat. Food* 5, 454–456. <https://doi.org/10.1038/s43016-024-01002-0>.
- Müggl, S., Liechti, L., Schär, M., 2022. Fachkräftemangel im Gastgewerbe und die Folgen für Unternehmen, die Branche und den Tourismus. Schlussbericht. Im Auftrag von HotellerieSuisse. Büro für arbeits- und sozialpolitische Studien (BASS). <https://www.hotelleriesuisse.ch/de/>.
- Molinero-Gerbeau, Y., López-Sala, A., Șerban, M., 2021. On the social sustainability of industrial agriculture dependent on migrant workers: romanian workers in Spain's seasonal agriculture. *Sustainability* 13 (3), 1062. <https://doi.org/10.3390/su13031062>.
- Reynolds, J., 2003. You can't always get the hours you want: mismatches between actual and preferred work hours in the US. *Soc. Forces* 81 (4), 1171–1199. <https://doi.org/10.1353/sof.2003.0069>.
- Röös, E., Fischer, K., Tidaker, P., Nordström Källström, H., 2019. How well is farmers' social situation captured by sustainability assessment tools? A Swedish case study. *Int. J. Sustain. Dev. World Ecol.* 26 (3), 268–281. <https://doi.org/10.1080/13504509.2018.1560371>.
- Ryan, M., 2023. Labour and skills shortages in the agro-food sector. OECD food, Agric. Fish. <https://www.oecd-ilibrary.org/docserver/ed758aab-en.pdf?expires=1697209686&id=id&accname=guest&checksum=COE531E05D0F1029E999244EFCFB7FF9>.
- Sannou, R., Kirschke, S., Günther, E., 2023. Integrating the social perspective into the sustainability assessment of agri-food systems: a review of indicators. *Sustain. Prod. Consum.* 39. <https://doi.org/10.1016/j.spc.2023.05.014>.
- Schader, C., Grenz, J., Ssebunya, B., Birrer, S., Pittet, M., Stolze, M., Möller, K., 2016. Sustainability indicators for agriculture: the potential of the sustainability monitoring and assessment routine (SMART) tool. *Ecol. Indic.* 65, 386–403. <https://doi.org/10.1016/j.ecolind.2016.01.006>.
- Schulze, L., 2022. “Die Gastronomie Muss Total Umdenken”: Geringe Löhne, Fehlende Wertschätzung Und Schlecht Planbare Arbeitszeiten. *Tagesspiegel*. <https://www.tagesspiegel.de/die-gastronomie-muss-total-umdenken-geringe-lohne-fehlernde-wertschätzung-und-schlecht-planbare-arbeitszeiten-8767150.html>.
- Senkrua, A., 2024. Decent work indicators. *Hong Kong J. Soc. Sci.* 62. <https://doi.org/10.55463/hkss.issn.1021-3619.62.63>.
- Sneddon, C., Howarth, R.B., Norgaard, R.B., 2006. Sustainable development in a post-Brundtland world. *Ecol. Econ.* 57 (2), 253–268. <https://doi.org/10.1016/j.ecolecon.2005.04.013>.
- Umstätter, C., Mann, S., Werner, J., 2022. A simple measure for workload as a social sustainability indicator for family farms. *Environ. Sustain. Indic.* 14. <https://doi.org/10.1016/j.indic.2022.100180>.
- Unia, 2023. Gastgewerbe: Beschäftigte beschreiben Missstände. Accessed on July 6, 2023. <https://IP:PORT>.
- Valiance, S., Perkins, H., Dixon, J.E., 2011. What is social sustainability? A clarification of concepts. *Geoforum* 42 (3), 342–348. <https://doi.org/10.1016/j.geoforum.2011.01.002>.
- Vougioukas, S., Fountas, S., 2019. Smart automation in the agri-food chain: state of the art, prospects and impacts on workforce demands. <https://farmlabor.ucdavis.edu/sites/g/files/dgvnsk5936/files/inline-files/Paper%20Vougioukas%20Fountas.pdf>.
- Vázquez, R.I., Charlier, D., Peterson, C., Balius, P.N., Kirsch, J.D., Liebman, A., Bender, J. B., 2025. Health and safety training for immigrant dairy workers in the upper midwest. *J. Dairy Sci.* 108 (4), 3756–3763. <https://doi.org/10.3168/jds.2024-24639>.
- Waney, N., Soemarno, Y.Y., Polii, B., 2014. Developing indicators of sustainable agriculture at farm level. *IOSR J. Agric. Vet. Sci.* 7 (2), 42–53. <https://doi.org/10.9790/2380-07224253>.
- Wang, D., Cheung, C., 2024. Decent work in tourism and hospitality: a systematic literature review, classification, and research recommendations. *Int. J. Contemp. Hospit. Manag.* 36 (7), 2194–2213. <https://doi.org/10.1108/IJCHM-10-2022-1263>.
- World Travel and Tourism Council, 2017. Travel and tourism global economic impact and issues 2017. <https://www.stb.gov.sg/content/dam/stb/documents/mediareleases/Global%20Economic%20Impact%20and%20Issues%202017.pdf>.
- Zahm, F., Viaux, P., Vilain, L., Girardin, P., Mouchet, C., 2008. In: *IDEA – Indicateurs De Durabilité Des Exploitations Agricoles: Guide D'Utilisation*, third ed. France: Educagri éditions, Dijon.
- Zimmert, F., Weber, E., 2021. The creation and resolution of discrepancies between preferred and actual working hours over the life course. *Appl. Econ.* 53 (42), 4899–4916. <https://doi.org/10.1080/00036846.2021.1912279>.