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R E S E A R C H A R T I C L E

Agrarian Restructuring and Changes in the Demand for Labour in Argentina

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Abstract: The changing characteristics of labour during agrarian restructuring are a result of processes of productive transformation typical of this stage of capitalism, where land consolidation, technological change, and economic strategies adopted by farms to cope with the market are involved in the reorganisation of production and labour. Agriculture in Argentina has seen significant changes since the last quarter of the twentieth century – changes that continue to the present day. Analysis of a varied group of crops shows differences in the demand for labour across different farm-types.

Keywords: Argentina, demand for labour, agrarian restructuring, family labour, temporary workers, export crops, casualisation, farm technology.

INTRODUCTION

There are few studies on the subject of labour in agriculture in contemporary Argentina. The study of agricultural labour, in general, is complex on account of what has been termed the “exceptional” character of agriculture (Marx 1978; Kautsky 1974). An “exceptional” character is attributed to agriculture because of the existence of a natural asset like land, with its reliance on climate, soil fertility, and the biological cycles that support it. Rural sociology has justified the “natural” seasonality of crops by citing differences between “production time” and “labour time” (Mann and Dickinson 1978). With the development of capitalism in agriculture, temporary wage labour assumes importance (Marx 1976; Weber 1990; Brass 2004).

The processes of agrarian restructuring accompanying globalisation over the last few decades across different regions of the world and for different crops have led to changes in the organisation of agriculture. The development of a “new agrarian question” is an attempt to interrogate classical assumptions of capitalist

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development in agriculture, and to understand the recent evolution of agriculture and the social structures that support it (Bernstein 2006; McMichael 1997, 1999; Friedmann 2006).

Agricultural labour, comprising demand for labour on the farm and the functioning of labour markets, is a critical aspect of the production process, one that has political implications and is also a subject of academic enquiry.

This article analyses the demand for and composition of agricultural labour in Argentina in the context of agrarian restructuring in the twenty-first century. Of particular analytical interest is the rise in the number of temporary workers in agriculture. Our study of the composition of labour examines family labour and wage labour, as well as permanent and temporary workers, from an integrated perspective. Recent changes in agriculture in Argentina include an increase in the area under cultivation, a rise in the levels of productivity, the introduction of technological innovations, and a push towards export of traditional and new crops. This article examines the quantitative changes in the demand for labour in farms cultivating a group of chosen crops at different technological levels.

AGRARIAN RESTRUCTURING AND THE QUESTION OF LABOUR

The traditional understanding of rural labour markets views their composition and functioning as an extension of the modernisation process in agriculture and associated changes in the scale of production of farms, including changes with respect to possession of land and capital. One consequence of this has been an agrarian labour market with a growing workforce that moved out of agricultural work because of land consolidation. Along with the disappearance of peasants, low-skilled workers, and jobs, a homogeneous occupational structure emerged in the rural areas. The agricultural “modernisation” approach restricted the study of labour to permanent workers in modern farms (Schultz 1964; Solari 1971; Law 1994). Work on such farms was concentrated in specific seasons and across specific tasks (almost exclusively during harvest periods), and carried out by underemployed family labour in addition to permanent workers.

Since the 1970s, when agriculture increasingly became linked to industry, there has been a growing interest in examining the relationship between technological change and the demand for agricultural labour. In general, the demand for labour has fallen, new qualifications for labour have been introduced, and the nature of work itself has changed. Furthermore, the integration of agriculture with agro-industrial complexes that link it to production chains has drawn attention to the fact that agricultural labour is increasingly influenced by non-agrarian circumstances.

The development of a new global food order over the last quarter of the twentieth century (McMichael 1994; Marsden and Cavalcanti 2001; Llambí 1993; Goodman

and Watts 1994) meant setting aside the traditional view of agriculture, and understanding “the effects of restructuring upon labour organisation and new methods of employment” (Lara Flores 2006, p. 334, author’s translation). Globalisation in its current form calls for intensification of capital accumulation. This has become typical of agriculture in recent decades. Moreover, interaction with other productive sectors – such as services, processing, trade, and consumption – leads to qualitative and quantitative changes in agricultural labour, given the need to continuously adapt to volatile markets to ensure higher profits.

“Quality” in agricultural production is a key component of the reorganisation process. An immediate consequence of the quality-related requirements of industry is that workers produce commodities that can be exported (Cavalcanti and Bendini 2014). This forces change at different levels: for example, the number of workers required, the seasonality and organisation of work on the field, the nature of work, and the emergence of new operations. Changes in labour market institutions and regulations also affect workers. Indeed, flexibility in the agrarian labour market is widespread, and characterised by precarity with respect to workers’ livelihoods.

Trends in the agricultural labour markets of advanced capitalist countries show a process of “casualisation” of the workforce (a growing number of workers previously employed on a permanent basis are now employed part-time or for shorter periods of time), as well as a reduction in the size and fragmentation of agricultural labour markets (Friedland and Pugliese 1989).

Interaction of the labour process and labour market with social and political institutions creates a structure that can explain the organisation of labour in the cultivation of different crops (Thomas 1985; Wells 1996). The combined influence of structural factors, political and institutional resources, social and economic structures, and their relation with the food system can explain how large farms hire and organise labour (Neiman and Quaranta 2004), and how the search for flexible labour is one of their primary concerns (Lara Flores 1998). Social, political, and economic conditions at the local level may also intervene (Ortiz and Aparicio 2007), thus drawing attention to the need to contextualise analyses of labour use with respect to specific crops.

The restructuring of agriculture has an impact on both the demand for and supply of labour, mainly because of strategies adopted by farms to adapt to the new circumstances, as well as issues related to the commercial and economic organisation of farms, farmers’ practices, and strategies for recruitment of workers. In many crop regions in Latin America, producers have adopted more flexible standards for labour, and the recruitment of temporary workers has become a distinctive feature of the agrarian employment structure (Lara Flores 2006; Piñeiro 2008; Neiman and Quaranta 2004).

Given the issues currently affecting agriculture, increases in temporary labour in agriculture may take different paths as a result of restructuring processes. Whereas seasonality of labour demand was traditionally associated with the natural or exceptional character of agriculture, “temporariness” of labour must be viewed from a different perspective. On the one hand, it is a result of corporate farming trying to cope with global uncertainty and ensure higher profits. On the other hand, temporary workers come from diverse backgrounds (in terms of age, place of residence, migration, casual work, peasant origin) and may vary in their preference for becoming full-time agrarian workers.

An analysis of different types of farms shows that there is a general trend of decline in total labour demand because of land consolidation and technological improvements, but a rise (in absolute or relative terms) in the demand for temporary labour. This is linked to processes of labour restructuring that lead to more flexible labour arrangements. Family labour and permanent wage labour may be affected in qualitative and quantitative terms. Thus, final outcomes are heterogeneous when a specific crop approach is used to evaluate phenomena that influence the workforce.

DATA AND METHODOLOGY

The research behind this article is based on an analysis that links agricultural labour with the productive structure of farms and technology, where the number of labourers employed and its evolution across time are the main concerns. However, this study also examines issues related to the composition of the workforce, labour organisation within farms, farmer heterogeneity, and labour involved in crop operations. A comprehensive conceptual framework on the effects of restructuring considers issues of transformation in and new approaches to the “labour question” in agriculture.

A methodological difference between this article and existing studies on Argentina (Reboratti and Sabalain 1984; Ekboir *et al.* 1990; Aparicio and Tort 1980) lies in considering a “typical farm” for each crop, where quantitative labour needs are estimated based on different technological levels (classified as low, middle, and high). Technological levels are a mix of practices and technologies that provide different labour configurations, including the quantum of labour required, types of workers employed, and tasks performed.

Although technological levels may differ across crops due to factors unique to each farm (accessibility of machines, seeds, and irrigation), it is assumed that each technological level will be directly associated with, among other factors, the amount of land available, allocation of capital, productivity levels, and dependence on the market. Labour use in farms varies from family labour to permanent or temporary wage labour.

This article provides an empirical estimate of the demand for labour in Argentina for 17 crops, taking into account farm size and technological levels; the nature of the work based on technology available to farmers; and classification of labour into family, permanent wage, and temporary wage labour. The demand for labour is quantified according to hours per hectare on an annual basis by type of labour, for different crop operations, in farms at varying levels of technology. Farms are classified as “low,” “middle,” or “high” in terms of levels of technology for different crops based on differences in land size, capital allocation (machinery and other inputs), and productivity. A low technological level refers to a small-sized farm that uses obsolete technology and depends mainly on family labour. A farm with a high technological level has abundant land, uses the latest technology, and has an employment structure that depends on wage labour. Finally, a middle technological level refers to farms that have land varying between the amount of land available to low and high technological levels, a significant share of family labour, and technology that is neither obsolete nor the most recent.

The following sources of information and techniques for data collection were used: interviews with farmers, key informants, members of farmers’ organisations, and workers’ unions; reviews of available studies, censuses, and surveys. On average, 12 interviews were carried out for each crop.

The crops analysed in this article account for almost 70 per cent of the total gross product of agriculture in Argentina, and for almost 80 per cent of cultivated land and types of crops. The selected crops are wheat, maize, soybean, rice, orange, lemon, sugarcane, olive, yerba mate,¹ tobacco, cotton, pear, apple, grapes for consumption, grapes for making quality wine, grapes for making regular wine, and garlic.

RECENT DEVELOPMENTS IN AGRICULTURE IN ARGENTINA

The total land area of Argentina is 275 million hectares, of which approximately 50 per cent is suited for agriculture and cattle-rearing. This land is distributed across different physical and climatic environments. The number of farms is slightly below 350,000 units (INDEC 2002).² Between one-third and one-half of these units are family farms where only family labour is employed (Scheinkerman de Obstchatko 2009), while the remaining are medium-scale and large-scale farms, classified according to the land and capital available to them.

Historically, exports to different countries of Latin America, Western Europe, and, more recently, China and India, and domestic consumption – in that order – have driven agricultural growth in Argentina. Exports have built foreign currency reserves and contributed to the fiscal resources of the country, mainly from taxes

¹ A perennial crop with leaves that are used for the preparation of a popular drink known as mate.

² Data from the Agrarian Census of 2008 have not been used because of issues related to their reliability.

on sales in international markets. The market for domestic consumption has also influenced agriculture, though it has varied according to the income distribution of the population.

Agriculture in Argentina has undergone a widespread process of restructuring in the last several decades, beginning with economic liberalisation and deregulation in the mid-1970s, followed by consolidation of land, technological change, foreign investment, and increasing integration with global markets in the 1990s (Trigo and Cap 2003; Barsky and Gelman 2009; Reca *et al.* 2010; Sili and Soumoulo 2011; Gras and Hernández 2014; Brent 2015). These trends can be seen in traditional crops such as wheat and maize, in the recent boom in soybean production, and in the land- and labour-intensive production of lemon, blueberry, pear, grapes, and orange. These in turn are linked to industrial activities.

Agrarian labour was transformed in a complex way as a result of the economic and productive restructuring of agriculture. The demand for labour was influenced by technology, farmers' practices, size of farms, market orientation of crops, qualifications required for labour, and payment systems. Changes in labour supply have also occurred, though these are not discussed in this article.

Recent figures show that the share of the agricultural sector in gross national product in Argentina fell from 8.4 per cent in 1996 to 6.5 per cent in 2014, in keeping with the global trend of a declining share of the primary sector. However, for approximately the same period, the production of grains and oilseeds cultivated in the pampas region of the country grew almost 5 per cent in volume per year, while national gross domestic product increased at an average annual rate of 3.5 per cent.

This growth of agriculture was based on an expansion of the area under cultivation, which increased by about 30 million hectares by the end of the first decade of the twenty-first century, and an increase in yield per hectare, resulting in an output of approximately 100 million tonnes of grain. The increase in soybean yield was on account of the use of technologies such as direct seeding, zero tillage sowing, genetically modified seeds, and selective chemical inputs, as well as outsourcing and sub-contracting of labour. Soybean accounts for half the cultivated area and half of total agricultural production in Argentina.

The growth in the area under cultivation of grains and oilseeds (soybean, wheat, and maize, in that order) spread to regions beyond the pampas, increasing from 1 million hectares to 2.5 million hectares in the northern provinces of the country, which have historically had a marginal share in agricultural output. The environmental consequences of this were an expansion into natural forest areas unsuited for agriculture and the eviction of local populations (peasants, small-scale farmers, and rural landless workers). The pattern of regional demand for labour also changed

because of a decline in the cultivation of labour-intensive crops such as sugarcane, cotton, and fruits.

Economic restructuring processes have also had an impact on crops other than grains. In lemon, for example, for which Argentina is the largest producing country, the area under cultivation grew by 50 per cent (equivalent to approximately 30,000 hectares) and the volume of production by 160 per cent during the 1990s. This was the result of an increase in yield from 25 tonnes per hectare at the beginning of this period to around 45 tonnes per hectare at present. The market for export of fresh products and industrialised by-products is dominated by a small number of highly integrated multinational companies, a typical condition of the transformation in lemon production over the last decades.

Grape-farming or viniculture and the wine industry underwent restructuring at the end of the 1990s with the transition to a “quality-based paradigm” in different regions of the country. Earlier, the output from grape production would be sent to the market for the production of wine for domestic consumption, but since the beginning of the last decade, 50 per cent of the grape output has been used for production of wine for domestic use and the rest for export-oriented quality wine. The volume of exported wine has tripled in ten years and the commercial value of international sales has increased ten-fold. The inflow of foreign capital from different countries of Europe and the United States has been a feature of the transformation in this sector.

Finally, the production of apples and pears has seen significant transformation, though with certain peculiarities. First, the area under apple-farming fell by 30 per cent, whereas output nearly doubled in the same period; secondly, the area under pear-farming increased by a similar proportion as the decline in the area under apple production, and total output increased eight times. The export of pears was almost half of overall production, while for apples exports fell by nearly a quarter because of international competition.

ASSESSMENT OF LABOUR DEMAND IN AGRICULTURE

Variations in labour demand and differences in the organisation of labour in agriculture were a result of differences in the size of farms, technology, and the social organisation of production. The structure of labour on farms was determined by the farmers' need to lower costs and guarantee the highest possible profit in a context of market uncertainty under globalisation.

Thus, the types of workers involved in farm work and the conditions on which they are hired were critical determinants of quantitative and qualitative labour requirements. Overall, labour demand in agriculture was determined by the requirements of each crop, which in turn varied according to available levels of technology. Within farms,

the composition of labour showed a clear difference between family labour and wage labour, with different methods of hiring wage labour and temporary labour forming a significant proportion of farm labour.

Table 1 summarises two critical aspects of the demand for labour in agriculture: the total demand for labour and the share of temporary labour as a proportion of total demand.

Our analysis shows that for a group of crops – wheat, maize, and soybean – annual labour needs were close to one working day per hectare, allocated during the productive cycle for different operations for each crop. Notably, this low labour use was an effect of mechanisation, which included machinery such as crawler tractors

Table 1 *Labour demand in terms of annual working days and workforce composition per crop, by technological level in 2010* in days per hectare and per cent

Crop	Level of technology	Annual working days per hectare	Workforce composition (in per cent)			
			Family labour	Permanent wage labour	Temporary wage labour	Total labour
Maize	Low	0.3	35.5	0	64.5	100
	Middle	0.3	18.8	18.8	62.5	100
	High	0.2	0	39.7	60.3	100
Wheat	Low	0.3	74	0	26	100
	Middle	0.3	40.8	42.9	16.3	100
	High	0.3	12.8	84.6	0	100
Soybean	Low	0.3	76	0	24	100
	Middle	0.3	40.4	43.4	13.2	100
	High	0.3	13.7	85.5	0	100
Rice	Low	0.9	11.1	0	88.9	100
	Middle	0.9	2.3	13.7	84	100
	High	1.3	0	70.5	29.5	100
Tobacco	Low	132	38.1	0	61.9	100
	Middle	133	7.5	0	92.5	100
	High	205	0	56.3	43.7	100
Sugarcane	Low	50	95.2	0	4.8	100
	Middle	23	0	1.9	98.1	100
	High	5	0	23.7	76.3	100
Cotton	Low	23	60	0	40	100
	Middle	20	1.9	11.2	86.9	100
	High	0.9	25	16.4	58.6	100
Yerba mate	Low	1.6	12.5	0	87.5	100
	Middle	2.3	43.5	0	56.3	100
	High	6	66.6	0	33.3	100

(continued on next page)

Table 1 (continued) Labour demand in terms of annual working days and workforce composition per crop, by technological level in 2010 in days per hectare and per cent

Crop	Level of technology	Annual working days per hectare	Workforce composition (in per cent)			
			Family labour	Permanent wage labour	Temporary wage labour	Total labour
Grapes for production of wine	Low	105	25.1	37.7	37.2	100
	High	89	0	28.5	71.5	100
Grapes for consumption	Low	173	5.4	24.2	70.4	100
	Middle	202	0	21.6	78.4	100
	High	290	0	8.5	91.5	100
Grapes for production of quality wine	Low	43	0.1	62.8	27.1	100
	Middle	47	1	66.2	33.8	100
	High	54	0	69.1	30.1	100
Orange	Low	27	53.3	0	46.7	100
	Middle	37	11.5	11.5	76.9	100
	High	94	0	38.3	61.7	100
Lemon	Low	30	17.5	0	82.5	100
	Middle	44	0	11.7	88.3	100
	High	84	0	5.8	94.2	100
Olive	Low	66	32.5	0	67.5	100
	Middle	72	14.5	26	59.5	100
	High	62	0	28.4	71.6	100
Apple	Low	132	19.7	18.3	62	100
	Middle	123	12.1	22.6	64.7	100
	High	138	5.5	26.3	68.2	100
Pear	Low	128	19	17	64	100
	Middle	121	12	22	66	100
	High	140	6	29	65	100
Garlic	Low	124	25.9	19.6	54.5	100
	Middle	130	13.2	27.7	59	100
	High	128	5.4	36.2	58.4	100

Note: The middle level is not applicable to grapes for the production of wine.

Source: Neiman (2010).

and harvesters with higher working capacities, and of a fall in the number of crop operations because of direct sowing of soybean and grain.

In the case of sugarcane and cotton, the demand for labour fell as a result of increasing sophistication of technology. For example, labour demand was 50 days per hectare on a low-technology farm and only five days per hectare on a high-technology farm. Mechanisation of harvest operations significantly reduced the number of labour-days required for these operations. High machinery costs and the need to use

new crop varieties that can be mechanically harvested have been major obstacles to the adoption of new technologies, making them accessible only to large farms.³

On the contrary, higher demand for labour has been noted for some crops cultivated by farms with more sophisticated technology as compared to farms with low levels of technology. The difference in labour demand may have been on account of a larger number of plants per hectare (orange cultivation for export), or higher yield per hectare (lemon), or quality-based patterns of production that require new operations, or existing operations that are labour-intensive (grapes for consumption).

We turn next to the composition of agricultural labour for the crops studied in this article. There were some crops that used a specific type of labour, and other crops where a combination of several types of labour was used with varying contributions by each type to total labour-use. Note that I use the term “small farm” interchangeably with “low-technology farm,” and “large farm” with “high-technology farm.”

Agriculture in Argentina is still characterised by a significant share of family labour in total labour-use. This category is complemented by wage labour, which includes permanent and temporary labour, the latter category including workers hired directly by farmers, as well as through sub-contracting or outsourcing.

Family labour and temporary wage labour are used for crops as diverse as grain, tobacco, and sugarcane, among others; this holds true not only for small farms, but also large farms, although in the latter, family labour primarily performs managerial and administrative tasks.

Table 1 shows that the highest share of family labour – equal to at least half the total labour-use for a specific crop and technological level – was for a relatively small number but mixed variety of crops on small farms with low levels of technology. This was true for sugarcane and cotton, which showed patterns of production and labour similar to a peasant (*campesino*) farm, in contrast to wheat and soybean, where highly mechanised farms have done away with permanent wage labourers, and retained a minimum staff comprising family labour and outsourcing to contractors for supplying seasonal (temporary wage) labour.

Permanent wage labour has little relevance for small farms that use family labour and is prevalent among farms that use mid-level technology; and, finally, the highest share of this component is in large farms that also have temporary wage labour and outsource labour. Permanent wage labour is typical of farms that have a high level of technology available to them for a small number and variety of crops, such as

³ For both sugarcane and cotton low-cost harvest machines have been developed, although these are used on a small portion of the harvested land.

rice and grapes for the production of quality wine (requiring a large number of temporary workers). Both crops require a number of operations all the year round, in comparison to farms with low and middle levels of technology.

Temporary wage labour is important for a large number of crops – 11 out of 17 crops depend on such labour. Over 70 per cent of the total labour demand for these crops was met by temporary wage labour. Further, the use of temporary labour covered different types of farms rather than being specific to any level of technology. In the case of crops that meet at least 50 per cent of the total labour demand from temporary workers, none of the farms cultivating soybean, wheat, and maize, at any technological level, registered such a high share of temporary wage labour – a development that can be attributed to the mechanisation of crop operations.

Table 2 summarises how changes in the overall demand for labour for different crops are linked to the demand for temporary labour. A majority of the crops showed an increase in the demand for labour with a simultaneous increase in the share of temporary labour. From the relationship between these two features, the following observations can be made.

As we shift from low-technology farms to high-technology farms, we note that:

1. A decline in overall demand for labour and an increase in the number of temporary wage labourers was observed for olives, sugarcane, cotton, and grapes for the production of wine for domestic consumption.
2. A decrease in the total demand for labour and a fall in temporary labour was observed for maize, wheat, and soybean.
3. An increase in the total demand for labour and in temporary labour occurred in the case of pear, grapes for the production of quality wine, lemon, grapes for consumption, apple, garlic, and orange.
4. An increase in the total demand for labour with a fall in temporary labour occurred for rice, tobacco, and yerba mate.

Table 2 *Crop distribution according to change in total demand for labour and temporary labour across farms at different technological levels*

Total labour demand	Share of temporary labour	
	Decrease	Increase
Decrease in demand	Maize, wheat, soybean	Olive, sugarcane, cotton, grapes for the production of regular wine
Increase in demand	Rice, tobacco, yerba mate	Pear, grapes for the production of quality wine, lemon, grapes for consumption

Source: Table 1.

A fall in the demand for labour alongside a relative increase in temporary labour for some crops was a consequence of the mechanisation of pre-harvest tasks, which leads to a loss of permanent jobs. Higher yields per hectare led to an increase in labour demand for manual harvesting, especially for grapes for the production of regular wine and olives, and for operations related to pest control in plants. Cotton and sugarcane harvesting were mechanised, though partial mechanisation in sugarcane meant that some tasks were performed manually.

Crops that registered an increase in the total demand for labour as well as for temporary labour on high-technology farms relative to low-technology farms tended to require a greater proportion of manual labour, showed an increase in the number of crop operations, were oriented towards the export market, experienced seasonal migration of workers due to a shortage in the local workforce, made use of labour contractors or outsourcing of labour, and used process technologies (where the method and knowledge linked to a specific technology are as important as the technology itself). The decline in permanent labour was associated with technological innovations for pre-harvest tasks, whereas labour requirements for harvest operations had not fallen as much.

Among grain crops such as maize, wheat, and soybean, the fall in demand for labour occurred alongside a fall in the share of temporary labour. For these crops, the demand for labour per hectare for the entire crop cycle was low, and crop operations were uniform across farms. The presence of machinery contractors explains the widespread access to machines, irrespective of the capital available to the farmer. The need for temporary labour was therefore mainly for machine operations. Temporary machine operators were hired for seasonal tasks that require machines (expensive machinery such as harvest machines) while temporary manual labour was engaged in labour-intensive operations. These jobs carry higher wages and offer access to social security, as compared to the wages and conditions of temporary manual workers in Argentina.

Finally, rice, yerba mate, and tobacco showed an increase in the overall demand for labour with a lower share of temporary labour, resulting in a more stable occupational structure. This can be explained by an increase in pre-harvest operations (related to soil treatment and management) that led to a growth in yield, especially on large farms. This, in turn, was connected to an increase in demand for labour for post-harvest (handling and storage) operations. In such situations farmers hired permanent labour, given the year-round labour demand for pre-harvest, harvest, and post-harvest operations on farms.

CONCLUSION

Over the last few decades, globalisation has led to processes of agrarian restructuring in different regions of the world. The changing characteristics of labour during

agrarian restructuring are a result of processes of productive transformation typical of this stage of capitalism, where land consolidation, technological change, and economic strategies adopted by farms to cope with the market are involved in the reorganisation of production and labour. Agriculture in Argentina has seen significant changes since the last quarter of the twentieth century – changes that continue to the present day. Analysis of a varied group of crops shows differences in the demand for labour across different farm-types.

Demand for labour is influenced by a combination of factors that, in turn, affect the quantum of labour, the types and quantity of labour employed, and the nature of work. The demand for labour increases with an increase in yield and the number of agricultural operations, the former associated with the use of intensive technologies and the latter with the requirements of industry or the market. A fall in the demand for labour can be attributed to technological innovations, affecting both family labour and permanent wage labour. This leads to a rise in the number of temporary jobs replacing permanent jobs.

The fall in family labour is uniform across crops because of land consolidation among small farms and technological advances in large farms, although it may persist in managerial and administrative positions among mid-scale farms.

On the other hand, although the demand for labour in agriculture has shown a rising tendency, with technological advancement, towards hiring temporary workers, the tendency varies depending on the crop and conditions of cultivation.

Crops that have limited possibilities for mechanisation show a growth in the demand for labour alongside an increase in temporary labour. Manual labour for crop operations at different stages of production is still prevalent, and crops that are produced for export tend to show fluctuations in labour-use.

Similarly, an increase in the share of temporary labour can take place in the context of a decrease in the total demand for labour, where technological innovation leads to a fall in the share of family labour and permanent wage labour. This fall is accompanied by a growing trend of outsourcing for labour, with contractors providing capital (machines), labour, and knowledge.

Possibilities for increasing the demand for labour centre on increasing the use of permanent labour in crop operations; that is, labour time can rise for a small number of crops cultivated on large farms. Among these crops, increases in yield per hectare are associated with a higher number than previously of pre-harvest operations and, in some cases, post-harvest activities carried out on the farm. Employing a small number of permanent workers than small-scale farms would entail stabilising the structure of labour within these large farms.

For workers, with the persistence of precarity and insecurity in the labour market, the probability of achieving stable jobs remains low. Labour instability remains a dominant feature of agricultural labour markets because of changes in production and labour processes, driven by the strategies adopted by farming units to adjust economic costs and maintain profits.

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