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Household Surveys to Measuring Remittances  
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#### **Session IV**

### **USING HOUSEHOLD SURVEYS TO MEASURE INTERNATIONAL MIGRATION AND REMITTANCES IN DEVELOPING COUNTRIES: EXAMPLES AND METHODOLOGICAL ISSUES \***

Background paper

#### **I. Introduction**

1. International migration is attracting increased attention from governments, international agencies, non-government organizations, and scholars throughout the world (see, e.g., Castles and Miller, 1995; UN 2004, 2005; World Bank and Wodon, 2006). The United Nations estimated that 3% of the world population lives in a country different from that of their birth, up from 2.9% in 1960 (UN, 2006). Most of the increase has been in the past 15 years, with migrants coming mainly from a few dozen countries and arriving mainly in a smaller number of countries. At the same time, remittance flows have increased much more rapidly, reaching around \$300 billion globally, over half being transfers from migrants in developed countries back to their households of origin in developing countries. On a global scale the total annual value of the latter now greatly exceeds that of ODA (Overseas Development Assistance) from all multilateral and bilateral sources and rivals that of total private capital investment in developing countries. This has attracted the attention of governments and international agencies as it can be a major factor in lowering poverty, stimulating investment by households and economic growth, and, at the macro level, improving the balance of payments of recipient countries.

2. Recent assessments of the state of the existing data on both international migration and remittances have found major deficiencies. Major international organizations have identified these deficiencies in various recent meetings, including the World Bank, Organization for Economic Cooperation and Development (OECD), United Nations Statistical Office, the European Commission (EUROSTAT), the UN Economic Commission for Europe, Inter-

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American and Asian Development Banks, International Monetary Fund, and the International Labour Office. An International Working Group on Improving Remittance Data was formed in 2005 at the request of G8 Heads of State and G7 Finance Ministers, and continues to function through the Luxemburg Group. National balance of payments statistics of countries do not capture data on much of the private transfers of migrants back to their home country since they do not all pass through commercial banks. Transfers missed are probably largely those, in money and kind, from migrants. It is therefore important to collect data on remittances, which can in principle be done via household surveys--directed at the migrants themselves in destination countries and/or at households from which migrants left in sending countries.

3. The purpose of this paper is to review efforts of developing countries to collect data to identify households with migrants (focusing on emigrants but not exclusively), offer suggestions on how to improve those efforts, whether by adapting existing surveys or designing new special household surveys on international migration. Methodological recommendations are provided--regarding survey and sample design and questionnaire content-- for both the adaptation of existing surveys and the design of new surveys. However, serious limitations of the former are indicated. Specialized surveys of international migration have many significant advantages over adapting existing surveys since they can be designed to focus explicitly on international migration, and thereby take the time (multiple questions) to collect data (a) to identify migrants according to the three criteria of country of birth, citizenship, and previous residence; (b) on the situation of the migrant and his/her household before and after migration; and (c) in the detail desired to investigate the determinants and/or consequences of international migration, its mechanisms and processes (c.f. Bilsborrow *et al.* 1997, Chapter 6).

4. The organization of the paper is as follows. Section II considers what is required for an existing survey to be a useful source of data on international migration, followed by section III which reviews the main multi-country types of surveys, their potential and limitations. Section IV describes survey and sample design requirements and recommendations for the design of specialized household surveys of international migration. Section V presents mini-questionnaire modules that could be added to existing surveys (or be incorporated in specialized surveys) to identify households with emigrants and their characteristics, and the receipt of remittances and their use. Section VI reviews some recent examples of specialized surveys on international migration, and section VII attempts to provide a brief summary and conclusion.

## **II. The Use of Existing Household Surveys to Measure International Migration and Remittances**

5. This section considers types of surveys that may provide meaningful data on international migrants and remittances, and what is required for a household survey to be able to provide useful data. It begins with the latter, then briefly describes the types of common household surveys that exist in many developing countries. Examples of such surveys are provided, including how they could be modified to provide data more useful on international migration. Thus adding a few questions to an existing survey has major cost advantages as the *marginal cost* is minimal since the survey is already being administered anyway. The additional costs are just the few seconds or minutes added to the time of interviews to ask the additional information, plus the small increase in data processing and analysis time costs. Depending on the main topic of the survey, data may already be being collected that are useful and cost-free for the study of international migration—e.g, in a labour force survey or income/expenditure survey: In the former case, the survey is already collecting data on household composition, place of birth, and employment, which are important for studying international migration, while in the latter case, income/expenditure data are already being collected, so the role of remittances in household budgets and poverty can be readily determined.

### A. The Two Crucial Issues of Sample Size and Prevalence of Migrants

6. Key initial issues to address to determine whether it may be worthwhile to use data from an *existing survey* (or add questions to it) to study international migration are:

1. What is the size of the sample, and its geographic distribution?
2. What is the prevalence of international migration in the country?

If the responses to questions (1) and (2) indicate the survey is likely to cover sufficient international migrants to be useful, two additional, supplementary questions are:

3. Does the survey collect data on place of birth, place of previous residence, and/or country of citizenship—to permit clearly defining and identifying international migrants one way or another (and preferably by at least two of the three); and
4. Does the survey contain any other useful questions on international migrants, specifically, in the context of this meeting, on remittances?

7. Responses to (1) and (2) together define at the outset whether there is any point in pursuing the idea of *either* using data from an existing survey to measure and analyze international migration and remittances, or to modify for that purpose. It is assumed here for now that (a) the main purpose of the existing survey will not be changed, so that the sample design also cannot be changed, and (b) only a few questions on international migration can be added to the existing survey questionnaire (minimum questions are presented in section IV below). Given the increasing importance of international migration to governments and international agencies, it is clear that both are interested in exploring this as a low-cost way of obtaining more data on international migrants and remittances.

8. However, for a household survey to be useful for this purpose, (1) the survey should have a *large sample size*, or (2) the country should have a *high prevalence of international migrants* of interest—whether emigrants or immigrants, and ideally both (1) and (2). And here is the rub—in most countries, existing surveys have sample sizes that are too small to yield statistically meaningful data on international migrants. This can be illustrated if we take international migrants to be defined as persons born outside the country in which they live. As noted above, their share of the world population is 3 percent (UN, International Migration 2006 Data Sheet: [www.un.population](http://www.un.population))—9.5% in the more developed regions and 1.4% in the less developed regions. These data are for *immigrants*, which concentrate in certain countries. Data for emigrants are not readily available, but certainly there are some developing countries which may have 10 percent or more of the population born there living elsewhere, though in most cases this is due to long historical processes that are of little current policy interest, or due to border changes or short-run civil strife or natural disasters. However, there are striking exceptions as well, involving countries of Eastern Europe, Latin America and a few Asian countries, where the percentage of the population born in the country which has left to live abroad in the past decade is significant, and exceeding, say 10%. For example, there are unverified estimates that 2 million people have left Ecuador (mostly in the past decade) and not returned (nearly 80% to Spain and the USA, with most of the rest to Canada and Italy), compared to a base population remaining in Ecuador of 13 million: This which would mean that about 15% of the population has recently emigrated.

9. However, in most situations, the stock of emigrants from any given country has accumulated over many years, so the numbers of emigrants in a short time period, such as within the past five or 10 years, is small. Very few countries have or ever will have more than a few

percent of their population departing in a recent time interval to live abroad (short of fleeing major civil strife or natural disasters, which are not relevant to the present paper). On a global scale, the mean annual net migration rate for developed countries in 2000-2005 was about 2 per 1000, or less than one half of one percent per year (UN, 2006b). Since the population of the developing countries is roughly 5 times that of the developed countries combined, if all the net migration were from the former to the latter (it is not), this would mean an annual net outflow of less than one tenth of one percent per year and less than one half of one percent over a five year period and about 1 percent over a decade. Very few countries thus have even 2 percent of their population leaving in a five year period, though the percentage will reach up to 5 % in some developing countries over a decade. This means that in a typical household survey in a developing country based on 5,000-10,000 households, the number of households migrating internationally would be only 100-200 if a five year definition of emigrants of interest is used, and 250-500 if a 10-year definition is used—both insufficient for meaningful analysis. It should be noted that these numbers assume that all migrants move as entire households, which is patently not true. If all migrated as single migrants, leaving the rest of their households behind, and mean household size in the developing countries of origin were 5 (meaning one of five left), then the numbers of households experiencing international migration (emigration) in a five year period would be five times the figures above. Thus the numbers impacted directly by emigration would be 500-1000 in a five year period, or 1250 to 2500 if a 10 year definition period is used to demark international migrants of interest.

10. These seem like good numbers, but are upper extremes, since (a) emigration is usually a mixture of both individuals and entire families or households (and over time, usually only a few years, what begins as individual migration becomes entire household migration, through family reunification, legally or illegally); (b) they assume a sample size of 10,000 households, and (c) a generous 10-year cut-off in the specification of migrants of interest; and (d) a country that has a very high rate of recent emigration. Thus, in the vast majority of developing countries, where (d) is not the case, very large sample sizes, say of 100,000 households or more, will be needed to yield numbers sufficient for analysis, though the required sample size would be lower if most migrants were individuals who were not being joined by family members (such as the migrant workers from South and Southeast Asia to the Gulf States). But most of the migration from the South to the North, of interest to this meeting, is to Europe and the USA and the other so-called traditional countries of immigration, where most migrants end up as families, staying for the long haul.

### **B. Existing Types of Household Surveys That May Provide Data on International Migrants or Which May be Modified to Provide Such Data**

11. A variety of *types* of surveys may be considered in principle as possible sources of data on international migration. Some may have sample sizes sufficiently large to yield numbers of international migrants adequate for meaningful analysis and/or are carried out in countries with a high prevalence of international migrants of interest. This section considers the potential value of common existing types of surveys, notably labour force surveys, Demographic and Health Surveys, LSMS surveys, and multi-purpose surveys, focusing on developing countries.

12. The International Labour Office sends out annual questionnaires to virtually all the countries of the world seeking data on employment and unemployment. About 120 of 191 countries provide data that is based on labour force surveys, though these surveys are not always recent or even carried out annually.<sup>1</sup> Nevertheless, it can be said that virtually all the developed countries and many developing countries, including most of the large ones, carry out *labour*

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<sup>1</sup> Based on conversations with ILO-STAT officials in Geneva in May, 2007.

*force surveys* nowadays, many doing so regularly such as every year if not quarterly or monthly. These surveys are almost always carried out by the national statistics office, have a *large sample size* and national coverage, and focus on obtaining data on employment and unemployment. Their large sample sizes and focus on employment--usually central to international migration--together make them top candidates for adding questions on international migration to existing surveys. A third advantage is that the questionnaires used are usually not very long, so it is not unreasonable to add additional questions (they can be added without much risk of respondent fatigue). *These are three crucial advantages of labour force surveys which generally make them the best candidates for adding questions on international migration among existing surveys,* without altering or augmenting the main purpose of the survey and its sample design.

13. *Demographic and Health Surveys* (and their similar antecedents, World Fertility Surveys, Contraceptive Prevalence Surveys, and surveys of the International Program of Laboratories for Population Statistics at the University of North Carolina) have been carried out in over 75 developing countries over the past 3.5 decades, with over 200 DHS surveys conducted since 1984 in over 75 developing countries, generally based on nationally representative samples of women of child-bearing age. Sample sizes are small to medium size--5,000 to 30,000 households. Besides fertility and use of fertility regulation methods, DHS questionnaires now include questions on household composition, dwelling conditions, household assets and ownership, violence against women, HIV/AIDS, health problems including infectious diseases, and use of health services. They include questions on the place of birth of household members, but this is mainly to study internal migration, as country is often not processed. They have almost never included any questions on international migration (but see below), nor on remittances. In addition, few have collected data on incomes or expenditures, or even work activity of any household members except the woman interviewed. Evidently, if questions on international migrants could be added, migrants and non-migrants could be compared and contrasted on a wide range of dimensions based on these rich data. For example, international migrants and non-migrants (and their households) could be compared regarding their fertility, nutrition and health conditions, use of health services, children's school attendance and attainment, housing quality, ownership of assets, violence against women, and disease patterns. In that sense, the length and coverage of many topics makes it advantageous to add questions. But the other side of the coin is that the interviews are already quite long, so adding any further questions adds to the risk of respondent fatigue. The issues of sample size and prevalence of international migrants should also both be analyzed carefully *before considering adding questions* to a DHS survey, to determine the likely number of international migrants, and hence the value of adding a module of additional questions.

14. *Living Standard Measurement Surveys* have been implemented in over 40 developing countries (60 or so surveys) over the past two decades, usually but not always based on national samples and modest sample sizes (around 5,000 households, occasionally up to 10,000). LSMS surveys involve collecting data from households in several rounds, greatly increasing the cost per household but facilitating an even broader topic coverage than DHS surveys, ranging from household demographics to dwelling conditions and household assets, income from all sources including employment and farm/business income, household expenditures in detail, internal migration, education and school attendance, time use, land ownership and agricultural activities, etc. They are usually implemented over four rounds of data collection in a year, to deal with seasonality issues especially in agriculture. If questions were added on international migration, the rich topic coverage would make them excellent sources of data to compare international migrants and non-migrants, but it also makes adding even more questions risky in terms of increasing respondent fatigue and reducing the quality of data. But by far the most important limitation is that the sample size is *usually* too small to warrant adding a module on international

migration to collect data on international migrants to learn more about them and compare them with non-migrants. On the other hand, it must be noted, LSMS surveys already collect detailed data on household incomes and expenditures, so that the collection of remittance data would immediately make possible measuring the quantitative importance of remittances relative to other sources of household income, and hence the impact on household poverty, as well as the impact on household expenditures. Of course, in the absence of panel data on households that go back to their time prior to experiencing emigration, this requires comparing household income and expenditure levels and patterns of households with and without receipt of remittances from migrants, where the trick is to statistically control for other factors to make them “equivalent” to isolate the remittances impact.

15. Some countries carry out other types of household surveys which could be good candidates for adding a module of questions on international migration. The key is again the sample size, and hence the number of households with international migrants that can be expected. This should always be examined carefully *a priori*. *Multi-purpose surveys*, for example, are carried out on an occasional or even regular basis by some developing countries on large, nationally representative samples of households, and collect data on multiple topics. Some of these topics may well be pertinent for comparing international migrants and non-migrants and otherwise studying international migration and the impact of remittances, if international migrants could be identified by adding additional questions (see below).

### **III. Adapting Existing Household Surveys to Collect Data on International Migration**

#### **A. Questions to Identify International Migrants in Labour Force (and Other) Surveys**

16. There are three types or levels of questions countries may use to identify international migrants, of increasing detail and better data, as follows, from (i) to (ii) or (iii). Thus it is recommended that a module of type (iii) be included whenever possible to generate sufficient data to clearly identify international migrants (immigrants and/or emigrants) as well as provide some data on their basic characteristics.

(i) Including only a question on place (country) of birth

Many countries include in their labour force, DHS, LSMS and other surveys a question on *place of birth* of all household members, which, provided the data are actually processed and made available by country of birth<sup>2</sup>, identifies a *lifetime migrant*:

*Where were you born? (If proxy respondent: Where was X born?)*

A number of labour force surveys in many developed and developing countries routinely include a question (column) in the household roster on where each person in the household was born. Among the many examples in developing countries are the annual National Population Survey (PMAU) of Brazil (65,000 households, carried out monthly but only in the six largest metropolitan areas), and Vietnam (about 100,000 households).<sup>3</sup> The question on place of birth is also found in many population censuses around the world but does not fix the time of arrival of the person. Someone who is age 50 may have come at any time in the past 50 years, including as a child. The question and resulting data are thus of very limited value in studying international migration.

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<sup>2</sup> It is noted in Bilsborrow *et al* (1997) that just because a question is used in a census does not ensure that the data are processed, or that when processed, they are made publicly available or published.

<sup>3</sup> Based on a discussion with Elizabeth Morris of the Subregional Office for East Asia of the International Labour Office in Bangkok, July 2007.

(ii) Including a question on place (country) of birth and place (country) of residence at a specified time in the past

The addition of a single additional question for those not born in the current country achieves a major improvement compared to i above:

*When did you (last) arrive to live in this country? (If proxy: When did X arrive?  
(If developing country of emigration) When did X leave to live abroad?*

This fixes the time of arrival, and makes possible estimating some international in-migration flows and rates, and determining some basic characteristics of migrants. It makes possible identifying also recent international immigrants, which are of far more importance to policy makers (if not also to most researchers) than migrants who came many years ago. Characteristics of emigrants and households with emigrants can be compared with those of non-emigrants and non-emigrant households on various dimensions, depending on the other data collected in the survey. The simple addition of a question on time of departure greatly enhances the value of the survey as a source of data on recent migrants, and comparing migrants and non-migrants.

(iii) Including a module of questions on international migration

## B. Labour Force Surveys

17. Two examples of country experience in adding a module of questions to a labour force survey to study international migration are summarized below to illustrate good practices, along with ways to improve existing practice.

18. Pakistan. The 1979 Population, Labour Force and Migration Survey of Pakistan (Irfan, 1981) illustrates how the addition of questions to an on-going survey can allow a better characterization of *emigration* (Irfan et al, 1984), but also the limitations of sample size. Questions were added to two rounds of the national Labour Force, Income and Expenditures Survey. The head of household was asked to indicate whether any member of the household had ever *migrated to live elsewhere* since December 1971, when war with India erupted (a date everyone knew). Anyone moving abroad (and not returning), or coming from abroad within the 8 years preceding the interview, was thus identified as an international migrant (including return migrants). The survey covered 10,242 household members, but found only 0.15 per cent return migrants (15 persons) and 0.48 per cent (49 persons) out-migrants. The information recorded on emigrants was limited to age, sex, dependency status, year of departure and return, and labour force participation while abroad. It thus includes both dates of departure/return and work activity while abroad, which are not covered in most labour force surveys, so this was a plus. Thus this example illustrates that, even with a generous 8-year time window for defining migrants of interests, not enough were found to make the effort worthwhile since they were *rare elements* in the large population of Pakistan.

19. Thailand. Another recent example of adding questions to a large national labour force survey (covering 79,600 households) in a developing country is illustrated by Thailand (2007a). In the last quarter of 2006, an experimental module developed by the International Labour Office with World Bank funding was added to seek information on international migration: 22 questions were added, for each person in the household, referring to the 12-month reference period before the survey date. However, despite the large sample size and useful questions, the results (Thailand, 2007b) are disappointing, because the prevalence of migrants (those born abroad) is so low (0.6%)--fewer than 200 households.

Other countries which have added useful modules to their labour force surveys include the Philippines, Costa Rica, Ecuador and Mexico (see Annex A, which also has further details on Thailand).

### C. Demographic and Health Surveys

20. While the Demographic and Health Surveys (DHS) have been expanded greatly to include more questions on health and HIV/AIDS), migration, internal or international, has never been a significant part of the surveys, despite many requests. Nevertheless, most recent DHS surveys now do ask at least place of birth, and also process the data by foreign country as well as internal administrative jurisdiction. Thus most recent DHS surveys identify the foreign born population (type (i) above). However, this only provides data on immigrants.

21. Ecuador. A recent exception to this is the 2004 DHS survey in Ecuador, a country which since 1995 has witnessed an explosion of emigration, to the new destinations of Spain and Italy as well as the United States. The survey (ENDEMAIN IV) had a completed national sample of 28,908 households (CEPAR, 2005), and a short module of questions on international migration (emigration). It showed that as many as 9.3% of all households had a household member living abroad, 81% having left to work, and 75% since 1999. Note that this would mean that about 7% of the households in the country had an emigrant in the previous 5 years. The survey should therefore produce over two thousand households with an emigrant (if there were one per household, somewhat fewer if the mean were more than one). The survey also included two questions on remittances received by households remaining behind: 62% said they had received money back in the past 12 months. Since the survey, as all household surveys,<sup>4</sup> could not collect data on international migrants leaving as *entire households* (since there is no one remaining to report on them), the figure of 9.3% is an underestimate of the total gross (not net) outflow of emigrants from Ecuador in the time period 1999-2004, which documents the extraordinary level of recent emigration. But the data provide a fairly good indication of the number of households receiving remittances to the extent that when whole (at least nuclear) families emigrate, they are unlikely to send money back, or not much since the parents and children are together.

22. The questionnaire module in Ecuador contained the following questions:

Has any member left this household to live in another country?

(Name of X, relationship, sex, current age, year when left)

What was the marital status of X at the time of leaving?

What was the education level completed of X at the time of leaving?

Did X work at any time during the year before leaving?

What was the main motive for leaving? In what country does X live currently?

In the past 12 months, did X send any money, with what frequency, and how much in total?

What was this money used for, principally?

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<sup>4</sup> An alternative methodology is to ask respondents about any close relatives (not necessarily former household members) who live abroad, or who have left to live abroad within the past X years. This methodology was proposed by Jorge Somoza several decades ago (1977, 1981a, b), and examined by Zaba (1986, 1987). It draws on the success of the maternal and paternal orphanhood questions used in surveys which have made possible reliable estimates of adult mortality in developing countries lacking reliable vital registration systems. This method can produce reasonable estimates if the relationship is very close and well defined and if the time period is recent. Thus respondents could be asked about their siblings, biological parents, or own children who live abroad. The number of people responding for a particular person must be determined to avoid double counting: thus if there are 4 siblings, and one is abroad, that international migrant may be reported by three different persons. The time frame must also be recent, to increase the likelihood that the respondent will reliably know whether someone is living abroad and their main characteristics.



23. This module is concise and has the virtue of getting information on marital status and education *at the time of migration*, which may affect migration, rather than at the current time, which could have been affected by events subsequent to migration and hence be a *consequence* of migration rather than a potential cause. It also asks about remittances and the *current* country of residence rather than the original country of destination, which might have been only a transit point. However, the module would have been better if the proxy respondent had been asked about work *during the month before* rather than during the whole year prior to emigration, which is too imprecise. It could also have been useful to add to the household roster or fertility section a simple question, for children *not* living at home, where they were currently living. Finally, in a country where there is such a drive to emigrate, asking *migration intentions*, viz., whether the person intends to migrate abroad, would have been desirable.

24. Colombia. Another example is the most recent DHS survey in Colombia in 2005, which also included questions for the first time on emigration (Ojeda et al, 2006). In the national sample of 37,211 households, the household head or proxy was asked if any person who used to be a member of the household was living in another country at the time of the survey. Questions asked about that person included whether he/she left alone or with spouse/children.<sup>5</sup> Four percent of Colombian households reported having a household member living abroad, though there was no time specification as in Ecuador.

25. A project reviewing what is known about international migration from DHS surveys (Migration, Globalization and Poverty Project, of the University of Sussex, UK), has compiled a list of 59 countries carrying out recent DHS surveys, indicating the modules used, with only Colombia shown as having a module on international migration. However, the web list did not include Ecuador.

#### **D. Living Standards Measurement Surveys**

26. The Living Standards Measurement Surveys (LSMS) began as a project of the World Bank in 1980 to stimulate countries to collect micro-level data to help policy-makers improve policies related to health, education, and poverty alleviation. LSMS surveys have been carried out since 1985 (Peru and Cote d'Ivoire) in about 40 countries, mostly based on nationally representative samples of households of modest sample size (3,000-6,000). The Migration, Globalisation and Poverty project of Sussex (see above) has also compiled a list of LSMS surveys, noting whenever the country had a module on migration, which was found to be the case in about half (31) of the surveys ([http://www.migrationdrc.org/publications/resourceguides/Migration\\_Nationalsurveys/index](http://www.migrationdrc.org/publications/resourceguides/Migration_Nationalsurveys/index))

27. However, in only two cases does there appear an interest in international migration, with a module "emigration" included in Armenia and one called "international migration" in Peru. But the list does not appear complete, as the LSMS survey of Ecuador in 2005-2006 on 13,536 households includes a module on emigrants from the household, recording their *current* age, sex, relationship, education, and whether the emigrant left minor children under age 18 behind (there being concern, as in Peru, about who is taking care of them).

28. The LSMS module on migration thus have focused on *internal migration*, although many have included questions to identify both lifetime and fixed term international migrants. Thus the 1988 Ghana LSMS and the 1994 Peru LSMS ask (for members of the household above age 15),

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<sup>5</sup> The Colombia DHS also asks in the household questionnaire whether the mother of each person, if alive, lives in Colombia or in another country. It also inquires for all women aged 50 to 69, whether her sons and daughters live in Colombia or elsewhere, and how many in which country.

place of birth (noting country if abroad), emigration (at what age left, and why), where lived between birth and current place of residence, year when came to current residence, and why came. This is the prototype migration module in LSMS surveys (see [www.worldbank.org/LSMS/guide](http://www.worldbank.org/LSMS/guide)), and may be considered of type (ii) above (see A. on labour force surveys) as its key questions are limited to place of birth and when came to current residence. Beyond that, it only asks the main reason for coming, with nothing substantive related to the migration move, and *nothing on emigration*. Nevertheless, LSMS surveys have considerable flexibility, according to country interests, with one having a module on emigration (Armenia), others on labour migration (Ecuador, India), and several asking about emigration since a time of dissolution (of the Soviet Union) or the end of a conflict (East-Timor).

29. Given the recent considerable and growing interest of the World Bank in international migration, remittances, and their role in development, incentives to add modules on international migration to LSMS surveys are growing.<sup>6</sup> Nevertheless, their very small sample sizes make them not very useful for studying international migration in their current form, neither for counting migrants, characterizing them, or measuring remittances, in most developing countries. To make them potentially useful, the sample size would need to be much larger *or* the sampling approach would have to be altered to oversample households with international migrants (see below). And that would require a change in the purpose of LSMS surveys, to include international migration as well as poverty as a central theme.

#### **E. Other General or Multi-purpose Household Surveys**

30. Some developing countries have occasional or sometimes regular large-scale sample household surveys which are not primarily labour force, DHS or LSMS surveys, which may have information on international migration. For example, they may include a question on place of birth of household members (type i above). One example is the *Pesquisa Nacional por la Mostra de Domicilios* in Brazil, which began in 1967 and has grown to a sample size of 110,000 households. Another is the National Sample Survey of India, since the 1950's. And Vietnam began implementing a Survey on Population Change and Family Planning in 2007, with the sample said to cover 15% of the population. The household head or proxy respondent is asked to identify any household member who had come to Vietnam to live in the prior 12 months, so only data on immigration are obtained, as in Brazil and India. Mexico carried out a National Survey of Household Income and Expenditures in 2005, based on a national sample of 25,443 dwellings, asking for each person where he/she lived five years before the survey, and whether received remittances. It estimated about one-half of one percent of the population to be immigrants arriving during the five-year time window.

31. The World Bank has launched a new programme to obtain data on remittances, involving specialized surveys in countries from which remittances are being sent, but no publications are available yet. A new series of household surveys on poverty which includes international migration is also starting up, with the first survey carried out in Congo in 2005, with a sample size of 5,000 households (Congo, 2005). In Section 06 entitled Migration..., it has a few questions on migration: "Did anyone in the household leave to live in some other place for at least 6 months (outside the current district of residence, but inside the country or abroad); why did this person leave, and does this person intend to return?" Additional questions inquire about economic and other problems which may be linked to migration: "Has your family suffered from the social-political troubles since 1993, and how? In case of emergency, could you get 10,000

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<sup>6</sup> LSMS data were also used in combination with other census data to study migration in Albania, by Carletto et al. (2004), revealing an extraordinary change in recent years from an orientation to internal migration to international migration, mainly to neighbouring EU countries.

francs, and how? If not, who would you go to first for help?" The information on migration is quite limited, as there is no attempt to identify who the out-migrant is, his/her characteristics, when left, situation of the migrant or household before or since migration, or even the country of destination. It is thus not a meaningful effort at getting data on international migration, but rather a survey on poverty and disruption due to civil strife.

#### **IV. Key Issues in the Design of Specialized Surveys on International Migration**

##### **A. Defining the Target Population in a Specialized Survey of International Migrants**

32. Surveys offer great flexibility in terms of the type and depth of information they can gather, including offering the broadest options for defining international migrants and collecting data on remittances and even their impacts. There are three ways to classify people *in situ* as international migrants or not: on the basis of place of birth, citizenship, or place of previous residence being different from that of the country in question. In general, surveys use the place of residence as the definition since they are usually interested in examining some aspect of the determinants or consequences of the migration movements for the migrants themselves, the household members that accompany them, the household members that do not accompany them (remain in the origin), and/or the communities of origin or destination. Thus to analyse either the causes or consequences of international migration, a change of residence from one country to another is usually the critical event of interest. This is true in both receiving countries, where they are considered immigrants, and sending countries, where they are emigrants. Return migrants are an especially important group from the perspective of developing countries as they may return with capital, education and skills acquired abroad that contribute to development in the origin country.

33. Surveys gather information either directly from the migrants themselves or indirectly from (proxy) respondents who provide information about persons who have moved from their household, to whom they are usually related. However, data from proxy respondents are usually less reliable than data obtained directly from the migrant himself/herself. This is particularly true of attitudinal data, such as concerning motives for migrating, psychological state of happiness or not before migrating or subsequently, but is also true of sensitive economic data, such as income being earned abroad. This is particularly likely regarding persons who left the household several years or longer ago. Thus there are limitations in the information that can be realistically sought about absent persons from a proxy respondent. This is important for surveys in developing countries since in most cases, it is emigrants and their remittances that are of principal interest.

34. A survey also, in general, should focus on *recent* events, since it is the analysis of the factors that shape *recent* migration or its consequences which is usually the main policy concern. However, the choice of a cut-off point is not obvious: The further back the cut-off point from the date of the survey, the less relevant the events are for understanding the current situation. In addition, data quality considerations argue against adopting a cut-off point set more than a few years in the past, as the farther back the event is, the more likely data will suffer from memory errors (Som, 1973). On the other hand, the closer the cut-off point to the survey, the smaller the number of migrants of interest that will be identified (smaller proportion of persons in the study population), and hence the greater the difficulty of *finding* the migrants to interview. Consequently, it is recommended that attention be focussed on persons who have changed their country of residence within a recent time period, such as the last 5 years preceding the survey (at most 10 years, as in the NIDI surveys, discussed below). When the survey focuses on

emigration, it should thus also focus on those who left within a recent time period, such as the past five years.

### **B. A Key Issue: Identifying and Collecting Data on Appropriate Comparison Groups for the Study of Either the Determinants or Consequences of International Migration<sup>7</sup>**

35. The purpose of the survey affects the sample size and its geographic distribution, *including in what country or countries it should be carried out* and the population group for which data should be collected to serve as the appropriate comparison or "control group". Despite previous efforts to explain this (Bilsborrow *et al.*, 1984; Bilsborrow *et al.*, 1997), there continues to be confusion in the policy and research communities regarding for what population groups data are needed to properly investigate the determinants or consequences of international migration. The ideal way to assess either the determinants or consequences of migration for the migrants would be to interview a sample of migrants *and non-migrants* before the migration, and then *trace* or follow them over time, including following those that migrate to another country. There would then be no memory or recall error, nor distortion of the data on the situation prior to migration, nor errors due to the imperfect knowledge of proxy respondents (in the case of emigrants from households). However, a longitudinal or panel survey is costly and *takes considerable time*. It also requires obtaining funds, recruiting and training survey teams, getting government approvals, etc., in two or more countries.

36. Acquiring data about the situation of migrants and non-migrants *prior to migration* is necessary to pool to formulate migration functions to study the determinants of migration. That is, the *population at risk of migrating* comprises migrants and non-migrants in the country of origin. But to study the consequences, data are similarly needed for the same two population groups, viewed from the country of origin: the emigrants, and the non-emigrants (and their households). The reason is that the consequences for the migrant and his/her household should be compared with those of non-migrants *remaining in the country of origin*. Thus data on non-migrants in the destination country are not useful for investigating the consequences of migration for the migrants. Instead they are of use only for gauging the extent of *adaptation* of migrants—by comparing their situations with those of natives in the destination country, on, e.g., employment and unemployment, wages and incomes, housing ownership and quality, land ownership, household assets, health, etc.

37. Whenever possible, the ideal approach for studying the *determinants of emigration* requires a coordinated, multi-country data collection effort. Thus to study the emigration of both individuals and entire households from an origin country O is to collect data from (a) samples of migrants in the country of destination, and preferably in each of the major countries of destination of emigrants from O, say, D<sub>1</sub>, D<sub>2</sub>, D<sub>3</sub>, ..., on persons who arrived there from O in the previous x (e.g., five) years, *plus* (b) non-migrants in O. The latter serves as the appropriate comparison group or "control" population. The data are pooled from all the surveys in the different countries to create a data file that can be used to estimate *migration functions*, that is, multivariate statistical models of the determinants of why some persons emigrated and others did not from O, based on data collected in all cases directly from the persons involved. Data would need to be collected in surveys in each of the D countries from the migrants (only those coming from O) using methods for rare populations, outlined below). In each D country survey, the migrants (in-migrants there) are asked when they (last) arrived and their situation (and that of their household, if individual migrants) just *before* their departure, since it is those circumstances that led to their emigration.

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<sup>7</sup> This discussion draws on Bilsborrow *et al.* (1997, Chapter 6B), but is much shortened.

38. At the same time, a survey is carried out of households in O on non-migrants—individuals and households--the appropriate comparison populations. While the sample design is straight-forward and there are no problems in finding households, the data collection is not as easy as usually assumed, since the data from non-migrants should pertain to their situation, not at the time of the survey, but rather at the *mean time of migration* of the migrants interviewed in the D countries! If a five year definition (cut-off) is used to define migrants of interest, this means data should be collected for non-migrants on their situation 2.5 years prior to the time of interview. The key is that the data refer to the situations of both those who decided to migrate from O and those who did not at approximately the same time. Existing studies almost invariably collect data on the control group of non-migrants *only at the time of interview*, viz., several years *after* the migration (and non-migration) decisions were made. To the extent the situation of non-migrants in O changed in the 2.5 year interval, this introduces error in the data to be used for non-migrants in estimating migration functions.

39. However, the usual approach in micro-level studies for analyzing the determinants of international out-migration is based on data from a *single survey carried out only in the country of origin* of the emigrants whose migration decisions are being analyzed. This approach is the most common since it is the least expensive and least complex to set up logistically: A single survey of *households* is carried out in O, in households with and without international out-migrants. Data are then pooled, as above, on individuals who have emigrated and those who have not, along with information on characteristics of their households, to estimate migration functions. But there are three important limitations of such a study. First, and often recognized, is that the information on emigrants must usually be obtained from proxy respondents (usually close relatives of the migrant, who remain in the origin household), which cannot be as detailed or reliable as that obtained directly from the person himself/herself.<sup>8</sup> Second, and not recognized, the data collected for non-migrants should pertain *not* to the time of interview but to the *mid-point* of the period during which emigrants made their decision to leave, as explained above. And third and most important, a survey conducted only in a country of origin misses some emigrants, perhaps most, since it cannot normally collect data on *whole households that moved* as there is no one left behind to report on them, viz., on their situation prior to their departure. This is an inherent limitation of *all migration surveys carried out only in areas or countries of origin* (Bilsborrow et al., 1984, Chap. IV; Bilsborrow et al., 1997, Chap. 6). Data on those migrating as households can usually be collected only via surveys in countries of destination.

40. With sufficient budgetary resources and international cooperation across countries, the ideal approach would be to conduct household surveys in both the country(ies) of origin and the major country(ies) of destination. Given the great effort (large screening surveys—see below) required to locate/identify migrants from a single country of origin in a destination country, it is not much more expensive to also list and sample migrants from *other* countries of origin as well in the destination survey. This might stimulate surveys in additional origin countries to provide a matching population, resulting ultimately in surveys linked in multiple origin and destination countries, constituting a migration system, which was the original goal of the NIDI project (section VI below).

41. A type of study of particular interest to developing countries is the assessment of the determinants of migration of *return migrants*, since most countries of origin are keenly interested

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<sup>8</sup> Occasionally it is possible to undertake the survey in the country of origin at a time such as a holiday season when emigrants return to their origin household to visit. But this is still likely to miss many emigrants, and to capture a biased sample of those who emigrated, perhaps the more successful ones who can afford to make the international return trip.

in attracting them with their new skills and assets. The ideal approach for studying the determinants of return migration is to interview (a) in O, migrants who left O for D but returned to O, along with (b) in D, emigrants from O to D who remained in D, since the latter constitute the "at risk" population of return migrants to O, viz., those who emigrated but did not return. If it is not feasible to conduct the survey in D as well as O, data on the at risk group remaining in D could be obtained from proxy respondents remaining in the original households of those emigrants remaining in O, though the data collected could not be as detailed. In either case, observations from the two groups of individuals (or households) would be pooled to estimate migration functions for the *determinants of return migration*. Similarly, the consequences of return migration would be assessed comparing those for households containing return migrants in O and those households remaining in D who migrated from O. The comparison of the former with other origin households which had no emigrants in the first place would amount to a comparison of the consequences of *both* emigration and return migration combined compared to non-migration.

### **C. Dealing with the Problem of Rare Elements: Stratification, Disproportionate Sampling, and Two-phase Sampling**

#### *1. Stratification and disproportionate sampling*

42. Stratification is the division of the population into sub-groups or strata according to objective criteria or variables available for the population of interest. Stratification eliminates the variation between strata from the computation of total variation in the sample, thus reducing total variance. The gain in reducing total variance by stratifying the population can be substantial, to the degree the strata are formed such that the elements within each stratum are similar to each other (reducing intra-stratum variance) while the strata differ as much as possible from each other (that is, have means for the stratification variables that differ widely). To be effective, stratification should be carried out on the basis of variables that are the focus of the study or that are closely associated with the key variables being studied. For a survey on international migration, the logical basis for stratification is the proportion of the population in the area that is international migrants, or the proportion of households containing one or more qualified international migrants. Stratification also allows the use of different sampling frames and even different sampling procedures in the different strata. Thus, if adequate maps and sampling frames are available for urban but not rural areas, different sampling procedures could be used.

43. As noted above and in previous documents of the World Bank, the Luxemburg Group, and the United Nations Statistical Office, international migrants, or households containing migrants, especially *recent* migrants, are relatively rare in both countries of origin and destination. Thus recent international migrants constitute *rare elements* in the sampling literature (Kish, 1965). Although Kish lists eight procedures that can be used to address the problem, the two relevant one are (a) use of *stratified sampling* with disproportionate probabilities of selection (sampling fractions), and (b) use of *two-phase* sampling in the last stage sampling units (Ultimate Area Units, or UAUs). These are discussed briefly below (see also Bilsborrow *et al.*, 1997). The discussion below assumes that a population frame exists which can be used to create a sampling frame to select a sample of international migrants (and non-migrants, depending on the survey purpose: see above). The discussion also assumes that the survey is being undertaken in a developing country interested in investigating the prevalence of emigration, the characteristics of emigrants and their households and differences from non-emigrant individuals and households, and remittances. The goal of the survey includes collecting data to investigate the impacts of remittances on receiving households' income and consumption levels and

patterns, investment, human capital formation, along with effects on non-migrant households in the community and poverty levels of both remittance-receiving and non-receiving households.

44. In constructing a sampling frame in the sending country, it is necessary to determine if data are available to identify households containing emigrants. If not, the only kind of sampling of first-stage area sampling units or primary sampling units (PSUs) possible is based on the (estimated) population sizes of places (say, from the most recent population census), then sample areas with probabilities of selection proportional to estimated population size (PPES). This would also be the likely procedure in selecting second stage area units, and so on, down to the UAUs.<sup>9</sup> At that last stage of the UAUs, two-phase sampling should be performed, as described below.

45. However, the assumption in what follows is that some data are available to identify international migrants, so that it is possible to do better than select areas based only on PPES or judgment. Thus data are assumed to be available from a census to identify households according to whether they contain a recent emigrant or not. Developing countries with large flows of emigrants and inflows of remittances are increasingly likely to incorporate questions in their population censuses, beginning with the 2010 round, to identify emigration. Since international migrants living abroad are generally not available to be interviewed, the best one can usually do is identify households with a former member now living abroad. This requires that the census being used as a sampling frame have included a question: “Is there any person who used to live in this household (or who lived here X years ago) who left to live abroad and has not returned?” Based on this information, it is possible to calculate the *proportions* of households containing international migrants in the various administrative areas of the country, making it possible to select a sample of areas. Strata can then be formed based on the proportion of households with emigrants. Then in the first stage, provinces (or their equivalent) constitute the primary sampling units (PSUs), so a sample of provinces may be selected with probabilities of selection proportional to the proportion of households with a recent emigrant. This is *stratified sampling* with sampling fractions proportional to the proportions of households with emigrants. A higher proportion of provinces will be selected into the sample from strata with high proportions than low proportions. The same procedures can be used in subsequent stages, to form strata of districts (say) in sample provinces according to the proportion of households with emigrants, then oversample districts with higher proportions. And similarly for the selection of the UAUs, such as census sectors or blocks.

46. In stratified sampling, the optimal statistical procedure is to select a number of elements (provinces, districts, . . . , UAUs) at each stage from each stratum in proportion to the estimated *variance* of the stratum's elements with respect to the variable of interest. If  $p$ , the proportion of households containing an international migrant is the key variable, the fraction of the districts to be selected from each stratum (across all provinces taken together) is proportional to the estimated standard error of  $p$  for the stratum ( $s$ ), which is given by  $s = \sqrt{p(1-p)}$ . Making sampling fractions proportional to  $s$  is using *disproportionate sampling*, a highly efficient procedure to sample rare elements (see Kish, 1965, pp. 92-98, 142-144, 279-282). This was the intended procedure in the NIDI project (section VI). But in fact, the probabilities of selection from the various strata can be anything, *even more disproportionate* than indicated above, provided that one is careful to keep track of the sampling proportions at each stage so that the

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<sup>9</sup> An alternative way of selecting area units could be to select them based on “expert” or informed judgment, that is, people knowledgeable about where emigrants mostly originate from, could be asked to essentially stratify areas according to the expected intensity of emigration, then areas with high expected proportions would be oversampled. This could be done at a national level to select regions or PSUs, then also to select areas within selected PSUs, etc. This was done in most of the sending countries in the NIDI project (section VI below).

values can be adjusted for using weights (the inverse probabilities of selection of elements). For a sample to be representative of the entire population, it is necessary that a few elements be selected from each stratum at each stage, though budget limitations may make that impossible.

47. A major reason for using multi-stage sampling is that it leads to a more efficient allocation of field work (including mapping, listing households, and interviewing) and hence cost savings. It also reduces the work of preparing a sampling frame at each stage since tabulations of the proportions of population constituted by international migrants need to be prepared for and grouped into strata only for the districts of the PSU sample provinces already selected in the first stage, and for, e.g., census sectors or UAU's only for those districts already selected at the previous stage.

## *2. Two-phase sampling to sample households at the last stage*

48. The procedures discussed above--proportionate/disproportionate stratified sampling (or sampling using PPES)-- select provinces, districts within provinces, and census sectors within sample districts as the ultimate area units (UAUs). Once the UAUs are selected, then it is necessary to identify which households contain (e)migrants in the sample UAUs, where they will usually still be, despite all the efforts above, a small minority if not rare elements. As noted above in discussing the need for appropriate comparison groups, it will usually be desirable to select a sample of households without emigrants as well as those with emigrants. The recommended procedure is thus to first conduct a *listing operation*, to list all households in the sample UAUs to identify those which have and those which do not have international migrants. The second step is then to oversample households with recent emigrants compared to the proportion selected from non-emigrant households. This is *two-phase sampling*, with phase one being the listing or *screening* operation, which is followed by sampling and interviewing selected households/individuals in phase two. There are various ways to go about the mechanics of two-phase sampling to facilitate field work, which are discussed elsewhere (Bilsborrow *et al.*, 1997).

## **V. Questionnaire Modules to Identify Emigrants and Measure Remittances in a Sending Country**

49. As noted in section II, since the conduct of a new survey, such as a specialized survey on international migration (whether of immigrants or households with emigrants) is expensive, it is important for countries and international agencies to examine whether there is an existing, ongoing or planned survey that might be augmented or modified to collect data, or additional data, on international migrants. As also noted above, such a survey should have a large sample size to provide a sufficient number of international migrants. What is large enough depends on the prevalence of migrants in the country (immigrants or households with emigrants, as the case may be). While there is no fixed or magic number, one thousand recent adult migrants aged 15+ could be considered a reasonable minimum number. If there is a survey in the country that could obtain data on such a number, then the possibility of adding additional questions to it on international migration would be worth exploring. The alternatives are to develop a new, specialized survey on international migration, following survey and sample design procedures outlined above; substantially modify an existing survey; or add questions to the population census or a subsample from the census. An existing survey could be substantially altered by changing the sample design and/or the questionnaire. Thus, areas of the country with likely high concentrations of migrants could be identified and the sampling rules changed so as to oversample those areas, and then use two-phase sampling also at the last stage to oversample



(households with) international migrants. Then additional questions would be asked pertaining to those migrants. When this is not possible but resources are available, the best alternative is a specialized survey of international migrants.

50. It is assumed that the questionnaire modules presented below could be added to an existing survey questionnaire, most likely a labour force survey given its larger sample size, though there may be cases when it would be possible and appropriate to add them to DHS, LSMS or other-purpose questionnaires. The modules are concise so as to not unduly lengthen existing interviews, since it is assumed that the major purpose of the survey is not being altered to include international migration. I assume the existing survey questionnaire already includes (a) a household roster which at minimum lists all current, usual members of the household by name, age, sex, relationship to the head, place of birth, educational attainment, and marital status; (b) data on dwelling conditions (e.g., material of roof and floor; access to electricity, potable water, etc.) and ownership of consumer durables/household assets; and (c) employment/unemployment of household members. Note that *place of birth* is assumed to be included, in the household roster. In a sending country, data on emigrants will usually come from a proxy respondent, which often should not be the household head, but rather the adult member of the household who is most knowledgeable about the emigrant. Asterisks (\*) are used to indicate questions of somewhat lower priority in general. The modules and questions to add to a labour force or other survey schedule depend on country interests and how long the questionnaire already is and how much more is acceptable to add. The total number of non-asterisk questions in all of the modules together is 12 plus 7 on remittances (excluding return migrant module), which is quite modest. Note D is used to indicate Destination country below, X to indicate name of migrant.

51. Module to identify emigrants from household

Is there anyone who used to be a member of the household living abroad now?

*Or*

Has anyone who used to live in the household left to live in another country since

Y (= 1, 5, 10) years ago? (If not, no emigrants, so skip subsequent questions.)

(If so) Name of X, sex, current age, \*relationship to h/h head, education level at time of departure.

Year left (\*and month). \*Why did X leave? \*Country of initial destination.

Country of current residence. \*How long (years, mos.) has X been living there since (last) arriving there to live?

\*Is X a citizen of that country? \* Is X interested in becoming a citizen or taking any steps to qualify, as far as you know?

\*For those aged 15+ older at time of leaving: Marital status at departure.

52. Module on work activity of emigrant prior to departure

Was X mainly working, studying, looking for work, doing housework, other, during the *month* before leaving? (skip rest of module on work questions below if not working or looking for work)

\*In what branch of economic activity was X working? \*Occupation, \*status(employee, manager, day labourer, own account worker, unpaid family worker, housemaid, other).

\*(If mostly not working during month before emigrating) Had X been looking for work, or entering the labour force to seek work for the first time? For how long had X been looking for work?

53. Module on reasons for emigration

- \*Why did X leave here to move to another country? (Economic, personal, other reasons) \*Who mainly made the decision for X to emigrate?
- \*Why do you think X chose to move to D? \*Had X ever visited D before? \*Did X migrate alone or with someone else, who?
- \*Did X have any relatives or close friends living in D before moving there? \*Did those persons provide any important assistance to X when he/she first arrived?  
\*What kinds of assistance?

54. Module on work activity in destination country

- Does X *currently* have some type of work or business in D, or is he/she looking for work, studying, retired, disabled, otherwise not working, other (specify)?
- \*Branch of economic activity, occupation, economic sector, whether has work permit or contract and duration, etc.
  - \*(If has business or farm) type of business, whether owns land or building, rents, or not (sells in street), whether has any employees, permanent or temporary, and number.
  - \*(If looking for work) how long has X been looking?

55. Module on education, migration intentions of emigrant in country of destination

- \*Did X know the (main) language (speak, read, write) of D before leaving to take up residence in D? (Well, not well....). If not, how well does X know the language now?
- What is the current level of education of X? \*Did X attend any educational establishment in D since arriving? \*What level(s), how many years, completed level/received diploma/certificate/degree?
- \*Does X plan to remain living in D or return to O? \* If to return, when?

56. Module on migration intentions

- Is any other (current) member of the household thinking of emigrating? Who-- how many persons? \*Where is X thinking of migrating to?
- \*How definite is this--already planned and funded, seeking funding, not certain?  
\*Does X have any documents for emigrating, or has applied for any?
  - \*When is this move to occur--within 3 months, less than a year, more than a year?

57. Module on remittances received

- Did X send any money in the past 12 months to anyone in the household? When was the last time? How much was received? \*Who received it?
- How many times did the h/h receive money from X in the past 12 months? How much was received in total?
- \*What was it mainly used for? \*List by category.
  - \*If invested in a business-- in what economic sector (branch)? Where?  
Why do you think X left here to move abroad (economic, personal, other)?

\*Did you receive or did X bring any large gifts of things other than money and small birthday, holiday, items, such as a computer, television set, digital camera, etc.?

58. Module for return migrants

When did you (last) leave here (this country) to live abroad? (Month, year)

What was your age, education level, and marital status then?

Why did you leave?

What country did you go to (first)? Did you work while there? Were you working in the month before you left to come back here?

Did you attend school while there?

Change your marital status? Have (or adopt) any children?

Learn the language--well or not well? Acquire/own property?

When did you return to this country? Why did you return?

While you were in country Y, did you send money back here to anyone?

To whom? Regularly? \*How much each time?

59. A few explanatory comments are desirable on the modules above. The first is that *additional topics and additional questions on each of the topics* indicated could provide a wealth of useful data, but that is what a specialized survey on international migration is for. Note that the focus in the modules is on factual information, and that attitudinal questions about a third party are preceded by an asterisk. The first modules seek to identify household members who left recently, when they left, the current country of residence, and certain key characteristics of the emigrant, including age, educational attainment, and marital status just before emigration. Information is also obtained on work status, occupation, and sector of work, both in the month before leaving and currently in the destination country, since the former could be an important cause of leaving, and the latter is an important consequence. Data on the education level of the person both upon leaving and currently are important to study the loss of human capital from the origin country and the extent to which X gained education in the destination country. The questions on remittances received are minimal but have seemed to work well in various contexts. Further details could be asked—including the means by which funds were sent, what was done with them immediately (to study the bank roles), and when and how they were used; also, on whether the person who used the funds was different from the person identified as receiving them; on whether the funds permitted the household to do or consume things they would not have been able to do otherwise; etc. It might also be possible to use monthly calendar to record remittances received in the past 12 months, though there is a real danger this would be considered obtrusive and end the interview. Finally, the proxy respondent is asked if he/she thinks any other members of the household are thinking of emigrating, which is of use for projecting migration and government policy planning.

## **VI. Examples of Specialized Surveys on International Migration**

60. A number of surveys focusing on international migration have been conducted over the last decade illustrate both the potential usefulness of specialized surveys and the shortcomings of existing surveys. In this section, several are reviewed, focusing on national surveys (reviewing the many small surveys on sub-national areas/populations is evidently beyond the scope of this paper). Specialized surveys that focus on international migration have a number of advantages compared to adapting existing surveys, since they permit: (a) the design of the sample so as to focus on recent migrants of interest, as well as appropriate non-migrants, yielding sufficient

sample sizes for both; (b) the inclusion of questions to permit precise identification of international migrants to fit survey purposes; and (c) the use of detailed questionnaires to collect data for an in-depth characterization of international migrants (and non-migrants), data on remittances, and data on the situation of the migrant before and after migration, the latter needed to analyze the determinants and/or consequences of international migration.

61. Several countries have introduced new surveys on international migration in recent years, often without results available yet. The existence of these new surveys further documents the greatly increasing interest in international migration in the world today, and recognition of the need to develop better statistics. Only a sampling of these can be mentioned here. The discussion below examines most of the better examples over the past decade.

*MIREM project (Return Migration to the Maghreb)*

62. Several countries have developed specialized surveys on *return migrants*, to assess the impacts of their migration experience on them, their families and communities in the origin country, and sometimes the country itself. One example is the MIREM project (Return Migration to the Maghreb), on Algeria, Morocco and Tunisia. Surveys were carried out in the three countries by teams led by the European University Institute in Florence, Italy, from September 2006 to January 2007. A total of 992 interviews were conducted, covering both migrants who returned voluntarily and some forced to return, on their situation before they left, their experience while abroad, and their situation in their origin country after returning. Topics covered include socio-demographic characteristics, work/professional situation and skills, social and financial capital, why they returned and reintegration experience, and perspectives on their experience. Results are to be posted as they come out on the project website at [www.mirem.eu/datasets/survey](http://www.mirem.eu/datasets/survey). Unfortunately, details on the sampling procedures are not available and the samples in each country are evidently very small. Still, the data may be useful for learning about the determinants and consequences of international migration from these three countries as well as about return migration.

*Survey of Return Migrants Living Abroad in Morocco*

63. Prior to its participation in the MIREM surveys, Morocco carried out several surveys on return migrants, including a panel survey in 1986-88 and a survey of 1,467 households with at least one return migrant, in September, 2003, called Survey of Return Migrants Living Abroad (see CERED, n.d., and [www.statistique.gov.ma](http://www.statistique.gov.ma)). The latter was carried out in two regions, Greater Casablanca and Souss-Massa-Draa, covering those who had left to live a year or more abroad and then returned, excluding students. The questionnaire is extensive, with 102 questions, some with multiple parts, and several for each h/h member aged 20 or more. Topics covered included h/h composition; housing quality; place of birth and current work of every h/h member; migration history of every member, including reason for each change of residence; situation of the migrant before first departure abroad, including who made the decision and whether received any help in the move and type of help; whether was married at time of migration and work situation of spouse; situation in destination country (not clear if first or last), including whether received any training and who funded; whether spouse and children accompanied or not and why; whether studied abroad; births abroad; language skills, social activities abroad, frequency of visits to Morocco; and whether had source of support in case of financial difficulty. Finally, questions were asked about their "reinsertion" into Morocco, including who decided to return, why, whether received help, whether working before return, evaluation of foreign experience, whether invested in Morocco since returning and why or why not, type and place; and whether experienced any problems in returning.

*Malaysia Migration Survey*

64. Some countries carry out large migration surveys with national coverage, usually focusing on internal migration but typically obtaining some data on international migrants as well. Malaysia, for example, has had an annual migration survey, administered by the Department of Statistics, since 1992, covering 74,500 households. *The Migration Survey Report 2003* is the most recent available publication, supposedly yielding 126,612 immigrants. The questionnaire inquires about any changes of residence in the past 12 months, for all persons at least one year old, plus the reason for moving. Those aged 15+ at the time of interview are asked one additional question on their occupation before moving. The number of international migrants reported above is impossible with the sample size so it must be an estimate of the *total number* in the country based on inflating the survey results.

*Complementary Survey on International Migrants in Argentina*

65. Argentina used its latest population census in 2001 to carry out a survey of international migrants in 2002-03, defined as anyone living in Argentina who was born in any of the five countries bordering Argentina. Called the Complementary Survey on International Migrants (ECMI, in Spanish), it was carried out in the main areas of residence of each of the five immigrant populations, varying from two areas for Brazilians to six for Chileans, and totally 18 political areas for all combined (see [www.indec.gov.ar/webcenso/ecmi/index\\_ecmi.asp](http://www.indec.gov.ar/webcenso/ecmi/index_ecmi.asp)). Therefore it is not a national sample, which made the fieldwork less expensive. Households were interviewed if they contained at least one person born in any of the five countries. The description of the sample is not complete (INDEC, n.d., p. 5ff), but states that, except in the city and districts around Buenos Aires, a one-stage sample of households was drawn using strata formed based on both (a) the number of persons in the household from the reference country (one, two or 3+), and (b) the number of years of residence in Argentina (13 or less, 14-23, 24-32, and 33+). A two stage sample was drawn in the Buenos Aires region yielding a sample of 13,296 households. The number in the other locations together is 8,222, for a total of 21,518 households. Data were obtained for each member of the household 18 and over.

66. A module on Spatial Mobility was used to ask each person aged 18 + about his/her last residence in the country of birth (place, composition of household, reason for leaving, education, and employment prior to leaving), when arrived in Argentina, residence history in Argentina (dates, household composition, employment, marital status changes, visits to country of birth, whether sent or received remittances, residence of close relatives and friends in Argentina and country of birth, property in country of birth, participation in civil society in Argentina, migration intentions (to remain or not in Argentina), etc. The questionnaire content is broad, so that even though the sample is not national, the survey should produce useful data on the five immigrant groups. However, and given the permissible time frame for their arrival, the usefulness of the sample frame depends on the migrants (a) being enumerated in the 2001 census (many and probably most of the undocumented migrants would likely not be enumerated), and (b) not have migrated internally since that census to other political jurisdictions of Argentina. Those who did migrate are likely to differ from those who did not. Undertaking the survey less than two years after the census minimizes this problem, but not (a). There is no discussion of whether there was a screening process in sample areas. If not and if instead only persons from lists of names (with addresses) enumerated in the census were interviewed, then an important shortcoming would be not including immigrants without legal papers living in sample areas, as well as missing those enumerated who subsequently migrated in the interim.

*IOM Surveys in Guatemala*

67. The office of the International Organization for Migration in Guatemala City has carried out six annual surveys in households which have one or more emigrants currently living abroad, one each year in 2002 through 2007, based on a national sample of 3,000 households. The main purpose of the surveys is to characterize households with emigrants and the emigrants themselves, collect data on remittances, and study the impacts of the remittances on the emigrant-sending households and also communities of origin (through a second survey of community leaders, on changes in infrastructure, etc.). The survey is based on a three-stage sample (see IOM, 2007, pp. 16-17), with the selection of *municipios* or districts as PSUs based on their estimated population size (PPES) in the most recent census of population (2002), followed by random (systematic) selection of census sectors as the last stage area units or UAUs. In each of the sample census sectors, a listing operation was performed on all 55,000 dwellings to identify households with and without family members living abroad.<sup>10</sup> Households with migrants were then selected with "equal probabilities" in all census sectors (p. 17). While the number of census sectors in the sample is not indicated, if there were on average 100 occupied dwellings per sector, that would mean about 550 sectors were selected, with a mean number of households in the sample of perhaps 6 per sector (allowing for 10% non-response), which should provide a good geographic dispersion. However, it seems that data are available on households with emigrants in the 2002 census, so that it would have been more efficient to select a sample of PSUs and UAUs using the methods described in section IV above, viz., stratifying areas by the proportion of households with emigrants and oversampling areas with higher proportions. And as noted also in section IV, collecting data only on households with emigrants does not permit a full analysis of either the determinants or consequences of emigration. For that, sampling and interviewing households with non-migrants in sample UAUs would have been necessary.

68. Nevertheless, the study indicates one approach to designing household surveys in developing countries to collect data on emigration and remittances. A wealth of data has been collected and 24 publications have appeared, based on the surveys and policy issues and documents on international migration in Guatemala, called *Cuadernos de Trabajo Sobre Migración*. The most recent volume is entitled (my translation), *Survey on Remittances 2007: Gender Perspective* (IOM, 2007), with the two previous ones focusing on investment of remittances in health and education (2006) and investment in micro-enterprises (2005). The surveys find that, as the population of Guatemala grew from 11.8 million in 2002 to an estimated 13.9 million in 2007, the number of Guatemalans living abroad (98% in the US) rose from 1.2 to 1.5 million, with those sending remittances rising from about 990 thousand to over 1.2 million, and the families estimated to benefit from remittances rising from 3 to 3.8 million, or about a third of the population. A few other findings are that migration continues to be mainly male (72%), though the proportion female is rising, and women migrants are more likely to be single and younger. Migrants have more education than non-migrants and do not come from the poorest households. Men and women migrants are about equally likely to remit. 68% of the households that receive remittances receive them monthly, 80% by electronic transfer, mostly Western Union. The total volume of remittances to Guatemala in 2007 is estimated as \$3.9 billion, or \$338 per receiving household (*ibid.*, p. 39). Surprisingly, only 49% is stated as being used for consumption purposes, with 15% for intermediate consumption (raw materials, services, etc.), 23% for investment and savings (including the house and furniture), and 13% for "social investment" (health and education). Remittances evidently add to household incomes, reducing

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<sup>10</sup> It is not clear if the listing operation was performed each year, yielding an independent but updated sample, or if it was done only for the first round of the survey in 2002. If the latter, households with return migrants would have to be dropped from the main sample. And over time, new households in sample UAUs would experience emigration but not be in the sample, making the panel increasingly out of date with respect to the most recent emigration.

poverty slightly, among receiving households. Emigrants sharply reduce the remittances they send after 5-9 years.

69. The data are kept by IOM in Guatemala City and not easily available for further analysis; indeed, even the questionnaire is treated as privileged information.

*The NIDI -Eurostat Push-Pulls Project in Seven Countries*

70. A major multi-country project involving surveys in 1997-98 in both sending and receiving countries was organized by the Netherlands Interdisciplinary Demographic Institute (NIDI) and EUROSTAT in 1997 (Schoorl et al, 1998). The purpose was to collect data to study the determinants of international migration from important countries of origin to the European Union. The project was unique in covering not only multiple countries but *both* countries of origin and destination which were linked by not only recent migration but historical colonial ties, language, international trade, and/or earlier substantial flows of migrants. The design of the NIDI project was thus consistent with the *systems approach* to the study of international migration (Zlotnik, 1992; Kritz and Zlotnik, 1992; Bilsborrow and Zlotnik, 1994) and also drew on pre-publication drafts of Bilsborrow *et al.* (1997). The countries of origin were Egypt, Ghana, Morocco, Senegal and Turkey, while the countries of destination were Spain and Italy. The sampling strategy was to design (1) nationally representative samples of households with immigrants in receiving countries, and regionally representative samples of households with emigrants in sending countries, (2) of sufficient size for statistically meaningful analysis. The focus was on recent migrants, with recent defined as being *within the 10-year period prior to the interview*. To achieve (2), procedures were implemented to ensure that (recent) migrant households ("rare-elements") would have a much higher probability of being selected than non-migrant households or earlier-migrant households, that is, would be over-sampled.

71. Thus in sending countries, migrant households were defined as those with one or more persons who had left to live for at least 12 months in *any* other country. In contrast, in each receiving country, interest was only on immigrants coming from *two* countries of origin--two of the five sending countries. Primarily for budgetary reasons, target sample sizes were set at 1,500-2,000 households in sending countries (about half each with and without emigrants), and 600-800 households for each of the two immigrant groups in each receiving country.

72. A common sampling strategy was developed by NIDI for all countries, adapted only as necessary to confront local conditions. The discussion below will focus on sending (developing) countries. First, geographical areas in the country (e.g., provinces, then districts) were stratified according to the estimated prevalence of households with recent international migrants (based on census or other quantitative data when available, and if not, on expert opinion about where migrants were concentrated). Then areas were stratified by the prevalence (proportion) of households with (one or more) recent emigrants. Areas with a higher expected prevalence of migrant households were then oversampled at each stage. Then in the last stage area units or UAUs in the sample, two-phase sampling was used: In phase 1, a short screening questionnaire was employed to list occupied households, noting which ones contained migrants of interest. In phase 2, all or some fixed or maximum number of households containing migrants were randomly selected for interview and interviewed, along with a small sample of non-migrant households. Thus the two key aspects of the sample design described above in section IV were used--stratification with disproportionate sampling and two-phase sampling. This is illustrated below.<sup>11</sup>

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<sup>11</sup> This discussion draws on Groenewold and Bilsborrow (2005, In Press).

73. Turkey. In Turkey (see Ayhan et al, 2000), the objective was to sample 1,800 households, divided equally among four regions differing in economic development (relatively high vs. low) and international migration experience (recent vs. earlier). Unlike the other four sending countries in the NIDI project where informed opinion had to be used for part of the initial process of selecting the study regions, recent census and survey data were available in Turkey to specify the four regions on both dimensions and thereby create the desired sampling frame. First, the most recent (1990) census had a question for each household on whether it had any (former) member living in another country. This made it possible to classify all 79 provinces and 850 districts of Turkey according to the proportion of households with one or more emigrants. In addition, a recent socio-economic survey was available to rank provinces and districts by level of development of households. Four study regions were accordingly identified, each comprising spatially proximate but non-contiguous districts located in two adjacent provinces. The total was 28 districts (6, 10, 7 and 8 districts), in four regions south, southeast and southwest of Ankara. Each sample district was in turn divided into an urban and a rural portion or sub-district, resulting in 56 sub-districts. In each region, all sub-districts were then classified by migration intensity--the proportion of households with at least one emigrant. Then two strata were formed, one comprising sub-districts with relatively high proportions, the other those with low proportions.

74. In all four regions, the first-stage selection of sample sub-districts (Primary Sampling Units or PSUs), then UAUs, and finally households was as follows. First, in each sub-district, two to three blocks were randomly selected based on the target sample size for each region (450 households). The number of days a team of field workers would need to cover the region was estimated based on a pilot survey which found that four interviewers and a supervisor could interview an average of 12 households per day. Thus, it was calculated that 37 ( $450/12=37.5$ ) team-days of interviewing would be needed in each region. In each sub-district, two or three blocks would be randomly selected, with the State Institute of Statistics asked to provide addresses of 100 residential structures, based on the previous census.

75. It was determined *a priori* that a maximum of 10 'recent migrant households' and at least two 'non-recent migrant or non-migrant' households would be selected from each typical block of 100 screened households. This was based on (i) the expectation that sample blocks would often have only a few recent migrant households, so all would usually be selected into the sample; (ii) that at least two non-migrant households should be taken from each block (to have a variance); and (iii) that a maximum number per block should be fixed to reduce excessive clustering in samples taken from different sub-districts. For example, suppose a sub-district had been allocated two batches (blocks) of 12 households for interview. Then, using two-phase sampling, a short screening questionnaire was used to determine the migration status of the roughly 100 households in each block. Following screening, the field supervisor created two lists of households for the block while in the field (rather than returning to the main office, which saves travel time and costs)--one list or stratum of 'recent migrant households' and one of 'other households'. If a block had more than 10 'recent migrant households', only 10 were selected (randomly), leaving two non-migrant households to be selected; if there were no recent migrant households, 12 non-migrant households were sampled; and finally if there were fewer than 10 households with emigrants (e.g., 5), all were selected for interview, with the balance needed to total 12 (e.g., 7) selected randomly from the non-migrant list.

76. In the end, 12,838 households were screened, identifying 2,178 'recent migrant households' and 10,660 'non-recent/non-migrant households'. A total of 1,779 households were selected in the sample using the procedures above, resulting in successful interviews with 1,564 households (656 recent migrant households, 173 non-recent migrant households, and 735 non-migrant households). Survey results are representative of the populations in the four regions



consisting of non-contiguous districts in 8 provinces. The same identical principles could have been used to select a nationally representative sample, but the cost of achieving a given sample size would have been greater due to higher travel and time costs.

77. With respect to what has been learned about *remittances* from the Push-Pulls project surveys, a study by van Dalen *et al.* (2005) investigated remittances received by households with emigrants in Egypt (651 households with all the relevant data available), Morocco (1,282), and Turkey (538). The percent of those households that received remittances in 12 months prior to the survey were 57, 78 and 58, respectively, with the median amounts being (in US dollars) \$423, \$1,352, and \$401. The fact that most of the households were headed by a female (75%, 60% and 64%, respectively) suggests that most of the migrants sending funds are husbands. But the authors note that the surveys had great difficulty obtaining information on the value of remittances, as the percentage respondents not providing that information was 45% in Egypt, 32% in Morocco, and 62% in Turkey. The authors further examined whether the receipt of remittances (not the value) was determined more by altruism or self-interest of the sender, and whether it induced others in the receiving households (compared to non-migrant households) to have intentions to emigrate (yes, especially in Morocco and Turkey). They found (p. 384ff) some surprises in the factors determining the sending of remittances (less likely by more educated migrants, which was attributed to their being more inclined to settle permanently in the destination country), and in which households received them (household wealth had no effect). However, the fact that virtually no variables describing either the migrant or the household had statistically significant effects could mean the data are of dubious quality, and/or that it would be more useful to analyse the determinants of the *value* of remittances rather than just their existence or not.

78. The raw data from the NIDI surveys plus questionnaires are freely available upon request, and beg for further analysis.

*Survey of Colombians in Ecuador, 2006*

79. With funding from the United Nations High Commissioner for Refugees in Geneva, Switzerland, a survey was carried out in northern Ecuador in 2006 on Colombians who had migrated recently to Ecuador. Covering both refugees and other migrants, the fieldwork was executed by the Centro de Estudios sobre Poblacion y Desarrollo Social (CEPAR), with assistance from NIDI and the University of North Carolina (Bilsborrow and CEPAR, 2007). Data were to be collected only on *recent* immigrants to Ecuador (arriving since January 1, 2000) from a *single* country of origin (not including a control group of Ecuadorians), making for a serious rare elements problem. The questionnaire included questions to identify Colombians by birth and time of arrival in Ecuador; to distinguish refugees and others seeking assistance from other migrants; to identify the composition of the household in Ecuador and in Colombia prior to arrival, as well as housing conditions, economic activities and income category; reasons for leaving; return migration vs. citizenship aspirations; etc. Questions were asked about both remittances received, as well as other assistance since arrival (including from UNHCR), and remittances sent back to Colombia, using modules akin to those in section V above.

80. The rare elements problem required the use of sampling approaches described in section IV (see Bilsborrow, 2005). The sampling frame used was based on the previous census of population in November, 2001 (INEC, 2002), which included a question on place (including country) of previous residence exactly 5 years prior to the census. This identified Colombians coming to Ecuador in that 5-year time window for all administrative areas--provinces, cantons (equivalent to US counties), *parróquias* (parishes, the smallest administrative areas), and even census sectors--making it possible to compute the proportion of the population constituted by

recent migrants from Colombia for all such units (tabulations were kindly provided by the Instituto Nacional de Estadísticas y Censos). Budgetary considerations restricted the geographic scope of the study, so five provinces were selected at the outset with the highest proportions of their population constituted by recent migrants from Colombia. Together the five--the northern provinces closest to Colombia--accounted for over 70% of the Colombians coming to Ecuador in the five years prior to the 2001 census. With data at the highly disaggregated level of the census sector available, it was possible to pinpoint the survey effort much more precisely<sup>12</sup>. Thus a single stage sample was selected from lists of census sectors in each of the five contiguous northern provinces. Normally, such a one-stage sample would be far too dispersed and extremely expensive for fieldwork, but Ecuador is a small country and the five out the total of 23 provinces constituted a fairly compact study domain.

81. In the five provinces, census sectors were then stratified according to the proportion of the census population constituted by Colombians who had arrived in 1996-2001. Five strata were formed--census sectors with fewer than 3% Colombians (the vast majority), 3-4.9%, 5-9.9%, 10-14.9%, and over 15%. In the 5 provinces there were over 8,000 census sectors, so since the budget was deemed sufficient to cover only around 100, all sectors which had fewer than 3% Colombians were excluded *a priori*. A stratified proportionate sample of census sectors (105) was then selected randomly (separately for urban and rural strata) from the remaining sectors using systematic sampling, with the probability of selection of each sector proportional to its proportion of Colombians in the sector. In each sample sector, two-phase sampling was used, involving first listing or screening all dwelling units to identify households with one or more recent Colombian migrants who had come in the previous six years. All such households were then interviewed, up to a maximum of 10 per sample UAU.

82. Despite the procedures used, the number of households encountered was less than anticipated by the Ecuadorian office of UNHCR,<sup>13</sup> so a snowball procedure (see Goodman, 1961; Sirken, 1998) was added in an attempt to increase the sample size, keeping track of the snowball households added since they would not be part of the probability sample. However, the snowball procedure did not work well: It was expected that each sample household could identify on average two more households of recent migrants from Colombia in the same *parróquia*, but instead only one-half household was obtained and successfully interviewed per sample household.

83. The survey results indicate that few Colombian immigrant households in Ecuador received assistance from other households since arriving in Ecuador, and virtually none from Colombia. The few who did receive aid received it from relatives already in Ecuador, mostly siblings. And very few of the immigrant households, even among those who were better off and not refugees nor seeking asylum households, sent any money or goods back to family members remaining behind in Colombia in the form of remittances (Bilsborrow and CEPAR, *op. cit.*, pp. 101-102). The overall numbers from the survey are that 37% of the approximately 900 adults responding to the survey requested assistance after arriving in Ecuador, with exactly two-thirds of them receiving it, usually in the first months only. But the assistance was mainly from UNHCR, other institutions, and friends and neighbours in Ecuador, with only 11 persons reporting receiving assistance from relatives in Ecuador and 3 from those remaining behind in

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<sup>12</sup>At the province level, the percentages varied from 0.3% to 1.2% in the five study provinces, being only 0.175% at the national level--truly "rare elements" in the population.

<sup>13</sup>Overall, the number of Colombian migrants in the five provinces rose by only 29% from 2001 to 2006, according to the survey. Apart from the possibility that the number of recent in-migrants was much lower than expected, another explanation could be that the sample frame was not very good: Thus Colombian migrants arriving in 2001-2006 may have concentrated in different census sectors in Ecuador than those arriving in 1996-2001.

Colombia.<sup>14</sup> Overall, the data indicate little tendency to send or receive remittances, which is probably related to the low incomes of the immigrants (nearly half being refugees or asylum seekers) plus the lack of a significant income earnings differential between Colombia and Ecuador, both developing countries.

## VII. Summary and Conclusions

84. This paper has two major parts: (1) an evaluation of what existing surveys in developing countries can tell us about international migration and remittances, together with, on the one hand, how they could be adapted to provide more useful information, but on the other hand, what their serious limitations are; and (2) how specialized surveys of international migration should be designed for that purpose. Regarding (1), the major multi-country programs of existing surveys are labour force surveys, Demographic and Health Surveys, and LSMS surveys, with labour force surveys generally the best candidates for being adapted to collect data on international migration due to their larger sample sizes. For the other types of surveys to be useful, their sample designs would need to be changed. With respect to (2), important issues of survey design should be addressed even before the sample design, to ensure that data will be collected for not only the defined international migrants and their households of interest, but also for appropriate comparison groups of non-migrants. Ideally, this will usually involve planning and conducting the survey in more than one country, though much can be learned from a well-designed survey in a single country as well. Once the survey design issue is clear, a sampling frame needs to be constructed and specialized sampling techniques used to find, identify, and interview the "rare elements" that are international migrants.

85. In the meantime, since the availability of good data on international migration in developing countries--meaning in most cases pertaining to households with emigrants--is scarce and sought after, I have reviewed some examples of both existing major types of surveys and specialized international migration surveys in the paper. Few publications focusing on international migration have come out to date based on the data sets described, and those indicated are doubtless incomplete. As for what data sets are available for further analysis, the DHS and LSMS data sets are thankfully available freely or for purchase at a modest price, from Macro International and the World Bank, respectively. As for the other surveys discussed in the text, some information is provided there on some of them, including websites, but most are not easily available, though could perhaps be obtained under certain conditions of confidentiality, etc. This includes data from the labour force surveys of countries cited in section III and Annex A and other countries, and the UNHCR data on Colombians in Ecuador. Data from the NIDI surveys are readily accessible, as noted in the text above in section VI.

86. In all cases where both are available, data are collected on both migrants and remittances in the same survey instrument, and in most except the specialized surveys on international migration in section VI cover remittances from both internal and international migrants (e.g., labour force, DHS and LSMS surveys). Household surveys in themselves are limited in their ability to measure the development impact--even evaluating the impact of remittances received by migrant-sending households on non-migrant households in the same sending communities is only in its infancy. More attention to the impacts on poverty and income distribution is needed.

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<sup>14</sup> The raw data from this survey are housed at UNHCR in Geneva and at CEPAR in Quito, Ecuador. Permission from UNHCR is required to access them.

Can existing data sets from household surveys be pooled to compare the prevalence or characteristics of international migrants or remittances flows across countries? The existing multi-country surveys such as DHS and LSMS, as well as most labour force surveys use the same questions (within each genre) to identify migrants, so the data are generally comparable (e.g., foreign-born population). And remittance data are also broadly comparable, as they come from similar sets of questions and are measured in currencies that can be converted into dollars or euros. On the other hand, existing data sets from specialized surveys provide limited bases for comparison of results across countries in the measurement of migration, since they use different definitions of international migrant (three options being available, plus different time cut-offs, and perhaps a cut-off for country of origin or destination<sup>15</sup>). One significant exception to this is the NIDI-Eurostat surveys which used identical definitions of migrant in all seven sending and receiving countries.

87. The more pervasive problem with *most* existing data sets is their having quite different and often shaky survey and sample designs with samples of international migrants that are too small for meaningful statistical analysis. The creation of truly comparable (harmonized) and adequate data sets across multiple countries requires a major coordinated international effort and commitment of funds comparable to that of the existing DHS or LSMS survey programs. As a step towards that, or an alternative, smaller-scale but still coordinated international efforts could very usefully be developed on a region-wide basis, such as by the Inter-American Development Bank and US Census Bureau for multiple countries in Latin America plus the United States as the main destination; or by the Asian Development Bank and Eurostat, the Arab Development Bank or the US Census Bureau for major Asian countries of emigration and their main destinations.

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<sup>15</sup> For example, the NIDI surveys in the two countries of destination, were only interested in immigrants coming in the previous 10 years from two countries of origin (for Italy, from Egypt and Ghana; for Spain, from Morocco and Senegal).

## **Annex A. Examples of Modules on International Migration Added to Labour Force Surveys**

### *Thailand (immigrants)*

Thailand has carried out a labour force survey since 1963, with the sample size and frequency increasing over time (Thailand, 2005). It became quarterly in 2001. The total sample size each quarter (and year) is 79,560, with 26,700 covered each month. Such a large sample is used to provide quarterly estimates of employment and unemployment for all 76 provinces, including Bangkok. A two-stage sample design is used, in which the primary sampling units (PSUs) are provinces and the secondary units (SSUs) blocks (urban) blocks and villages (rural) selected at random in each province, with the number proportional to the estimated population size (based on the 2000 census).<sup>16</sup> The total sample comprises 5,796 SSUs--3,336 urban and 2,460 rural--providing better representation of the urban population (since it is about 30% of the total but 58% of the sample). The total sample size is 50,040 households in urban areas and 29,520 households in rural areas. The oversampling of urban vs. rural areas requires compensating weights to produce national totals.

The main labour force questionnaire collects the usual information of labour force surveys, on each person aged 15+, namely, composition of the household, including age, sex, marital status and education of each member; employment/work in the previous 7 days, including work status, occupation, sector/industry, hours worked, and wages; for those not working, reason, time without work, and job-seeking behaviour (Thailand, 2007a, n.d.). It is worth noting the questions in the basic questionnaire since they provide data that is already there, cost free, for any study of international migration. In fact, a short module on migration has been included most years since 1974, which since 2004 has been administered in the last quarter, providing data for the full sample (Thailand, 2007a, b; n.d.). Nineteen additional questions are asked of each person in the household on how long the person has been living in the house, whether registered there (Thailand has a continuous population register), whether expects to stay permanently or temporarily, and if the latter, how long; reason for not staying, and whether intends to return to previous residence. Then for all persons who moved to the present residence in the past 12 months, province *or country* of previous residence is asked, along with the reason for migrating to this place; whether worked during the month before coming, and occupation and sector; whether had sent money or goods, amount, to whom, means used, and what it was used for. There is evidently considerable information on international migration: one can even compare the occupation in the previous country of residence with that in Thailand.

Nevertheless, further data on international migration was collected in the last quarter of 2006 (Thailand, 2007b) using a new, experimental module. 22 questions were added, including remittances, for each person, referring to the 12-month period before the survey, including the following:

- Does X receive money or goods from someone living elsewhere (including another country)?
- Relationship to sender. Total times, total amount in 12 months, main use?
- (If money) What mechanism is used for sending money?
- Is X a citizen of Thailand?

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<sup>16</sup> Such a sample with PPES makes it unnecessary to weight the data but means that provinces with small populations will be poorly represented compared to more populated provinces, resulting in unreliable estimates for the former. A better procedure would have been to take larger proportions of the population in the smaller provinces.

(If Yes but not born in Thailand) When did X become a citizen?  
(If not a citizen) What is the country of citizenship?  
(Ask if born abroad) When did X first come to live, work or study in Thailand?  
Did X come to live in Thailand more than once? What country did X live in before coming (the first time)?  
When did X arrive most recently (month, year)?  
What level of education did X have when he/she arrived?  
What was the main reason for coming to Thailand?  
What was the occupation, industry, work status (as employer, employee, own account, unpaid family worker, etc.)?

This is a useful module to add to a labour force or other survey, though it might have been useful to also ask language ability and marital status on the occasion of the most recent arrival, as well as with whom (number of family members) they came and whether they intend to stay. It would also be useful to inquire for those who are not citizens whether they intend to apply. The fact that it asks when X came *most recently* is needed to determine if the person should be classified as a migrant or not. And the questions on previous education and work make it possible to determine changes (gains in human capital, occupational mobility after arriving in Thailand), and therefore assess whether the migrants improved their status with migration (that is, one can study the process of *integration*, and compare the situation of migrants and non-migrants in Thailand), as well as appraising the brain drain (from the origin country) and the brain gain (for Thailand). However, as explained in section III above, a proper study of either the *determinants* or *consequences* of international migration cannot be carried out based on data collected only in the destination country (Thailand, in this case) but instead requires data also from non-migrant households in the origin country.

The focus of the new module as well as of the pre-existing module on migration is on internal migration, and on *immigration* rather than emigration, though Thailand has few immigrants and more emigrants. Given the large sample size and extensive migration modules, it is instructive to summarize some results from the survey (Thailand, 2007b) as they indicate the limitations of even large surveys when countries have a low proportion of international migrants--less than one percent (0.6%) of the population was born abroad (94% from neighbour countries). The absolute number of persons born abroad identified in the survey was only about 480, in perhaps 100-200 households, making the statistics on international migrants published for the country based on the national inflation factor of 823 (=65.45 million/79,560) very unreliable. Regarding remittances, 13% of all house-holds reported receiving money or goods from others, but only 6.7% of this was from people abroad; funds were used overwhelmingly for food and clothing (71%), with little for investment.

#### *Costa Rica (immigrants and emigrants)*

Costa Rica has incorporated useful modules in its annual labour force surveys, carried out every July. It has a completed national sample of 13,175 households, which collects data on both immigrants and emigrants. Its questions are found at [www.inec.go.cr/Encuesta Hogares](http://www.inec.go.cr/Encuesta Hogares). Following a few questions on immigrants (place of birth, how long lived in Costa Rica, previous country of residence) are questions on former h/h members now living abroad seeking data on:

Current age, sex, relationship to head and to spouse; time lived abroad. Where.  
Current education, economic activity (whether working, studying, etc.).  
Whether sent money in last 12 months.

Appropriately situated (because of its potential sensitivity) at the end of the questionnaire are

two sections on remittances received in the household, and whether anyone in the household also sent funds to a relative or friend abroad (whether a former household member or not). Having data on *both* is important (but very rarely collected) since it makes possible estimating *net* transfers. Regarding remittances received, the questions may be summarized as follows:

Did you or any other member of this h/h receive money from a former household member in the past 12 months? How frequently?

How much did you receive last time? From what country? By what means (bank, in person, etc.)? What was the total amount you received in the past 12 months?

Did you or any other h/h member receive any goods, such as the following: clothing/shoes, food, toys, medicine, personal care products, electrical appliances such as a computer, TV, etc.; car, motorcycle or bicycle; business or agricultural equipment, other? What do you estimate to be the value of the goods of each type?

A similar battery of questions is then asked at the very end on money sent abroad, frequency, amount sent last time, means used, total amount sent in last 12 months, plus the same questions on goods sent.

The questions on remittances are reasonable, though those on transfers in kind (of goods) are of secondary value, as the value of transfers in kind is reported in most surveys to be only 5% or so of transfers. Asking only the household head or proxy respondent about all transfers received or sent by all household members will sometimes not yield complete information, since that person may not know about some transfers received or sent by other h/h members. If every person in the household (above a cut-off age of 15 or so) is separately interviewed, each could be asked about transfers.

#### *Ecuador (emigrants)*

In its latest labour force survey with data published and available (2005), called the Survey of Employment, Underemployment and Unemployment (see [inec.gov.ec](http://inec.gov.ec)), Ecuador has a substantial module on international migration. The national sample covers 19,596 "dwellings"<sup>17</sup>, focusing on emigration, with 33 questions on emigrants from the household. These are quite different from those of Thailand and Costa Rica above, and equally worth summarizing:

Is there anyone who used to be a member of the household living abroad now?

Relationship of X to h/h head. Age, sex, education now.

For those aged 12 or older: Marital status at time of departure. Did X leave behind any children under 18, how many?

Was X working, studying, looking for work, doing housework, other, before leaving?

Branch of economic activity, occupation, status as employee, boss, day labourer, own account worker, unpaid family worker, housemaid, other.

Place of birth. Place of residence at time of leaving. Year left and reason.

Country of current residence. Is X working, looking for work, studying, housemaid, other? Branch of economic activity, occupation, status.

Is any other member of the household thinking of emigrating? How many persons?

A series of questions on remittances follow:

Did X send any money in November 2005 to anyone in the household? Amount.

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<sup>17</sup> It is likely that this is the number of households completed in the survey. Many countries confuse the two, reporting dwellings (which are not decision-making units) instead of households.

Did X send any money between December 2004 to November 2005? How many time and how much?

What was it used for? (up to 4 categories allowed out of 12, including investing in a business)

If invested in a business, in what economic sector (branch)?

Then *every person* aged 18 or older in the h/h is asked whether he/she had thought of investing the money sent by X in a business, and if not, why not; how the money was received from abroad, how long ago the money was received (less than a year, between 1 and 3 years, ..., over 15 years ago). But it is time consuming and potentially confusing to ask hypothetical questions of every adult, regardless of whether that person received the funds or had any role in their use. And asking about whether they had ever received funds from X many years in the past is of little use, both because of memory errors and the data being too far back to be of much policy interest. However, it is true that asking only the head about remittances will not necessarily provide complete data, so it would be better to ask the module of questions on remittances received of each adult. Still, the survey does inquire about work status and occupation of the migrant both before leaving and currently, permitting some limited assessment of changes associated with migration. However, it asks current education but not education at time of leaving, so no assessment is possible of education gained abroad; and asks marital status at time of departure, but not current status, so again it is not possible to assess any change. Finally, the question on whether anyone in the household plans to emigrate should be asked in the beginning, on the h/h roster. Putting it in this module means that it is *only* being asked in households that already have household members living abroad, missing all other households with this important question on potential migration.

#### *Armenia (emigrants)*

The Armenian Migration Survey, on emigration, was carried out in 2006, supported by the International Labour Office with funding from the World Bank. Though the original intention was apparently to implement the module in the full 3,600 household sample of the Armenia LFS, it was instead tested for quality control in a separate sample of 1,985 households (details not available) from 11 *marz* or administrative districts in Armenia. It had as screening questions for all household members, age, sex, etc., plus place of birth, citizenship, and whether the person had left Armenia to live in another country for at least 3 months at any time since 1990. For the latter who had returned and were over age 16 at the time of interview, it also asked last country lived in for over 3 months, when arrived in that country, when (last) came back to Armenia, whether was working in that country, and whether had ever sent money or goods back to Armenia. Then a series of questions was asked of the household head or proxy about each h/h member living abroad on when and where the person was living, whether sent remittances, how much in last 12 months, by what means, to whom, and for what was it mainly used. Results are not yet available but are forthcoming. The questions are useful, but the real issues are (i) how are households with emigrants or return migrants found/identified, and, related, (ii) how can the module be included in the regular LFS and how many migrants would be found given its small sample size. Even though Armenia has many emigrants (estimates of 1-2 million including descendents living outside Armenia compared to only 3 million living in Armenia) and, with its economy so depressed since the dissolution of the Soviet Union since the early 1990's, is so dependent on the remittances from migrants in Russia and elsewhere, the issue of finding households with emigrants should be explicitly discussed. While they may appear to not be such "rare elements" as in other countries, households *currently* receiving remittances, which is more likely from *recent* emigrants, will not be so prevalent.



*Philippines (emigrants)*

The Survey on Overseas Filipinos (SOF) is a continuation of a program since 1987 of adding a small module to the October round of the Labour Force Survey in the Philippines (see [census.gov.ph](http://census.gov.ph)). That survey initially collected data on overseas workers who had gone abroad to work in the previous five years (whether returned or not), and asked about remittances received in the 6-month reference period prior to the survey. It currently is administered by the National Statistical Office, asks about anyone *travelling outside* the Philippines in the prior five year reference period, and is used to estimate the number of Filipinos working or living overseas, their socio-economic characteristics, and remittances sent in money or in kind. The sample size is 41,000 households, but it is not known how many international migrants were found, and when a whole household has departed, there is no one left to report on them. It is interesting that data in the survey on remittances sent via banks vs. other means is used to create a factor for multiplying the macro-data from banks on remittances received to obtain a total estimate for the country.

Based on the last available round of the survey module in October 2006, the SOF website reported (May 29, 2007) that the number of Filipinos working overseas rose by 14% to 1.5 million in September, 2006, with women slightly out-numbering men and also being younger. Remittances rose 17% compared to 2005, were 95% in cash, and 79% were sent through banks. In response to a UN questionnaire in July, 2007, to the NSO regarding whether there has been any assessment of the quality of the survey for measuring international migration, the response was that "the current sampling design may not be the best for the SOF...since it utilizes the same design meant for the LFS and not for overseas Filipinos." This indicates recognition of the difficulties of combining the purposes of the LFS with the purposes of the SOF. A number of papers and publications have been prepared based on the SOF data, notably by Yang (e.g., Yang, In Press).

*Egypt (emigrants)*

Egypt has a module on emigrants including return migrants added to its Labour Force Sample Survey (LFSS). In 2007, the Central Agency for Public Mobilization and Statistics conducted the quarterly LFSS, which has national coverage and an unknown sample size (not available at [capmas.gov.eg](http://capmas.gov.eg) website). For international migration, it first asks if any member of the household has left in the past 10 years to live abroad for more than 3 months, and remains abroad. For each such person, age, sex, relationship to h/h head, country of current residence, and year of departure are obtained, along with current employment status, occupation, and whether ever sent money to the h/h. It also has an interesting question about how long after the person left did he/she *first* send money (though with a 10-year time horizon, this may be unrealistic for those who left more than a few years ago), how much was sent the last time (but does not ask *when* was the last time), number of times remittances were received in the past 12 months and total estimated amount of money, what means were used for sending money, and what were the uses of the money (but without asking the *main* uses). Return migrants are asked the main reason for their going abroad, when they (last) moved abroad and moved back, name of country where they lived, work status/category and occupation while abroad, whether ever sent money or goods, total value per year (but this is not likely to be reliable for those sending during various years, especially several years back), how sent, and how much money he/she also brought back. The 10-year time frame is too long to be asking all the details indicated, but the separate modules on return migrants and current out-migrants abroad are generally well conceived.

*Mexico (immigrants and emigrants)*

Mexico, through its national statistical office, INEGI (Instituto Nacional de Estadística, Geografía e Informática--see [inegi.gob.mx](http://inegi.gob.mx)), administers many kinds of relevant surveys and was one of the first countries in the world to geo-reference its census data and all political boundaries by the early 1990's. INEGI administers many household surveys, including a national labour force survey. The latest available, National Survey of Occupation and Labour (ENOE) in 2007, has a sample size of 120,260 dwellings, sufficient to provide statistically reliable estimates for all 32 states and 32 self-representing cities. To measure immigrants, for each new member of the household, it asks both place (including country) of birth and of previous residence, and why came. To identify emigrants, it asks the head of household or other usual resident available aged 15+ if any former member of the household has left to live elsewhere, including in another country, and for what motive that person left. However, no time frame is specified.

In the fourth quarter of 2002, a special Module on Migration was included in a survey which at that time had a sample size of 80,000 households. Data were collected for all persons in the household on whether ever lived elsewhere, place of previous residence, and time lived in current residence. For those over age 5, questions followed on where that person lived exactly 5 years ago (facilitating computing 5-year migration rates), where, and reason for leaving. Then a series of questions is asked of all international return migrants aged 12+ in the household, on whether they had ever gone to the United States to work or seek work (but fails to identify those going to study or accompany family members who left to seek work), how many times, month/year of last departure for the US and of return, whether had legal documents (work permit, green card, other), and whether currently receives remittances from anyone in the US.

Finally, a module of questions is asked about any household member who had gone to the US *within the past 5 years* but not returned, including age at time of leaving, sex, relationship, when left, state of residence in Mexico when left, and state of destination in the US. Further questions are asked about every such out-migrant from the household (without the needed age cut-off): number of times left to live in the US, reason for last move, means of transport, remittances received from that person, and country of current residence. These questions are useful for identifying migrants, fixing the origin and destination countries and date of move (necessary for measuring migration), but are insufficient for studying either the determinants or consequences of migration.

## References Cited

- Ayhan, H. Oztas, et al., 2000. *Push and Pull Factors of International Migration: Country Report, Turkey*. Population and Social Conditions 3/2000/E/no. 8. Luxembourg: European Commission
- Bilsborrow, Richard E. and Centro de Estudios sobre Población y Desarrollo Social. 2007. *The Living Conditions of Refugees, Asylum-seekers and Other Colombians in Ecuador: Millennium Development Indicators and Coping Behaviour*. Geneva, Switz.: United Nations High Commissioner for Refugees.
- Bilsborrow, Richard E., Graeme Hugo, Amarjit S. Oberai, and Hania Zlotnik. 1997. *International Migration Statistics: Guidelines for Improving Data Collection Systems*. Geneva: International Labour Office.
- Bilsborrow, Richard E., A. S. Oberai, and Guy Standing. 1984. *Migration Surveys in Low-Income Countries: Guidelines for Survey and Questionnaire Design*. London and Dover, NH: Croom Helm.
- Bilsborrow, Richard E. and Hania Zlotnik. 1995. "The Systems Approach and the Measurement of the Determinants of International Migration." Pp. 61-76 in *Causes of International Migration*, edited by R. F. van der Erf and L. Heering. Luxembourg: Office for Official Publications of the European Communities.
- Bustamente, Jorge A., Rodolfo Corona, and Jorge Santibáñez. 1994. *Encuesta sobre Migración en la Frontera Norte de México: Síntesis Ejecutiva*. Tijuana, Mexico: El Colegio de la Frontera Norte, Consejo Nacional de Población, and Secretaria del Trabajo y Previsión Social.
- Bustamente, Jorge A., Jorge Santibáñez, and Rodolfo Corona. 1994. *Migration and Immigrants; Research and Policies, SOPEMI-Mexico. Mexico's Report for the Continuous Reporting System on Migration (SOPEMI) of the Organization for Economic Cooperation and Development (OECD)*. Tijuana, Mexico: El Colegio de la Frontera Norte.
- Castles, Stephen and Mark J. Miller. 1998. *The Age of Migration: International Population Movements in the Modern World*. Houndmills, Basingstoke, Hampshire: Macmillan.
- CEPAR. 2000. *Encuesta Demográfica y de Salud Materna e Infantil: ENDEMAIN III*. Quito, Ecuador and Atlanta, Ga.: Centro de Estudios sobre Población y Desarrollo Social; Centers for Disease Control.
- Congo, Republic of. 2005. *Enquete Congolaise Aupres des Menages pour l'Evaluation de la Pauvreté (questionnaire)*. Kinshasa, Congo: Ministere du Plan, Centre National de la Statistique et des Etudes Economiques.
- Goodman, L. A. 1961. "Snowball Sampling." *Annals of Mathematical Statistics* 32:148-70.
- Groenewold, George and Richard E. Bilsborrow. 2005. "Sampling International Migrants: Lessons Learned from the NiDi/Eurostat Study: Migration from West Africa and the Mediterranean Region to the EU." *Demotrends*:6.
- . In press. "Design of Samples for International Migration Surveys: Methodological Considerations and Lessons Learned from a Multi-Country Study in Africa and Europe." in *International Migration in Europe: Current Trends and Issues*, edited by Corrado Bonifazi, M. Okolski, J. J. Schoorl, and P. Simon. Rome: Universite di Roma.
- INEC (Instituto Nacional de Estadísticas y Censos). 2002. *VI Censo de Población y V de Vivienda*. Quito, Ecuador: INEC (Instituto Nacional de Estadísticas y Censos).
- Irfan, Mohammad. 1981. *An Introduction to "Studies in Population, Labour Force and Migration", a PIDE/ILO-UNFPA Project. Research Report Series No. 118*. Islamabad: Pakistan Institute of Development Economics.
- Irfan, Mohammad, Lionel Demery, and Arif Ghulam Mohammad. 1984. *Migration Patterns in Pakistan: Preliminary Results from the PLM Survey, 1979. Studies in Population, Labour Force and Migration Project Report No. 6*. Islamabad: Pakistan Institute of Development Economics.
- Kish, Leslie. 1965. *Survey Sampling*. New York,: J. Wiley.
- Kritz, Mary M. and Hania Zlotnik. 1992. "Global Interactions: Migration Systems, Processes and Policies." Pp. 1-18 in *International Migration Systems: A Global Approach*, edited by M. M. Kritz, L. L. Lim, and H. Zlotnik. Oxford New York: Clarendon Press ; Oxford University Press
- Ojeda, Gabriel, Myriam Ordoñez, and Hernando Ochoa. 2005. *Salud Sexual y Reproductiva en Colombia: Encuesta Nacional de Demografía y Salud 2005..* Bogotá, Colombia: Profamilia, and Columbia, MD., Macro International Inc.
- Schoorl, Jeannette J., Liesbeth Heering, Ingrid Esveldt, George Groenewold, Rob F. van der Erf, Alinda Bosch, Helga de Valk, Bart J. de Bruijn, European Commission., and Statistical Office of the European

- Communities. 2000. *Push and Pull Factors of International Migration: A Comparative Report*. Luxembourg: Office for Official Publications of the European Communities.
- Sirken, Monroe G. 1998. "A Short History of Network Sampling." *Proceedings of the American Statistical Association*:1-6.
- Somoza, Jorge L. 1977. "Una Idea para Estimar la Población Emigrante por Sexo y Edad en el Censo de un País." *Notas de Población* V:89-106.
- . 1981a. "Indirect Estimates of Emigration: Application of Two Procedures Using Information on Residence of Children and Siblings." Pp. 35-60 in *Indirect Procedures for Estimating Emigration, International Union for the Scientific Study of Population (IUSSP) Papers, No. 18*. Liege, Belgium: IUSSP.
- . 1981b. "A Proposal for Estimating the Emigrant Population by Sex and Age from Special Census Questions." Pp. 3-18 in *Indirect Procedures for Estimating Emigration, International Union for the Scientific Study of Population (IUSSP) Papers, No. 18*. Liege, Belgium: IUSSP.
- Thailand, National Statistical Office (NSO). 2005. *The NSO Vision*. Bangkok: NSO.
- . n.d. *The Labor Force Survey (Questionnaire, Parts 1-5). Plus various special modules implemented once every year or two: Part 6 Informal Employee, Part 7 Sickneses, and Part 6, Migration (Supplement in 4th quarter). In addition, implemented once were Parts 7-8, Receive/Send Money or Goods, and Foreign Migration, Special Module on International Migration used in Dec. 2006 as part of ILO/Geneva pilot project*. Bangkok: NSO.
- . 2007a. *Improving International Labour Statistics: Report of Thailand (CD version)*. Bangkok: NSO.
- . 2007b. *The Labor Force Survey: Whole Kingdom, Quarter 4: October - December 2006. Report in Thai and English*. Bangkok: NSO, Ministry of Information and Communication Technology.
- United Nations. 2004. *International Migration and Development*. New York: United Nations, Department of Economic and Social Affairs.
- . 2005. *World Economic and Social Survey, 2004: International Migration (Sales No. E/2004/75/Rev.1/Add.1)*. New York, N.Y.: United Nations.
- . 2006a. *International Migration and Development: Report of the Secretary-General (A/60/871)*. New York: United Nations.
- . 2006b. "Trends in Total Migrant Stock: The 2005 Revision, POP/DB/MIG/Rev.2005, database in digital form.
- van Dalen, Hendrik P., George Groenewold, and Tineke Fokkema. 2005. "The Effect of Remittances on Emigration Intentions in Egypt, Morocco, and Turkey." *Population Studies*, Vol. 59(1): 375-392.
- World Bank and Quentin Wodon. 2003. *International Migration in Latin America: Brain Drain, Remittances and Development*. Washington, D. C.: World Bank.
- Yang, Dean. In Press. "International Migration, Remittances, and Household Investment: Evidence from Philippine Migrants' Exchange Rate Shocks". *Economic Journal*.
- Zaba, Basia. 1986. *Measurement of Emigration Using Indirect Techniques: Manual for the Collection and Analysis of Data on Residence of Relatives*. Liège, Belgium: Ordina Editions.
- . 1987. "The Indirect Estimation of Migration: A Critical Review." *International Migration Review* 21:1395-1445.
- Zlotnik, Hania. 1992. "Empirical Identification of International Migration Systems." Pp. 19-40 in *International Migration Systems: A Global Approach*, edited by Mary M. Kritz, L. L. Lim, and H. Zlotnik. Oxford; New York: Clarendon Press; Oxford University Press.

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