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Small French Farms and Employment: are they creating wage labour?

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Abstract

In this article, we highlight the structure of employment in the small French farms sector and we identify the characteristics of those that are conducive to the use of wage labour. For this purpose, we code labour regimes according to different types of workforce and propose a classification of small farms from the 2010 French agricultural census.

It is shown that small farms with permanent waged workforce are mostly involved in high value-added creation activities and are managed by trained farmers. However, we observe two main models: on the one hand, small farms with low recourse to family workforce (including that of the farmer). The proximity of job market and consumer market constitute an opportunity for these farms and the income earned off the farm have a positive impact on wage labour on the farm. On the other hand, small farms with significant recourse to family workforce complete their working time with permanent waged labour. It can reflect farmers' preferences for agricultural activity (chosen following a career change).

Keywords: *small farm, farm work, waged workforce, agricultural census*

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1. Introduction

Public subsidies allocated to agriculture largely benefit large farms at the expense of little known small-scale farms (Lécole, 2015; European Commission, 2011). Yet public bodies increasingly acknowledge that small farms contribute to maintaining employment levels in rural areas (European Parliament, 2014). For example, they have provided an employment refuge for workers who could not find enough work during the recent economic recession in Italy and Greece (Araújo, 2012; Karafolas and Alexandrakis, 2015).

More generally, in France, we observe that small-scale farms contribute more to employment per hectare of utilised agricultural land, than larger farms. The data from the 2010 agricultural census shows that the total agricultural work units (AWU) per hectare of utilised agricultural area is one point seven times higher for small farms than for larger farms, all kinds of production combined.

A distinction must be made between the labour provided by the farm manager and the labour of his/her workforce (wage labour or not). The contribution of small farms to employment is largely based on the labour supplied by the farmer. In France, the number of small-scale farms operated by the farm manager alone is three times that of larger farms. Is this because the labour supplied by the farm manager alone is sufficient to meet needs or is it because the latter does not have the capacity to hire additional manpower?

The small size of a farm, the low income it generates, lack of cash flow and poor access to the labour market are factors that can limit the size of the workforce on small farms. These limitations impact the size of the wage labour force, rather than unpaid household labour. The impact of these limitations is reflected in the agricultural census data: only two percent of small farms employ permanent wage workers; seventeen percent hire seasonal workers, while thirty-three percent of them use unpaid household labour.

The goals of this article is first to highlight small French farms employment structure and secondly to identify the characteristics of small farms that use labour other than that of the farm manager him/herself, and to identify whether these characteristics differ according to the forms of employment concerned (paid or unpaid family employment, seasonal or permanent).

This work aims to encourage reflection on the development of public support measures that would better take into account the specificities of small farms that employ labourers or would provide more incentives for job creation in these small-scale operations and in rural areas.

This question is all the more relevant given the recent evolution in small-scale farming. The image of small farms is undergoing a transformation with, significantly, the emergence of a shift towards innovative and income generating activities and productions. In 2010, one in four small farms had been created within the previous ten years. The percentage of small farms that sell their produce through short supply chains, using production methods respecting official quality labels and undertaking diversification activities¹ is greater among newly established small farms than among those that have been in operation for longer. There has been a significant expansion of organic farming on those farms² and an emergence of micro-farms specialised in market gardening (Morel, 2016). Operating on small farms, these farmers seek to increase the added value of their production and/or to diversify their sources of income. The rise in the level of education of these small farmers also leads to their engagement in pluriactivity. In the last ten years, pluriactivity among small French farmers has increased significantly³.

Our analysis focuses on small French farms. Many definitions of small farms exist. We are opting for the statistical definition, which identifies small farms as those with a standard output inferior to €25,000⁴. In the 2010 agricultural census, 179,000 small farms were identified, representing over one third of all farms in mainland France. Despite their importance in number, their contribution to public good and their resilience to the constraints they face, which are now acknowledged, data is still scarce (Guiomar et al., 2018). These smallholdings are excluded from the database on financial and accounting characteristics of European farming operations. Our work aims to take into account all small farms in mainland France, using the 2010 agricultural census.

We first present the employment characteristics of small French farms, as they are defined in the literature. We then take a closer look at the labour allocation on farm households and explain how this is pertinent to our study. Finally, we present the data, the methodology and the results obtained.

2. Employment in Small Farms: a review of the literature

To understand the drivers of the allocation of labour in small farms, we first focus on the central role of family labour. However, family labour is less and less available on farms nowadays. Hiring paid labour can be a solution despite the cost of this paid labour and the shortcomings of labour market in rural areas.

Aubert and Perrier-Cornet (2009) discuss the difficulties small French farms face when investing in equipment at the same pace as large farms because of low incomes and low cash flow. This finding is shared by Hubbard (2009), Meert et al, (2005) and Potter and Lobley (1993). According to these authors, cash flow difficulties make small farms vulnerable and limit farmers to strategies for reducing operating costs (e.g. reducing intermediate consumption expenses, extending their equipment life).

Expansion is difficult for these farms due to their limited access to land for sale or leasing (Aubert and Perrier-Cornet, 2009). In addition to the aforementioned cash flow issue and investment difficulties, they also have difficulty gaining recognition within the farming community (Dufour et al., 2007; Brun, 2006). Furthermore, the land nearby that becomes available on the market is seldom sold for the creation or consolidation of small farms (Lécole, 2017; Boissier, 2007).

Faced with these difficulties, smallholders can rely on family labour when available. On the one hand, to overcome investment difficulties and when production systems allow it, family labour can be a substitute for capital. Potter and Lobley (1993) argue that the lack of financial resources facing small farmers forces them to make more intensive use of family labour as a substitute for chemical inputs and equipment.

On the other hand, an intensification of family labour on the farm can increase the value added per hectare. This value added can be generated by:

- (1) production under quality and origin-certified labels. This ensures product recognition and often enables the farmer to sell his/her products at higher prices (European Commission, 2008). In France in 2010, twenty percent of small farms provided produce covered by quality and origin-certified labels (including organic farming);

- (2) sales of their produce through short distribution channels. This allows producers to keep a larger percentage of profit margins otherwise absorbed by the various intermediaries involved in longer supply chains. In 2010, fifteen percent of small French farms sold part of their production through short supply chains.
- (3) diversification activities (e.g. processing, tourist accommodation). These activities concerned eight percent of small French farms in 2010.

The necessary investments and excessive cost of compliance to regulation, certification and marketing make these activities difficult for small farmers to obtain access to them (Winter et al., 2016; Allaire, 2011).

Thus, small farmers rely heavily on family labour. In a poor cash flow situation, one advantage of using family labour is that family workers do not have to be declared as a paid worker. A number of studies on small farms use this argument to explain the persistence of family labour-based farms (Aubert and Perrier-Cornet, 2009; Hazell, 2005; Blanc and Perrier-Cornet, 1999).

However, the rising level of education in farming households observed in the farming community as a whole and among young smallholders in particular (Masero, 2016), implies that the expected income generated through off-farm activities is higher than the income generated by the farm⁵. Therefore, the farmer and household members can choose to devote time to off-farm activities (Blanc et al., 2008). We tend to assume that the smallholder should combine on-farm and off-farm activities and manage the farm by only performing the skilled tasks required while using less skilled and less costly labour for other tasks⁶ (Benjamin and Kimhi, 2006). Smallholders then have to strike the optimal balance between low cash flow and the hiring of paid labour to attain the optimal level of farm labour.

Beyond the cost of labour, it should also be stressed that the jobs offered by smallholders are very often part-time jobs and therefore unattractive (Elyakime, 2007).

Moreover, transaction costs can be significant and increase the effective cost of paid work for the employer (recruitment difficulties, high fixed management costs), and reduce the employee's effective remuneration, particularly when the farm is remote (cost of transport to work). This last point is particularly true for small French farms, which are highly concentrated in disadvantaged areas and especially in mountain areas (Lécole, 2017; Aubert and Perrier-Cornet, 2009).

So the questions we expect to answer here are: How is employment structured on small farms and how do the types of workforce complement or compensate each other? What are the characteristics of small farms which provide wage work and how could small farms which need a labor force be better supported in order to enable the hiring of workers and to contribute more towards providing employment?

3. Models of Farm Labour Allocation

In the theory of agricultural households, elaborated by Tchayanov (1923), the hypothesis of imperfect or missing markets implies that self-sufficient farming households must make production and consumption decisions simultaneously. Production and consumption functions cannot be separated and the working time the farmer decides to allocate to farm-related tasks therefore depends on the household's consumption needs and the amount of family labour

available. On the other hand, when the markets exist and function properly, the family may decide to buy food or sell its production and in the same way, it can buy additional labour.

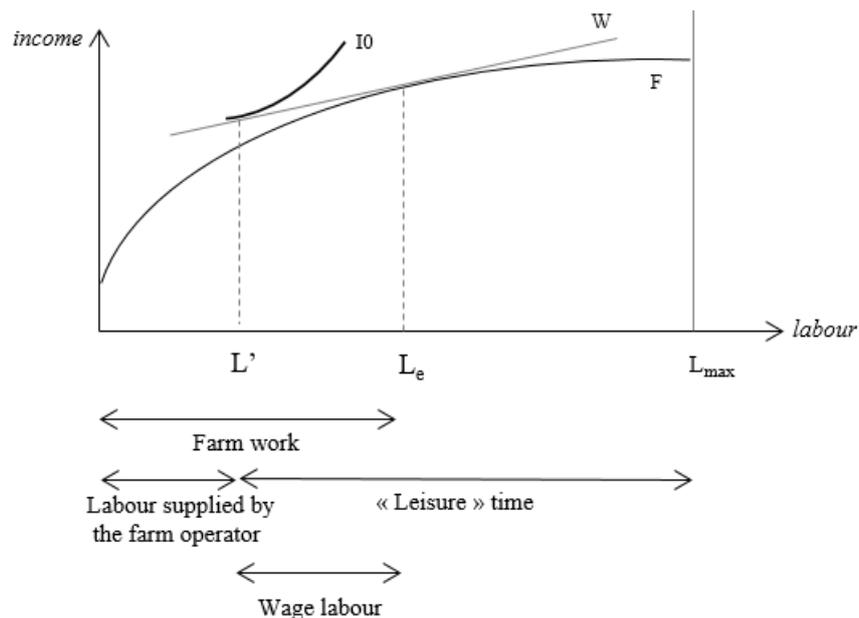
In the case of small French farms, the situation is often intermediate. Overall, these farms are very seldom fully self-sufficient, and markets do exist. Transaction costs can significantly restrict their access to the labour market. Labour market failures make this framework for analysing work allocation decisions relevant.

Graph 1 represents the situation of a farm that employs wage labour. It is assumed here, that there is no family labour available on the farm and that there is a single labour market.

The production function (F) describes the variation in the value of the agricultural output produced on the farm as a function of on farm labour input. The amount of time available of the farmer is limited (L_{max} on the graph). The production function curve (F) represents the marginal labour productivity. We have drawn the line W of curve (w), (w) being the cost of labour on the market (the agricultural wage). This determines the optimal amount of labour on the farm (L_e) at the point where (F) has slope (w).

The utility of the farm manager depends on the value of the production (equated here with income), and on his/her free or "leisure" time (the difference between the maximum amount of time available and the total amount of time worked). This utility is represented by indifference curves, which describe the different utility levels derived from different income/ "leisure" time combinations. The slope of these indifference curves is the marginal rate of substitution between "leisure" and income.

The point of tangency between the highest achievable indifference curve (IO) and line W enables us to identify the amount of working time that maximises the farmer's utility. If this working time is greater than the optimal amount of labour on the farm (L_e), the farmer will work on his/her farm and then sell his/her remaining available work time off the farm. If it is lower, s/he will stop working before reaching point (L_e) and will recruit paid labour to fill the gap (situation illustrated on graph 1).



Graph 1: Representation of the farmer's labour allocation decision-making model: creation of paid employment in the absence of additional family labour

This graphical representation of labour allocation on farming operations is often modelled via the maximisation under constraint of the farmer's utility, or even of household' utility (Benjamin, 1996; Benjamin et al., 1996; Blanc et al., 2008). These models have, among other things, made it possible to study the effects of agricultural policies on the work choices of farming households (Benjamin, 1996; Singh et al., 1986). They have also helped to understand the determinants of pluriactivity among agricultural households (Huffman, 1991) and to show the effects of complementarities and/or substitution between the different types of workforce (Corsi, 1994; Benjamin et al., 1996; Matshe and Young, 2004; Kimhi, 1994).

In our analysis, we draw inspiration from these studies. Firstly, we specify the types of workforce we intend to study (unpaid family labour, seasonal labour...). The association of these different types of workforce is called a labour regime. For example, a labour regime may consist of having seasonal labour and unpaid family labour. It is an effective way of representing labour allocation on farms. Secondly, we identify, in the 2010 agricultural census, the different labour regimes in small French farms. Once we have identified the existing labour regimes, we seek to identify which of the farmer's, household's or farm's characteristics are related to such or such regime or types of workforce.

4. Coding of Labour Regimes in Small French Farms

First, we present the types of workforce we choose to study, and then combine them into different labour regimes. Second, we classify small French farms according to each type of workforce, we code (1) if it is used on the farm and (0) otherwise.

We consider first and foremost the employment of the farm manager and the family labour force without distinguishing whether s/he is a spouse, a parent or a child of working age. Within the family labour force, however, we distinguish between paid and unpaid family labour. Unpaid family labour has no explicit monetary cost. On the contrary, the paid family labour is paid at the market rate, just like the permanent paid non-family declared labour. We know that between these two types of labour, the costs of supervision are not the same, and that work motivation is often higher among waged family workers (Allen and Lueck, 2002). However, in order to simplify and limit the number of regimes, we choose to group waged family labour and permanent non-family waged labour into the same category: "permanent waged labour".

According to Darpeix (2010), seasonal and permanent paid work are different in terms of recruitment and/or supervision costs. She adds that in peak periods, the farmer can experience uncertainty as to whether s/he will find a seasonal worker, and, in parallel with this preoccupation, there is a risk that if s/he hires a permanent employee, the latter might be underemployed. Finally, seasonal contracts are often more precarious and less attractive. We consider the distinction to be relevant and specify this.

Finally, more than thirty-three percent of small farms use Farm Work Companies (FWCs) and agricultural equipment cooperatives for very occasional and specific tasks such as plot clearing, mulching or harvesting. They have on average few farm work units. To limit the number of labour regimes, we also decide not to add this in the labour workforce. However, contracts with Farm Work Companies (FWCs) and agricultural equipment cooperatives can play an important role in

some small farms. This is particularly true for elderly farmers close to retirement age, or for farmers who are new to agriculture and may be pluriactive *hobby farmers* and who may, due to a lack of skills and/or equipment, choose to contract with such organisations to perform certain tasks on their farm (Errington, 1998). We suspect the existence, among small farms, of farms in which the local equipment cooperative performs all the farm work or in which the FWC “fully manages the farming operation and property” (Harff and Lamarche, 1998). In these cases, all farming activities are outsourced. Anzalone and Pursegile (2014) name this phenomenon “make-believe farming”. The operator's labour input on the farm is then reduced merely to that of a farm owner. So we decide to study separately, small French farms where time spent by a Farm Work Companies and agricultural equipment cooperatives on the farm is comparable to that of the manager.

The different labour regimes (W_k) are specified as follows:

$$W_k = \left\{ \begin{array}{l} W(\text{manager}) ; W(\text{unwaged family workforce}) ; W(\text{permanent waged workforce}) \\ ; W(\text{seasonal waged workforce}) \end{array} \right\}$$

W_k represents the labour regimes, (where k can vary between 0 and N).

$W(\text{manager})$ represents the farm manager's labour input; it is always equal to 1 in our analysis.

$W(\text{unwaged family workforce})$ represents the labour input of the unpaid family workforce, excluding the manager (=1 if the total number of declared agricultural work units is greater than 0; 0 otherwise)

$W(\text{permanent waged workforce})$ represents the labour input of permanent employee(s) including family employees (=1 if the total number of declared agricultural work units is greater than 0; 0 otherwise)

$W(\text{seasonal waged workforce})$ represents the labour input of seasonal employee(s) (=1 if the total number of declared agricultural work units is greater than 0; 0 otherwise)

We are using the small French farms identified by the 2010 agricultural census. In the latter, the definition of an agricultural holding is relatively broad (at least 1 hectare of utilised agricultural land or 0.2 hectare in the case of specialised crops such as vineyards).

In mainland France, smallholdings (with a standard output value inferior to 25,000€) represent over thirty-six percent of all farms, cover almost seven percent of the total agricultural surface area and more than thirteen percent of the total agricultural work units.

5. Results

For the population of nearly 179,000 small farms, we code the types of workforce identified (Table 1).

The most common labour regime is regime (1) whereby the manager works alone on the farm. It is also the labour regime with the fewest hours of agricultural work on the farm. The second most common regime is regime (2) (farm manager and unpaid family labour), followed by regime (3) whereby the farm manager is helped by seasonal workforce. Labour regimes with permanent waged workforce have the highest number of hours of agricultural work (5), (6), (7), (8). They represent two point two percent of small French farms.

	Labour regimes	Coding	% of all small farms	Average of AWU
(1)	W(manager)	1000	55.8%	0.4
(2)	W(manager) + W(unwaged family workforce)	1100	25.6%	0.7
(3)	W(manager) + W(seasonal Wf)	1001	10.6%	0.5
(4)	W(manager)+ W(unwaged family Wf)+ W(seasonal Wf)	1101	5.8%	0.8
(5)	W(manager)+W(permanent waged Wf)	1010	1.1%	2.0
(6)	W(manager)+W(permanent waged Wf)+ W(seasonal Wf)	1011	0.6%	3.9
(7)	W(manager)+ W(unwaged family Wf)+ W(permanent waged Wf)	1110	0.3%	1.9
(8)	W(manager)+ W(unwaged family Wf)+ W(permanent waged Wf)+ W(seasonal Wf)	1111	0.2%	3.1

Table 1: Coding of the different possible labour regimes in small holdings.

We present in the following parts: (i) the characteristics of small farms where the total working time on the farm is important and who have permanent wage worker(s) (labour regimes (5), (6), (7) and (8)); (ii) the characteristics of small farms without permanent wage worker and where the total working time on the farm is less than full time (labour regimes (1), (2), (3) and (4)).

We then target on (iii) small farms where the working time of agricultural work companies is at least equal to that of the farm manager.

5.1 Small Farms with Permanent Waged Workforce

Small French farms with permanent hired labor have the highest farm's standard output and we see an over representation of market gardening that is the most labour intensive production per hectare of utilised agricultural land. Small farms in labour regimes (6) and (8) have the largest labour workforce of all regimes and cumulate seasonal and permanent waged workforces. This can be explained by the highest proportion of market gardening among labour regimes with a permanent workforce as well as the importance of organic farming (Bertin et al., 2016).

Small French farms with permanent hired labor farms also have value-added activities. They have diversification activities (processing, accommodation, leisure activities for example), sell part of their production in short distribution channels and / or produce in organic farming (table 2).

	Proportion of farms with diversification activities	Proportion of farms with short distribution channels	Proportion of farms with an organic farming certification
(5) W(manager)+W(permanent waged Wf)	23.2%	21.9%	6.1%
(6) W(manager)+W(permanent waged Wf)+ W(seasonal Wf)	30.0%	32.9%	12.3%

(7) W(manager)+ W(unwaged family Wf)+ W(permanent waged Wf)	37.8%	33.1%	8%
(8) W(manager)+ W(unwaged family Wf)+ W(permanent waged Wf)+ W(seasonal Wf)	47.2%	44.9%	13.9%
All small French farms	7.90%	14.6%	2.50%

Table 2: Value-added activities and labour regimes in small holdings.

These labour-intensive activities can be developed because there is labor available on the farm, but we can also assume that the increase in the value added per hectare achieved through value-added activities is high enough for small farms to hire paid labour and bear the associated costs (fixed labour costs, recruitment costs, supervision costs). Facilitating access to investments for small farms that have value added activities projects can be a way of encouraging hiring paid labour.

Small French farmers with permanent hired labor (5), (6), (7) (8) also share a high level of education: more than sixty-two percent of them have at least a post Baccalaureate level of education (agricultural or not).

But, and this is a difference between labour regimes with a permanent workforce, farmers of the regimes (5) and (6) (without unpaid family workforce) are mostly part-time farmers. They work as craftsmen, merchants, or as a self-employed professional. The pluriactivity of the farm manager can certainly be explained by the fact that the remuneration for a job off the farm will exceed the cost of hiring paid labour. The farmer is therefore encouraged to work off the farm and to delegate some of the tasks to an employee.

Moreover, small farms from the regimes (5) and (6) are overrepresented in urban areas. The proximity to the job market offers opportunities for family members, as for the farmer, to work off the farm. The labour provided by the wage workforce can become a substitute for that of the farm manager and family members.

As a general rule, the small farm operator is a self-employed worker. However, in the case where the agricultural enterprise is a company, the manager can sometimes opt for a status of agricultural employee. Few farmers receive a salary from small farms (only zero point four percent), but they are all concentrated in labor regimes (5) and (6).

On the contrary, farmers of the regimes (7) and (8) (with an unpaid family workforce) work full time on the farm. We argue that highly educated, non-pluriactive farmers recruit for two reasons: Firstly, because they develop labour-intensive projects on the farm and secondly, because they want to gain agriculture-related knowledge and skills that they do not necessarily possess (more than sixty-three percent of them do not have any agricultural education). Indeed, even if these farmers earn a higher income working off the farm, they may have a preference for working on the farm. Many of these farmers started farming at 36 years old and in some cases after deciding to make a career change. They have maybe intrinsic motivations that are not monetary but based on ethical and moral values. Farmers of labour regimes (7) and (8) hire an additional workforce to supplement their own labour and improve their technical skills. Facilitating setting up projects following professional retraining actively can indirectly encourage paid labour.

Farmers of the regimes (7) and (8) are also over-represented in mountainous and isolated rural areas. The remoteness of the labour market does not seem to limit hired work in these farms and we note that they have the highest proportion of hired workers from employers' alliances. Employers' alliances can be an opportunity for smallholders who offer partial jobs.

5.2 Small Farms with Few or No Hired Workforce

In comparison to small farms with permanent workforce, small farms in the labour regimes (1), (2), (3) and (4) have a lower standard output, few of them have value-added activities and the farmer's level of education is lower. They are also over-represented in isolated rural area (as opposed to urban areas).

Small farms in the labour regimes (3) and (4) have seasonal workforce due to the predominance of viticulture or perennial crops. Seasonal workforce work less than 0,1 agricultural work unit (AWU) which is low.

Small farms in the labour regimes (2) and (4) have unpaid family workforce. They are largely run by women who are on average the oldest, who settled late and without initial education in agriculture. They are assisted by their retired spouse, from whom they most certainly inherited the managing of the farm. In France, there is a system of transfer of the holding between spouses when the farmer retires that offers retirement benefits. This transmission system has been used widely to transfer the farm to younger wives.

In labour regimes (1) and (3) without any unpaid family workforce, the proportion of part-time farmers is high. Perhaps the size of the farm does not always allow the farmer to devote all his/her time to farm work.

5.3 Small Farms Managed by Farm Work Companies (FWCs)

As we said previously, on some small farms, the farmer's labour input on the farm is reduced to that of a mere farm owner.

Without going so far as to identify the small French farms which entirely outsource agricultural work, we identify those where the work of agricultural work companies (FWC) and agricultural equipment cooperatives is equal to or greater than the workforce of the manager.

They represent zero point three percent of small French farms and are mainly specialised in field crops and viticulture. The Farm Work Companies (FWCs) work on average 0.3 AWU, which represents half of the farm's total agricultural workforce.

As expected, there is a predominance of this type of small farm on farms run by part-time farmers working as managers or as self-employed professional and who can be considered to be hobby farmers⁷ (farmers working on farms with no need to generate an agricultural income). However, while we expected to find a predominance of this type of small farm over small farms run by elderly farmers close to retirement age, or by farmers who are new to agriculture we did not observe this.

In fact, the highest proportion of this type of small farm is found in labour regimes (5) and (6). This is surprising because on these farms there is on average 3 AWU of permanent waged labour so even if the farmer is working part-time outside of the farm, we deduce that they are not hobby farmers. Nor are they old or retired farmers. So they don't match with what we expected to find.

They are part of a remote management of a productive heritage, a model that we thought we would find rather in large farms (Chevalier, 2007).

We summarise our key results in table 3.

Small farms with permanent wage labour		Small farms without permanent wage labour	
Labour regimes (7) and (8)	Labour regimes (5) and (6)	Labour regimes (2) and (4)	Labour regimes (1) and (3)
Full time farmers settled after career changes who develop labour-intensive projects that increase the value added per hectare.	Part-time farmers who develop labour-intensive projects that increase the value added per hectare. They may be employees of their own farm or may be the head of a farm largely managed by FWCs.	Part-time farmers who run the farm with their retired spouse and from whom they inherited the farm.	Farmers working alone on the farm or with seasonal labour to face peak periods.

Table 3: Overview of each labour regime in small French farms.

6. Discussions and conclusion

We indicated at the beginning of this article that smallholders may be in a situation whereby they have to find the optimal balance between a low cash flow and hiring paid labour to reach the optimal level of farm labour. However, we also pointed out that for these farms, transaction costs can considerably limit access to the labour market. For example, the farmer might not be able to find a suitable workforce on the local labour market or might have poor access to agricultural networks. To be able to pay the fixed costs of his/her farm and guarantee a minimum standard of living, his/her only solution is to work more than his/her optimal level of labour input would be in the absence of this constraint and to achieve a lower level of utility. Overwork is a solution implemented by small farmers, to meet the need for additional labour, when they cannot find or employ paid labour (Parry et al., 2005; Boissier, 2007). However, the data provided by the agricultural census does not enable us to measure it.

Common Agricultural Policy (CAP) supports are largely distributed per hectare. They are therefore not oriented towards small farms. Since 2014 in the first pillar of the CAP, Member States can apply a redistributive payment for the first eligible hectares, which is in favor of small and medium-sized farms. This contributes indirectly to employment by helping to maintain small farms. The distribution of aid per agricultural work unit per hectare or the revaluation of the amount of aid for the first agricultural work unit would certainly constitute an effective incentive for employment (salaried or not) on small farms. Such a redistribution would very largely reverse the situation between small and large farms and also between productions. The scenario of a CAP distributed per unpaid worker shows that a distribution of aid according to employment could curb the erosion of the agricultural labour force in France and in Europe. It concludes that the

levers to preserve employment are probably not found in the first pillar of the CAP (Forget et al., 2019).

As public policies increasingly recognize the need to acknowledge the value of small farms' contributions, they could include measures to support trained individuals who have undergone career changes. Today, start-up aids are intended for young farmers under 40 years of age, which excludes some of the small farmers. Raising this threshold would support setting up projects of farmers who potentially provide wage employment and who participate in the renewal of generation.

Public policies can also indirectly support employment and more specifically paid employment, through the development of value-added projects. Aids for investment in agrotourism or processing can be provided, as part of the Common Agricultural Policy. However, they represent a heavy administrative burden for small farmers who are required to finance their project in part with their own funds, which is often impossible for smaller farmers. Finally, it is not uncommon for calls for tenders to specify minimum project investment amounts, which, in effect, boils down to imposing a minimum farm size. Specific aid mechanisms could be developed to provide financial aid amounts better suited to small farmers' investment needs, which are often much lower than those of larger farming operations, and lighter administratively.

Public policies grant farmers exemptions from employer contributions when they hire casual workers. In small farming operations, these exemptions could be an opportunity if extended to permanent employees. Today, this type of exemption from contributions for permanent contracts is only granted to employer alliances. It has been shown for small olive farms in Spain that cooperation between farms could have a negative impact on employment (Colombo et al., 2020). However, employer alliances are a form of cooperation that appears favourable to employment in rural areas and could represent a real opportunity for small farmers, whatever their project (need for a small regular workforce throughout the year) (Elyakime, 2007).

Only zero point four percent of small farms with one employee were members of an employer alliance in 2010. The aim is therefore not only to promote the creation of employer alliances but also to facilitate the integration of small farms into these alliances, for example by increasing the financial support given towards the creation or running of alliances in return for including small farming operations.

Finally, better involvement of small farms in networks would make it possible to better understand their needs in terms of jobs and better communicate about existing solutions of which they are not necessarily aware.

Footnotes

¹ Short supply chains: 19% of recently established small farms against 13% of those in operation for over 10 years; Official quality labels: 19% against 16% of older small operations; and diversification activities: 11% against 7%.

² Almost 10% of recently established small farms are engaged in or converting to organic farming, against less than 4% form those operating since before 2000.

³ 55% of small farms in operation for less than 10 years are run by a pluriactive farmer, against 33% for those in operations for more than 10 years.

⁴ The Standard Output is based on the surface area and/or number of animals and type of production.

⁵ Except when there is unemployment.

⁶ If the skilled labour market is not deficient.

⁷ They work less than 0,2 AWU in the farm.

References

Allaire, G., (2011), Petits agriculteurs et marchés locaux dans le contexte de la politique européenne de la qualité. Bruxelles, Note Parlement européen, 72p.

Allen, D., Lueck, D., (2002), The nature of the farm. MIT Press, Cambridge, MA., 266p.

Anzalone G., Purseigle F., (2014), Délégation d'activités et sous-traitance : au service de la transmission de l'exploitation ou d'un patrimoine ? L'agriculture en famille : travailler, réinventer, transmettre. P.Gasselin, J.P. Choisis, S. Petit, F. Purseigle, S. Zasser (coord), 327-338.

Araùjo P., (2012), Quand l'usine ferme, SociologieS, Théories et recherches, mis en ligne le 09 mai 2012, URL : <http://sociologies.revues.org/3935>

Aubert M., Perrier-Cornet P., (2009), Is there a future for small farms in developed countries? Evidence from the French case, *Agricultural Economics* 40(s1), 797-806.

Benjamin C., (1996), L'affectation du travail dans les exploitations agricoles : une application du modèle du ménage producteur et consommateur, *Cahiers d'économie et sociologie rurales*, (38), 60p.

Benjamin C., Kimhi A., (2006), Farm work, off-farm work, and hired farm labour : estimating a discrete choice model of French farm couples' labour decisions, *European Review of Agricultural Economics*, 33(2), 149-171.

Benjamin C., Corsi A., Guyomard H., (1996), Modelling labour decisions of French agricultural households, *Applied Economics*, 28 :12, 1577-1589.

Bertin C., Cébron D., Masero J., Massis D., (2015), Démarches de qualité/diversification et emploi, *Agreste, Les Dossiers*, (34), 25p.

Blanc M., Perrier-Cornet P., (1999), Emploi agricole : les cadres d'analyse à l'épreuve des dynamiques actuelles, *Economie Rurale* (253), 8-14.

Blanc M., Cahuzac E., Elyakime B., (2008), Demand for on-farm permanent hired labour on family holdings, *European Review of Agricultural Economics* 35, 493-518

Boissier M., (2007), Petites exploitations agricoles : quelles spécificités, *POUR* (194), 98-105.

Brun, G., (2006). L'agriculture française à la recherche d'un nouveau modèle. Paris, L'Harmattan, 346p.

Chevalier B., (2007), « Les agriculteurs recourent de plus en plus à des prestataires de services », Insee Première no 1160, octobre.

Colombo S., Sanchez-Martinez J.D, Perujo-Villanueva M., (2020), The trade-offs between economic efficiency and job creation in olive grove smallholdings, *Land Use Policy* 96, 104696.

Commission européenne, (2008), Evaluation de la politique de la PAC concernant les appellations d'origine protégées (AOP) et les indications géographiques protégées (IGP), London economics, résumé, 19p.

Corsi A., (1994), Imperfect labour markets, preferences, and minimum income as determinants of pluriactivity choices, in Caillavet F., Guyomard H., Lifran R., *Agricultural Household Modelling and Family Economics*, Ed. Elsevier, 87-110.

Darpeix A., (2010), La demande de travail salarié permanent et saisonnier dans l'agriculture familiale : mutations, déterminants et implications. Le cas du secteur des fruits et légumes français, Thèse de doctorat, 367p.

Dufour A., Bernard C., Debroux C., (2007), Les facteurs de fragilité des exploitations, *POUR* (194), 91-97.

Elyakime B., (2007), Groupement d'employeurs agricoles : quelle aide publique locale ? *Revue d'Economie Régionale & Urbaine* 5, 861-880.

Errington A., (1998), The increasing flexibility of machinery and labour inputs to UK farming, In : *Etudes et Recherches sur les Systèmes Agraires et le Développement*. Paris, INRA Editions, 371-385.

European Commission, (2011), What is a small farm? *EU Agricultural Economic Briefs* (2), 11p.

European Parliament, (2014), L'avenir des petites exploitations agricoles. Bruxelles, Rapport Parlement européen – Document de séance, rapporteur : C.A. Siekierski, 18p.

Forget V., Depeyrot J.-N., Mahé M., Midler E., Hugonnet M., Beaujeu R., Grandjean A., Hérault B., (2019), *Actif'Agri. Transformations des emplois et des activités en agriculture*, Centre d'études et de prospective, Ministère de l'agriculture et de l'alimentation, la Documentation française, Paris.

Guiomar N., Godinho S., Pinto-Correia T., Almeida M., Bartolini F., Bezák P., Biró M., Bjørkhaug H., Bojnec S., Brunori G., Corazzin M., Czekaj M., Davidova S., Kania J., Kristensen S., Marraccini E., Molnár Zs., Niedermayr J., O'Rourke E., Ortiz-Miranda D., Redman M., Sipiläinen T., Sooväli-Sepping H., Šūmane S., Surová D., Sutherland L.A., Tcherkezova E., Tisenkopfs T., Tsiligiridis T., Tudor M.M., Wagner K., Wästfelt A., (2018), Typology and distribution of small farms in Europe: Towards a better picture, *Land Use Policy* 75, 784-798.

Harff Y., Lamarche H., (1998), Le travail en agriculture : nouvelles demandes, nouveaux Enjeux, *Economie rurale* (244), 3-11.

Hazell P.B.R., (2005), Is there a future for small farms? *Agricultural Economics* 32(1), 93–101.

Hubbard C., (2009), Small Farms in the EU: How Small is Small?, *Paper presented at the 111th EAAE-IAAE Seminar 'Small Farms: Decline or Persistence'*. University of Kent, Canterbury, UK, 13p.

Huffman, W.E., (1991), "Agricultural Households Models: Survey and Critique," in *Multiple Job-Holding among Families in North America*. M. Hallberg, et al., Ed., Iowa State University Press, 79-111.

Karafolas S., Alexandrakis A., (2015), Unemployment Effects of the Greek Crisis: a Regional Examination, *Procedia Economics and Finance* 19, 82-90.

Kimhi A., 1994, Participation of farm owners in farm and off-farm work including the option of full-time off-farm work, *Journal of Agricultural Economics* 45 (2), 232-239.

Lécole P., (2015), Paysage des petites exploitations agricoles en France : typologie et analyse statistique, *Papier présenté aux 10^{ème} Journées de Recherches en Sciences Sociales (JRSS), 10 et 11 décembre 2015*. Paris, France, 28p.

Lécole P., (2017), Les petites exploitations agricoles françaises, Thèse de doctorat, 410p.

- Masero J., (2016), La formation des exploitants agricoles. Une formation agricole plus élevée chez les hommes, *Agreste Primeur* (335), 8p.
- Matshe I., Young T., (2004), Off-farm labour allocation decisions in small-scale rural households in Zimbabwe, *Agricultural economics* 30, 175-186.
- Meert H., Van Huylenbroeck G., Vernimmen T., Bourgeois M., van Hecke E., (2005), Farm household survival strategies and diversification on marginal farms, *Journal of Rural Studies* 21, 81-97.
- Morel K., (2016), Viabilité des microfermes maraîchères biologiques. Une étude inductive combinant méthodes qualitatives et modélisation, Thèse de doctorat, 355p.
- Potter C., Lobley M., (1993), Helping small farms and keeping Europe beautiful, *Land Use Policy*, 10(4), 267-279.
- Singh I., Squire L., Strauss J., (1986), Agricultural household models: extensions, applications and policy, Washington, The World Bank, 335p.
- Tchayanov A., (1923), L'organisation de l'économie paysanne. Paris, Librairie du Regard, 1990, 342p.
- Winter M., Lobley M., Chiswell H., Howe K., Wilkinson T., Wilson P., (2016), Is there a future for the small family farm in the UK? Report to The Prince's Countryside Fund. London, Prince's Countryside Fund (Politics) 100p.

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