The evolution of rural non-agricultural activities and intersectorial linkages in Brazil

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Abstract

The text is part of a wider research project called *Project Rurbano (see* http://www.eco.unicamp.br*)*, whose objective is to explore the relevance of rural/urban and agricultural/non-agricultural dichotomies for Brazilian development processes today. Changes in rural and agricultural employment are a necessarily privileged dimension of this research. The latter were, until recently, assumed to be on the decline in Brazil. As a matter of fact, it was even postulated that the lesser the rural population, the more highly developed the region of the country.

In fact, during the 60s and 70s a significant contingent of rural workers had been dislocated from the countryside to the outskirts of large cities, thereby urbanizing a large part of the agricultural labor force that had previously lived on farms. But in the eighties, on the other hand, not only had such movement been significantly reduced, but a true “urbanization of the countryside” was taking place, through the growth of non-agricultural employment in rural areas.

Through the data generated by National Household Surveys (*Pesquisa Nacional por Amostra de Domicílios – PNAD)* for the period 1981/97 we confirmed the large growth of non-agricultural activities in rural Brazil during the 80s and the 90s, especially for the central, west and southeast regions of the country. In 1997, out of every ten rural residents seven were engaged in agricultural activities. The remaining three were employed in non-agricultural activities, particularly in transformation industries, agroindustries, personal services, building, commerce and social services, while continuing to reside in rural areas.

Key words: Rural non-agricultural activities; Rural employment; Intersectorial linkages.

Resumo

Este texto faz parte de um projeto mais amplo de pesquisas denominado sinteticamente de Projeto Rurbano, que se propõe a explorar a relevância dos cortes urbano/rural e agrícola/não agrícola no desenvolvimento brasileiro recente. Evidentemente, uma das dimensões privilegiadas na investigação é o comportamento do emprego rural e do emprego agrícola, que se supunha até muito recentemente, deveriam declinar. Chegou-se até mesmo a postular que quanto menos população rural, mais desenvolvido seria o país ou a região.

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No Brasil, a recessão dos segmentos urbano-industriais, que já vinha desde o início da década anterior, coincide nos anos 90 com uma crise agrícola sem similar no pós-guerra. Já nos anos 60 e 70 um contingente expressivo de trabalhadores rurais havia se deslocado dos campos para a periferia das cidades, urbanizando assim grande parte da força de trabalho agrícola que antes residia nas fazendas. E que nos anos 80, ao contrário, não só esse fluxo havia sido substancialmente reduzido, como estava ocorrendo uma verdadeira a "urbanização do campo brasileiro" através do crescimento de ocupações não agrícolas no meio rural.
Os microdados das Pesquisas Nacionais por Amostra de Domicílios (PNADs) dos anos 1981 a 1997 analisados neste trabalho confirmam o grande crescimento das atividades não agrícolas no meio rural brasileiro, em especial nas regiões Centro Oeste e Sudeste do país. Em 1997, por exemplo de cada 10 pessoas residentes no meio rural, sete estavam ocupadas em atividades agropecuárias. As outras três tinham um emprego em atividades não agrícolas, principalmente na indústria de transformação (agroindústrias), prestação de serviços pessoais, construção civil, comércio e prestação de serviços sociais, embora continuassem a residir no meio rural.

Palavras-chave: Atividades rurais não-agrícolas; Emprego rural; Relações rurais-urbanas.

Introduction

This text is part of a wider research project called *Projeto Rurbano (see* http://www.eco.unicamp.br*)*, with objective is to explore the relevance of rural/urban and agricultural/non-agricultural dichotomies for current Brazilian development processes.[5] Changes in rural and agricultural employment were, until recently, assumed to be on the decline. As a matter of fact, it was even postulated that the lesser the rural population, the more highly developed the region or country. In the mid-eighties, the *OCDE* countries, after passively observing decades of emigration from the countryside and the ensuing brutal concentration of their population in large metropolitan areas, began to put together policies designed to alleviate what had come to be called the "desertification" of ample parts of their territory. In the case of Latin American countries, however, almost everyone considered rural exodus and the decline of small and medium-sized cities to be inexorable.

Klein (1992), in a pioneering work, alerted others to the fact that during the seventies, rural agricultural employment fell by 0.8% per year, while rural non-agricultural employment had grown by 3.4% per year, a rate higher than the average growth of the total labor force for all other Latin America countries. He also observed that in 12 out of the 18 countries for which census information was

(5) The project, entitled "Characterization of the Brazilian New Country-Side, 1981-1995", partially funded by the *FAPESP* and PRONEX-FINEP/CNPq, analyzes changes in rural employment in 11 Brazilian states (PI, RN, AL, BA, MG, RJ, SP, PR, SC, RS, and DF). For more information, see our home page <http://www.eco.unicamp.br/projetos/rurbano.html>

available, rural non-agricultural employment was growing more rapidly than the total employment, as was the case of Brazil; and that in 8 countries it was growing even more than the economically active urban population (Klein, 1992: 2).

Using aggregate census data for Brazil, similar to those used by Klein (1992), Graziano da Silva (1996) drew attention to the fact that during the 60s and 70s a significant contingent of rural workers had been dislocated from the countryside to the outskirts of large cities, thereby urbanizing a large part of the agricultural labor force that had previously lived on farms. In the eighties, on the other hand, not only had such movement been significantly reduced, but a true "urbanization of the countryside" was taking place, through the growth of non-agricultural employment in rural areas.[6]

Through the data generated by National Household Surveys (*Pesquisa Nacional por Amostra de Domicílios – PNADs)* for the years 1981 and 1990, Graziano da Silva (1993) confirmed the large growth of non-agricultural activities in rural Brazil during the 80s, especially for the Central West and Southeast of the country. In 1990, for example, out of every five rural residents in São Paulo state, only two were engaged in agricultural activities. The remaining three were employed in non-agricultural activities, particularly in transformation industries (agro-industry), personal services, building, commerce and social services, while continuing to reside in rural areas.

In spite of its limitations,[7] the *PNADs* have become ever more important among Brazilian researchers, as one of the few sources of national-level data that are kept reasonably up-to-date. As of 1992, the *IBGE* also began to make the raw data available, enabling researchers to aggregate the data according to their own purposes. We should also emphasize that, starting in 1992, the new surveys broadened the range of topics covered (to include topics such as migration, fertility

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(6) Officially, distinctions between the rural and the urban in Brazil are defined by their geographic location, as established by the municipal legislation in effect on the date of data collection for the most recent Population Census (September 1st, 1991). Urban situations are those that encompass "people and households found within areas that were reported as urban in the latest census, whether these areas are urbanized or not, such as cities (municipalities), townships, or isolated rural areas. Populations and households located in all remaining areas are considered rural, including rural areas in the vicinity of cities, hamlets and other small settlements" *(IBGE* , 1994).

(7) The definition of the rural and the urban remains unaltered during the period between censuses. As a consequence, "statistics presented according to rural and urban situation do not capture the further evolution of local conditions after the Census' basic year of reference; therefore, the further the results obtained are from the year the Census was conducted, the greater the discrepancies." (IBGE, 1996: XVIII). However, what is most critical is the fact that many municipalities do not systematically update their urban perimeters, leaving out areas that have in effect been urbanized from the point of view of the public services expansion such as water, sewage, asphalt, garbage collection, etc.(Graziano da Silva & Del Grossi, 1997).

and marriage patterns) as well as the concept of work being used, in order to include certain groups of people involved in economic activity that had previously been excluded.[8]

These changes made direct comparisons between the data published in the new surveys of 1992 to 1997 and the earlier surveys impossible, creating incompatibilities between recently-collected data and data from the eighties. Fortunately, based on the micro-data we could remove from the agricultural labor force those who have worked only in subsistence agriculture and consider only those non-paid workers who have worked 15 hours a week or more. This allowed us to reconstruct the series from 1992 on, using the same criteria as of 1981.

In this paper we are always going to use the compatible series of data which we have called “usual” or “restricted” labor force, to distinguish it from the data published for the most recent *PNADs*, which we have named as “expanded” labor force.[9] It is worthwhile to remind that the data presented exclude rural populations of the North Region (states of RO, AC, AM, RR, PA, and AP), because they are not surveyed by the *PNADs*. Comparisons of data aggregated for Brazil with those for the state of São Paulo had the meaning of taking as reference the most urbanized and most modernized agriculture in the country.

1 The rural labor force

First and foremost, we want to make it clear that the labor force engaged in agricultural activity varies considerably depending upon the period of reference for which a person’s main occupation is defined. The most recent *PNADs* established two periods of reference: the year and the week prior to the date of data collection (*IBGE*, 1996). There are 14.6 million people who declared agriculture as their main

(8) The new classification of EAP by occupation included two new categories generated by the broadened notion of work (workers producing for their own consumption and construction workers building for their own use). In addition, the *IBGE* began to consider as economically active persons anyone over 10 years of age that was engaged in at least one hour a week of unpaid work (in other words, 8 minutes and 34 seconds a day), rather than the previously required 15 hours a week (IBGE, 1995).

(9) Del Grossi (1999) showed that the differences between the two series – which he called “conceptual addition” – was formed basically of elderly, most of whom retired, of young at the school-age, and of women involved with household tasks, among them subsistence agriculture and raisin of small animals. Using the published data (expanded EAP) we found that almost 21% of the economically active agricultural population was in 1997 devoted exclusively to subsistence agriculture; the majority was made up of persons working in non-paid work (34%) or as “self-employed” workers(30%). Agricultural wage earners made up only 33% of the Brazilian economically active population engaged in agriculture activities in 1997.

activity during 1997, a figure that drops to 13.4 million if we consider only the last week of September. In other words, there are almost a million and one hundred thousand people in the country who declared that agriculture was their main activity during the 365 days prior to the day of the interview (Oct. 1996/Sep. 1997); yet, during the week of reference they were engaged in non-agricultural activities or were simple inactive.

These differences tend to vary according to the date of reference and the period of time (year, month, week) under consideration, given the great seasonal variation that is typical of agricultural activity. In the case of the *PNADs*, this date falls within the last week of September, a time of harvest in the South and Southeast, where most of the country's agricultural production is concentrated. We can assume, therefore, that during this week there are more people involved in agriculture than during other times of the year. Just the opposite occurs in the Northeast, where this is a time of draught and agricultural activities are reduced to the minimum necessary for the maintenance of livestock and crops.[10]

As we have seen, the *IBGE*'s usual way of defining the labor force uses the last week of September as its period of reference, a criteria which we will also adopt from here on.

Table 1 shows the evolution of the economically active population, in agricultural and non-agricultural activities, for Brazil and São Paulo, according to their household situation. The labor force engaged in agriculture made up slightly more than 20% of the total labor force, in 1997, with 75% of the former living in rural areas; for São Paulo it is about 7%, half of it with rural residence. The economically active agricultural population dropped in the period spanning 1992/97,[11] with a larger drop for rural workers living in urban areas than in rural ones, especially for São Paulo state.

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(10) It is important to note that the opposite also occurs, but with less frequency. In other words, during the last week of September of 1997, there were 207 thousand people involved in agricultural activities for whom agriculture had not been their main activity during the previous 365 days. This means that there were at least 550,000 people whose activities were in flux, in and out of agriculture throughout the year. In São Paulo, there was a contingent of 100,000 workers with those characteristics; proportionally speaking, 7% of the labor force devoted to agricultural activity as a main occupation alternates between agricultural and non-agricultural sectors, when the period of reference considered is the last week of September, a peak in terms of agricultural activities in that state (period in which sugarcane and oranges are harvested, as well as a time for the planting of temporary crops.)

(11) Indeed, this drop has been occurring since 1985/86, when there was a peak for agricultural occupations in the country (see Graziano da Silva, 1994).

Table 1
Labor force by household situation and sector of activity
Brazil and São Paulo, 1981/97 (1000 persons)

Labor force	Agricultural			Non-agricultural			Total		
	Rural	Urban	Total	Rural	Urban	Total	Rural	Urban	Total
Brazil									
1981	10.736	2.564	13.300	3.061	29.105	32.166	13.797	31.669	45.465
1992	11.193	3.669	14.861	3.497	42.878	46.375	14.689	46.547	61.236
1997	10.056	3.373	13.429	4.086	48.065	52.151	14.142	51.439	65.581
1981/92 [(a)]	0,4***	3,3***	1,0***	1,2***	3,6***	3,4***	0,6***	3,6***	2,7***
1992/97 [(b)]	–2,2***	–1,7**	–2,1***	2,5**	2,3***	2,3***	–1,0**	2,0***	1,3***
São Paulo									
1981	682	484	1.166	329	9.146	9.475	1.011	9.630	10.641
1992	612	649	1.261	393	12.040	12.433	1.004	12.690	13.694
1997	454	470	924	526	13.398	13.924	979	13.869	14.848
1981/92 [(a)]	–1,0	2,7***	0,7**	1,6*	2,5***	2,5***	–0,1	2,5***	2,3***
1992/97 [(b)]	–5,9***	–5,4***	–5,6***	5,9***	2,3***	2,4***	–0,7	1,9***	1,7***

(a) Annual rate (% [aa]). The Student t-test determines whether the differences calculated from one year to another are significant or not; (b) Angular coefficient of a log-linear regression for 1992/97 (% [aa]); the significance indicates the existence of a tendency in the period; *, **, or *** means statistically significant ***t*** values at the probability levels of 20%, 10 % and 5%, respectively.

Source: *PNADs* (National Household Surveys), Special Tabulation for the *Projeto Rurbano* <http://www.eco.unicamp.br>

Nonetheless, the economically active rural population demonstrated a slight decrease in the same period, both for the state of São Paulo and Brazil. This is due to the growth of the non-agricultural labor force living in rural areas, which went up 2.5% per year for Brazil and 5.9% per year for São Paulo. Consequently, the proportion of rural workers engaged in non-agricultural activity went from 22.2% in 1981 to 28.9% in 1997 for the country as a whole, and from 32.5 to 57.4% during the same period in state of São Paulo.

In short, it was non-agricultural activity rather than agricultural activity *strictu sensu* that kept people in the Brazilian countryside: almost a million people were engaged in diverse occupations having little or nothing to do with traditional agricultural activity, that is, in new forms of work that sprung up in the countryside during 1981/97.

Before proceeding further, we should issue a warning: the fact that people live in rural areas does not necessarily mean that they exercise their activities in that environment. For example, a construction worker or a domestic worker who claims residence in a rural area can very plausibly be working in a neighboring city. Therefore, adopting place of residence as a criteria for determining levels of non-agricultural rural employment can lead to overestimates of rural sources of employment, precisely due to those informants who are rural residents but work in urban areas. On the other hand, this can also be understood as a "new non-agricultural function" of rural areas in Brazil: to provide places of residence for a significant contingent of people who work in urban environments. This includes both people of high income urban origin who are looking for better conditions for life and leisure (via country homes, second homes in rural areas etc.) as well as low-income families who resort to the areas on the outskirts of major urban centers in order to fulfill their dream of a home of their own, relying on their own labor and taking advantage of the laxer building and housing codes for these areas.

2 The growth of non-agricultural rural occupation

Up to this point, we have talked about the population that is economically active in agriculture whether of urban or rural residence and were able to demonstrate that the drop in the number of persons involved in agricultural activities was not accompanied by a concomitant reduction in the economically active rural population, by which we mean those persons occupied in agricultural or non-agricultural activities and residing in zones that are considered as rural. Now we will try to take a closer look at who these persons are.

In Table 2 we can see that almost half such persons reside in the Brazilian northeast. Nonetheless, in relative terms, the São Paulo is the region that houses the largest proportion of people involved in non-agricultural activities in rural areas and that shows the highest growth rates for people occupied in those activities for the periods under consideration here. Our attention is also drawn to the Southern region, which has less than the national average of people occupied in non-agricultural activities. It is precisely in this part of the country that we find a larger population of people living on small rural properties and that houses a type of industry that, if not diffuse, can at least be considered less concentrated than that of the Southeast.

Table 2
Rural resident population by main sector of economic activity: Brazil and its regions, 1997
(thousands of persons)

Regions and sectors of activity	Agricultural	Non-agricultural	Total	Non Agricultural 1.981/92 (a) % aa	1.992/97 (b) % aa
Northeast	5.308	1.734	7.042	0,5	0,0
São Paulo	454	526	979	1,6 *	5,9***
Southeast (-SP)	1.543	742	2.285	3,3***	3,5***
South	2.066	764	2.830	0,4	3,9***
Western Central	686	320	1.006	3,7***	7,2***
BRASIL(c)	10.056	4.086	14.142	1,2***	2,5**

Notes: (a) Annual rate. The Student t-test determines whether the differences calculated from one year to another are significant or not; (b) Angular coefficient of a log-linear regression for 1992/97; the significance indicates the existence of a tendency in the period; *, **, or *** means statistically significant ***t*** values at the probability levels of 20%, 10 % and 5%, respectively.

Source: *PNADs* (National Household Surveys), Special Tabulation for the *Projeto Rurbano* <http://www.eco.unicamp.br>

These characteristics of the South should favor the classic worker/peasant combination (Anjos, 1995), a form of pluriactivity that is typical of regions that bring small rural properties together with less concentrated patterns of industrialization.[12] The reasons for this lesser importance of non-agricultural activities in the South is an issue deserving of further research.

Table 3 shows the main sectors of non-rural activity engaged in by the economically active rural population. Provision of personal services ranks first, occupying more than l,200,000 persons in the entire country, in 1997. Next in rank are activities in manufacturing industries, occupying almost 780,000 persons, followed by commerce, social services[13] and the construction industry, with approximately 445,000 persons in each of these categories. It is important to note that by putting all persons occupied in different areas of the service sector together, we account for more than half of those occupied in non-agricultural activities living in rural Brazil, in 1997.

(12) Saraceno (1997) also associates these variables in order to explain the “diffuse industrialization of the third Italy”.

(13) In 1995, more than 70% of those working in this area exercised activities in public schools and another 8% in public health services. The remaining labor force was distributed between social work, sports organizations, clinics and private schools.

Table 3
Sectors of activity of the labor force residing in rural households and occupied in non-agricultural activities: Brazil and São Paulo, 1997

	Brazil				**São Paulo**			
Sectors of Activity	1000 persons	%	81/92[(a)]	92/97[(b)]	1000 persons	%	81/92[(a)]	92/97[(b)]
Manufacturing industry	780	19,1	1,6***	–0,6	101	19,2	–2,2 *	1,7
Construction industry	445	10,9	–7,5***	2,8	57	10,8	–1,1	14,7***
Other industrial activities	111	2,7	–0,9	–2,1	10	1,9	–3,6	3,3
Commerce (goods)	531	13,0	3,4***	4,2***	61	11,6	4,4 *	7,4***
Personal services	1.207	29,5	4,2***	4,4***	203	38,7	5,2***	5,7 **
Aux. Services for Econ. Activities	75	1,8	0	7,1***	12	2,2	–0,8	12,4 *
Transport & communication	173	4,2	2,1***	4,9 **	24	4,6	9,2***	4,3
Social services	506	12,4	3,9***	1,6 *	35	6,6	2,1	9,4 *
Public administration	212	5,2	4,9***	2,9	19	3,6	0,7	2,7
Other activities	47	1,2	–1,6	4,1 *	5	0,9	–5,1	6,3
Total	4.086	100	1,2***	2,5 **	526	100	1,6 *	5,9***

Notes: (a) Annual rate (% aa). The Student t-test determines whether the differences calculated from one year to another are significant or not; (b) Angular coefficient of a log-linear regression for 1992/97; the significance indicates the existence of a tendency in the period; *, **, or *** means statistically significant ***t*** values at the probability levels of 20%, 10 % and 5%, respectively.

Source: *Pnads* (National Household Surveys), Special Tabulation for the *Projeto Rurbano* <http://www.eco.unicamp.br>

Attention should also be drawn to the importance of the public sector in the creation of non-agricultural employment, whether directly, through public administration, or by way of the social services that the latter provides. In Brazil, workers in this area already add up 718,000 persons, demonstrating that a fundamental aspect of the "urbanization" of rural areas is access to public services. In reality, the question of access to public services is of such vital importance that in developed countries, such as the USA it has been one of the criteria used to help determine whether an area should be considered rural or urban. (USDA, 1997)

With reference to growth, it is important to underline the significant increase in persons engaged in commerce, services, transport & communication and public administration, in Brazil, during the 1981/97 period. In the state of São Paulo, the manufacturing industry, the building industry, personal services, commerce and social services underwent the most significant growth during the period 1992/97.

These outcomes, both for Brazil and São Paulo, do not confirm the hypotheses that the dynamics behind the creation of rural non-agricultural employment are linked, in an initial stage, to processes of modernization in agriculture, which would include the development of industrial activities in the countryside, and, in a latter stage, to the expansion of commerce and services in rural environments.[14] And this is not because there is no logical and historical sequence linking the modernization of agriculture, the development of agro-industries and the posterior emergence of services. Rather, rural development is not a homogenous process, neither from the spatial point of view nor with regard to the dynamics that are behind it. The fundamental reason for this is that the modernization of Brazilian agriculture was a profoundly unequal process, whether considered from the point of view of the regions and products affected, the producers who benefited from it, or the new inter-sectorial links that were generated. The result was the emergence of very distinct patterns of urban-rural relationships both for different regions of the country as well as within regions, especially since there is usually a large metropolitan area that determines the flux of products and people. Therefore, we should not be surprised if we encounter completely different patterns for the generation of non-agricultural rural employment even in regions where only modern agriculture is practiced.

The same persons resident in rural areas and occupied with non-agricultural activities, can also be grouped according to the activity within which they work. As we know, each sector brings together different occupations in a particular area of activity, for example, a bank cashier and a Bank manager, classified under the heading “financial services.” Another example is the public administration, where municipal administration is the most important source of rural non-agricultural employment, accounting for 59% of the 212,000 persons occupied in that area of activity, in 1997. Similarly, we can see that for trading goods, the most important sectors are food, peddler and traders, with this latter activity still common in the rural Brazilian hinterland. As the data of *Pnads* show, the rural population engaged in non-agricultural activities is concentrated in activities which, by large, demand low levels of qualification, such as domestic work, workers in construction and small-scale food trade.

Table 4 shows the distribution of the rural population occupied active in non-agricultural activities. We can see that at least half of the rural non-

(14) According to Weller (1997: 79), in the process of differentiation between agricultural and non-agricultural activities, a first phase in the evolution of the latter includes the creation of activities linked to agriculture and located in rural areas; only in later stages are the bulk of activities concentrated in sectors that are not connected to agriculture and located in urban areas.

agriculturally employed population is made up of domestic workers, construction workers, self-employed providers of services, salespeople, drivers, tailors, etc., all occupations demanding low skill levels

Table 4
Main occupations of the non-agricultural labor force residing in rural areas:
Brazil and São Paulo, 1997.

	Brazil(1)				**São Paulo**			
Main occupation	1000 persons	(%)	81/92[1]	92/97[2]	1000 persons	(%)	81/92[1]	92/97[2]
Domestic worker	537	13,1	3,1***	5,9***	102	19,5	4,2**	5,4***
Bricklayer	245	6,0	4,3***	7,3**	39	7,5	4,0	14,1*
Autonomous service provider	207	5,1	3,9***	1,8	11	2,2	3,6	5,3
Sales clerks	174	4,3	3,6***	8,1***	21	4,1	5,7	13,0*
Primary schoolteacher	162	4,0	4,7***	–2,0	4	0,8	2,0	15,2
Driver	158	3,9	2,4***	6,0**	22	4,2	7,0**	5,2
Janitor and porter	137	3,3	6,6***	–0,9	13	2,5	7,0**	–8,8
Bricklayer's assistant	129	3,2	–2,0**	8,5**	16	3,0	–4,1	11,1
Assistants diverse trades	120	2,9	–12,2***	–8,9	7	1,4	0,0	2,3
Others	105	2,6	7,1***	3,2	9	1,7	6,4*	–2,7
Seamstress & tailor	89	2,2	–0,9	–1,8	8	1,6	–5,9*	10,7
Brickmaker	83	2,0	1,1	–7,2*	11	2,0	–8,6***	–8,8
Handyman	69	1,7	7,5***	11,2*	4	0,8	0,9	18,8
Sub-Total	2.215	54,2	0,7***	2,5*	269	51,2	2,3*	5,3***
TOTAL	4.086	100,0	1,2***	2,5**	526	100,0	1,6*	5,9***

Notes: (a) Annual rate (% aa). The Student t-test determines whether the differences calculated from one year to another are significant or not; (b) Angular coefficient of a log-linear regression for 1992/97; the significance indicates the existence of a tendency in the period; *, **, or *** means statistically significant ***t*** values at the probability levels of 20%, 10 % and 5%, respectively.

Source: *Pnads* (National Household Surveys), Special Tabulation for the "*Projeto Rurbano*" <http://www.eco.unicamp.br>

The relative weight of domestic services among the non-agricultural activities of the rural population can be linked to three different factors, which are not mutually exclusive: a) women's increasing difficulties in finding a place in the agricultural labor market, where attributes linked to physical resistance are very important for the unskilled agricultural labor force; b) the growth of residences for persons with high incomes in rural settings, such as country houses and town house complexes for people looking for a better quality of life than the ones available in large metropolis today; c) the growth of a low income population that work in the city but maintain residence in rural areas due to the advantages that the latter offer in terms of land costs and building codes (making it much easier to build one's own home, especially under substandard conditions).

Summary and conclusions

Our research enables us to conclude that the dynamics of rural employment in Brazil cannot be understood or determined exclusively by agricultural activities. Thus, the peculiarities of rural employment, and especially the movement of the population residing in rural areas, can no longer be explained solely by the agricultural calendar and the expansion/contraction of agricultural areas and production. There are a series of non-agricultural activities, such as the provision of services (whether personal, linked to leisure activities or auxiliary of the economic activity), commerce and industry, that are ever more indicative of the new population dynamics of rural Brazil.

We can affirm that the rural Brazilian milieu can no longer be considered solely as the combination of agricultural and agro-industrial activities. The rural environment has taken on new functions and "new" types of activities, such as the following:

- the provision of leisure activities for holidays and weekends (especially for middle class families with their own means of transportation), in the form of resorts, fishing spots (fee-fishing), weekend country properties, etc.
- places of residence for a growing segment of the upper middle class (rural townhouse complexes in areas outlying large cities)
- the development of activities linked to conservation that stimulate the emergence of "eco-tourism", as well as the creation of state parks and ecological stations
- the provision of a locale for a series of typically urban occupations that have proliferated in rural environments due to the "urbanization" of rural work, stimulated by the new labor legislation belonging to the 1988 Constitution (for example. bus drivers who transport rural workers, mechanics, accountants, secretaries, typists and domestic workers). (Graziano da Silva, 1999).

The indicators we have presented in this paper provide more evidence of the growing importance of the combination of agricultural and non-agricultural activities in rural Brazil for the period spanning 1981/97. Analysis of the labor force based on the *PNADS* data demonstrates the presence of a considerable contingent of rural workers occupied in non-agricultural activities, making almost 30% of the labor force residing in rural areas in Brazil, in 1997.

The occupational migration of the rural population towards non-rural sources of employment demonstrates, on the one hand, the low demand for specifically agricultural labor, and on the other, the search for paid work and higher-paying jobs. The main occupations taken on by this rural non-agricultural population are linked to personal services, the manufacturing industry, commerce and construction trades. As a rule, they are jobs requiring low skill levels.

But what most interests us here is to know **why non-agricultural employment increases in rural areas**. In his previously mentioned pioneering work, Klein (1992) put forth the hypothesis that the considerable growth of non-agricultural rural employment in Latin American countries was due, on one hand, to the actual decrease in agricultural occupation, which forced the rural population to look for alternatives; on the other hand, to the extension and widening of the market for goods and services to rural sectors. According to the author, both of these factors are the result of the modernization of agriculture.[15] He also suggested that there is an integration between rural and urban labor markets for non-agricultural activities, just as there is an interrelationship between urban and rural labor markets for agricultural activities, that goes beyond the fact that there are rural residents occupied in two or more different areas of activity.

According to Klein, there is a consensus that the growth of rural non-agricultural employment is strongly linked to the growth of agriculture and activities directly related to the latter (such as commerce and services) . But he admits that the growth of this non-agricultural rural employment need not be exclusively contingent upon the development of agriculture: "it is perfectly possible to imagine that rural industry can develop due to the stimulation's of external markets, which in turn generate a backward-moving chain effect." (Klein, 1992: 13)

Evidently this same type of reasoning can be extended from rural industry to other non-agricultural rural activities, which can even generate forward-moving chain effects, as is the case for resorts, rural tourism, etc. In other words, we do not

(15) For example, the "technification" of agricultural jobs demands more instruments and productive inputs than can be created through rural industry. The generalization of money as a form of payment for the labor force creates greater possibilities for the development of commercial activities to satisfy the demand for consumer goods. As countries develop, public services must be extended to rural areas, and in particular to health and education; similarly, there is an increase in public employment linked to administration. (Klein, 1992: 7).

need to link the increase of rural non-agricultural employment exclusively to agricultural development, nor to the links created to upstream and/or downstream agricultural sectors.

In a recent work, Weller (1997), examining the generation of rural non-agricultural employment for the countries of the Central American isthmus, observes that some non-agricultural rural activities – and the demand for labor within them – depend directly on the development of agriculture, whereas others are relatively or totally independent of this sector. He also argues that, for the countries he studied (Costa Rica, Guatemala, Honduras, and Panama) the characteristics of rural non-agricultural employment depend primarily on the agricultural sector, although some sources for the generation of rural employment not linked to agriculture can also be identified. In other words, the development of agriculture that has a major and direct impact on the generation of employment, as in the case of the so-called "shelter jobs" (*empleo de refugio*) that engage the labor of those who are left over from the peasant sector.

Weller identifies five distinct dynamics behind the creation of supply and demand in rural non-agricultural markets, which, he reminds us, are not mutually exclusive. Three of them are directly related to agricultural activities, as follows:

a) activities derived from the direct production of agricultural goods and services or indirectly from their commercialization, processing and transportation, as well as the intermediary consumption of non-agricultural inputs used in these processes;

b) activities related directly to the consumer needs of the rural population (the author considers that the majority of rural residents in the countries he studies are engaged in rural activities), that include the production of non-agricultural goods and services both rural and urban in origin, such as auxiliary services (transportation, retail trade etc.);

c) activities derived from the great availability of surplus labor from the peasant sector, which can be referred to as the "shelter sector". It includes industrial home work as well as the complementary activities of those who engage in another paid activity outside of the productive units in which they work, whether this "moonlighting" occurs within agriculture or not.

The other two dynamics that Weller identifies are not directly connected to agricultural activities:

d) the non-agricultural consumer needs of the urban population, such as handcrafts and “rural tourism”; in other words, the production of non-agricultural goods and services that can be carried out within the confines of agricultural sites;

e) the provision of public services in rural areas.

As is evident, the dynamics identified by Weller (1997) are basically the same ones suggested earlier by Klein (1992). In our opinion, they capture the evolution of rural non-agricultural employment adequately for typically agricultural regions with a bi-modal agrarian structure, that is, where large farms based on wage labor and small family farms coexist, alongside highly differentiated rural and urban labor markets. In these cases, rural non-agricultural forms of employment appear during an early phase of agricultural development, heavily linked to agricultural activity itself. They appear to be a natural outgrowth of the latter, taking on the form of activities once carried on within large farms that have now moved out. At a later stage, other non-agricultural activities emerge, bearing no relationship to the agricultural activities of the region and which was capable of absorbing a portion of the surplus labor coming from small peasant properties.

The five dynamics for the generation of rural non-agricultural employment that were described above are also applicable to the Brazilian case. Nonetheless, in regions where the “conservative modernization” of our countryside has been more intense, the rural agricultural population is relatively small and the cities are larger (Graziano da Silva, 1997). Thus, due to the importance that the demands of the urban and rural non-agricultural population have acquired in some of the country’s most urbanized regions, we consider important to point out **three other dynamics** that are not directly related to agricultural activities, as follows:

f) the high income rural non-agricultural population’s demand for places of leisure and/or second homes (country and summer properties) and related services (groundskeepers, maintenance workers, gardeners, domestic workers, janitors etc.)

g) the low income urban population’s demand for plots of land on which to build their own homes, in rural areas close to the cities and offering at least the minimal infrastructure in terms of transportation and public services such as water and electricity) and

h) industrial and service-sector firms’ demand for land, in the instances in which the rural environment is considered to offer advantages in relation to the negative conditions that reign in large urban centers (traffic, pollution etc.)

These three dynamics – that could be called patrimonial or real estate dynamics – have their specificities and generate very different types of rural non-agricultural employment. Yet, none of them depend fundamentally or significantly on agricultural activities. In reality these patrimonial dynamics are typically urban in origin and receive their impulse primarily from adjacent urban centers. In the case of countries like Brazil that have large metropolitan areas in most regions, these demands, which are generated externally by urban population and are independent of local agricultural activities, can come to be of decisive importance to the rural development of a particular region.

We also need to include another additional dynamic to capture what we have referred elsewhere as

i) new agricultural activities, generated mostly by the population of large urban center's demand for rural areas as places for leisure and conservation activities, such as fee-fishing spots, game farms set up for hunting, animals and plants raised for decorative purposes, etc. (Graziano da Silva, 1999)

These activities represent the aggregation of craft-based services that incorporate high levels of specialization and technology with animals and plants not traditionally destined for consumption in the form of food and clothing. Thus, although they do constitute agricultural activities, in the last analysis, the way in which they organize production and, even more, the specific market niches that they generate, encourages us to treat these "new agricultural activities" differently from dynamic **a** which refers to agricultural activity *strictu sensu.* As these "new agricultural activities" can be considered as demands derived from the consumer needs of the urban population, they are closely related to dynamic **d** (consumer needs of the urban population) discussed above.

Also, as we argued earlier, the modernization of Brazilian agriculture created very distinct patterns of sectorial linkages. It therefore becomes interesting to break down dynamic **a** into its fundamental components :

a1) agricultural activities derived from the direct production of agricultural establishments;

a2) agro-industrial activities derived from the processing of agricultural products, as well as the intermediary consumption of non-agricultural inputs that aroused in the production of agricultural goods and services;

a3) auxiliary services for the economic activities derived from the production of agricultural goods and services or from their commercialization, processing and transportation, as well as for the intermediary consumption of non-agricultural inputs used in these processes.

In short, in the Brazilian case we can identify nine dynamics that are of significance in the creation of non-agricultural rural employment – listed above as **a, b, c, d, e, f, g, h,** and **i** – being only three of them strongly related to agricultural modernization development itself. The relative importance for each one of these dynamics for the country as a whole can be evaluated through the data presented in this paper.

The spatial combination of these different dynamics leaves us with a highly differentiated picture of rural non-agricultural employment throughout the country, as can be seen by comparing the data presented for Brazil and for the state of São Paulo. Furthermore, many of these dynamics are interrelated, for example, the low income population's search for places of residence and the high income population's demand for weekend country properties. These interconnections make it hard to isolate the volume of rural non-agricultural employment generated by each individual dynamic, basing ourselves solely on the data from *PNADs*. Therefore, it becomes important to identify the variables that explain the greater or lesser growth of each one of these types of non-agricultural activity for each region of the country. This, however, is a task to be taken up at another moment.

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