



ined
INSTITUT
NATIONAL
D'ÉTUDES
DÉMOGRA
PHIQUES



6th Conference of the

European Survey Research Association

Reykjavik, Iceland, July 13-17, 2015

***When national censuses met small-scale surveys...
A longitudinal project in rural Mali***

Véronique Hertrich (*INED, Paris, France*)

Assa Gakou Doumbia (*INSTAT, Bamako, Mali*)

& colleagues

Research Project *Slam – Suivi longitudinal au Mali*

<http://slam.site.ined.fr/>

-
- Substantial improvement in Demographic knowledge on Sub-Saharan Africa: more data, better access.
 - National data:
 - ✓ Since 1950, over 500 national demographic surveys and censuses were conducted in Africa (55 countries)
 - ✓ Free access to data promoted by the international program of surveys: DHS, MICS
 - ✓ Increasing availability of national census data (publications, IPUMS)
 - Small scale data:
 - ✓ Demographic surveillance systems (In-Depth networks, 39 sites in SSA)
 - ✓ Specific surveys
- Complementary/opposite approaches:
representativeness/comparison vs accurate/detailed information
- = incompatible approaches?***

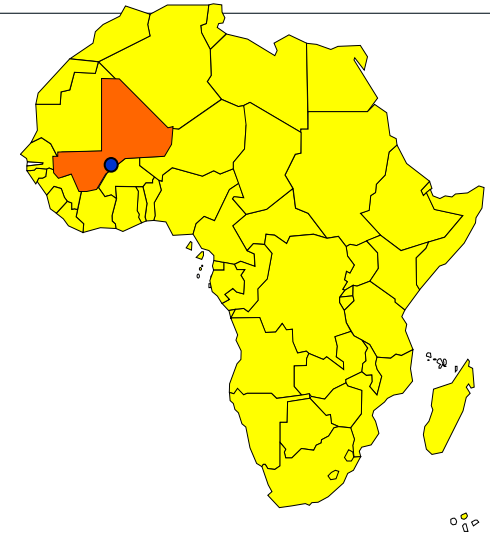
Can we use national census data in a small scale observation system?

- Feasibility*
- Opportunities for analysis*

→ Focus on a follow-up survey in rural Mali



Context



The population

- Location: Southeast Mali, 450 km from Bamako
- Bwa ethnic group
- Farmers, family-based production
- Low school enrolment until the 1990s
- High fertility (TFR=8)

The observation system

- implemented in 1987-89 → *retrospective approach*
- a follow-up survey, a new round every 5 years → *prospective approach*
- last round: 2009-10.
- 7 villages (4300 inhab. en 2009)

Objectives

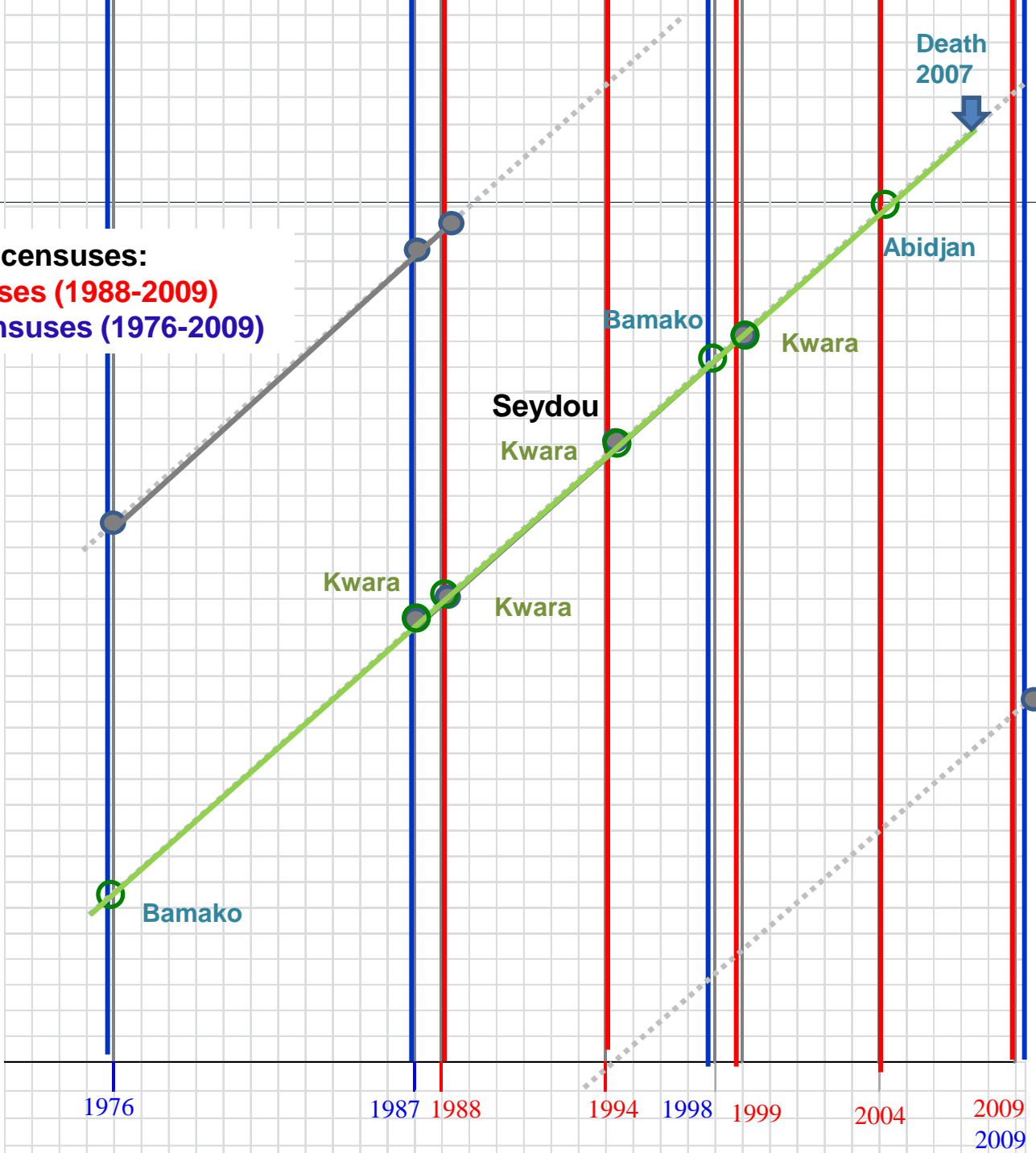
- Demographic trends and family changes in a rural/traditional population
- Changes, emerging behaviors in a context often considered as static

The follow-up survey (« enquête renouvelée »)



- « Enquête renouvelée » = a « renewed survey »
 - *old data are given a second life, considered as a first/previous round of the survey*
 - *when the survey begins, a nominative database of the population is already available*
- Our concern: long-term changes in family structures
 - Impossible through retrospective data*
 - *demand for existing data* → *national censuses*
- First step in 1988:
 - Realise a local census
 - Copy the questionnaires of the 2 national censuses (1976, 1987)
 - *Matching the individual data from the 3 censuses*
- Every 5 years: a new local census + potentially a national census realized since the previous round
- Current database: **9 censuses, 1976-2009**

9 independant censuses:
- 5 local censuses (1988-2009)
- 4 national censuses (1976-2009)



- **The principle of the survey:**

- ✓ Input: **cross-sectional**, independant data
- ✓ Ouput: (semi-)**longitudinal** data, individual itineraries

- **The matching process:**

- ✓ Data are organized by domestic groups (zû)
- ✓ First matching is done by hand
- ✓ Work meetings by families (lineages):
 - To control and complete the matching
 - To collect additionnal data

→ Objective: know the status and place of residence at every census for each individual registered by at least one census.

- **The bet of the survey: identify and follow everyone**

- **Few individuals « unknown »:**

3 from the 1976 census (0,1 %), 5 from the 1998 census (0,1%).

- **Database:** N=9200 indiv. recorded as resident at least at 1 census

Potential for analysis

Long-term and (semi-)longitudinal data

→ Patterns, trends **and dynamics**

✓ At the *individual* level

ex: intercensal emigration rate per age

✓ At the *family* level → dynamics of domestic groups

ex: probability of segmentation, transition between types of structures

✓ *Linking individual* behaviors **and family** environnement

Probability to experience an event according the structure of the family at the begining of the period of reference or according its intercensal dynamic

Ex: probability to emigrate according the size of the domestic group or the presence of other emigrants

Independent censuses, with matched individual data

- ✓ **A same reality, different approaches (national or local censuses)**

ex: family structure: residential unit / economic unit / « household »

- ✓ **A same question, recorded by independant censuses**

Consistency of reports

Patterns of errors

ex: **age** recorded at different censuses for the same individuals

survival of father and mother (indirect estimates of adult mortality)

Addressing the complexity of family environment

- Contextualizing the registration of family unit: domestic group vs residential unit
- Where is the « household » of the national census ?

The critical information on age

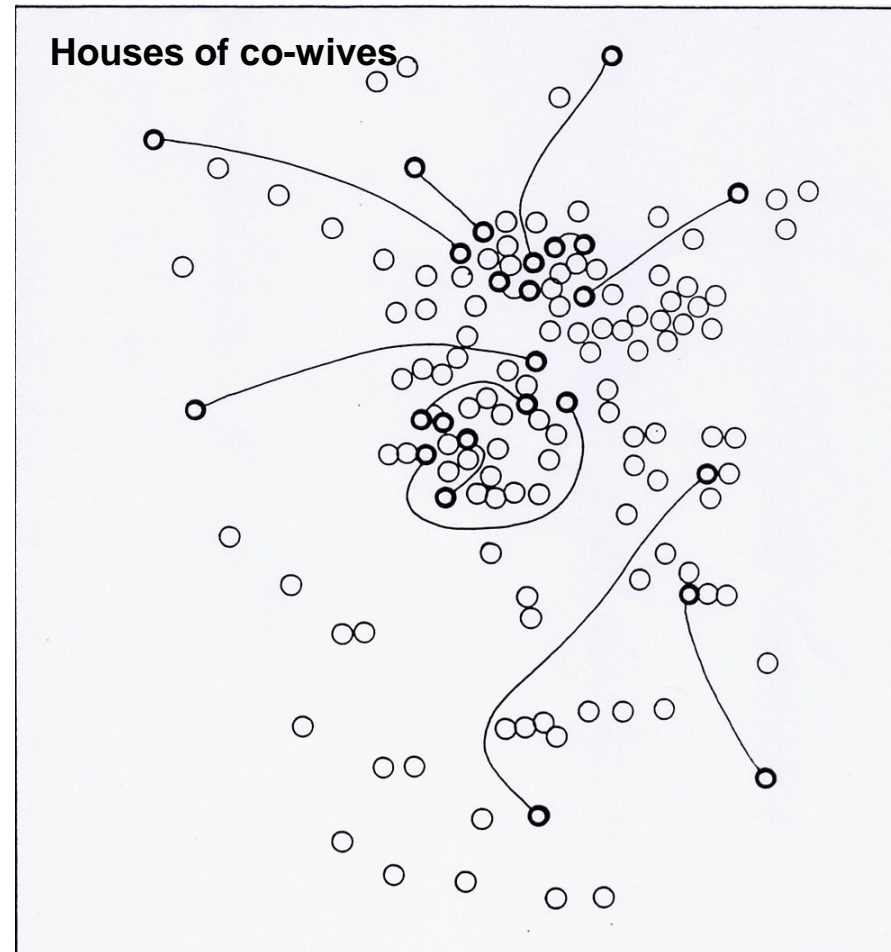
- Levels of inconsistencies
- Marital itinerary and distorsion in age reporting

Addressing the complexity of family environment

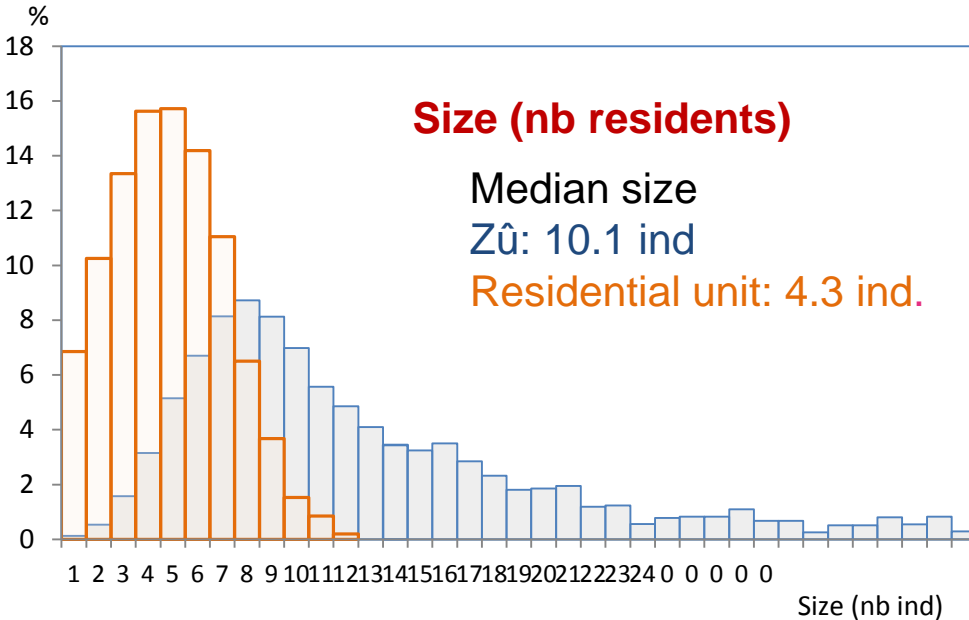
Zû = Family farm (domestic group)
= Economic unit, people « *who work and eat together* »

No physical delimitation

- 2.6 dwellings on average per zû
- Dwelling (clay hut) = the place to sleep



Distribution (%) of the population according the structure of the domestic group (zû) and the residential unit. Local census 2009.



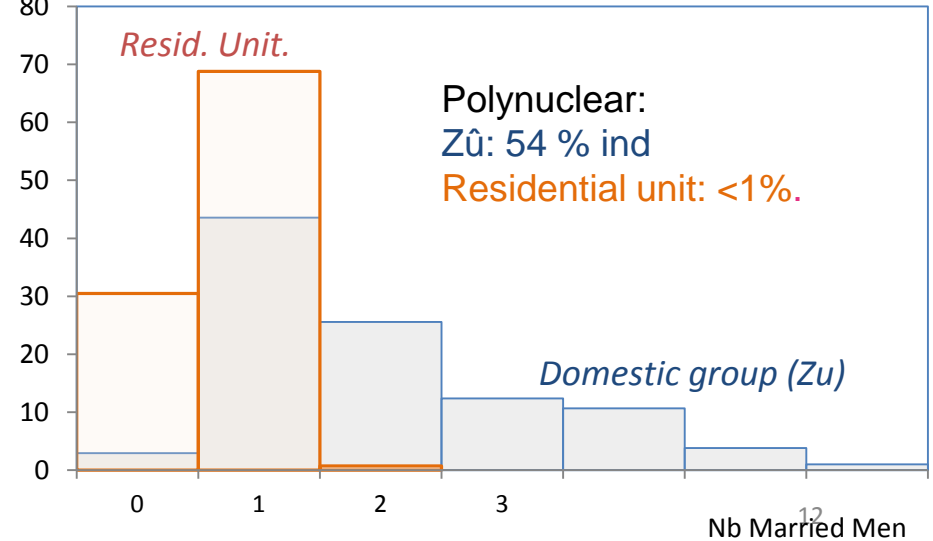
Sex of the head

	Zû	Dwelling
Female Head	<1%	23%
Male Head	99%	77%

60+ old living alone or in small families

	Zû	Dwelling
Living alone	<1%	32%
Living with:		
-- max 2 others	4%	67%
-- min 3 others	96%	33%

Nb of conjugal units (married men)



The household of the national census, the residential and the economic family units

National census (2009), enumerator handbook:

“The household is composed by an individual or by a group of individuals, related or not, living under the same roof under the responsibility of a household head whose authority is recognized by all members. /.../ An ordinary household consists of a head of household, his wife/ves and their unmarried children, possibly with other people, with or without a family relationship.”

Population according to the characteristics of the family unit	National census	Local census	
	Household	Economic (Zû)	Residential
Median size	5,4	10,1	4,3
Nb married men			
0	16	3	30
1	82	44	69
2+	1	53	1
Female Head	15	<1%	23
Part of the nuclear family of the head in the unit			
100%	72	16	-
50% +	96	60	-
% adolescents boys (12-20) living only with other men	17	<1	56
% adolescents girls (12-20) living with à Female head	16	<1	39

Example 2: The critical information on age



- Approach: Comparing 2 census registrations of the respondent's age
- National censuses at \underline{t} and $\underline{t+10}$ → 4853 linked observations
- Indicator of consistency:
 year of birth (census \underline{t}) – year of birth (census $\underline{t+10}$)
- Inconsistencies:
 - 2 years +: 45%
 - 5 ans et plus : 21%

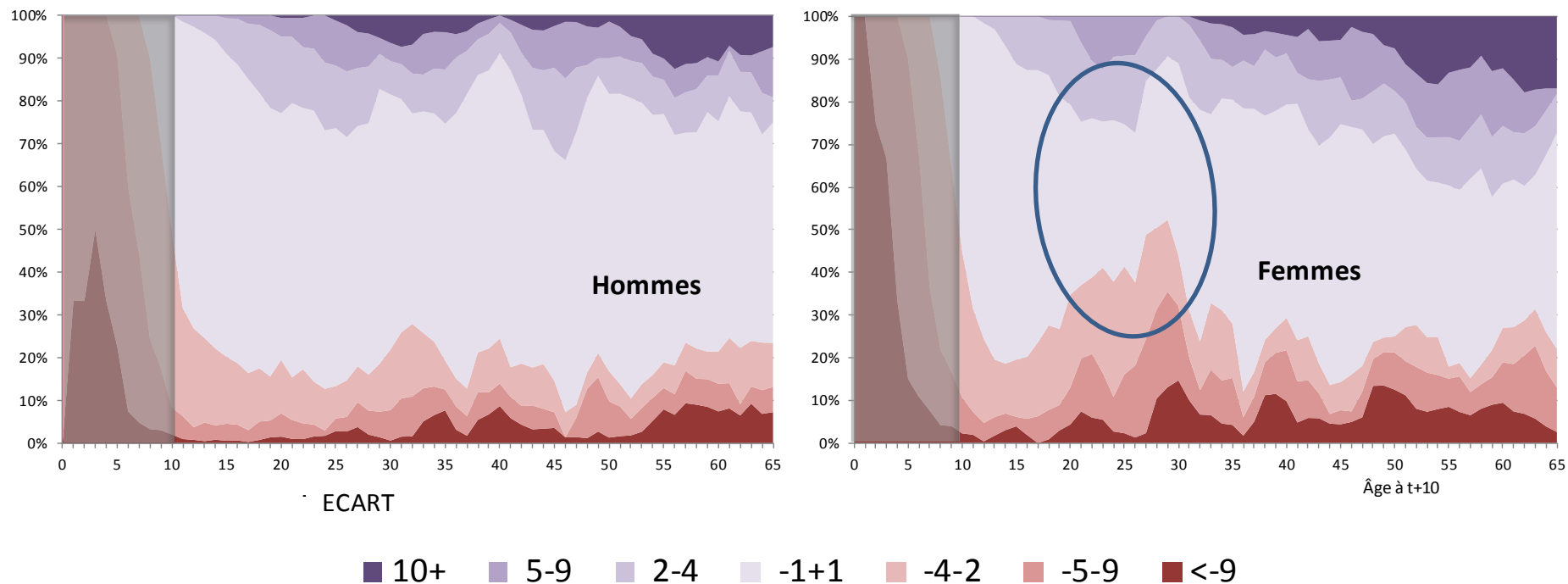
Incohérences sur l'âge entre recensements successifs (t, t+10)

Selon l'âge au second recensement (t+10) (moyennes mobiles)

Red-Pink: Negative gap → « rejuvenation », *age at t+10 < age predicted by the report at t*

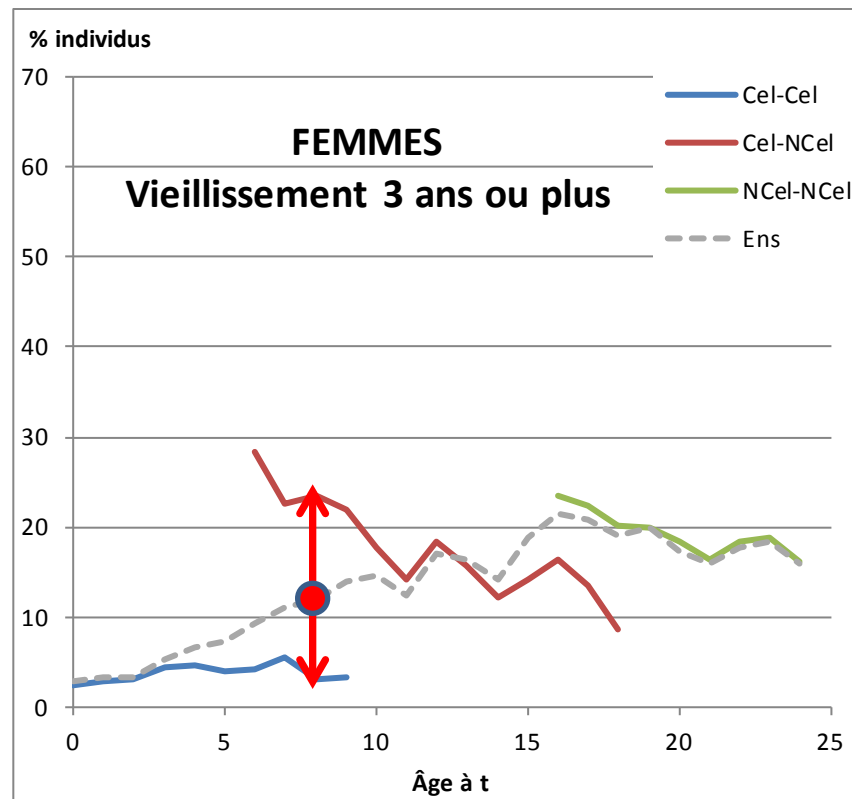
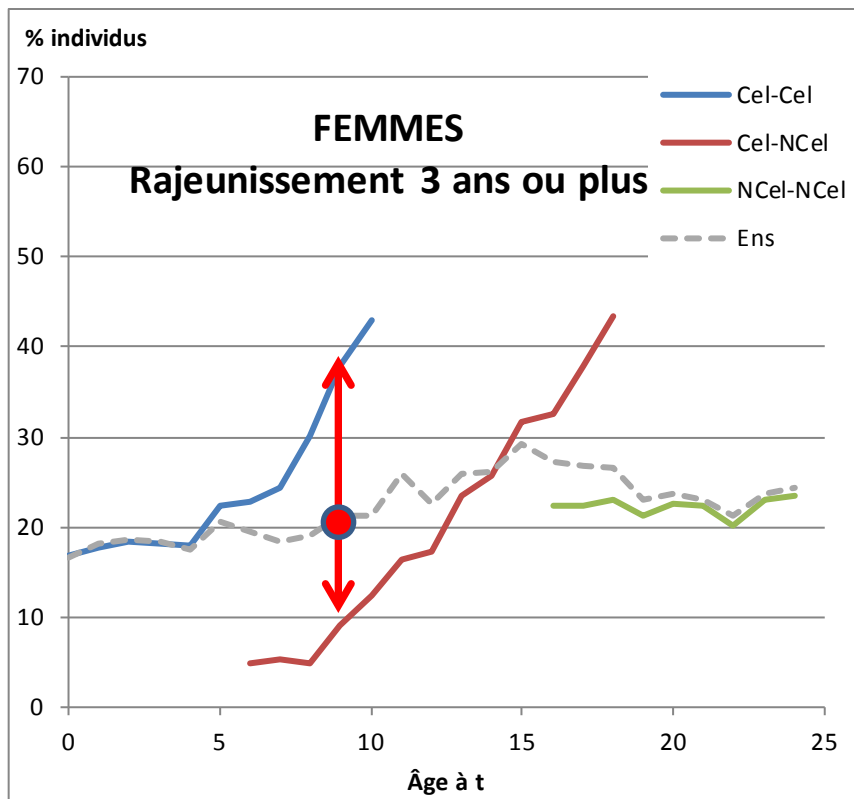
Violet: Positive gap → « ageing », *age at t+10 > age predicted by the report at t*

(We do not know which report is the best (neither if one is accurate)



Fréquence et sens des discordances de 3 ans et plus selon la trajectoire d'entrée en union.

FEMMES



To conclude

- Why should we include national data in small scale survey?
 - Analytical potential
 - Because they exist
- Feasibility in different contexts?
 - Convincing experiences were conducted in the 70s and 80s in Burkina Faso and in Togo (including urban areas)
 - A new research is beginning in Senegal (national censuses and DSSs)
- Building bridges between national offices of statistics and researchers
 - A win-win operation
 - Local level: the observation system is developed
 - Statistical office:
 - methodological feedbacks on the data
 - Additional exploitation and valorisation of existing data
 - Development of common projects

***Thank you
Merci !***

hertrich@ined.fr

