# Data on intergenerational relationships and support: <br> The Mekong Integrated Population-Registration Areas of Cambodia (MIPRAoC) 

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#### Abstract

In this paper, we provide information on data from the 2012 Orphan Rider Survey, which is part of The Mekong Integrated Population-Registration Areas of Cambodia (MIPRAoC) project. In particular, the paper highlights the data that could be used to study intergenerational relationships and support. The survey was designed to compare the wellbeing of adults who lost a parent during childhood and of those who did not, with a sample size of close to 2,000 for each group. The respondents were selected from the population of the MIPRAoC project, which is representative of the rural population of the Mekong River Valley, where $20 \%$ of the Cambodian rural households reside. The paper also provides background information on the ongoing demographic surveillance of this population of over 50,000 residents. This population has been followed up since a complete census in 2008, but for some households, the census and subsequent demographic updates go back to 2000. The demographic surveillance also provides opportunity to study the residential arrangements of family members, and their changes following specific demographic events.


The Mekong Integrated Population-Registration Areas of Cambodia (MIPRAoC) project combines a demographic surveillance system (DSS) and occasional, topical "rider" socialscience surveys. In this paper, we provide information on data from the rider survey fielded in 2012 which could be used to study intergenerational relationships and support. We first provide background information on the DSS.

The Demographic Surveillance System
Description
MIPRAoC currently follows over 50,000 residents in 7 Population-Registration Areas (PRA). Registration in MIPRAoC started in 2000 with the 2,146 residents of a single village. At the time of registration, each household head provides for each household member their name (later replaced by a unique identifier), gender, birth date, relationship to head, and parental information (is the mother/father alive, and if so, where does s/he lives, else when did s/he die). All women between the ages of 15 and 74 also provided complete marriage and birth histories.

A village is the smallest administrative unit in Cambodia, whose territory is divided into provinces, districts, communes and finally villages. Within 18 months, registration was extended to all the residents of the other 4 villages in the commune where the initial village is located. The commune population of 11,115 so registered individuals was then followed biannually until 2006. This light demographic surveillance consisted of birth, death and migration registration, and for women aged 15 to 49, pregnancy and marital status updates. We thus have 13 rounds of data for the first village and 10 rounds for the most recent ones in the commune. Across those rounds, we have registered 785 births, 298 deaths, 1,905 in-migrations and 2,068 out-migrations (Heuveline et al. 2014).

As the territory of the commune consists of an island on the Mekong River, the project was initially named the Mekong Island Population Laboratory (MIPopLab). The commune itself is located in the Kandal Province. The territory of this rural province forms a ring around the Phnom Penh Province where the capital city is located. The choice of this particular commune was a convenience choice guided by the perceived need to remain close to the capital at the time (for staffing and security reasons) and the advantage of conducting a DSS on an island, as the commune was unlikely to be affected by redrawing of its administrative boundaries. Although there was no pretense of representativeness, strong urban-rural differentials suggested that the demographic characteristics of a rural community relatively close to the capital might be close to national averages. This expectation was later confirmed by comparing demographic data from the 1998 General Population Census (GPC), Demographic and Health Surveys and MIPopLab.

First, the population pyramid exhibits the demographic scars of the 1975-79 KhmerRouge period and the following baby-boom (Huguet et al. 2000). The high mortality of the late 1970s (Banister and Johnson 1993; Heuveline 1998; Neupert and Prum 2005; Lognard 2012) combined with the high fertility of the 1980s (Heuveline and Poch 2007) produces a young age structure: 53.3\% of the population registered between 2000 and 2002 was born in 1980 or after. Moreover, the low fertility of the 1970s produces a visible deficit of people aged 20 to 24 . Finally, the mortality of the late 1970s was particularly high for males. The overall male to female ratio among people registered in 2000-02 is 93.4 males per 100 females. It decreases to 69.4 males per 100 females among the cohorts born in 1960 or before, that is, among those who were 15 years and older at the outset of the Khmer Rouge regime. The sex ratio is gradually increasing through cohort replacement, and among the births we registered in 2001-06the, the sex ratio at birth is 104 male births per 100 female births.

Figure 1: Age pyramids
a. Cambodia, 1998 General Population Census

Cambodia Population: 1998

b. MIPRAoC, 2000-02 Population Registration


Source: National Institute of Statistics (1999); Heuveline et al. (2014).
Second, demographic trends are also similar to national averages. Heuveline and Poch (2007) compare MIPopLab fertility rates to those from the 2000 Cambodia Demographic and Health Survey (National Institute of Statistics 2001) and find them lower than the rural average,
but higher still than in the near-by capital city, Phnom Penh. There is no similar benchmark of nationally-representative data on mortality rates, but MIPopLab mortality rates also seem comparable, a little lower though they are, to national averages (Demont 2011). The main demographic specificity is the high level of migration, explained in part by the proximity to the capital city. Extensive, labor-related migration to the capital city is not rare, and in fact, most of the country's rural areas experience substantial outmigration (NCPD 2009). The nearly equal level of in-migration is more unusual and can be explained by two factors. The first one is that the proximity to the capital city facilitates migration back and forth. The second one is that the main economic activity in MIPopLab besides agriculture is silk weaving and young women from various other rural provinces come to work in this sector to acquire skills before moving to the capital city to seek work in the booming garment industry.

In 2007, the DSS was expanded with the addition of 6 new PRA, and the project renamed the Mekong Integrated Population-Registration Areas of Cambodia (MIPRAoC). The improvement of safety conditions allowed for a wider coverage, and to increase the DSS representativeness, the new PRA were randomly selected. To retain the central characteristic of MIPopLab, the new PRA were drawn from a sample of roughly equal size areas within all the districts classified as rural in the 1998 GPC and located along the Mekong River, from the Northern border with Laos to the Southern border with Vietnam (Figure 2). MIPRAoC is thus intended to be representative of the population of these contiguous districts, where at the time of the 1998 GPC, resided 20\% of the rural households in the country. Depending on population size, a PRA could be an entire commune (as in MIPopLab), or a group of villages within a large commune, or a group of villages in a couple of adjacent, smaller communes.

Figure 2: Location of the Mekong Integrated Population-Registration Areas of Cambodia (MIPRAoC)


Source: Poch (2009)
The initial registration in the six new PRA and demographic update in the initial PRA (MIPopLab) were conducted in 2008. The resident population of the seven PRAs was then close to 60,000 (59,592 individuals registered, Table 1). One of the selected PRAs is located in Phnom Penh Province, and though classified as rural in the 1998 Census, it has since been absorbed by the capital city's urban agglomeration and its population grown quite large. Only one third of this PRA' population has been retained in the biennial demographic updates and rider survey. The size of the population followed in the demographic updates is slightly above 50,000.

Updates were conducted in 2010 and 2012, and preparations for the 2014 round are underway.

Table 1: Selected Characteristics of the Mekong Integrated Population-Registration Areas of Cambodia (MIPRAoC), 2008 Benchmark Registration

| Province | Phnom <br> Penh |  |  |  | Kandal |  |  |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: | ---: |
| PRA | $\# 6^{1}$ | $\# 5$ | $\# 4$ | $\# 7$ | $\# 3$ | $\# 2$ | $\# 1$ |
| Kampong Cham | Kratie |  |  |  |  |  |  |
| Population | 13,607 | 11,770 | 10,379 | 7,728 | 7,279 | 4,545 | 4,284 |
| Sex ratio | 82.55 | 92.60 | 98.93 | 96.14 | 93.13 | 91.37 | 100.75 |
| Number of <br> households | 2798 | 2397 | 1917 | 1352 | 1505 | 896 | 833 |
| Average household <br> size | 4.9 | 4.9 | 5.4 | 5.7 | 4.8 | 5.1 | 5.1 |
| \% of female-headed <br> households | 21.6 | 26.4 | 16.5 | 18.3 | 27.3 | 33.5 | 12.4 |

Note:

1. Population-Registration Areas (PRA) are numbered from North (\#1) to South (\#7). PRA\#5 corresponds to MIPopLab.

Source: Poch (2009)

## Analyses

As in MIPopLab, benchmark registration in MIPRAoC includes gender, birth date, relationship to head, parental information, and for women of eligible ages, complete marriage and birth histories. Heuveline and Poch (2006) used the MIPopLab marriage histories to analyze divorce rates, in particular among the Khmer-Rouge-era marriage cohorts, and Heuveline and Poch (2007) used the MIPopLab birth histories to analyze the post-Khmer-Rouge baby-boom. To date, the marriage and birth histories from the other PRA haven't been analyzed.

All demographic update records indicate individuals' relationship to the household head. Demont and Heuveline (2008) combine census and MIPopLab data to describe household
structure in Cambodia. Heuveline et al. (2012) use the same data and focus on the transition to adulthood. Again, these analyses have not yet been replicated on the larger, more representative MIPRAoC data.

The DSS data also provide opportunities to study co-residence across generations, and changes in co-residence following demographic events. For instance, we can study whether a recently widowed individual moves in with or takes in relatives. As married couples typically begin their marital life co-residing with parents on either side, we can study after a birth whether they then form an independent household. Demographic update records were also enriched with the MIPRAoC expansion to new PRA. Of particular interest here, these records now provide data on economic exchanges at the time of marriage (exchanges of money or gifts between the bride and groom's families). Marriage remains in Cambodia one of the main forms of parental investment. As shown in Appendix I, our marriage registration now asks each woman married since the previous round:

M10: Do you know who paid for the wedding party?
M11: Before the wedding, was there an agreement between your parents and your in-laws in which money was exchanged?

M12: Do you know approximately how much your parents received?

## The Orphan Rider Survey

The Orphan Rider Survey was conducted in 2012 to coincide with the third round of data collection (2 $2^{\text {nd }}$ post-census update) in the expanded DSS. In the first round (census) questionnaire, questions on parents' survival and time of death allowed us to identify orphans, which we defined as individuals under the age of 65 at the time of the survey, having lost either biological parent before the median age at marriage in Cambodia - 23 years for females or 25 years for males. Based on these definitions, we identified 9,250 orphans across the seven PRA.

We further classified them as paternal orphans $(5,851)$, maternal orphans $(1,882)$ or bilateral orphans $(1,517)$, that is, individuals who had lost both biological parents by the cut-off age. These high numbers (relative to a population size of roughly 60,000 residents) again illustrate the very high mortality experienced during the Khmer-Rouge period, and in particular, the disproportionate increase in male mortality.

In the second round (1st post-census update), post-parental death residence histories were collected from a subset of these orphans, first randomly selecting only one orphan among full siblings, and second, randomly selecting half of the remaining paternal orphans. We collected such histories for 4,674 orphans, allowing us to identify their "social parents": the household heads and their spouses in the households the orphans lived following the death of one of their biological parents (other than their other surviving biological parent). In turn, we define as "social siblings" the biological children of these "social parents." For 1,885 of these individuals, we were able to identify at least one social sibling still living in one of our PRA (most likely the same as the individual herself).

At round 3, the Orphan Rider Survey questionnaire was administered to 4 samples of respondents: "matched" orphans (those who could be matched to at least one social sibling still living in the PRA), unmatched orphans, social siblings, and other randomly selected nonorphans. While we sought to interview all of the 1,885 matched orphans from round 3, we only targeted 1,584 of the 2,621 unmatched orphans, with the goal of interviewing 1,000 matched and unmatched orphans in each category: paternal, maternal and bilateral, and for comparison purposes, 1,000 non-orphans. For logistical reasons, 658 individuals in these samples could not be reached at round 3 and will be contacted at round 4 . Even so, preliminary results from round 3 (3,621 complete questionnaires), suggests that this alone might not suffice to reach our
targets by orphan category. We will thus add to the sample at round 4 some of the 2,621 unmatched orphans that were not included at round 3 .

The questionnaire has 3 modules. The first one is administered to the head of the household in which the individual in our samples lives; the other two are administered to the individual directly. The first, "economic" module provides information on the household's income and wealth. Respondents were also asked about the origin of land or house ownership (e.g., inherited, given by relatives), and recent exchanges of money or assets in the form of either gifts or loans, in particular with family members. The third module covers mostly physical and mental health issues, but also include a few questions on future prospects in particular with respect to own children's education and parental ability to pay for current and anticipated related expenses. The second module is likely the one of most interest for studying inter-generational support though. As shown in Appendix II, this module specifically focuses on living arrangements and family ties, and provides detailed information about any exchange in the previous 12 months between the individual and her relatives or spouse's relatives in the form of rice, crop, labor, farm animal or equipment, and money (given or loaned). Examples of questions include:

L43: In the past 12 months, has your household received/given rice from/to one of these relatives for free (not in exchange for money, other goods or services)?

L44: In the past 12 months, has your household received/given any other crop (corn, for instance) from/to one of these relatives for free (not in exchange for money, other goods or services)?

L45: In the past 12 months, has your household received/given any labor (help with your/their farm or business) from/to one of these relatives for free (not in exchange for money, other goods or services)?

L46: In the past 12 months, has your household borrowed/lend any farm animal or farm/business equipment from/to one of these relatives for free (not in exchange for money, other goods or services)?

L47: In the past 12 months, has your household borrowed/lend any money from/to one of these relatives that you will repay later?

L48: In the past 12 months, has your household received/given any money from/to one of these relatives that you will not have to repay later?

Each of these questions is asked to both the head of the household, and if married, his or her spouse.

Another detailed set of questions ask about land, housing, livestock, money, gold or jewelry received as inheritance from parents or in-laws. For instance:

L70: Did you inherit any land from your parents?
with similar questions for "house and/or residential land" (L73), livestock (L75), gold/jewelry (L77), and cash (L79). Finally, a couple of questions also cover debts that might have been passed from parents to children (L82-L84).

## Data Availability

Anonymous census and event files are available for 2000 to 2008 , that is, up to the census round in the seven PRA. We are in the process of transferring the archiving and distribution of the 2000 to 2006 files and documentation to the Data Sharing for Demographic Research (DSDR) at the Inter-University Consortium for Political and Social Research (ICPSR). The 2010 analytical files are being finalized, and the 2012 data are undergoing cleaning and consistency checks at this writing.

## References

Banister, Judith and E. Paige Johnson. 1993. After the nightmare: The population of Cambodia, in Benedict Kiernan (ed), Genocide and Democracy in Cambodia: The Khmer Rouge, the United Nations and the International Community. New Haven, CT: Yale University Southeast Asia Studies, pp. 65-140.

Demont, Floriane. 2011. Dynamiques Démographiques et Parcours de Vie au Cambodge, 1998-2008 :
Des Trajectoires Individuelles et Familiales à l'Epreuve du Developpement . Genève, Switzerland : Université de Genève, Doctoral Thesis.

Demont, Floriane and Patrick Heuveline. 2008. "Diversity and Change in Cambodian Households (19982006)," Journal of Population Research 25(3): 287-313.

Heuveline, Patrick. 1998. 'Between one and three million’: Towards the demographic reconstruction of a decade of Cambodian history, Population Studies 52(1): 49-65.

Heuveline, Patrick, Brooks Ambrose, Sothy Eng, Gail Yen, Bunnak Poch, and Savet Hong. 2014. The Mekong Island Population Laboratory (MIPopLab), A Demographic Surveillance System in Rural Cambodia (2000-06). Working Paper, California Center for Population Research, University of California, Los Angeles.

Heuveline, Patrick, Floriane Demont and Bunnak Poch. 2012. "The Transition to Adulthood in Cambodia," Population Working Paper PWP-CCPR-2012-016, California Center for Population Research, University of California, Los Angeles.

Heuveline, Patrick and Bunnak Poch. 2006. "Do Marriages Forget Their Past? Marital Stability in post-Khmer-Rouge Cambodia," Demography 43(1): 99-125.

Heuveline, Patrick and Bunnak Poch. 2007. "The Phoenix Population: Demographic Crisis and Rebound in Cambodia," Demography 44(2): 405-26.

Huguet, Jerrold W, Apichat Chamratrithirong, Nott Rama Rao, and San Sy Than. 2000. Results of the 1998 population census in Cambodia, Asia-Pacific Population Journal 15(3): 3-22. Lognard, Marie-Odile. 2012. "Conséquences démographiques de la période khmer rouge," [Demographic consequences of the Khmer Rouge period] paper presented at the Chaire Quételet, Impact démographique des conflits. Last accessed on 12/12/2013 at http://www.uclouvain.be/cps/ucl/doc/demo/documents/Lognard.pdf National Committee for Population and Development (NCPD) .2009. Migration and Development in Cambodia. Phnom Penh, Cambodia: The Office of the Council of Ministers and United Nations Population Fund.

National Institute of Statistics. 1999. General Population Census of Cambodia 1998: Final Census Results. Phnom Penh, Cambodia: National Institute of Statistics, Ministry of Planning.
$\qquad$ . 2001. Cambodia Demographic and Health Survey 2000. Phnom Penh, Cambodia: National Institute of Statistics and Directorate General for Health, and Calverton, MD: ORC Macro. Neupert, Ricardo F. and Virak Prum. 2005. "Cambodia: Reconstructing the demographic stab of the past and forecasting the demographic scar of the future," European Journal of Population 21(2/3): 217-243. Poch, Bunnak. 2009. "Demographic Surveillance System: MIPRAoC, paper presented at the Annual General Meeting of the INDEPTH Network, 25-29 October 2009, Pune, India.

## APPENDICES

## Appendix I: Sample Marriage Form



|  | was exchanged? |  | $2=$ ¢G $\rightarrow$ END |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| M12 |  <br> Do you know approximately how much your parents received? |  | (amount in US Dollars) |  | M12 |  |  |  |  |  |
| โセกษช่โนึโโน (Comments): |  |  |  |  |  |  |  |  |  |  |
| M13 |  |  |  |  |  |  |  |  |  |  |
|  <br>  |  |  |  |  |  |  |  |  |  |  |
|  |  | 11 | 11 | Second | ntry: |  |  |  | 1 | 1 |






| L43 |  | L43 | 1 |
| :---: | :---: | :---: | :---: |
|  |  <br>  <br>  <br> the past 12 months, has your household received/given rice from/to one of these relativesfor free (not in exchange for money, other goods or services)? <br>  <br>  <br>  <br>  |  |  |
|  <br>  <br> L44 <br> In the past 12 months, has your household received/given any other crop (corn, for instance) from/to one of these relatives for free (not in exchange for money, other goods or services)? See code for L 43 |  |  |  |
|  <br>  any labor (help with your/their farm or business) from/to one of these relatives for free (not in exchange for money, other goods or services)? Code for L43 |  |  |  |
|  <br>  <br> farm animal or farm/business equip-ment from/to one of these relatives for free (not in exchange for money, other goods or services)? Code for L43 |  |  |  |
| L47 |  โูครโษ? โโบีกู่ L43 (In the past 12 months, has your household borrowed/lend any money from/to one of these relatives that you will repay later? ) Code for L43 |  |  |
| L48 |  <br>  money from/to one of these relatives that you will not have to repay later?) | L48 | 1 |
|  |  |  |  |
| L49 | Check: IS ANY OF THE RELATIVES (PARENT/BROTHER/SISTER) OF THIS PERSON'S SPOUSE'S LIVING IN A DIFFERENT HOUSEHOLD, VILLAGE OR COMMUNE? |  |  |
|  |  | L49 | 1 |
|  |  |  |  |
| L50 |  <br>  of thèse spouse's relatives for free (not in exchange for money, other goods or services)?) Code for L43 | L50 | 1 |
| L51 |  <br>  received/given any other crop (corn, for instance) from/to one of these spouse's relatives for free (not in exchange for money, other goods or services)?) Code for L43 | L51 | 1 |


 ..... L52
received/given any labor (help with your/their farm of business) from/to one of these spouse's relatives for free (not in exchange for money, other goods or services)?) Code for L43

 ..... L53 ..... |  | L54 |
| :--- | :--- |
|  |  |

 ..... -
In the past 12 months, has your household borrowed/lend any money from/to one of these spouse's relatives that you will repay later? Code for L43
  of these spouse's relatives that you will not have to repay later? Code for L43
L55

$\square$

##  

Note : In L56-61" anyone else" mean anyone other than a biological parent(mother/father)or sibling(brother/sister)of this person or his/her spouse. It includes any non-relative as any more distant relative (grand-parent, uncle /aunt, cousin ,etc......)


received/given any labor (help with your/their farm or business) from/to anyone else for free (not in exchange for money, other
goods or services)? goods or services)?


borrowed/lend any farm animal or farm/business equipment from/to anyone else for free (not in exchange for money, other goods or services)?

 you will repay later?

 anyone else that you will not have to repay later?


| โธี่รูกึนึนธกั่มี? |  |  |  |
| :---: | :---: | :---: | :---: |
|  |  | L62c |  |
| L62c What would you sell? |  |  |  |


 away. What would you do to find these $\$ 300$ ?

What has been your father's primary occupation during most of his life?

## 

(What is the highest grade your father completed? See codes for R6 (CNUS form))


| L66 |  | L66 | 1 |
| :---: | :---: | :---: | :---: |
|  | What has been your mother's primary occupation during most of her life? |  |  |
| L67 |  | L67 | 1 |
| L68 |  | L68 | 1 |


โิถรึรูงกบ่เร่ L73 - How much land do they own? (enter area and the code for the area unit) (Unit codes: 1 if area is reported in Square meters,

$1=$ ตรร乌ู่


L71


Did you inherit any land from your parents?
3=ษิรตรงรูถรีตำนร่น่ $\rightarrow$ L73





How much land did your spouse inherit? (enter area and the code for the area unit - See Codes from L69)


| N | u | 7 |  |  |  | uso |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |

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