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FEMALE WORKERS UNDERCOUNTED  
THE CASE OF LATIN AMERICAN AND CARIBBEAN CENSUSES

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## PRESENTATION

The English speaking public is offered here selected excerpts from the book by Catalina H. Wainerman and Zulma Recchini de Lattes El trabajo femenino en el banquillo de los acusados. La medicion censal en America Latina (Women's work on trial. Censal measurement in Latin America), published in Mexico in 1981 by Terra Nova\*. This publication was possible thanks to the initiative of the program of the Social Development Division of the Economic Commission for Latin America (ECLA) on "Integration of Women in Development," to the support of the Regional Office for Latin America of the Population Council (Mexico), and to the institutional support of the Centro de Estudios de Poblacion CENEP) in Buenos Aires (Argentina). This English version, a translation of excerpts from the above-mentioned publication, was made possible with a grant from the Women in Development Office of USAID.

The present selection mainly draws on certain sections of Chapters 3 and 4 of the original book. More specifically, we are presenting here (i) the results of an attempt to quantify the flaws discovered in the measurement of female labor force by Latin American and Caribbean censuses taken around 1970;(ii) suggestions for modifications to be introduced in future censuses with a view to improve the quality of information on female economic activity; and (iii) suggestions for the elaboration of new measures to apply to past censuses to overcome, though partially, the low degree of validity and reliability verified in order that trends and international comparisons might be established on a firmer basis.

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\*The present document was translated by Anna M. Mundigo.

We trust our findings will alert and trouble both the users, who are often fully confident working with these figures, as well as those who produce them. We hope that the dissemination of these results will call attention and lead the groups to undertake the necessary task of improving the measurement of female participation in the economy.

Faithfulness to the original Spanish text included keeping within this document references to tables, chapters, annexes, which are not included here. The Annex presented at the end of this version was especially written for it. It contains a brief report on a new stage of the project already completed which involved the establishment of personal contacts with people from the Statistical Offices of five Latin American and Caribbean countries. It also contains preliminary lines suggested for carrying on the next stage of this research enterprise.

## FROM CHAPTER 1: INTRODUCTION

The reader might wonder why this book is devoted to the measurement of the economic activity of women rather than to that of the population, without sex differentiation. The question is a valid one, among other reasons because the data gathering instruments used by population censuses as well as by household surveys have up to now been designed, following international recommendations, without reference to either sex. In other words, there is no section in the questionnaires used either in censuses or household surveys specifically designed to probe the employment situation of women as there is, indeed, for probing their fertility. In both, the section on employment situation refers to males and females, and seldom are different instructions given for the one or the other sex.

The reason justifying this apparently "sexist" work is that female labor behavior is different from that of males and that this difference makes for different qualities of the measurement of both sexes, more concretely for a generalized underenumeration of the female labor force. Before elaborating on these assertions we wish to make clear that the women we are referring to are actually only those in the middle age-groups of the life cycle. They do not constitute the only sector of the population undercounted as members of the economically active population. The younger and older sectors of the population (irrespective of sex), also tend to be ignored when carrying out economic activities (students or retirees who in addition engage in activities classified as economic). If our work does not deal with these other groups it is, among other reasons, because they occupy, in strictly numerical terms, a less important place among the human resources of a society. Nevertheless, and although it is not our main intention, some of the conclusions we have reached

and some of the recommendations we have formulated do in fact have implications for these other sectors of the population.

To assert that female labor behavior is different from that of males is as valid at the individual as well as the societal level. It is also valid within as well as between countries. In the majority of known societies the males who are in the economically active stage of the life cycle remain in the labor market from entry to retirement, save exceptional situations such as illness, death, war or economic recession. During the most active years of the life cycle their behavior is relatively independent of the educational level attained, of the family situation (both in terms of the marital status and of the number of children), of the place of residence, be it urban or rural, and even of the economic structure of the society. In fact, in most of the countries for which records exist, the proportion of males in the labor market among those between 25 and 54 years of age exceeds 90 percent, a figure scattered throughout a wide gamut of occupations and employment status.

The main characteristic of the labor behavior of women is diversity, instead. The homogeneity of the high level of economic participation of males contrasts with the enormous diversity found among females within and between countries. In effect, in the 1970's such disparate figures for female activity could be found as an 86 percent in the Soviet Union, 46 percent in the United States, 24 percent in Argentina, 18 percent in Brazil, and 8 percent in Egypt. The high female economic participation in the Soviet Union is, in truth, an unusual phenomenon since it is more often the case that the proportion of females not taking part in the labor market is very high. Among those who do so it is a common experience to enter and to leave several times from the market throughout their active lives. There is a discontinued economic activity with

interruptions usually associated with points of a change in the life cycle: marriage, birth of first child, school entrance of last child, etc.

It is also common among women to have part-time, sporadic, and seasonal employment, all forms of economic participation which in general obey to the need to make their reproductive role compatible with their productive one. On the other hand, unlike males, the level of education attained whether there is a husband or companion present, whether childless or with one or more children, and whether living in an urban or rural setting does indeed make a difference to women and a great one in terms of their probability of entering the labor market. In general, the market selectively recruits working women among those with the higher educational levels, without husband or companion - single, separated or divorced, and widowed - and without children. Those that are recruited are permitted access to a short gamut of occupations and to a narrow range of occupational categories within a few sectors of the economy. In the majority of known societies, women form the majority in occupations such as domestic servants, nurses, and teachers which bear a similarity to their nurturing and reproductive role. Very often their activity is carried out in the home (as in the case of self-employed seamstresses), or not too far from home and from their small children (as is the case with street vendors who carry them on their backs, while offering their merchandise to passersby).

These characteristics - discontinuous, seasonal, part-time work, which is often difficult to distinguish from household activities, carried out in the traditional sectors of the economy, in family enterprises or as own account workers - are intimately related to the sexual division of labor prevalent in societies. Together with the effects of prejudices favoring women's reproductive role in detriment of the productive one (also present among people

responsible for the design and collection of statistics), these features make this behavior to be poorly measured and usually underestimated by the statistical registers. It must be borne in mind that these registers have been designed to detect one type of activity, that which is carried out by the majority of males in developed economies and which is characterized by being carried out continuously, eight hours per day, five to six days per week, and 48 to 52 weeks per year.

The underestimation of women's labor force participation varies with the degree of "invisibility" of certain occupations and employment statuses. It is greater in the occupations perceived as a part or extension of household duties, such as women who prepare lunch for the workers of an agricultural enterprise or that of a woman who carries out in her own home a part of a sequence of tasks required in the garment industry. "Invisibility" is also high for activities that are not registered in the accounting system of an enterprise, for example, the "unpaid family worker" or the "selfemployed" woman in a traditional sector of the economy. Visibility is greater, instead, in the salaried activities of the modern sectors of the urban economy.

FROM CHAPTER 3: THE LABOR FORCE APPROACH. ITS APPLICATION IN  
POPULATION CENSUSES AND HOUSEHOLD SURVEYS

Quantitative Evidence of Censal Omission in the Measurement of the Participa-  
tion of Women in Economic Activity

Before evaluating the degree of validity of the information produced by population censuses in relation to that produced by other kind of data collection such as household and demographic surveys, it is pertinent to recall certain basic characteristics of these operations, whether multi-purpose or not. These operations differ in their objectives, coverage, frequency with which they are conducted and characteristics of information gathering. All these features cannot but affect the quality of the data they furnish.

The population census is a complicated and costly undertaking aimed at obtaining information on relatively new characteristics of the total population of a country at a given moment (age, sex, marital status, migration status, educational and economic characteristics of individuals, size and distribution of the population throughout the territory, etc.). The census, which tends to be repeated every ten years, is normally carried out in one single day or in a very short period of time, by means of a questionnaire which necessarily must be brief, simple and of clear interpretation for interviewees and for the numerous interviewers who, in Latin America, normally receive little training and no remuneration for a task that is usually imposed upon them.

The major feature which distinguishes a survey from a population census is that the former gathers information on a sample of the population, something which makes the undertaking less complicated and costly. This is done by means of a questionnaire applied by a small group of especially trained interviews which are remunerated for a task which normally extends over a period of time that exceeds one day. A survey is usually oriented towards the more or less

thorough investigation of some topics considered basic, hence the questionnaire might be long and complex or short and simple. An example of the first case would be the continuous household survey (taken once per year or more often) designed to attain a thorough investigation of topics like employment, unemployment, underemployment and the like. An example of a short and simple questionnaire is provided by the demographic survey which tends to deal with the same subject matters as the population census and others such as the investigation of mortality and fertility at a given moment.

Differences in objectives as well as in methodology undoubtedly grants greater validity to the information gathered by surveys vis a vis that gathered by censuses on the "activity status" of the population. In the case of household surveys, the utilization of several questions instead of only one (as is almost the rule in censuses) not only increases the quantity but also the quality of the information. In effect, when the questions are several, if the answer to the first one of a sequence should result in an erroneous answer, the possibility would exist to introduce corrections through the following questions, something impossible when there is only one question.

In what follows comparisons are made of measures obtained from census enumerations and that obtained by other types of data collection. For the reasons detailed above, information provided by household surveys and similar data collecting operations is granted greater validity than those of the census type.

The specific purpose of the following pages is to provide empirical evidence which reveals how different measurement procedures of the same phenomenon obtain different magnitudes of it. Two examples are given in which contrasts are made between censuses and household surveys. One of them is Panama

in 1970, a case where it was possible to differentiate between the metropolitan area and the rest of the country. The other, also in 1970, is the State of Sao Paulo in Brazil, a State which includes one of the largest urban agglomerations of Latin America and which has a not insignificant rural population (around 20 percent).

It would have been desirable to analyze more than two instances of measurements of the same universe through a census and a household survey but, unfortunately, cases in which both operations use, if not identical, at least comparable conceptual definitions are not abundant. (Two cases supplied by Argentina and Chile were discarded because the minimum working period required for a person to be classified as economically active by the census and survey of each country differ notably.) Neither were abundant cases where the results are published and/or are accessible. Two other pairs of measurement have been found that involve population censuses on the one hand, and special purpose surveys, on the other. Both cases have been included because they also contribute to demonstrate the low validity of census information in relation to the female labor force. The two cases are: Bolivia, which has information from the population census of 1976 and from the National Demographic Survey conducted a year earlier; and Costa Rica, which, in addition to the census of 1973, has a continuous register of the working population covered by the Costa Rican Social Security System (Caja Costarricense de Seguro Social).

In none of the analyzed cases do the data rigorously correspond to the same populations, defined in time and space, as would have been the ideal. But, as can be seen in Table 1, they are reasonably equivalent. The most important differences are to be found in the period in which they were conducted. While in the four cases the censuses were taken on one single day, or

Table 1  
Some Characteristics of the Sources of Data Contrasted for Measuring Female Economic Activity

Place	Source	Date and time used for enumeration	Spatial coverage	Reference period	Minimum time	Size (percent)	Sample total - N
Panama Total, Metropolitan Area, Rest of country	Census	5/10/1970 (1 day)	Entire country	Week prior to census day	Not specified except for non remunerated family workers (1/3 of working time)	Universe	Universe
	Survey of labor force	-Metropolitan Area in a continuous way during entire year. -Rest of country: First week of each quarter	Entire country <u>a/</u>	Week prior to interview	Not specified for all occupational categories	≈ 5-6	13 000 households
São Paulo	Census	9/1/1970 (1 day)	State of São Paulo	1 year (9/1/69 to 8/31/70)	Not specified	25 (particular ≈ 3 333 households or thousand persons up a collective household)	
	Household Survey	1st. quarter 1970 (1 quarter)	State of Sao Paulo	Employed: week prior to survey. Unemployed: last two months	Not specified	0.1	17 201
Bolivia	Census	9/29/1976 <sup>b/</sup>	Entire country	Week prior to census	Not specified (asks for the greater part)	3.3	139 434
	Demographic survey	June-October 1975 (4 months)		Week prior to survey	Not specified	≈ 1.2	52 293
Costa Rica	Census	5/14/1973 <sup>b/</sup>	Entire country	Week of May 7 to 12	1 hour a week for all occupational categories	Universe	Universe
	Caja Costarricense de Seguro Social	June 1973 <sup>c/</sup>	Entire country <sup>d/</sup>	Not existing	Not existing	Universe	Universe

- a. Particular households; native Indian population is excluded and also those residing in the Canal Zone.
- b. There is no information regarding length of time for the enumeration (one day or more).
- c. Exact details of the enumeration are unknown. From the introduction preceding the statistical information - reproduced in Appendix A - it is assumed that it is a monthly declaration and therefore it refers to a month.
- d. Refers only to managers, wage-earners and some self-employed and members of cooperatives. It is estimated that in 1973 Social Security covered 49 percent of the economically active population.

in a period presumed to be very short (Costa Rica and Bolivia), the surveys were invariably conducted during a much longer period: three months in Sao Paulo; four months in Bolivia with almost one year's difference between the time when one and the other were conducted); throughout the entire year or in each quarter, as in Panama, depending on whether reference is made to the Metropolitan Area or the rest of the country. Although very drastic changes in behavior cannot be expected within such narrow time-spans, the fact that the data collection was undertaken in different periods within the year can indeed be of importance due to the possible presence of seasonal work activities both in Bolivia - a predominantly rural country - as well as in Sao Paulo and Panama, above all outside their metropolitan areas.

Appendix A<sup>1</sup> reproduces the measurement instruments just as they appear in the census schedules, in the instructions for census enumerators, in the questionnaires, and in the definitions used by the household surveys and by the Costa Rican Social Security System. The degree of divergence between the instruments used for each case of comparison varies both with respect to concepts as well as data collection techniques. The smallest divergence is found between the instruments used by the two Bolivian sources; the greatest, between the Costa Rican ones; and in between, although tending to be very divergent, those between the sources of Panama and, above all, those of the State of Sao Paulo. There is no information regarding the type of training given to the enumerators in the different cases but it is undoubtful that it is more intense and of better quality in the surveys than in the censuses.

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1 These documents are not attached here but are part of the original Spanish version, available on request from Judith Bruce, The Population Council, One Dag Hammarskjold Plaza, New York, New York 10017.

a) Comparison of population census versus household survey: Panama

The conceptual definitions of the economically active population employed by both Panamanian sources contrasted are very similar. The population census as well as the labor force survey include among the active both the employed and the unemployed, with practically identical descriptions about who should be included in each of those categories. Both used a one week time-reference period, and both leave undefined the portion of that week that a person is required to have worked in order to be counted as economically active, with the sole exception of unpaid family workers in the census. For this category the census requires that the person must have worked at least one-third of a normal work week to be considered active. No requirement is established in the survey; that is, the time is left undefined, just as it is for the other categories. This would be the only source of conceptual discrepancy between the census and the labor force survey. Since this category has little weight on the total female labor, this difference would account for only a minor part of the differences that exist between these two measurements of the economically active female population. According to the census, only 4.3 percent of the total active females are unpaid family workers, the corresponding figure according to the labor force survey is 5.6 percent. That is, assuming that all the other categories would have been measured with the same degree of accuracy by both sources - which of course is not the case, as will be seen further on - the change of conceptual definition would only give rise to a 1.3 point difference.

Whereas the conceptual aspects are similar, the technical ones concerning the information gathering tools are markedly different. As can be seen in Figures 1 and 3 of Appendix A, only once in the census questionnaire is an in-

quiry made about the different economic activity alternatives for the reference week ("worked", "looked for work having worked before", "looked for work not having worked before"). In the labor force survey queries were twice made about work - in addition to the formulation of a third question regarding whether a person has an employment or business whether working or not during the previous week - and twice about having searched for work. The use of a reiterative instrument greatly increases the probability that the survey will record more of the active population than the census. Added to this is the fact that the enumerators of a survey operation are better instructed than those of a census and that their performance is likely to be superior because interviewing is a stable and remunerated job.

There are other reasons for possible discrepancies between both measurements. While the census collected information in one single day, the survey did it (alternatingly or not according to the area) over the course of the entire year. Little can be said about the possibility of a survey discerning seasonal labor since there are insufficient test elements for evaluating whether in the "rest of the country" (that which is predominantly rural) the first week of each quarter coincides or not with seasonal tasks. From the survey report it is also not clear whether four data collections were made and then averaged or whether in each quarter a different region was surveyed. However, it seems sensible to assume that the survey has a greater probability of detecting seasonal employment than the single day census operation.

Other possible sources of divergence between the two measurements reside in the inclusion or exclusion of the native Indian populations and in the lowest age limit employed which determines the starting point for the

applicability of questionnaires. But these have been compensated through the selection of adequate tabulations that include similar populations.

The comparison between activity rates by sex and age calculated from census and survey data reveals very clear results: the survey registers a greater number of active persons than the census, as can be seen in Table 2. (The only exceptions occur among the youngest and oldest women of the Metropolitan Area. These cases might be the result of sample errors given that one is dealing, undoubtedly, with groups of lesser frequency among the active population.) The results coincide with what is expected according to the quality of the instruments utilized.

But the differences are not the same for both sexes. Though significant, they are not too great in the case of males; in turn, they are enormous for females. That is, the quality of the collecting tool seems to have had little effect on the measurement of the male labor force but it has indeed affected that of women even in an urban setting as is the case of the Metropolitan Area of Panama, where the recording of the active population is more valid generally.<sup>2</sup> The differences between the rates of female participation of the two sources (with the exceptions already pointed out) are not below 5 percent. Indeed, they usually go beyond 10 percent and as high as 43 percent. The conclusion is clear and immediate: the population census did not result in a valid tool for measuring the economic participation of women, both in an urban population (the Metropolitan Area), and in a predominantly rural one (rest of the country).

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<sup>2</sup> The bibliography on the economically active female population is insistent in pointing out that underenumeration is greater for agricultural and unpaid family workers, less frequent in urban than in rural areas.

TABLE 2

Participation Rates<sup>a/</sup> by Sex and Age Derived from the Census and the Labor Force Survey of Panama  
(Total country, Metropolitan Area and the rest), 1970

Age	WOMEN			MEN		
	Survey	Census	$\frac{S}{C} \cdot 100$	Survey	Census	$\frac{S}{C} \cdot 100$
Total country						
15-19	32.9	31.3	105.0	63.5	60.0	105.7
20-29	44.3	39.6	111.9	95.6	94.8	100.8
30-39	41.1	33.6	122.8	99.2	97.4	101.9
40-49	35.8	31.2	114.9	98.4	96.4	102.1
50-59	30.2	23.7	127.4	95.0	91.6	103.7
60 and +	11.5	10.3	111.5	65.6	61.1	107.3
Metropolitan Area						
15-19	35.8	36.0	99.5	48.5	46.8	103.5
20-29	57.2	50.8	112.6	94.3	93.2	101.5
30-39	56.2	44.9	125.1	99.2	96.6	102.7
40-49	48.2	42.2	114.2	98.4	95.3	103.2
50-59	39.1	32.1	121.8	94.2	89.0	105.9
60 and +	13.0	13.3	98.0	52.6	47.7	110.2
Rest of the country						
15-19	29.5	25.6	115.4	77.0	72.3	106.5
20-29	28.8	25.8	111.7	97.0	96.5	100.5
30-39	24.9	21.7	115.0	99.2	98.1	101.1
40-49	23.2	18.6	124.9	98.4	97.5	100.9
50-59	19.2	13.7	140.1	95.8	94.3	101.6
60 and +	10.0	7.0	143.3	75.3	72.6	103.8

a. The participation is the quotient between the economically active population and the corresponding total population of each sex and age-group, times one-hundred.

SOURCES: Panama (1972), Table 5. Panama (1976), Table 30 of Vol. III and Table 6 of Vol. IV.

b) Comparison of population census versus household survey: Sao Paulo

The case of Sao Paulo (Brazil) is entirely different from that of Panama as to the degree of conceptual and technical divergence. The census includes within the economically active population persons having worked during the twelve months previous to the date of the census, even if at the census date they were unemployed, on leave or on vacation, or imprisoned "awaiting trial", and also persons aged ten years and over who at the date of the census were for the first time looking for a job (Brazil, IBGE 1973, pages xxxi and xxxii).

The household survey considers that the economically active population is constituted by the totality of employed persons (those who in the reference week were working and those who, although not working, had some employment or business from which they were temporarily absent for reasons such as illness, vacation, bereavement, strike, etc.), plus the unemployed (those not employed in the reference week but who in the last two months had taken some steps to seek work).

These definitions differ in the reference period and, therefore, in the concept of economically active population. While the census adopts one year, the survey adopts one week for the employed and two months for the unemployed. Given the characteristics of the participation of women, this discrepancy would lead one to expect that the recording of that population would be larger in the census than in the survey.

As to the techniques of collection, those of the census and the survey are absolutely different. Criticism has already been made in a previous section of the collection instrument used by the Brazilian census: the question apparently directed at measuring the "activity status" contains a double nega-

tive, an indeterminate reference period - even though in the publication of the censal results it is said that the reference period is of one year, this is not mentioned either in the censal schedule or in the manual for enumerators - and a set of response categories which begins with the alternatives of economic inactivity. Further on another two questions are formulated to distinguish between employed and unemployed, whose reference period in one case is the last week, and in the other, one year. The instructions in the manual for the census takers do not clarify either the sense of the questions nor to whom these should be asked, as can be seen in Figure 6a of Appendix A. It is not known what kind of training the enumerators received but faced with such a complicated and confused collection instrument it is doubtful, even if much energy was invested in the training process, that the replies would be superior to the formulation of the questions themselves.

The survey, which follows the outlines of the Atlantida model (see Fig. 7 of Appendix A) devotes several questions towards the identification of economically active persons, so that whoever was erroneously classified as inactive in the first question, can be correctly classified as economically active at the second or third opportunity when questioned on the same subject.

Based entirely on the instrument (i.e., disregarding conceptual aspects), it seems clear that the survey's questionnaire is a more valid measuring instrument than the census. Therefore, a greater enumeration of active persons would be expected by the survey, above all among women, since in addition to the reason pointed out earlier, in this census in particular, the first alternative offered each person was "household chores". However, based on the conceptual aspects--e.g. length of adopted reference period--one would expect a greater registration of active persons by the census than by the survey. If

the comparison of both measurements were to show that the survey registered more active persons than the census, the lack of validity of the Brazilian censal instrument for measuring female economic activity would acquire a much stronger significance.

Another source of incomparability between both measurements, just as in the case of Panama, is the time of the year when they were carried out. While the census was taken on 1 September 1970, the survey was conducted during the first quarter of that same year. Since the existence of seasonal activities is highly probable, especially in the rural part of the State of Sao Paulo, the change of time period to which the economic activity refers could have a bearing on the counting of the female labor force. But, again, the census should enumerate more completely than the survey, because the census made reference to activity during the last year, while it is not known whether or not the quarter to which the survey refers corresponds to a time of heightened agricultural activity.

The rates of participation calculated with data from the two sources appear in Table 3. The conclusions are even more convincing than for the Panamanian case: the survey enumerated more active persons than the census. (the only exception is constituted by persons 65 and over, attributed to the size of the sample, since the relative frequency of cases is very low in these ages.) Once more, the censal underenumeration is much greater for women than for men. The censal underenumeration in relation to the survey oscillates between 14 and 33 percent among women and between 2 and 6 percent among men.

Fortunately, the available information for Sao Paulo makes it possible to delve deeper into the comparison by permitting separate calculations of the activity rates for agricultural and non-agricultural workers, and for unpaid

TABLE 3  
 Participation Rates<sup>a/</sup> by Sex and Age Derived from the Census and Household Surveys  
 of the State of São Paulo (Brazil), 1970

Age	WOMEN			MEN		
	Survey	Census	$\frac{S}{C} \cdot 100$	Survey	Census	$\frac{S}{C} \cdot 100$
20-24	47.4	39.3	120.6	92.8	88.5	104.9
25-34	31.7	26.5	119.6	97.9	96.0	102.0
35-44	29.0	22.6	128.3	97.1	95.3	101.9
45-54	19.4	17.1	113.5	92.8	88.2	105.2
55-64	12.6	9.5	132.6	72.7	68.6	106.0
65 and +	2.4	3.7	64.9	31.6	34.2	92.4

a. The participation rate is the quotient between the economically active population and the corresponding total population of each sex and age-group, times one-hundred.

SOURCES: Brazil (1973), Table 21. Brazil, (n.d.), Table 3.1.2.

family workers and wage earners. The results shown in Table 4 clearly demonstrate that, at least in this case, the population census is not a good enumerator of the female labor force in general. Furthermore, the census is especially inadequate for women working in agricultural activities and for unpaid family workers of both sexes. In these categories too, the divergence is greater with regard to women than to men. In fact, the figures are very impressive, although it might be argued that the survey's sampling error might be great in these relatively small groups. But the differences, in addition to being large, are consistent with each other and also with the results obtained by Pecht (1974) in his analysis of data from Brazilian population and agricultural censuses, both taken in the same period. Therefore, the census of Sao Paulo supplies clear evidence that the Latin American population censuses significantly underenumerates active women and especially so those employed in agricultural activities and as unpaid family workers (within or outside the agricultural sector). It gives further evidence, though to a somewhat lesser degree, of a high underenumeration of males working as unpaid family workers.

c) Comparison of population census versus demographic survey: Bolivia

The general methodology of a demographic survey such as the one conducted in Bolivia in 1975 is in many aspects similar to that of a population census. It coincides with the latter in the use of a short and simple questionnaire as well as in the variables investigated. It differs in some aspects like that among the "economic characteristics" it only investigates the "activity status" and not other topics common in censuses (such as "occupation", "industry" and "employment status"), and it delves deeper into the investigation of fertility and mortality. The most notable difference, however, is that the

TABLE 4

Participation Rates by Sex and Age, Agricultural and Non-Agricultural Sector, Wage earners and Unpaid Family Workers, <sup>a/</sup> Derived from the Population Census and the Household Survey of Sao Paulo (Brazil), 1970

Age	Survey	Census	$\frac{S}{C} \cdot 100$	Survey	Census	$\frac{S}{C} \cdot 100$
WOMEN						
	Agricultural			Non-agricultural		
20-24	4.5	1.9	236.8	42.8	37.4	114.4
25-34	4.7	1.1	427.3	26.9	25.3	106.3
35-44	4.2	1.2	350.0	24.8	21.4	115.9
45-54	2.8	1.2	233.3	16.6	15.9	104.4
55-64	3.8	0.8	475.0	8.8	8.7	101.1
	Unpaid family workers			Wage-earners		
20-24	3.5	1.1	318.2	42.2	36.4	115.9
25-34	5.6	0.5	1,120.0	23.1	23.3	99.1
35-44	3.9	0.4	975.0	21.0	18.5	113.5
45-54	2.8	0.4	700.0	13.1	13.1	100.0
55-64	2.1	0.3	700.0	6.9	6.6	104.5
MEN						
	Agricultural			Non-agricultural		
20-24	17.0	19.0	89.5	75.4	69.6	108.3
25-34	18.5	18.1	102.2	79.4	77.9	101.9
35-44	19.7	19.7	100.0	77.4	75.7	102.2
45-54	23.0	22.7	101.3	69.9	65.4	106.9
55-64	23.0	23.6	97.5	49.8	45.1	110.4
	Unpaid family workers			Wage-earners		
20-24	9.7	4.6	210.9	77.5	73.4	105.6
25-34	2.8	1.2	233.3	72.4	75.0	96.5
35-44	1.2	0.4	300.0	67.6	66.6	101.5
45-54	0.3	0.3	100.0	60.4	56.3	107.3
55-64	1.6	0.5	320.0	38.7	39.4	98.2

a. The participation rate by activity sector or occupational category is defined as the quotient between the economically active population of each sector and category and the corresponding total population of each sex and age-group, times one-hundred.

SOURCES: Brazil (1973), Table 21. Brazil (n.d.), Table 3.2.2.

survey utilizes a sample of the population which is studied by a relatively small number of well trained interviewers. These move about the territory during a period of three to four months, corresponding to the data collection phase.

The concepts of an economically active population implicit in the 1976 population census of Bolivia and in the demographic survey of 1975 are very similar. The census definition says that the economically active population "encompasses all persons who in the adopted reference period (the week prior to the date of the census) were employed and unemployed" (Bolivia INE: n.d. page 21). From the available survey materials one infers a similar definition. It includes the employed and the unemployed, and the period of reference is also one week, although with a less precise definition than in the census as to the amount of working time required during that period for a person to be considered active. Another small difference is that the census specifically includes the unpaid family workers whereas it is not clear whether the survey does it or not because since the occupational category is not investigated, this category is not mentioned.

There are some differences between the measuring instruments used by the census and the survey both in the phrasing of questions as well as in the instructions given to interviewers. Whereas the census question inquired about the economic activity during the "greater part of your time", no reference to time exists in the corresponding item of the survey, as can be seen in Figures 9 and 11 of Appendix A. The instructions in the census, short and clear, indicate only that the response alternatives must be read in the indicated order until an affirmative answer is obtained (see Figure 12 of Appendix A). The one included in the survey's questionnaire says that the alternatives must be read

in the indicated order and that the first to register a positive answer should be marked. However, the one in the survey's manual, repeats this instruction but also says that "all and each of the alternatives" should be read to the interviewee, which is contradictory to the former. Since the instructions included in the questionnaire are more frequently read than those included in the manual, given that the interviewer is confronted with them each time the question is posed, one assumes that it is the questionnaire instructions that were actually followed by the interviewers. If this be so, it can be concluded that both census and survey tools are similar in this sense and that both clearly give preference to the alternative corresponding to economic activity. Although undoubtedly there is room for doubt, we will continue the analysis assuming that the two tools for collecting information (census and demographic survey) were similar in terms of the aspects analyzed, so far.

The censal instructions in the manual for interviewers are accompanied, as can be seen in Figure 10 of Appendix A, by a series of apparently descriptive drawings of each option presented by the census: all characters representing categories of economic activity (1, 2, 3 and 4) are masculine. The only feminine characters are those corresponding to the categories of "homemaker" and "student". The choice of sex does not appear to be casual. Could those responsible for the census have had in their minds that work is a province of men, even in a country such as Bolivia with a long tradition of high female participation in economic activities? Though not intended, it is sensible to assume that the drawings may have biased the census takers.

All indicates that the demographic survey fieldwork (as well as the household surveys) must have been done with greater care than that of the cen-

sus. All aspects considered, it is expected that the demographic survey would offer more valid results than the population census.

Lastly, mention must be made of the time period in which each was conducted as a possible source of incomparability. In fact, the survey was taken between June and October 1975 and the census at the end of September of the following year. There is a certain overlapping in the period of the year in which both were conducted, but it is not total and thus, if the first months of the survey would correspond to a certain intensification of agricultural activities, this would result in a relatively greater number of persons economically active measured by the survey.

Data from the survey and the census are compared in Table 5. The male data are shown next to the female data as a point of reference. The relationship between the participation rates of the survey and those of the census for the totality of women in Bolivia, controlling by age-groups, shows that the survey counted between 33 and 48 percent more active women than the census. These differences are huge if compared to those observed for the capital and the rest of the urban areas - areas for which the survey and census give participation rates that tend to differ very little, and even give difference of a contrary sign for some age-groups-,<sup>3</sup> and are especially dramatic when compared to those for the rural areas. In the latter areas, the rates for women

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3 This result, so different from that found in the metropolitan area of Panama is surprising. Faced with it, several questions need to be raised, although no satisfactory answer can be found for any of them. Was the survey in the urban areas of poorer quality than in the rural areas? Was the census fieldwork better implemented in the urban areas? Were the urban and rural limits defined differentially by one or other operation and, are these the ones responsible for the results that were found?

TABLE 5

Participation Rates <sup>a/</sup> by Sex and Age for Bolivia, total country and regions, derived from the 1976 Population Census and from the 1975 National Demographic Survey

Age	W O M E N			M E N		
	Survey	Census	$\frac{S}{C} \cdot 100$	Survey	Census	$\frac{S}{C} \cdot 100$
	Total country					
20-29	37.0	25.0	148.0	83.8	89.5	93.6
30-39	34.1	23.5	145.1	98.3	98.6	99.1
40-49	30.2	22.8	132.5	98.1	98.4	99.1
50-59	27.1	19.5	139.0	96.0	96.2	99.1
	Capital City <sup>b/</sup>					
20-29	35.4	35.3	100.3	69.0	84.2	81.6
30-39	36.8	35.9	102.5	97.3	98.3	99.1
40-49	28.6	33.1	86.4	96.6	98.2	98.6
50-59	27.8	27.2	102.2	90.3	93.2	96.1
	Other urban areas <sup>b/</sup>					
20-29	35.1	32.3	108.7	73.5	82.0	89.1
30-39	30.6	32.9	93.0	97.7	98.0	99.1
40-49	26.0	31.5	82.5	97.0	97.5	99.1
50-59	23.5	23.3	100.9	94.0	92.3	101.1
	Rural areas <sup>b/</sup>					
20-29	38.2	17.4	219.5	91.6	95.6	95.6
30-39	35.0	15.7	222.9	98.8	99.0	99.1
40-49	32.1	16.5	194.5	98.8	98.8	100.1
50-59	28.4	15.7	180.9	97.8	98.2	99.1

a. The participation rate is the quotient between the economically active population and the corresponding total population of each sex and age-group, times one-hundred.

b. The rates corresponding to the population census are based on simple averages using those calculated by Polo Najera by quinquennial groups, since the original information was not available.

SOURCES: Torrez (1977), Tables 11 and 12. Polo Najera (1978), Table 4. Bolivia (1977), Table 9 and unpublished tabulations from the National Demographic Survey of 1975, kindly supplied by the Instituto Nacional de Estadística (La Paz).

between 20 and 39 years of ages obtained on the basis of survey data, are twice as large as those obtained on the basis of census data and, although for women between 40 and 59 years of age these differences are of a smaller magnitude, they are still quite large. The rates for men calculated on the basis of information from one and the other source differ the least, even less than those for women from urban areas. In addition, those derived from the census present a slight tendency to exceed those from the survey.

It is possible that the large differences in economic activity found for the female population residing in rural areas, is accounted for by the seasonality of agricultural tasks, hence, by the different dates of the data collection. (However, one rather tends to believe that, as with the Brazilian and Panamanian censuses, the Bolivian also turns out to be an operation of little validity for collecting information on the female labor force engaged in agriculture, and therefore, in the rural areas. The results of the survey, on the other hand, are also more consistent with the previous census of Bolivia (1950) which showed higher rates of participation for the agricultural sector than for the non-agricultural. The urban-rural differential shows the same pattern according to the 1975 survey data (Recchini de Lattes: 1979), a fact that is consistent with the conditions of life of the residents of the Bolivian altiplano, that is, the majority of the population. The differential revealed by 1976 census data, on the other hand, shows the opposite case, as can be seen in Table 5, although similar to those presented (possibly in an erroneous way) by the other countries of the region.

d) Comparison of population census versus continuous register: Costa Rica

These two information sources for the working population present strong divergences, both with reference to concepts as well as to instruments.

The 1973 population census of Costa Rica defines the economically active population in a way that is similar to other censuses of the region, including both the employed and the unemployed. Among the former it includes those who have worked in the reference week, for remuneration or for income, or in a family enterprise without receiving income, or had not worked but had an assured employment; and among the latter, those who sought work in the same reference period, whether having or not having worked before.

The statistics from the Costa Rican Social Security System, to the contrary, refer not to the economically active population but to those directly insured by the Security System, which comprise: 1) workers or wage earners registered in payrolls by their employers; 2) persons who were wage earners but who are self-employed at present; and 3) members of cooperatives. Some tables using these statistics also include employers, defined as "the natural or juridical person, private or by public right, who utilizes the services of one or more persons covered by social security benefits" (Costa Rica: 1974a, page v.).

It can be seen that the definitions of these different categories have little to do with the definitions of the censal categories, even though they respond to the same or to similar generic names (wage earners, employers) and that these categories do not encompass the entire labor force. To point out the most obvious differences one might say that the Costa Rican Social Security System does not cover, and therefore, does not register: 1) self-employed workers who never were wage earners; 2) unpaid family workers; 3) wage earners

not registered in the payroll by their employer;<sup>4</sup> 4) the unemployed, unless they have registered on their own volition. Furthermore, among employers, it does not differentiate between natural or juridical persons. In light of such differences with the census categories for the economically active population, it seems irrelevant to speak of a reference period, of the date of the data collection, and even of the instruments themselves. Census data is collected from a single item plus its instructions in the censal schedule; Social Security data are collected from a monthly payroll on which different information is entered for the employer and for the insured, shown in Figures 13, 14 and 15 of Appendix A.

Why are these two sources of information from different population sectors being contrasted? Because the analysis of persons registered by these two sources leads one to believe that the Social Security greatly underestimates the economically active population enumerated by the population census, since the latter by definition includes more worker categories. And these expectations are amply borne out in general but not in the case of active women engaged in agricultural tasks. Therefore, this comparison demonstrates once again that the census is not a good tool for measuring women's participation in agriculture. In fact, as can be observed in Table 6, the Social Security System encompasses approximately 46 percent of the total economically active population, or 62 percent of it, if one only takes into account the salaried workers. It appears that Social Security coverage is greater for active women than for men, which may be due to the fact that the Social Security System --

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4 Since enrollment means payment of insurance, that is, apportionment of money on the part of the employer, it can be surmised that there might be evasions and, therefore, important omissions from these lists of workers. In addition, there might be employers who do not register as such.

TABLE 6

Proportion of Workers Covered by the Social Security System in  
Relation to the Economically Active Population Registered  
by the Population Census of Costa Rica, 1973 (in percent)

Sector used to calculate proportion	Total	Women	Men
LF,* total	46	61	42
LF, wage-earners	62	67	60
LF, in agriculture	24	117	22
LF, wage earners in agriculture	41	133	38

SOURCES: Costa Rica (1974a), Table E-9. Costa Rica (1974b), Table 53.

\* Labor Force

which includes maternity benefits -- reaches more satisfactorily the female than the male population, or that active women were more poorly enumerated than men by the population census. Despite this higher coverage, the Social Security figure for working women is far from that of the census: it represents only a 61 percent of the latter.

Coverage by the Social Security System of the economically active population in agriculture is lower than coverage of the total of actives, as can well be expected in a rural setting where the difficulties for making monthly declarations are greater due, among other reasons, to the relatively greater lack of information and services. But what is surprising is that the direction of the difference is inverted in the case of women in agricultural activities: coverage by the Social Security System represents 117 or 133 percent of the censal register of this sector, depending on whether all women in agriculture or only salaried women in agriculture are included. These figures speak for themselves about the censal underenumeration of women in agricultural activities. In fact, as already mentioned, although the Social Security System does not cover the total active population and even less so wage earning males of the agricultural sector (as seen in Table 6), it still registers more women in agriculture than the population census. That is, there is evidence that the agricultural sector is one of those least covered by the Social Security System - 38 percent of the wage earning males in agriculture compared to 60 percent of the total salaried workers -, and that the Social Security System covers a greater number of women in agricultural activities than were enumerated by the population census. It can therefore be deduced that the actual number of women working in agriculture in Costa Rica largely surpasses both the census and the Social Security System's figures. Once more this case serves to show, for our

specific purpose, that the census is not a good tool for measuring female participation in agricultural activities.

e) General conclusion

The four comparisons between the results of population censuses and those from other independent sources of information suggests that censuses are tools little suited for measuring female participation in economic activity, especially in the agricultural sector or in the category of unpaid family workers.

In the case of Sao Paulo (Brazil), where different conceptualizations employed by each of the information sources led one to expect that the census would show a greater relative number of persons economically active than the household survey, the opposite was true. The same applies to Costa Rica where the census was compared with a register containing fewer categories of workers than are implied in the censal definition of the economically active population. In Bolivia, where the demographic survey's instructions suffer from serious defects, it seems that the quality of the interviewers still brought about a better measurement of female economic activity. In the case of Bolivia, as well as in the Panamanian part outside the Metropolitan Area ("rest of the country"), doubts remain as to the possible influence of different data gathering periods with possible seasonality of certain agricultural tasks. But, if this were so, why did it not become a reason for a difference in the measurement of males? There are enough reasons for attributing the discrepancies between both sources contrasted to the low validity of the population censuses for measuring the female labor force.

It bears pointing out that the results found in these four Latin American cases are similar to those reported by Bancroft (1958) for the United States. Comparisons made with conceptually equivalent data from the Current Population Survey show that economically active women were underestimated in the 1940 and 1950 U.S. censuses by 17 percent (based on 41 countries) in the former census, and by 5 percent (based on the entire country) in the latter census. The underenumeration was consistently greater among young persons of both sexes, women in general, and especially among those employed in agriculture. These results were attributed to the different quality of census and survey interviewers: "a trained interviewer will make fewer assumptions and will tend to classify more persons as members of the labor force than a beginner" (Bancroft: 1958, page 162). The U.S. example shows that the problem of censal underenumeration of the economic activity of women is not restricted to Latin American countries nor to developing countries, although it might perhaps attain a much greater magnitude in the latter due to the prevalence of traditional economic activities frequently carried out in the home environment and alternated with - and therefore often undifferentiated from - household duties.

#### FROM CHAPTER 4: EVALUATION AND SUGGESTIONS

##### Validity of the Collection of Information on "Activity status"

As seen in the previous chapter, the degree of validity of the measurement of female labor force in household surveys is clearly superior to that of censuses. Hence, the analysis and suggestions that are here formulated will refer to the latter. Let us be clear that the suggestions derive from an analysis of a very defined universe: the censuses that were taken in the decade of the 1970's in Latin America and the Caribbean. In other words, in this publication the conceptual definitions of "work", "activity status", "economically active population", "unemployment", etc., which have been used in these censuses are not discussed but rather taken as given. On the other hand, the operational interpretations made by each country in light of those conceptual definitions were evaluated. The suggestions being made are, therefore, the product of the assessment of a particular approach which does not represent that of all countries that have taken censuses nor the only possibility. To undertake a broader evaluation would be the object of another work, which would transcend what has been done on this topic in the region and which would include, furthermore, a discussion of the conceptual basis on which the measurements of female labor rest. The analysis was done here of the quality of the conceptualization of the phenomenon of female labor, of the way to achieve this measurement, and of the adequacy of the one to the other. The suggestions are addressed at increasing the adequacy.

Three aspects were judged as requiring the greatest consideration because of their effects on the measurement of the economic participation of women: a) items (and instructions investigating the "activity status");

b) reference period with regard to which that status is investigated; and c) minimum time required to be considered "economically active".

a) Items (and instructions) on "activity status"

The following suggestions arose from the analysis of the wording of items and of instructions accompanying these items addressed to determine the "activity status" of the population of active age. First of all, and following the most basic methodological recommendations applicable to all social research, it is necessary to insist that when opting for one single question (the stimulus designed to produce the information), its wording must be clear, precise and uniform for the entire population. As to clarity, the use of the negative form, especially if reiterated, as in the case of the census of Brazil,<sup>5</sup> goes against the most elemental principles for the wording of items designed to record valid information. As to uniformity (constancy of stimuli), it is necessary that the information on the "activity status" be obtained through one question (or several) that is included in the censal schedule and not by means of a heading for a column or row which forces each enumerator to give it (at their discretion) an interrogative form.

Secondly, it is important that the presentation of the precoded response alternatives of that item starts by those on economic activity and follows by those on economic inactivity. It is also important to instruct the enumerator to stop the reading of the alternatives at the first answer chosen by the interviewee. If the economic activities are not conveniently ordered or

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5 The question referred to reads as follows: "If you do not work nor were looking for a job, what situation and occupation did you have?" (*Italics added.*)

if the interviewee is given the possibility of replying after knowing all the alternatives, it is probable that, as already said, many of the active women would be classified erroneously as inactive. This may occur because a given culture "says" that for women the proper and suitable tasks are the domestic ones, or because under given circumstances household tasks are considered as more prestigious than certain economic activities and, furthermore, because in general, economically active women tend to carry out a double role. Precisely owing to this latter reason, it is convenient to accept the double answer which may possibly increase the probability of detecting a considerable number of housemakers who are, at the same time, economically active.

Thirdly, and although apparently obvious, it seems necessary to insist that the instructions for the enumerators must not detract from and contradict the wording of the items as was seen to occur in many cases. It is especially recommended that it should not be suggested in the instructions manual, for example, that household tasks are proper to women and that only as an exception are these performed by men, or that for persons of specific ages it is most possible that they be inactive or unemployed. Quite the contrary, the instructions should tend to do away with the stereotype that women are only devoted to household tasks by insisting that if they carry out an economic activity, even though at home or part-time, they should likewise be classified as active.

Up to now we have assumed the use of a single item, which was common in the majority of the cases analyzed. But given that the item on "activity status" in its usual form of a single question actually condenses several, one would have consider whether it is convenient that a series of alternative answers be unfolded in a sequence, thus contributing to clarify what is meant by "work" in addition to ensuring the internal control of the answers. But this

is a topic that merits an investigation all of its own and which does not form part of the present work.

b) Reference period

As several authors have already pointed out (D'Souza: 1978; United Nations: 1978, Torrado: 1979), the choice of a short period such as a week affects above all the female agricultural workers who only participate in periods when those tasks are intensified. In fact, it is reasonable to assume that the very high participation rates observed in Haiti --the highest in Latin America and the Caribbean according to the latest available census information, as will be seen further on-- is due to the long reference period chosen by that country (six months). But one more step needs to be taken as part of the set of considerations for this recommendation. Research on participation in non-agricultural activities of some populations outside the region indicates that female participation is characterized by several entries and exits from the labor market, even in relatively short periods such as one year. Ostry's (1968) study on female labor force in Canada gives quantitative evidence regarding its greater occupational "elasticity" relative to that of males: the comparison between the participation rates obtained in 1961 for the week and for the year prior to the census highlights a difference that reaches 14 percent among women, but does not reach 5 percent among men. Although the information based on one week underestimates the one based on one year for both sexes, the effect is significantly greater for females. More adequate measurement of the female labor force in the region would require extending the reference period bearing in mind the peculiarities of female participation not only by those in which agricultural activities predominate.

c) Minimum activity time

The analysis of cases including instructions regarding the amount of time required to be considered economically active revealed that only one country (Mexico) specified a minimum time in addition to including a reference period in the item on "activity status" of the censal schedule. Of the rest of the countries indicating a precise time -- one day, 15 hours, etc. -- the great majority gave different instructions for "unpaid family workers". As was shown in Chapter 3, this divergence may have confused the census taker determining him not to take these instructions into consideration. It is here recommended not to include a minimum time either in the question or in the instructions for the item on "activity status". As will be seen in the next section, it is considered more profitable to investigate the time actually worked. But when it is decided to put this in, there should be no differences between the time established for "female unpaid family workers" and for the rest of the "economically active women" at the risk of having to formulate very complicated instructions - not proper for an operation such as the census - or to make incoherent or absurd recommendations, as has happened in the past.

Elaboration of Measures that partially Overcome the Validity Problem of Censal Information on Activity Status

The conclusion that Latin American population censuses do not appear to have been up to now valid tools for the measurement of female economic participation might not surprise those who repeatedly have written or read about the censal underestimation of female activity. It is nevertheless new, and in more than one sense. Up to now emphasis had been placed on the low validity of the census as a data source on women's economic activity and, in particular, on the underestimation of those employed in agricultural activities and as "unpaid

family workers". The novelty consists in having based this conclusion in an attempt to quantify, even though for only a few cases, the magnitude of that underestimation and in having detected that the problem is more general.

The underestimation seems to affect not only the female agricultural workers and the unpaid female family workers but also women economically active in other occupations. Thus, for the users of censal data doing historical research on female labor force these conclusions are discouraging. Not only discouraging but difficult to accept. In fact, how can one renounce the use of the data source for the study of past trends of female participation? Is there no part of the information whose validity might be accepted?

As was seen when contrasting independent sources of measurement the operational aspects of the labor force approach that in such a remarkable way affected the female population did not seem to have similar problems when referring to males. This seems to be due to perceptual distortions of a cultural nature that make both the interviewers as well as the respondents perceive women, as do women themselves, as economically inactive when they are actually participating in an economic activity. The same does not hold true for men. But it is much more probable that this erroneous perception - which therefore leads to a poor declaration - occurs with a greater frequency in the cases where the economic activity is performed part time or within the home environment. In other words, when it takes place outside the organized capitalist sector of the economy or of a governmental activity. Following a similar line of thought and with the object of overcoming the low validity of censal measurements, Boserup (1975) proposed to use a measure of female participation in activities that she calls "modern". Her premise, accepted here, is that modern activities performed full-time for remuneration, will always be better

registered than other economic activities. What she had in mind when proposing this new measure of female activity was the comparability between countries at a given moment, and in time for the same country. These suggestions are also considered essential here: to attain a more valid measurement of female labor force participation which would permit the study of trends and, on the other hand, render more reliable comparisons of economic participation between Latin American countries, and of the region, with respect to other countries and/or regions of the world.

Several measures of female economic activity for Latin American countries that conducted population censuses in the decade of the 1970's are presented in this section. But the information for each of the countries of the region is not always available with the necessary degree of disaggregation to allow to calculate the rate considered as giving the most valid measurement and at the same time the most comparable between countries - that is, the one taking into account modern activities, as mentioned above. The one that is possible to calculate for practically all the countries of the region is a rate that underenumerates active women. This is the refined rate of total participation, defined as the quotient between the active women 15 years and above and the total number of women of corresponding ages.<sup>6</sup> This rate leads to a picture of Latin American and Caribbean female activity in which Haiti stands out from the rest of the countries of the region because of its very high level of participation (Table 7). In fact, Haiti's refined rate of total participation is practically twice that of the country following it in order of impor-

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6 Use of a lower age limit relatively high is preferred not only because in this way comparability is gained among countries, but also because, with regard to the denominator of the rate - by excluding women younger than 15 - differences in age-structure among countries are largely eliminated.

TABLE 7

Some Measures of Female Participation for Latin American and Caribbean Countries from Available Census Data of the 1970's

Country	Refined participation rate (15 years and over) per hundred population					
	Total	Modern occupations	Wage earners	Domestic servants	Non-agricultural <sup>d/</sup>	Gross years of active life, urban zones (15-59 years)
Argentina <sup>a</sup>	27.3	13.0	21.0	6.3	26.2	15.1
Barbados	34.1	*	*	*	*	*
Bolivia <sup>a</sup>	23.9	5.5	9.4	4.2	19.1 <sup>e</sup>	15.3
Brazil	21.1	*	14.9	*	17.1	*
Chile <sup>b</sup>	21.9	9.0	16.2	6.3	21.1	12.9
Colombia	23.9	7.1	15.1	0.2	19.6	11.5
Costa Rica	20.7	10.7	19.0	6.1	19.9	15.1
Cuba	18.3	*	18.0	*	*	11.8
Dominican Republic	26.7	3.8	10.4	3.2	19.2	13.0
Ecuador	17.1	5.6	10.2	4.1	15.1	13.1
El Salvador <sup>a</sup>	25.7	c	14.4	c	22.5	c
Guatemala	14.2	4.2	9.5	4.9	13.8	13.8
Haiti	70.3	*	*	*	*	*
Honduras <sup>a</sup>	16.8	5.8	10.6	4.3	15.6	15.3
Jamaica	36.1	*	*	*	*	*
Mexico	17.9	6.5	12.0	0.5	18.6	*
Nicaragua <sup>a</sup>	21.6	5.7	14.2	7.7	19.9	16.2
Panama	30.3	13.7	22.4	9.0	29.2	21.6
Paraguay <sup>b</sup>	22.4	6.0	11.6	6.0	20.1	17.5
Peru	19.9	6.1	10.8	3.7	16.4	12.7
Uruguay	29.4	*	20.7	*	29.1	17.8
Venezuela	22.6	10.7	17.0	4.9	19.9	12.6

\* Information not available.

a. Economically active female population 10 years and over.

b. Economically active female population 12 years and over.

c. OMUECE available data absolutely not comparable to those from national publication.

d. Includes unknown activities.

e. Economically active female population 7 years and over.

SOURCES: National population censuses (see details at end of present chapter); Data Bank of CELADE (OMUECE 70). The total rates calculated by one and another source coincide reasonably well, save for El Salvador - where the difference was so great that it was decided not to incorporate OMUECE data and, in smaller measure, for Colombia.

tance - Jamaica - whose rate is, in turn, two and a half times that of Guatemala, a country that according to this measurement would have the lowest female participation in the region.

What has been shown up to here does not differ significantly with works such as PREALC (1978) for the same period or those of Elizaga (1974) and Durand (1975) using data from the previous decade. But these data do not give a reliable picture of female economic participation in the region. Each of the figures shown must have very different degrees of validity because they derive from data collection approaches whose degree of validity also differs. Using the measure proposed by Boserup (1975) and up to the point where the available data permits, an attempt will be made in what follows to improve the existing measurement.

This new measure will be called "refined rate of participation in modern occupations".<sup>7</sup> It is defined as the quotient between women 15 years and over who worked in modern occupations and the total number of women of corresponding ages. That is, the denominator for this measure is the same as that used in the prior measure. The numerator includes the following occupations: professionals, technical and related female workers in all occupational categories; managers, directors and top level administrators in all occupational categories; salaried office workers and related; wage earning saleswomen; non-

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7 It should be noted that this is a rate and not the proportion of women active in modern occupations. In this way the underenumeration of the rest of the occupations does not affect this measure. In those cases where female labor force information by occupations was not available for active women 15 years and over, the available figure was used in the numerator (for example, women 10 years and over in modern occupations), but the age limit of the denominator was retained at 15 years. In this way, the comparability is much better assured since, although there are few women under 15 in modern occupations, a change in the denominator would significantly affect the magnitude of the rate.

agricultural wage earning laborers and workers and related female wage earners. In other words, for the computation it was necessary to have tabulations that classify female labor according to occupation and employment status. (The occupational classification used corresponds to COTA 1970 and the data derives from the CELADE - OMUECE 1970 data bank.) It must be pointed out that the problem of correctly measuring the totality of the female labor force is not solved in this way. On the contrary, information is lost especially with regard to all occupations that are not of the modern type, but gains are made in validity and comparability with respect to a sector of a female labor force, as mentioned before.

The refined rates of participation in modern occupations for each country are also included in Table 7. The picture these new rates present is completely different to the earlier one not only because they are all lower - as was expected, since fewer occupations are included - but, basically, because if one ranks the countries according to the magnitude of female participation measured by one or other rate, these will be situated, save a few exceptions, in completely different locations. What has been said becomes evident in the number of crossings that the left-hand side of Graph 1 presents. Here countries are ranked from larger to smaller female participation in economic activity according to different rates. Graph 2 completes the differential picture offered by one and the other measure - if only the bars corresponding to the total rate and to that of modern occupations are observed - since the differences in magnitude between both are more readily discernable in this graph. According to the rate of participation in modern activities, four Latin American countries stand out: Panama, Argentina, Costa Rica and Venezuela, with rates ranging between 10.7 and 13.7 percent. Next comes Chile with 9.0

GRAPH 1

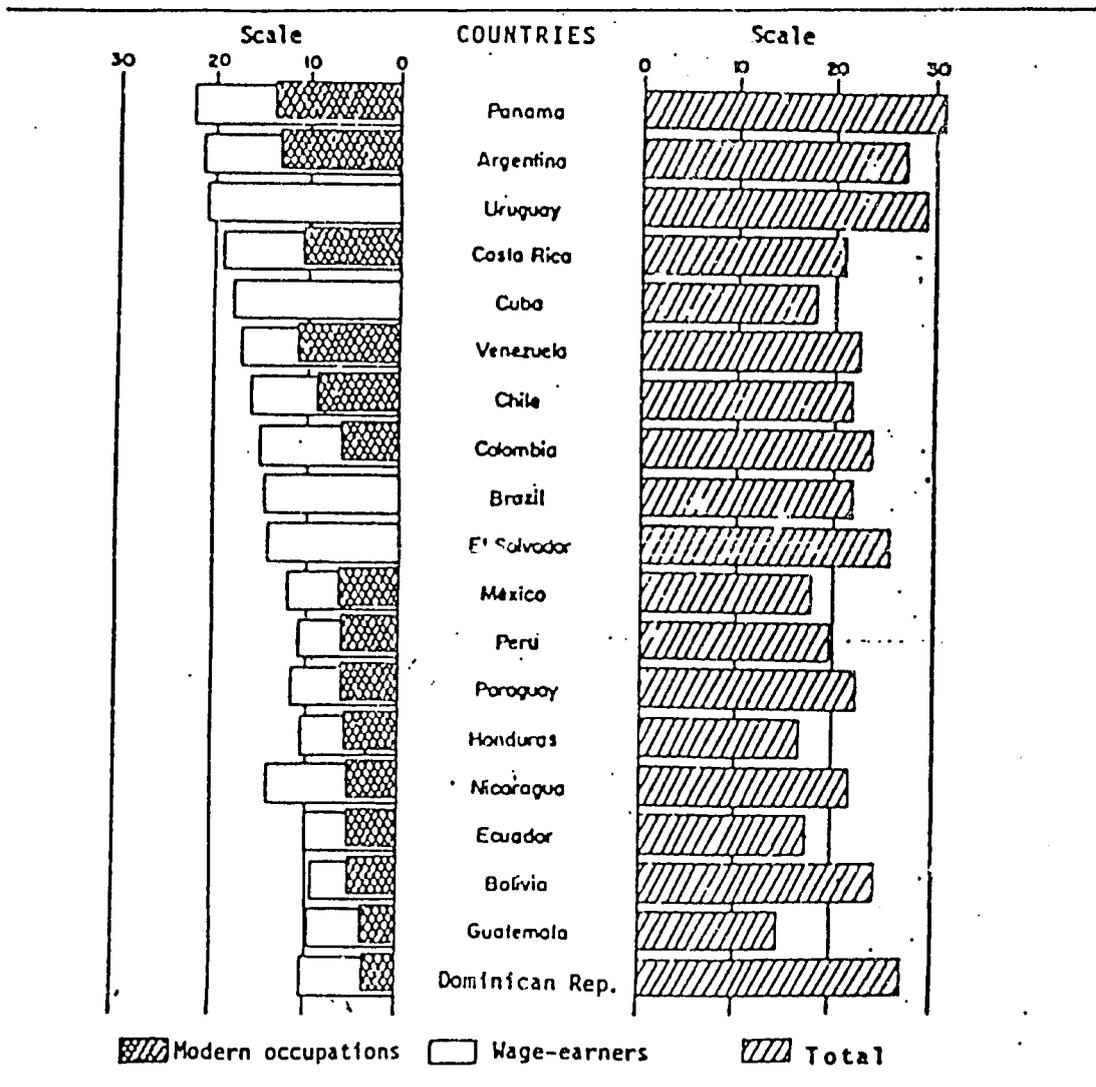
Latin America: Rank Order According to Some Measures of Female Participation— Countries with Available Necessary Censal Data for the 1970's

	Total		Modern Occupations		Wage earners
1	Panama	1	Panama	1	Panama
2	Argentina	2	Argentina	2	Argentina
3	Dominican Rep.	3,5	Costa Rica	3	Costa Rica
4,5	Bolivia	3,5	Venezuela	4	Venezuela
4,5	Colombia	5	Chile	5	Chile
6	Venezuela	6	Colombia	6	Colombia
7	Paraguay	7	Mexico	7	Nicaragua
8	Chile	8	Peru	8	Mexico
9	Nicaragua	9	Paraguay	9	Paraguay
10	Costa Rica	10	Honduras	10	Peru
11	Peru	11	Nicaragua	11	Honduras
12	Mexico	12	Ecuador	12	Dominican Rep.
13	Ecuador	13	Bolivia	13	Ecuador
14	Honduras	14	Guatemala	14	Guatemala
15	Guatemala	15	Dominican Rep.	15	Bolivia

SOURCE: Table 7.

GRAPH 2

Latin America: Refined Participation Rates for Women in Modern Occupations, Wage-earners and Totals — Countries with Available Necessary Data for the 1970's (per hundred women 15 years and over)



SOURCE: Table 7.

percent of its women 15 years and over in modern occupations, and finally the rest of the countries with 7.0 percent or less.

How do these countries rank with regard to those from other regions of the world? Some available data are found in the already mentioned article by Boserup, based on information for 34 countries around 1960. The group of those countries with greatest female participation in modern occupations (the United States, New Zealand, and Canada) presented an average rate of 21.7 percent, followed by those (Japan, Denmark, France, Belgium, and Norway) with 18.0 percent, and the group of countries (Puerto Rico, Cuba, Chile, Jamaica, and Mauritius) in the next rank order, 8.6 percent. Thus, the Latin American Countries with greatest female participation in modern occupation around 1970 would fall within the countries that around 1960 were grouped in Boserup's second and third rank orders, closer to the latter. At the other end, none of the Latin American countries presents in 1970 a rate as low as Boserup's lowest average rate for 1960 (1.0 percent), not even that of the next group of countries (2.4 percent)<sup>8</sup>. The lowest of the 1970 Latin American rates corresponds to the Dominican Republic where it reaches a value of 3.8 percent.

In this presentation of the refined rates of participation in modern occupations, 7 of the 22 countries for which the refined rate of total participation had been calculated remained outside the comparison due to the lack of tabulations that could permit their computation. As the reader might suspect, if the comparison were to be attempted for earlier dates, the "loss" of cases would probably be greater. The computation of other rates was then attempted,

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<sup>8</sup> These two groups are integrated by Sierra Leone, Pakistan, Korea, Morocco, and Liberia, in the first; and Nicaragua, Egypt, Syria, the Dominican Republic, and Ghana, in the second.

testing whether the picture that these others offered would be good substitutes of the supposedly better rate: that of modern occupations. The following measures were calculated: refined rate of participation of female wage earners, refined rate of participation in nonagricultural activities, and gross years of active life in urban areas.<sup>9</sup> With each series of rates the ranking of the countries was again established - only for the 15 which the refined rate of participation in modern occupations had been calculated - always from larger to smaller, building up Graph 3, similar to Graph 1.

When observing the two graphs one can conclude that the only rates that produce a similar ranking to that of modern occupations are those of wage earners. In fact, very few countries significantly change their ranking: Nicaragua, and in second place, the Dominican Republic. This can also be observed in Graph 2: here can be seen that, generally speaking, and with the noted exceptions, the rates for wage earners reproduce fairly well - at a higher level - the ranking for the rates of those employed in modern occupations. But in his graph the group of countries with relatively high rates is not so clearly differentiated from those with relatively moderate rates. The dividing line is not so easily drawn. One must take into account that in the category of wage earners, in addition to the modern occupations already mentioned, are included some labeled as very traditional, such as domestic services. And, as can be seen in Table 7 itself, some of the countries with the

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9 The latter computation was done instead of the refined rate of participation in urban areas because the computations were begun with the urban participation rates by age. The ranking of countries would not have changed much if the refined rate had been used.

GRAPH 3

Latin America: Rank Order According to Some Measures of Female Participation – Countries with Available Necessary Censal Data for the 1970's

	Non-agricultural occupations		Modern Occupations		Urban zone activities
1	Panama ————— 1		Panama ————— 1		Panama
2	Argentina ————— 2		Argentina ————— 2		Paraguay
3	Chile ————— 3,5		Costa Rica ————— 3		Nicaragua
4	Paraguay ————— 3,5		Venezuela ————— 4,5		Bolivia
6	Costa Rica ————— 5		Chile ————— 4,5		Honduras
6	Nicaragua ————— 6		Colombia ————— 6,5		Argentina
6	Venezuela ————— 7		Mexico ————— 6,5		
8	Colombia ————— 8		Peru ————— 6,5		Costa Rica
9	Dominican Rep. ————— 9		Paraguay ————— 8		Guatemala
10	Bolivia ————— 10		Honduras ————— 9		Ecuador
11	Mexico ————— 11		Nicaragua ————— 10		Dominican Rep.
12	Peru ————— 12		Ecuador ————— 11		Chile
13	Honduras ————— 13		Bolivia ————— 12		Peru
14	Ecuador ————— 14		Guatemala ————— 13		Venezuela
15	Guatemala ————— 15		Dominican Rep. ————— 14		Colombia

SOURCE: Table 7.

highest rates of participation in modern occupations as well as some with the lowest have, coincidentally, very high rates of participation in domestic service.<sup>10</sup>

The rates for wage earners permit to compare a larger number of countries since the information needed for this calculation exists for 19 of the 22 cases. The rank that each of these "added" countries would occupy can be observed in Graph 2: Uruguay, occupying a place very close to that of Argentina and Panama; Cuba, although not as high - it must be taken into account that this country does not include remunerated domestic service among the economically active - ranking among the Latin American countries with high female participation; Brazil, in an intermediate place, although in all probability it is badly placed due to the very poor formulation of the question on activity status; and finally El Salvador, close to Nicaragua.

The other measures shown in Table 7 - refined participation rates in non-agricultural occupations and gross years of active life in urban areas - give, on the contrary, a totally different picture than the rates of participation in modern occupations. It is therefore, not possible to take these measures as substitutes, not even as an approximation to the first. The idea implicit upon calculating these two last measures was that non-agricultural, or urban, could be considered almost synonymous to modern. But it has been amply proven that this is not so. In fact, many of the occupations that are carried out in the urban area - in similarity to the group formed by all non-agricultural occupations - include traditional activities such as domestic service,

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<sup>10</sup> One is struck by the very low rates of participation in domestic service in Mexico and in Colombia. They seem exceedingly low and unacceptable as valid measures. But it is beyond the scope of this work to investigate their real magnitude. One suspects problems of codification.

plus a wide gamut of tasks that may even be characterized as occasional, as are probably many of those carried out by women who participate in the labor force as unpaid family workers or as self-employed. As to domestic service it is interesting to point out a collateral finding revealed by examining Table 7. If to the column of refined participation rates of female wage earners one subtracts that of domestic service, with few exceptions a column of rates very similar to that of modern occupations is obtained. Aside from a few exceptions, the discrepancy between both rates does not go beyond 21 percent and, in the majority of cases, is between 5 and 10 percent. This not only gives an idea of the importance of this activity among women, but also suggests that it constitutes perhaps one of the traditional female activities most often declared with relative accuracy in the population censuses. The latter is a conjecture that needs to be contrasted with other independent measurements.

To conclude, and on the basis of the evidence already examined, we assert that censal data may be used although with great caution since, as was seen, they tend in general to underestimate active women but especially the agricultural female workers, the unpaid family workers and, in general, all those not engaged in modern activities. Quite the contrary, those best detected by the population censuses would be those carrying out tasks which, following Boserup, are called "modern". Since not all countries have the necessary information to calculate these rates - which also could be computed with a much greater degree of specificity: according to age-groups, civil status, etc. - a fairly acceptable substitute could be on the computation of the participation rates of wage earners.

Finally, it is believed that a realistic image has been offered of the relative place that each Latin American country occupies as far as female par-

ticipation in modern economic activity is concerned. What remains to be established is the ranking of female participation in all economic activities. This question - of disputable formulation - cannot be answered starting from an investigation that uses censal data.

### Conclusions and Suggestions

The two objectives of the present work have been: 1) to evaluate the quality and identify the deficiencies that statistics for the analysis of women's economic participation suffer from, especially those of the 1970 census round taken in Latin America and the Caribbean; and 2) to record the gaps in the gathering of information on those variables relevant to the analysis and explanation of women's labor performance. Both objectives have been met and the conclusions derived emerged clearly: female labor measurements have little validity and relevant variables on which information is gathered are very scarce. But, as will be evident to the reader who has followed this exposition, the conceptual and operational deficiencies of population censuses for measuring female labor are so great, as the quantified analysis of a few cases indicated, and underestimate this labor so much that it would be entirely out of place to plead for more information. Before that, the objective should be better information.

Therefore, some suggestions to overcome the flaws found in the censal statistics have been elaborated. This was done without departing from the universe of existing approaches and definitions institutionalized by the usual practices recommended internationally. That is, criticisms and suggestions were made from the perspective of approaches currently in use in censal statistics, and not from other conceptual frameworks. The tasks implied evaluating

the quality and quantity of statistical information were gathered around 1970. This was done starting with a review of the conceptual frameworks proposed for the study of female labor force; followed by the analysis of the operational forms used, the biases detected in censal measurements, and the tabulations that were elaborated and published. Now the moment has come to put the conclusions arrived at together so they can stand out and be evaluated. Those judged of greatest importance are presented below.

Firstly, among the persons responsible for the 1970 Latin American censuses - especially those charged with the wording of questionnaires and instructions to interviewers - prejudices and stereotypes were found concerning the role of women in society and, therefore, of the activities that they carry out. These prejudices and stereotypes, when present in the operationalization of the concept of an economically active population diminish the validity of the censal measurement of female labor force.

Secondly, in many Latin American censuses serious inconsistencies were identified between different instructions or between the wording of items and instructions, if not a flagrant flaunting of the rules that apply to all social research. Among these inconsistencies, one frequently found and whose origin might be probably due to a mechanical adherence to international recommendations (inconsistent in themselves) relates to the minimum time of work required from a person to be considered "economically active" and the one required for the status of "unpaid family worker". These inconsistencies, although affecting both men and women, affect the latter more because it is they who work most frequently part-time and as unpaid family workers.

Lastly, the attempt to quantify the underestimation of female labor force, though based on a few cases, brought forth very conclusive results: the

population censuses taken in Latin America in the decade of the 1970's do not provide - in comparison to alternative sources of information - a valid measure of female labor force. This, which is especially true of the sector that includes women dedicated to agricultural activities and occupied as "unpaid family workers," is also true of that made up by women employed, in general, in non-modern activities. Among these, remunerated domestic service was found to be one of the occupations that should be investigated with special care due to its rather high relative frequency in some countries of the region and its surprisingly low one in a few others.

As already mentioned, the problem of low validity of censal measurements is so serious that, in spite of having identified important gaps in the spectrum of variables on which information is gathered, it was not recommended to broaden information gathering with the exception of one item which would permit better identification of the employment situation: the period of time worked. In the case of household surveys, where the problem of validity does not seem to be as serious, it was indeed suggested to collect additional information.

It is necessary to point out, however, that not all the defects derive from the way in which Latin American censuses rendered operational the concept of an economically active population. Some of the problems noted seem to go way back and have been dragged along. This seems to be due not only to those in charge of the censuses, but also to social science researchers. (As an example, just as it is frequent to find evaluations of the quality of Latin American censuses with regard to the coverage of the total population, by age and by sex, there are hardly any examples of attempts to evaluate the quality of the information on the economically active population.) The concept of

"work" itself continues to be insufficiently clear and in spite of recent developments originating within the framework of marxist economics and the time budget approach, obsolete patterns persist, such as continuing to consider only some activities and not others as economic: for example, the non-remunerated domestic activities.

The result of the evaluations carried out here should not lead one to conclude that the census is necessarily a bad tool for measuring the female labor force. On the contrary, we believe that it can and must be improved. A first step towards an awareness of the issue was already taken when social science researchers and some international agencies (see United Nations: 1978, and ECLA: 1978) recognized that the task of detecting female economic activity gives rise to specific problems. Earlier in this chapter, some suggestions were already made to improve the validity of the collection of information on the employment situation. Obviously, these are not definitive, as additional research is needed to formulate more precise recommendations, as for example, concerning the reference period on the time worked, and on the wording of the sequence of questions for measuring the "activity status."

Up to here, the recommendations formulated have not paid attention to the fact that older available information contains certain basic flaws that might invalidate further analyses if used indiscriminately. To overcome this obstacle Boserup proposed in 1975 the computation of refined activity rates for modern occupations - in preference to the generally used measures - since these activities tend to be registered more completely by censuses. We have followed this suggestion here and have calculated such rates for all the countries of the region that had the necessary data. It must be pointed out that this measure, which only takes into account one sector of the economically active

female population, is not proposed here as a replacement for a total rate since it is not intended to give information for the entire female labor force of each country. If its use is suggested, it is because the censal data referring to the totality of economic occupations are not valid. The proposed measure does indeed offer information that is valid even though for only a part of the economic occupations, and above all, useful for the purposes of comparative studies both in space (among units) as in time (covering the history of each unit). Given the greater validity of this rate relative to the total rate, the comparisons based on it must also be more valid.

Because the computation of this rate requires the existence of special tabulations and because not all countries have them, we have computed a substitute measure that requires a type of information that is available among a greater number of countries and which is sufficiently acceptable. This is the refined participation rate for wage earning women. But here again, this matter has raised some questions requiring further investigation. Are Boserup's recommended occupations or activities the most adequate, or would it be advisable to redefine what is meant by "modern occupations"? Should some of the traditional occupations perhaps be included, such as "domestic service," that apparently is more accurately registered as an economic activity than other traditional occupations? Or, is it that, perhaps, the dividing line between valid and non-valid registration has to do with the social recognition of the economic nature of the task rather than with its modernity?

As already stated, the present study has dealt with only a selection among the many topics that merit consideration. Many others were also identified which undoubtedly will give rise to future research. Among these, the problem of how much censal underestimation of the female labor force is due to

the deficient conceptualization and operationalization of the variable and how much to characteristics proper to the data collection operation. It would be advisable to try to evaluate how the information obtained through censuses and surveys of various population groups - among which interviewers are recruited (students, teachers, etc.) - is influenced by whether these are or are not remunerated, the type of training they receive, etc. It is necessary also to investigate how the seasonality of certain agricultural tasks affects the measurement of female labor by censuses and surveys, as well as how the definition of head of household and the selection of the respondent influences the declaration of female economic activities. These and many other topics require further investigation before we are able to formulate concrete recommendations directed at improving the data on the status of women in the economic sphere.

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## ANNEX: SUGGESTIONS AND INITIATION OF THE NEW STAGE

For many of the Latin American and Caribbean countries the census is the only source of information of national coverage. Because of this and of its high cost, it cannot be allowed to offer, even if in one or a few items, results that are of little validity, reliability, and comparability. It is therefore imperative to improve the statistics of the next round of population censuses. The suggestions summarized in this annex and the ideas outlined for future research are precisely guided by this aim.

### a) Recommendations

The first stage of the research project -- completed between April 1979 and October 1980, -- consisting of the assessment of the quality of the censal measurement of female labor force, allowed one to identify a number of actual and potential sources of invalidity. In fact, the conceptual analysis of all items and instructions to enumerators on "activity status" contained either in the censal schedule or in the handbook for enumerators, lead to formulate a set of recommendations and a set of suggestions. The latter -- suggestions -- differ from the former -- recommendations -- in that they require to be tested empirically; the adequacy of the former requires no proof.

The recommendations apply to the items, their response categories, the time required from a person to be considered economically active, and to the training of the census takers. They point out the need to: i) eliminate sex biases from instructions to enumerators; ii) sensitize enumerators to the case of double "work", so widespread among women (as well as youths and elders of either sex); iii) formulate the item on "activity status" as a question rather

than as a title looking for the constancy of the stimulus; iv) present the response alternatives starting with those of activity and following with those of inactivity; v) instruct the census takers to stop reading the response alternatives when the first answer chosen by the interviewee is obtained; vi) see that the minimum amount of time required from a person to be considered economically active is not inconsistent with that required from a person to be classified within any specific category of economically active.

The suggestions, i.e., those related to the potential sources of invalidity of the measurement of female labor force stemming from different sources include: i) using different wording of item(s) on activity status; ii) employing interviewers with different levels of training; iii) varying the respondent's and the interviewer's sex; iv) collecting data at times which do and do not take into account the seasonality of certain agricultural and agricultural activities.

b) Report on the trip<sup>1</sup>

Between September 1981 and January 1982 contacts were made and official invitations were received by Catalina H. Wainerman from the Statistical Offices of various Latin American and Caribbean countries. Barbados, Ecuador, Panama, Paraguay, and Peru were chosen on the basis of the reliability of their human resources and of their manifest interest in the project. The visits (between early March and mid April 1982) had a two-fold aim: 1) to acquaint the people in charge of producing the official statistics with the limitations of the

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<sup>1</sup> This trip, which was supported by USAID, was made possible by the initiative and enthusiasm of Judith Bruce from the Population Council.

censal measurement of female labor force revealed by the analysis completed during the first stage of the research project, and whose outcome is contained in the book El trabajo femenino en el banquillo de los acusados. La medicion censal en America Latina; and 2) to assess the interest of the producers of statistics to participate in the design and testing of alternative items addressed to improve the quality of current census measurement.

The presentation of the results of the first stage of the research was done through seminars involving up to 25 persons involved in the production of data on the economic characteristics of the population through censuses, continuous household surveys, and labor statistics. Demographers, statisticians, sociologists, and economists from the Statistical Offices and, in some cases, from the Ministry of Labor and the Ministry of Planning, composed the audience. The seminars had a didactic aim. They were started with a presentation of the results of the research on the censuses collected in the region around 1970, and followed by a practical exercise which consisted on working together in the search for local examples of problems involved in different measurements of the female labor force. The interest demonstrated by the people and the frequency with which personal experiences on this topic appeared are a proof of the positive effect the seminars had as a tool for sensitizing people with respect to this subject matter.

It may be asserted that the visits achieved a great success in terms of both its aims. In most cases the people responsible for the collection of statistics were much in favor of participating in a project of this kind. In all cases there was clear awareness of the difficulties inherent in the measurement of this phenomenon. In all cases, especially in Barbados, people were equally clear as regards the impossibility of their institutions to contribute

with funds to such a project. Most were willing, however, to contribute with work, mainly through labor force within one of the annual data collections of a household survey.

c) Some ideas for the next stage

The next stage will proceed along two lines involving: i) a conceptual or arm-chair type of research, and ii) and empirical or field type of research, in that order.

The former, i.e., the arm-chair activity, aims at enlarging and deepening the conceptual analysis conducted in the first stage. Its purpose is to identify additional sources of invalidity of the censal measurement of female labor force that the review of the Latin American and Caribbean censuses of the 1970's might have not revealed. Such conceptual analysis will imply: 1) to review the critical literature on measurement by censuses and by household surveys conducted beyond the limits of the Latin American and Caribbean region, not only in developed countries like the USA, Canada, and the like, but also in other developing countries which differ widely in cultural terms, like India; 2) to review attempts conducted in Latin American and the Caribbean countries to measure the female labor force through data collection operations and techniques other than those used by censuses and household surveys (e.g., those which have used the time-budget approach, the "realistic" list of response alternatives to activity, the investigation of activities which are perceived as being "work" or "non-work", etc.); 3) to identify additional pairs of measurement of female labor force obtained by censuses and by other kinds of data collection operations to be used as non-intentional test experiments of the effect of some of the variables identified as possible sources of invalidity of female

labor force measurement during the first stage of the project; 4) to design field experiments to test the suggestions mentioned in a) above.

The need to review the critical literature produced beyond the limits of the region obeys to the need to draw on the knowledge produced or that is being produced in other societies, which differ either in terms of their economic structure, level of development, or cultural orientations towards women's economic participation. For instance, in a recent seminar on "Women's Work and Employment" held at the beginning of 1982 in Delhi (India), a number of papers bearing directly on the issue of the censal measurement of the female labor force were discussed.<sup>2</sup> Two of the four substantive topics of the agenda were especially relevant: "Secondary analysis of Indian data on female work participation", and "Methodological issues in measuring women's work". Among the achievements of the seminar it is worth mentioning the recognition of the urgent need to improve the statistics on women's work; the need to bridge the gap between researchers and national level data collection agencies; and the need to provide input for the "methodological leap" between small-scale anthropological and time use studies of women's work and the requirement of large-scale national data collection activities.

Measurement of female labor force (especially in rural areas and among women working in highly "invisible" activities in the informal sector, as unpaid family workers or on own account basis) using the time budget approach or other kinds of approaches and techniques, though not applicable to censal operations, might be a source of insights. There already exist a number of such attempts in the region. For instance, the research conducted by Judith

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2 "Technical Seminar on Women's Work and Employment", organized by the Institute of Social Studies Trust, Delhi (India), 9-11 April 1982.

Fircher Laird on the rural women in Paraguay where lists of "reality-based" precoded activities (like washing, cleaning, knitting, plowing, harvesting, candle-making, etc.) were used to measure "work."<sup>3</sup> The study directed by Magdalena Leon de Leal on the rural women in Colombia using a long questionnaire to investigate the division of labor by gender within the household is another case in point. These techniques of self assessment of the frequency with which each activity is developed by each member of the unit were used.<sup>4</sup> Time-budget techniques were applied by E.A. Cebotarev in her study of Latin American rural women.<sup>5</sup> Elizabeth Jelin's research on female labor from urban sectors using life histories is another quite insightful source.<sup>6</sup>

Additional cases of measurement of female labor force by census and by other type of operations may help to identify new sources of invalidity and/or supply evidence in favor or against the sources already identified. Certain censuses might provide also non-intentional experiment. For instance, the 1980 Peruvian population census applied two questionnaires -- a long and a short one -- to different samples of the population. Both were applied by equally "badly

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- 3 The study mentioned is La mujer rural en el Paraguay. Dimensión socio-económica, Dirección General de Estadística y Censos, Ministerio de Hacienda de la República del Paraguay, 1979. It contains the computation of five activity rates (including or not unpaid family workers, work outside the domestic unit, etc.) obtaining a wide range which varies between 15.7 and 65.4 per cent.
  - 4 Magdalena León de Leal (comp.) Mujer y capitalismo agrario, Bogotá: ACEP, 1980.
  - 5 E.A. Cebotarev, "La organización del tiempo de actividades domésticas y no-domésticas de mujeres campesinas en Latioamérica", mimeo, 1978.
  - 6 Elizabeth Jelin and María del Carmen Feijóo, Trabajo y familia en el ciclo de vida femenino: el caso de los sectores populares de Buenos Aires, Buenos Aires: CEDES, Estudios CEDES Vol. 3, no 8/9, 1980.

trained" census takers. Both share one item addressed to measure the "activity status", but whereas this is the sole item in the short questionnaire, it is one of a set of items on the same variable in the long questionnaire. Once the tabulations are available, the effect of the activity rates obtained for females with one or the other questionnaire (and the same training of interviewers) will be assessed.

Field experiments will be designed in an attempt to empirically test the effect of the sources of invalidity identified. These experiments will be designed to be carried out in pairs, keeping constant certain features while varying others. For instance, two operations of data collection using the same conceptual and operational definitions of activity status and differing in the level and quality of training of the interviewers will be designed. Other pairs of data collection will be planned so that the wording of the item(s) and the order of presentation of the precoded alternatives of activity is varied keeping other features constant.

The empirical stage of this project will consist of the field experiments, which will be conducted in five countries within the region differing in their economic structure, degree of urbanization, cultural orientations towards women's participation in the labor market, etc. To keep costs relatively low it is suggested that the field experiments be conducted as part of a continuous household survey which are carried out by the Statistical Offices of the different countries. The positive reactions obtained from the majority of the Latin American and Caribbean countries visited as part of the second stage of this project assures the feasibility of this research enterprise.