Harmonized Census Geography in IPUMS International for Spatio-temporal Research:
Examples of Sub-national Trends in select SDG Indicators from Developing Countries

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15th Congress of IAOS
December 6, 2016
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IPUMS
International

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International

Home | **Select Data** | **FAQ** | **Help** | **Logout**

PROJECT

About IPUMS-I
How to Cite IPUMS-I
User Registration and Login

DATA

Browse and Select Data
Download Your Data Extract
Geography and GIS
Supplemental Data Files
Analyze Data Online

SAMPLES

Sample Descriptions
Variance Estimation
Source Documents

RESOURCES

Help
User Forum
Bibliography
International Partners
Teaching with IPUMS

Integrated Public Use Microdata Series, International

census microdata for social and economic research

IPUMS-International is a project dedicated to collecting and distributing census data from around the world. Its goals are to:

- Collect and preserve data and documentation
- Harmonize data
- Disseminate the data absolutely free!

79 countries - 258 censuses - 560 million person records

Source data for IPUMS-International are generously provided by participating National Statistical Offices

IPUMSI News

NEW! 20 samples added
NEW! Geography variables revised
Online tabulator
Class accounts
Latin America project extended
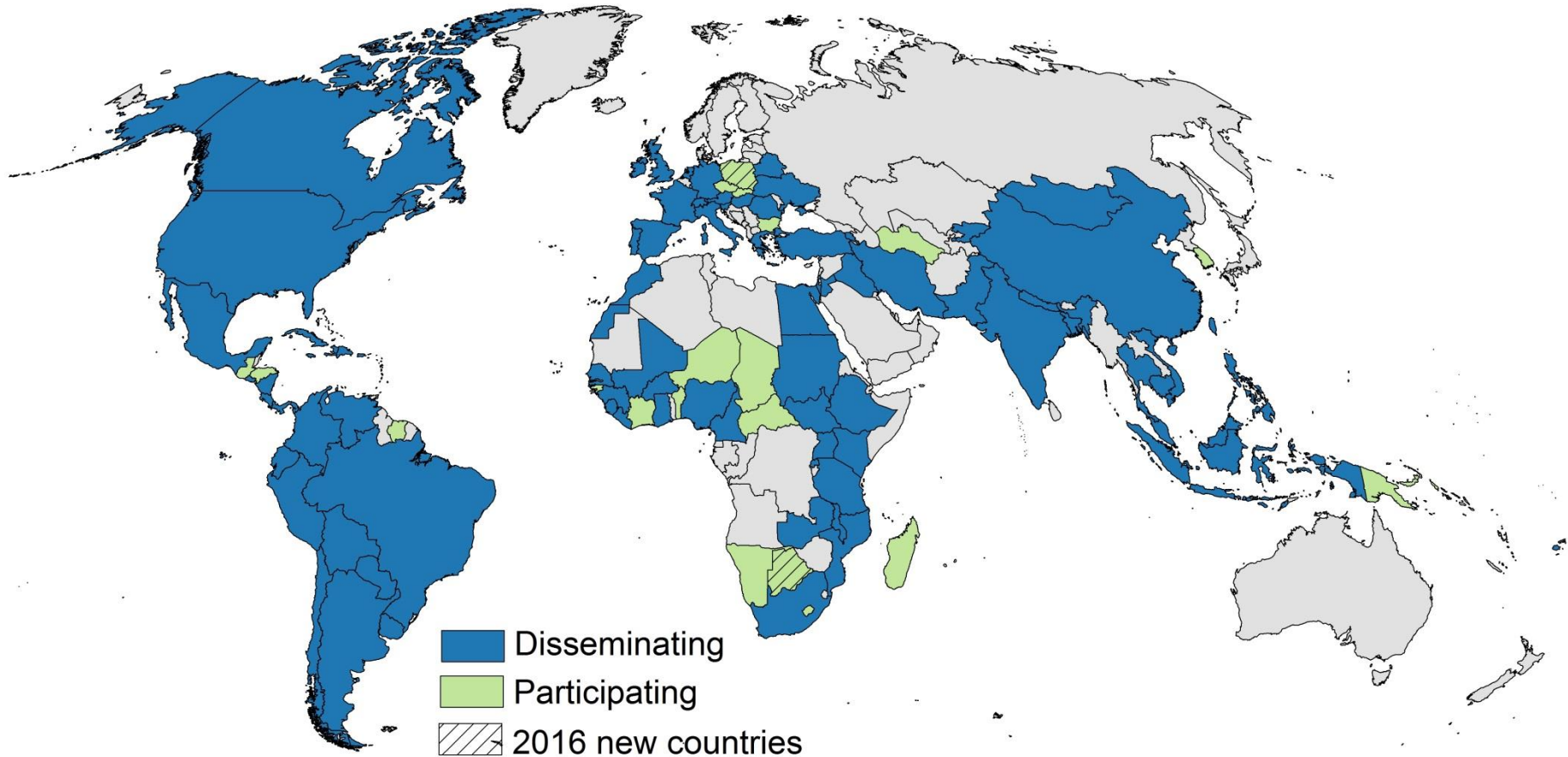Integrated DHS project funded
... All news items

MPC Data Projects

IPUMS-USA and others

Sign up
to receive News of interest to IPUMS-International data users and producers.

IPUMS Microdata Availability

Disseminating
Participating
2016 new countries

82 countries — 277 censuses — 614 million person records

IPUMS
International

IPUMS Samples per Country

Country		Country		Country		Country	
Argentina	5	Fiji	5	Malaysia	4	Saint Lucia	2
Armenia	2	France	8	Mali	2	Senegal	2
Austria	5	Germany	4	Mexico	8	Sierra Leone	1
Bangladesh	3	Ghana	3	Mongolia	2	Slovenia	1
Belarus	2	Greece	5	Morocco	3	South Africa	4
Bolivia	3	Guinea	2	Mozambique	2	South Sudan	1
Botswana	4	Haiti	3	Nepal	1	Spain	4
Brazil	6	Hungary	5	Netherlands	3	Sudan	1
Burkina Faso	3	India	6	Nicaragua	3	Switzerland	4
Cambodia	2	Indonesia	9	Nigeria	5	Tanzania	3
Cameroon	3	Iran	2	Pakistan	3	Thailand	4
Canada	5	Iraq	1	Palestine	2	Trinidad & Tobago	4
Chile	5	Ireland	9	Panama	6	Turkey	3
China	3	Israel	1	Paraguay	5	Uganda	2
Colombia	4	Italy	1	Peru	2	Ukraine	1
Costa Rica	5	Jamaica	3	Philippines	3	UK	2
Cuba	1	Jordan	1	Poland	4	USA	7
Dominican Republic	5	Kenya	5	Portugal	4	Uruguay	6
Ecuador	6	Kyrgyz Republic	2	Puerto Rico	6	Venezuela	4
Egypt	3	Liberia	2	Romania	4	Vietnam	3
El Salvador	2	Malawi	3	Rwanda	2	Zambia	3
Ethiopia	3						

IPUMS International

Harmonization for Comparative Analysis

NSO microdata: census-by-census, limited documentation

IPUMS: simplify comparison across time and place

1. **Integrate census samples**
   - common format for data and metadata
   - bring together in common database
2. **Harmonize variables**
   - common codes for variables across all data files
   - composite coding structure
     - first digit = general code (common to many censuses)
     - trailing digits = detailed codes
3. **Disseminate customized pooled data files**
   - user downloads custom data extracts
   - pooled samples containing only selected variables

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Translation Table

Input

Bangladesh 2011	Mexico 1970	Kenya 1999
1 = Unmarried	1 = Married, civil & relig	1 = Never married
2 = Married	2 = Married, civil	2 = Monogamous
3 = Widowed	3 = Married, religious	3 = Polygamous
4 = Divrc or separated	4 = Consensual union	4 = Widowed
	5 = Widowed	5 = Divorced
	6 = Divorced	6 = Separated
	7 = Separated	
	8 = Single	

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Translation Table

Harmonized

Code   **Label**

Code	Label
1	**Single**
2	**Married or in union**
2	▷
2	▷
2	▷
2	▷
2	▷
2	▷
2	▷
3	**Divorced or separated**
3	
3	
4	**Widowed**

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Variable Page: Metadata Documentation

MARST

Add to cart | Change samples

Marital status
Group: Demographic — PERSON

| Description | Comparability | Universe | Codes | Availability | Questionnaire Text | Source Variables |

Description

MARST describes the person's current marital status according to law or custom. Individuals who remarried should report the status relevant to their most recent marriage. Census instructions rarely explicitly limit marital status to strictly legal unions.

Note regarding universe: The lowest age at which a person can be anything but "never married" varies among samples.

IPUMS International

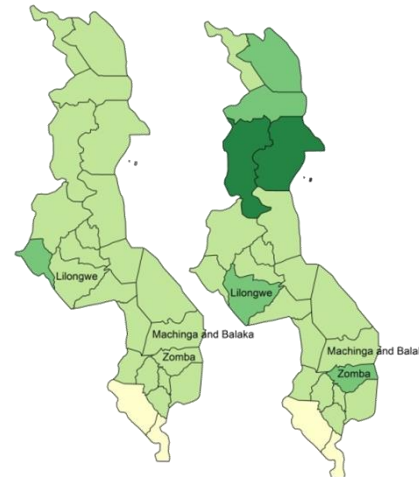# IPUMS Customizable Data Extract System

Geography in the microdata

H01100013200401313
P01100113220661935 02001
P01100213310341967 05001
P01100313310421959 02001
H02100012200401313
P02100112210665835 02001
P02100213220663132 02002
P02100313310040067 05001
P02100413310020059 02001
H03100012200401313
P03100112210561538 02001

Digital Maps
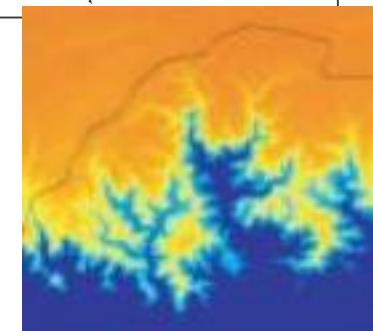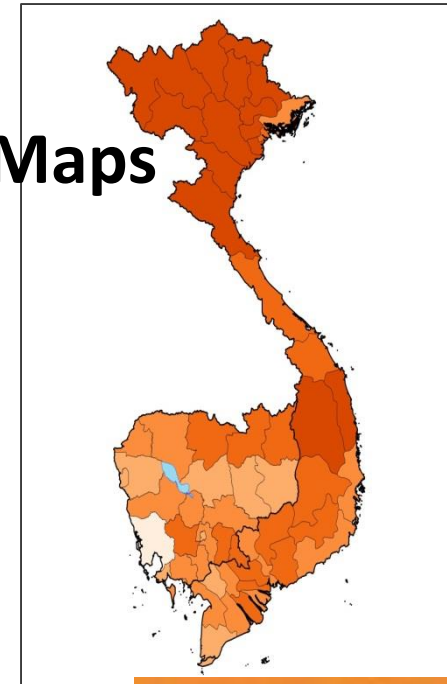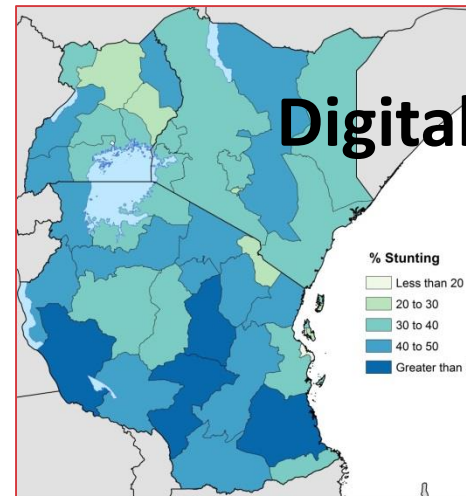
% Urban for 3 districts of Malawi (Censuses 1987-2008)

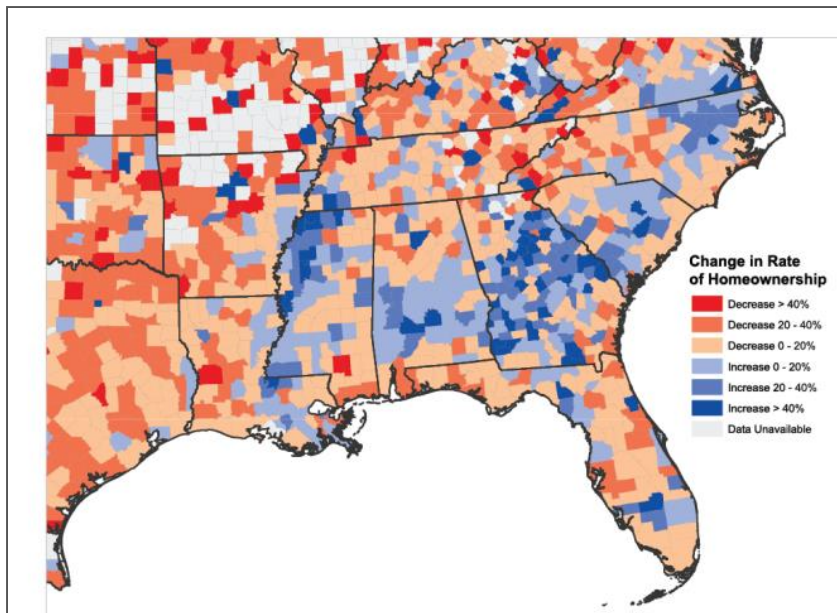| Region	Year	
	1998	2008
Mzimba/Mzuzu city	16.3	17.9
Lilongwe/Lilingwe city	32.6	34.2
Blantyre/ Blantyre city	62.3	58.2

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Spatial challenges: Estimation

How to summarize information
- Average
- Max
- % Change
- many others …

Change in Rate of Homeownership
- Decrease > 40%
- Decrease 20 - 40%
- Decrease 0 - 20%
- Increase 0 - 20%
- Increase 20 - 40%
- Increase > 40%
- Data Unavailable

Microdata:
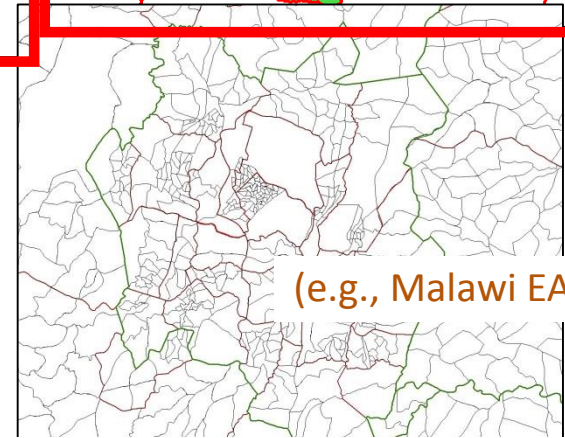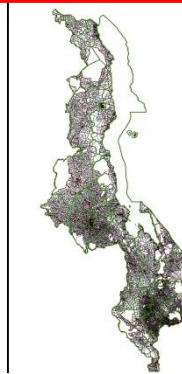Appropriate summaries
Test multiple methods

H01100013200401313
P011001132206193502001
P011002133103419670501
P011003133104219590201
H02100012200401313
P021001122106658350201
P021002132206631320202
P021003133100400670501
P021004133100200590201
H03100012200401313
P031001122105615380201

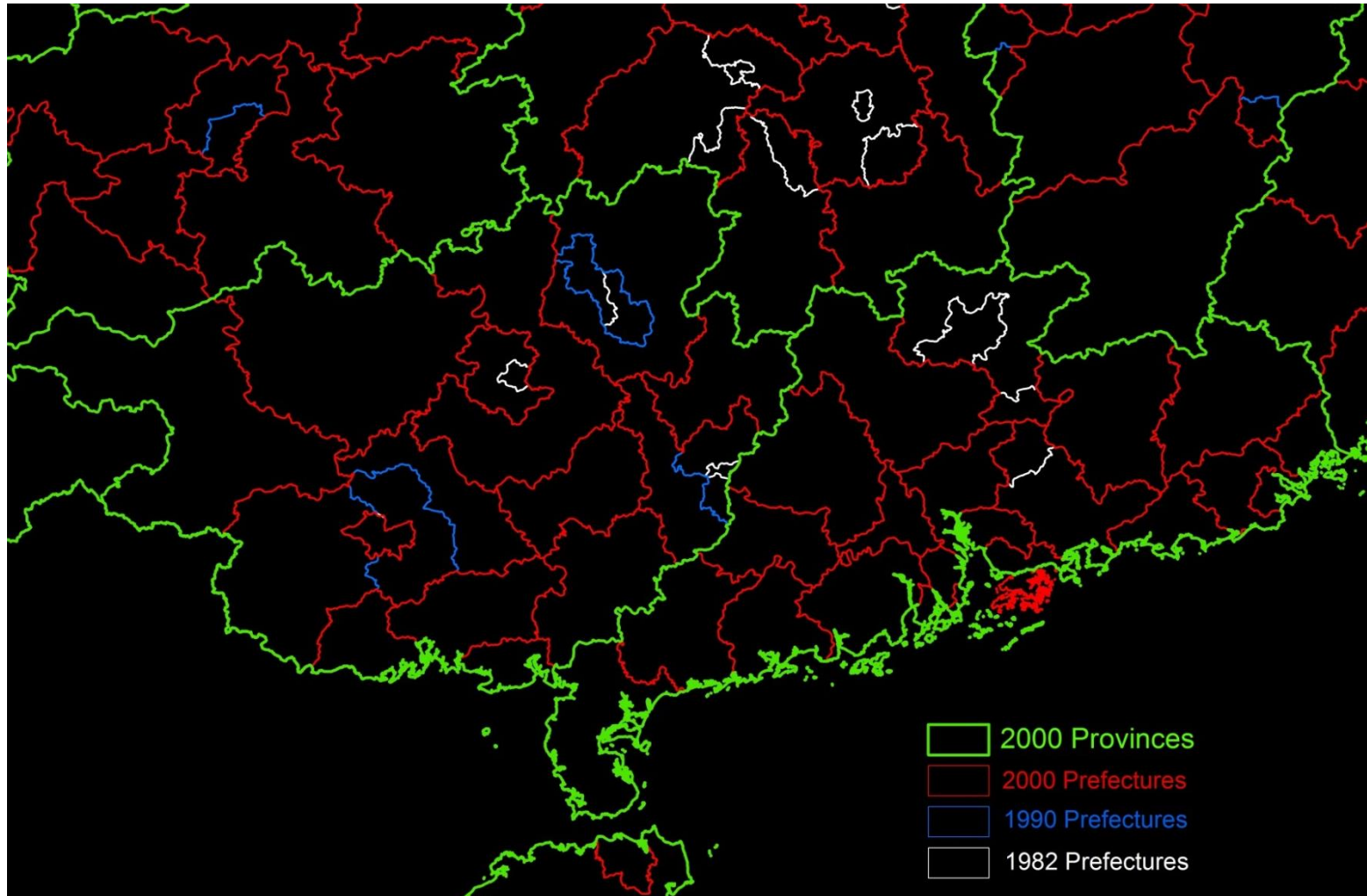# Spatial challenges: Scale

Country

1st Admin

2nd Admin

(e.g., Malawi EAs)
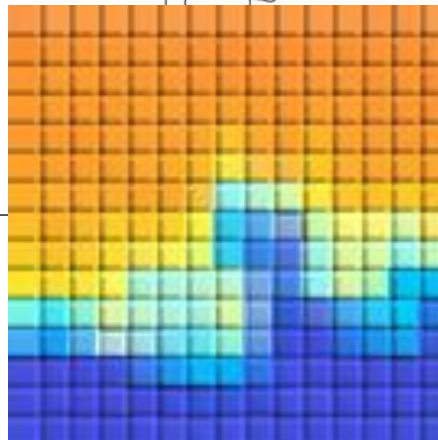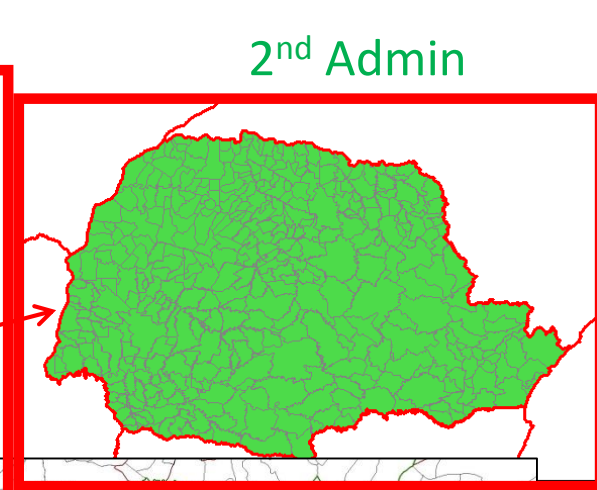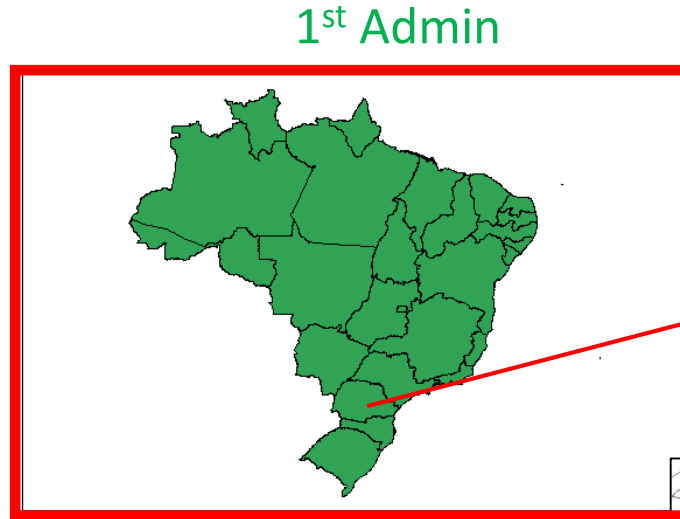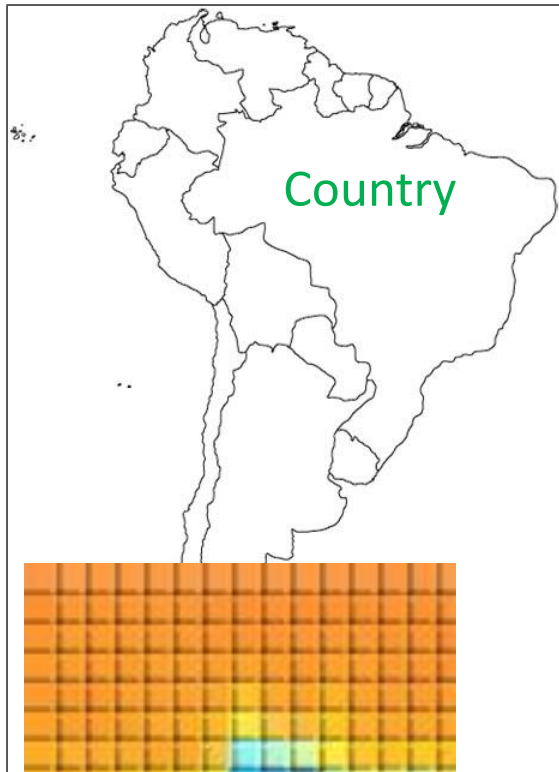
Other data sources:
E.g., grid cell/raster
(uniform spatial size)

Ideal solution:
small units with uniform population size

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Space + Time

2000 Provinces
2000 Prefectures
1990 Prefectures
1982 Prefectures

GUANGXI, CHINA 1982-2000

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International

Harmonizing geographic units by name

code	label	mw1987a	mw1998a	mw2008a
rectype	DISTMW	H	H	H
columns	District, Malawi			
proj1		MW87A094	MW98A021	MW08A022
proj2				
	# Northern Region			
101	Chitipa	101 = Chitipa {1982}	101 = Chitipa {2581}	101 = Chitipa {3687}
102	Karonga	102 = Karonga {2787}	102 = Karonga {4011}	102 = Karonga {5817}
103	Nkhata Bay and Likoma	103 = Nkhata Bay {2935}	103 = Nkhata Bay {3340}	103 = Nkhata Bay {4303}
103	"		106 = Likoma {155}	106 = Likoma {199}
104	Rumphi	104 = Rumphi {1992}	104 = Rumphi {2539}	104 = Rumphi {3930}
105	Mzimba	105 = Mzimba {9355}	105 = Mzimba {11728}	105 = Mzimba {14069}
107	Mzuzu			107 = Mzuzu city {2739}
	# Central Region			
201	Kasungu	201 = Kasungu {7245}	201 = Kasungu {9687}	201 = Kasungu {12629}
202	Nkhota Kota	202 = Nkhotakota {3930}	202 = Nkhota Kota {5006}	202 = Nkhota Kota {6126}
203	Ntchisi	203 = Ntchisi {2639}	203 = Ntchisi {3617}	203 = Ntchisi {4644}
204	Dowa	204 = Dowa {7180}	204 = Dowa {9045}	204 = Dowa {12720}
205	Salima	205 = Salima {4713}	205 = Salima {5869}	205 = Salima {7493}
206	Lilongwe	206 = Lilongwe {22720}	206 = Lilongwe {31102}	206 = Lilongwe {27703}
207	Mchinji	207 = Mchinji {5687}	207 = Mchinji {7086}	207 = Mchinji {10034}
208	Dedza	208 = Dedza {9551}	208 = Dedza {11404}	208 = Dedza {15173}
209	Ntcheu	209 = Ntcheu {8114}	209 = Ntcheu {8558}	209 = Ntcheu {11702}
210	Lilongwe city			210 = Lilongwe city {15341}
	# Southern Region			
301	Mangochi	301 = Mangochi {12315}	301 = Mangochi {15214}	301 = Mangochi {18297}
302	Machinga	302 = Machinga {7595}	302 = Machinga {9020}	302 = Machinga {11369}
303	Zomba	303 = Zomba {11033}	303 = Zomba {13836}	303 = Zomba {14651}
304	Chiradzulu	304 = Chiradzulu {5002}	304 = Chiradzulu {5879}	304 = Chiradzulu {7114}
305	Blantyre	305 = Blantyre {14452}	305 = Blantyre {19929}	305 = Blantyre {8509}
306	Mwanza	306 = Mwanza {2833}	306 = Mwanza {3258}	306 = Mwanza {2596}
307	Thyolo	307 = Thyolo {10232}	307 = Thyolo {11301}	307 = Thyolo {14203}
308	Mulanje	308 = Mulanje {10041}	308 = Mulanje {10445}	308 = Mulanje {12445}
309	Phalombe	309 = Phalombe {5319}	309 = Phalombe {5965}	309 = Phalombe {7505}
310	Chikwawa	310 = Chikwawa {6961}	310 = Chikwawa {8002}	310 = Chikwawa {10081}
311	Nsanje	311 = Nsanje {4689}	311 = Nsanje {4357}	311 = Nsanje {5169}
312	Balaka	312 = Balaka {4968}	312 = Balaka {6071}	312 = Balaka {7931}
313	Neno			313 = Neno {2620}
314	Zomba city			314 = Zomba city {2688}
315	Blantyre city			315 = Blantyre city {16377}

1987	Rural %	Urban %
Mzimba	88.1	11.9
Lilongwe	77.6	22.4
Blantyre	42.0	58.0

1998	Rural %	Urban %
Mzimba	81.7	18.3
Lilongwe	67.4	32.6
Blantyre	37.7	62.3

2008	Rural %	Urban %
Mzimba	96.2	3.8
Lilongwe	100	0
Blantyre	100	0

Malawi

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Harmonizing by space and time

code	label	mw1987a	mw1998a	mw2008a
rectype	GEO1_MW	H	H	H
columns	Malawi, District 1998 - 2008 [Level 1; consistent boundaries, GIS]			
	# Northern Region			
454101	Chitipa	101 = Chitipa {1982}	101 = Chitipa {2581}	101 = Chitipa {3832}
454102	Karonga	102 = Karonga {2787}	102 = Karonga {4011}	102 = Karonga {5758}
454103	Nkhata Bay, Likoma			
454103	Nkhata Bay	103 = Nkhata Bay {2781}	103 = Nkhata Bay {3340}	103 = Nkhata Bay {4311}
454103	Likoma	106 = Likoma {154}	106 = Likoma {155}	106 = Likoma {229}
454104	Rumphi	104 = Rumphi {1992}	104 = Rumphi {2539}	104 = Rumphi {3808}
454105	Mzimba, Mzuzu city			
454105	Mzimba (1998)	105 = Mzimba {9355}	105 = Mzimba {11728}	
454105	Mzimba (2008)			105 = Mzimba {14314}
454105	Mzuzu city (2008)			107 = Mzuzu City {3043}
	# Central Region			
454201	Kasungu	201 = Kasungu {7245}	201 = Kasungu {9687}	201 = Kasungu {13096}
454202	Nkhota Kota	202 = Nkhotakota {3930}	202 = Nkhota Kota {5006}	202 = Nkhota Kota {6273}
454203	Ntchisi	203 = Ntchisi {2639}	203 = Ntchisi {3617}	203 = Ntchisi {4754}
454204	Dowa	204 = Dowa {7180}	204 = Dowa {9045}	204 = Dowa {12407}
454205	Salima	205 = Salima {4713}	205 = Salima {5869}	205 = Salima {7737}
454206	Lilongwe, Lilongwe city			
454206	Lilongwe (1998)	206 = Lilongwe {22720}	206 = Lilongwe {31102}	
454206	Lilongwe (2008)			206 = Lilongwe {27562}
454206	Lilongwe city (2008)			210 = Lilongwe City {15651}
454207	Mchinji	207 = Mchinji {5687}	207 = Mchinji {7086}	207 = Mchinji {9917}
454208	Dedza	208 = Dedza {9551}	208 = Dedza {11404}	208 = Dedza {14652}
454209	Ntcheu	209 = Ntcheu {8114}	209 = Ntcheu {8558}	209 = Ntcheu {11312}
	# Southern Region			
454301	Mangochi	301 = Mangochi {12315}	301 = Mangochi {15214}	301 = Mangochi {18518}
454302	Machinga	302 = Machinga {7595}	302 = Machinga {9020}	302 = Machinga {11477}
454303	Zomba, Zomba city			
454303	Zomba (1998)	303 = Zomba {11033}	303 = Zomba {13836}	
454303	Zomba (2008)			303 = Zomba {14241}
454303	Zomba city (2008)			314 = Zomba City {2545}
454304	Chiradzulu	304 = Chiradzulu {5002}	304 = Chiradzulu {5879}	304 = Chiradzulu {7226}
454305	Blantyre, Blantyre city			
454305	Blantyre (1998)	305 = Blantyre {14452}	305 = Blantyre {19929}	
454305	Blantyre (2008)			305 = Blantyre {8417}
454305	Blantyre city (2008)			315 = Blantyre City {15631}
454307	Thyolo	307 = Thyolo {10232}	307 = Thyolo {11301}	307 = Thyolo {14254}
454308	Mulanje	308 = Mulanje {10041}	308 = Mulanje {10445}	308 = Mulanje {12776}
454309	Phalombe	309 = Phalombe {5319}	309 = Phalombe {5965}	309 = Phalombe {7568}
454310	Chikwawa	310 = Chikwawa {6961}	310 = Chikwawa {8002}	310 = Chikwawa {9691}
454311	Nsanje	311 = Nsanje {4689}	311 = Nsanje {4357}	311 = Nsanje {5301}
454312	Balaka	312 = Balaka {4968}	312 = Balaka {6071}	312 = Balaka {7569}
454313	Mwanza, Neno			
454313	Mwanza (1998)	306 = Mwanza {2833}	306 = Mwanza {3258}	
454313	Mwanza (2008)			306 = Mwanza {2241}

Mzimba

Lilongwe

Blantyre

— 2008

— 1998

Malawi

IPUMS International

Map acquisition

- Match IPUMS codes to available map
- Digitize paper maps based on boundary of most recent year
- Align with standardized world map

GUANGXI, 1990
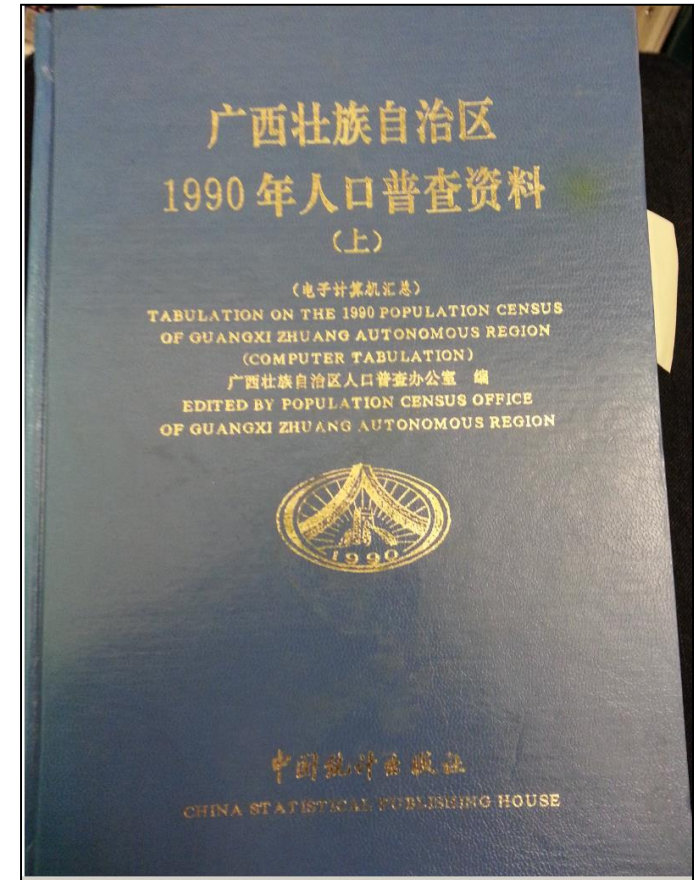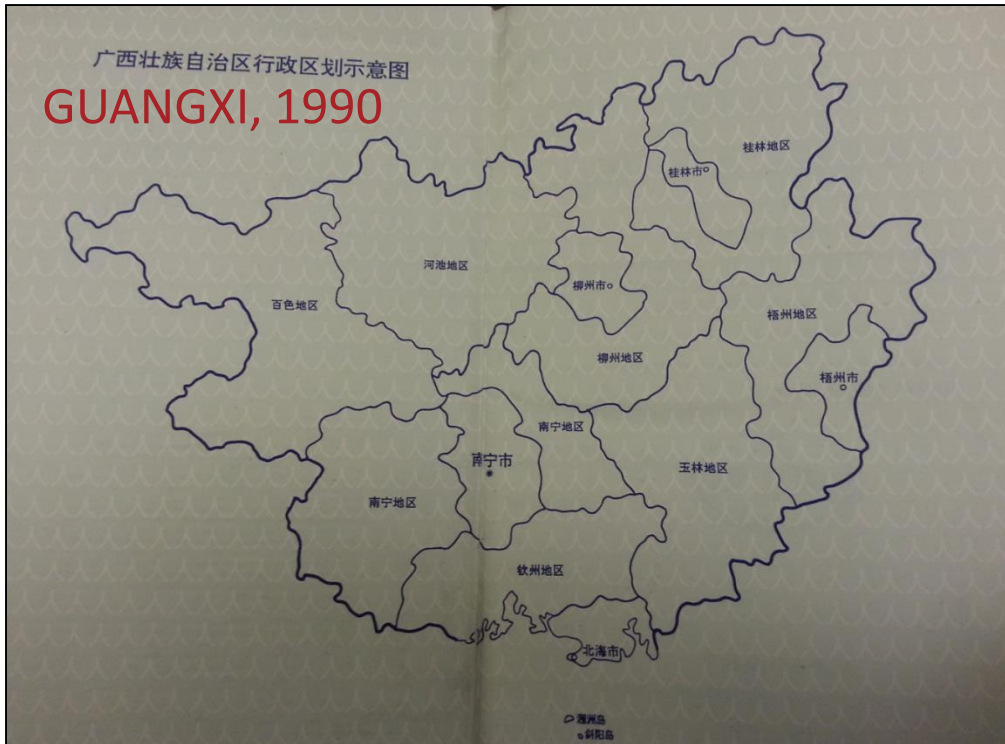
China 1990

Matching census codes and labels

China 1990

IPUMS International

Paper maps to digital maps

Digital boundary from most recent year

Digital boundary from 1990
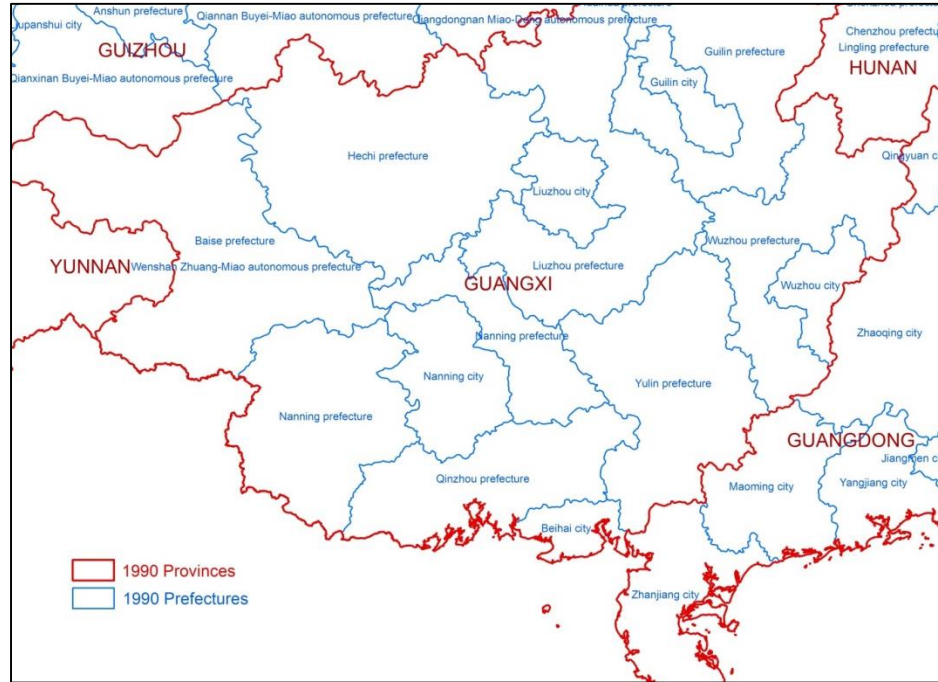
- Digitization is based on available digital boundary of most recent year
- Most recent digital boundary source: Global Administrative Areas (GADM), Second Administrative Level Boundaries (SALB), National Statistical Offices (NSO)

China 1990

IPUMS International

Boundaries change over time
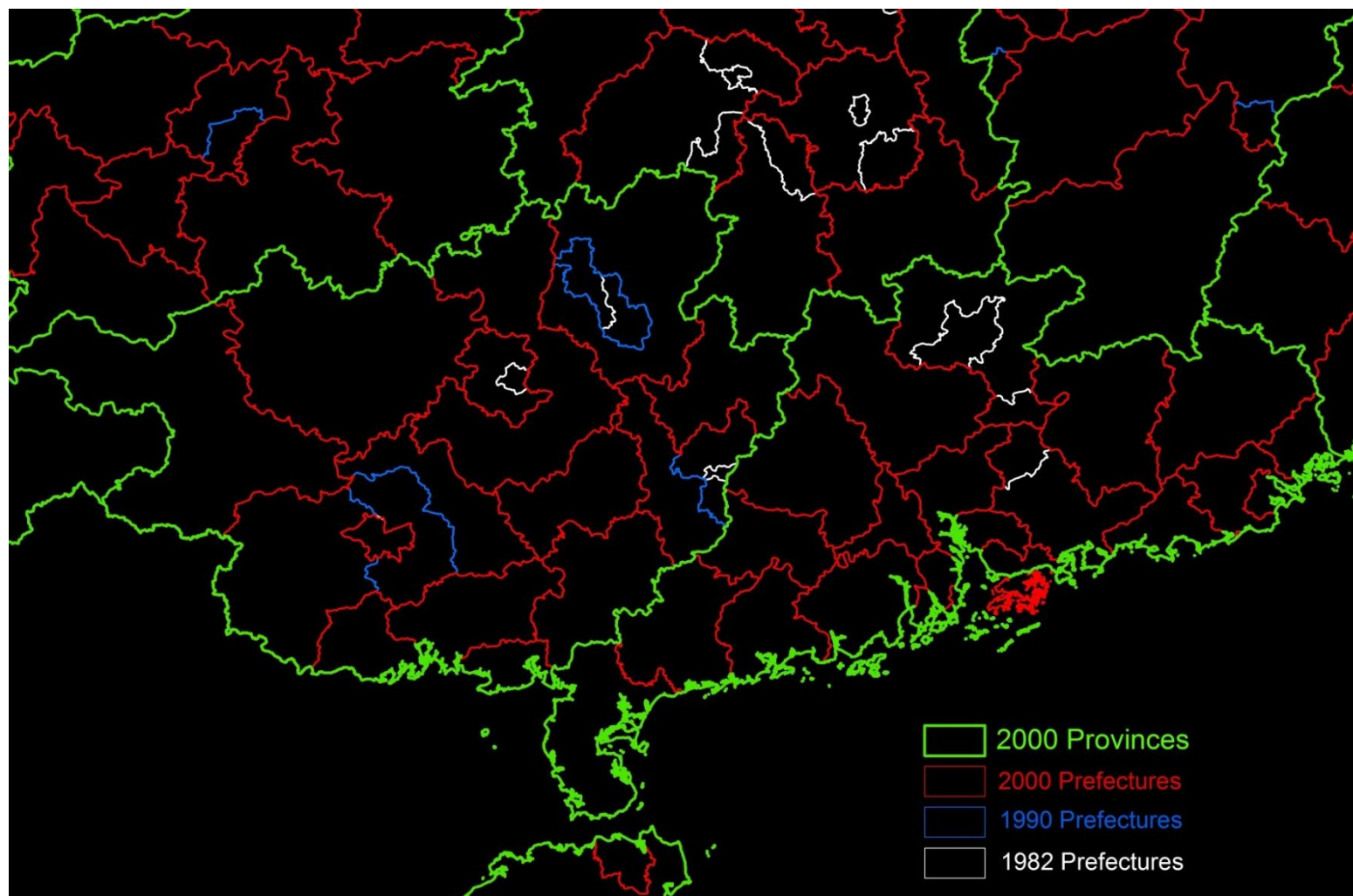
Legend:
- 2000 Provinces (green)
- 2000 Prefectures (red)
- 1990 Prefectures (blue)
- 1982 Prefectures (white)

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International

Spatial and temporal harmonization
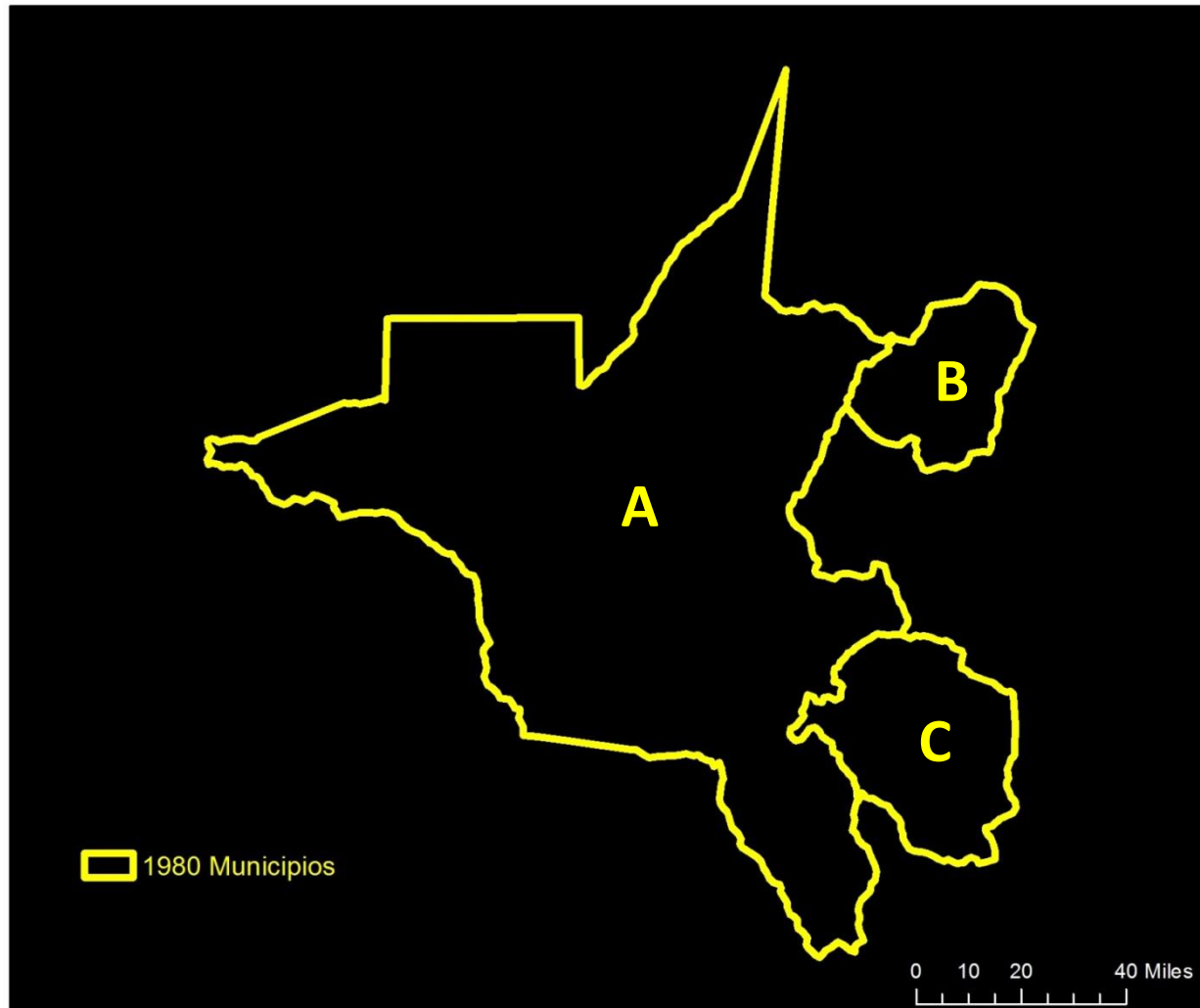
Spatial and temporal harmonization
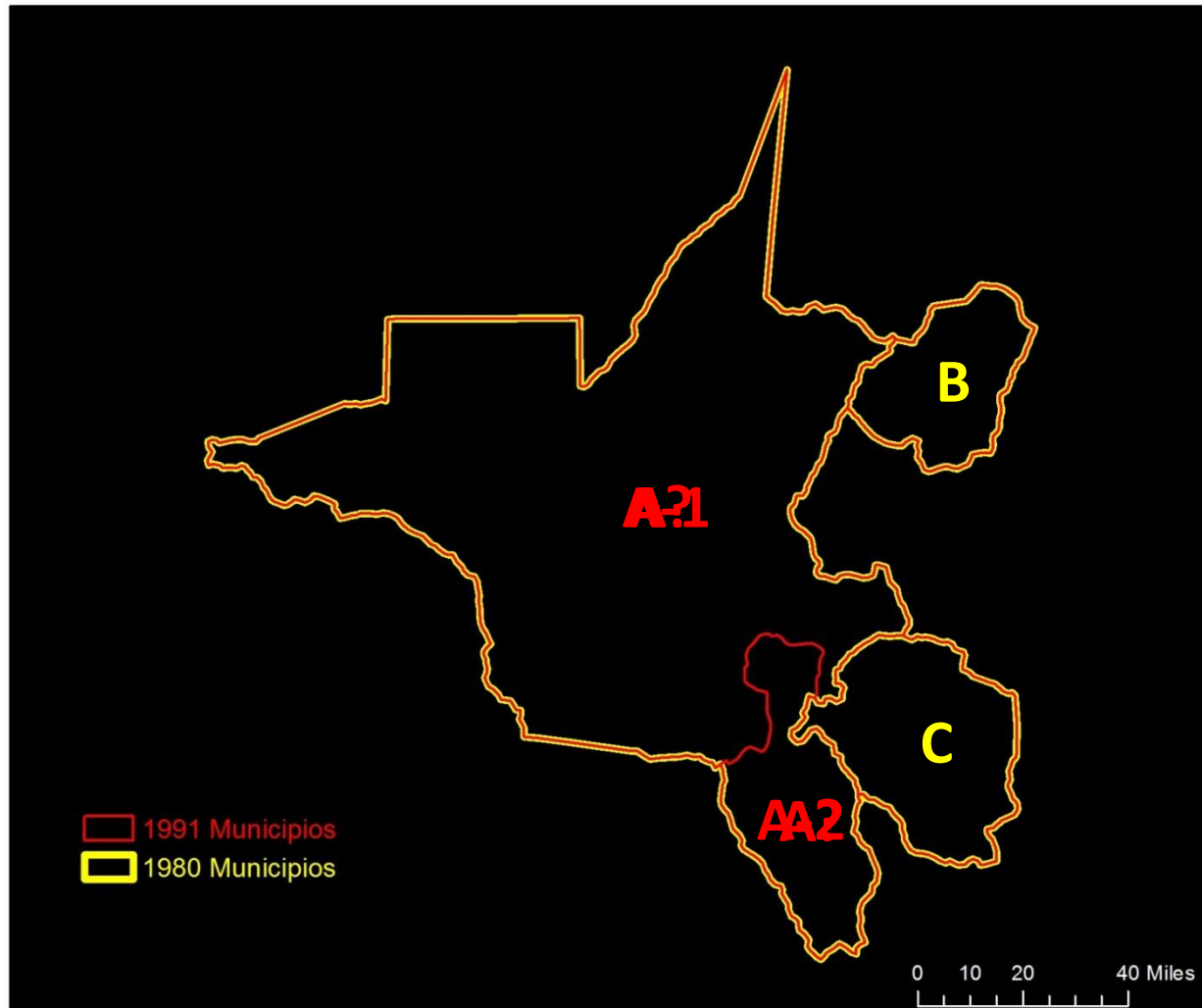
Spatial and temporal harmonization
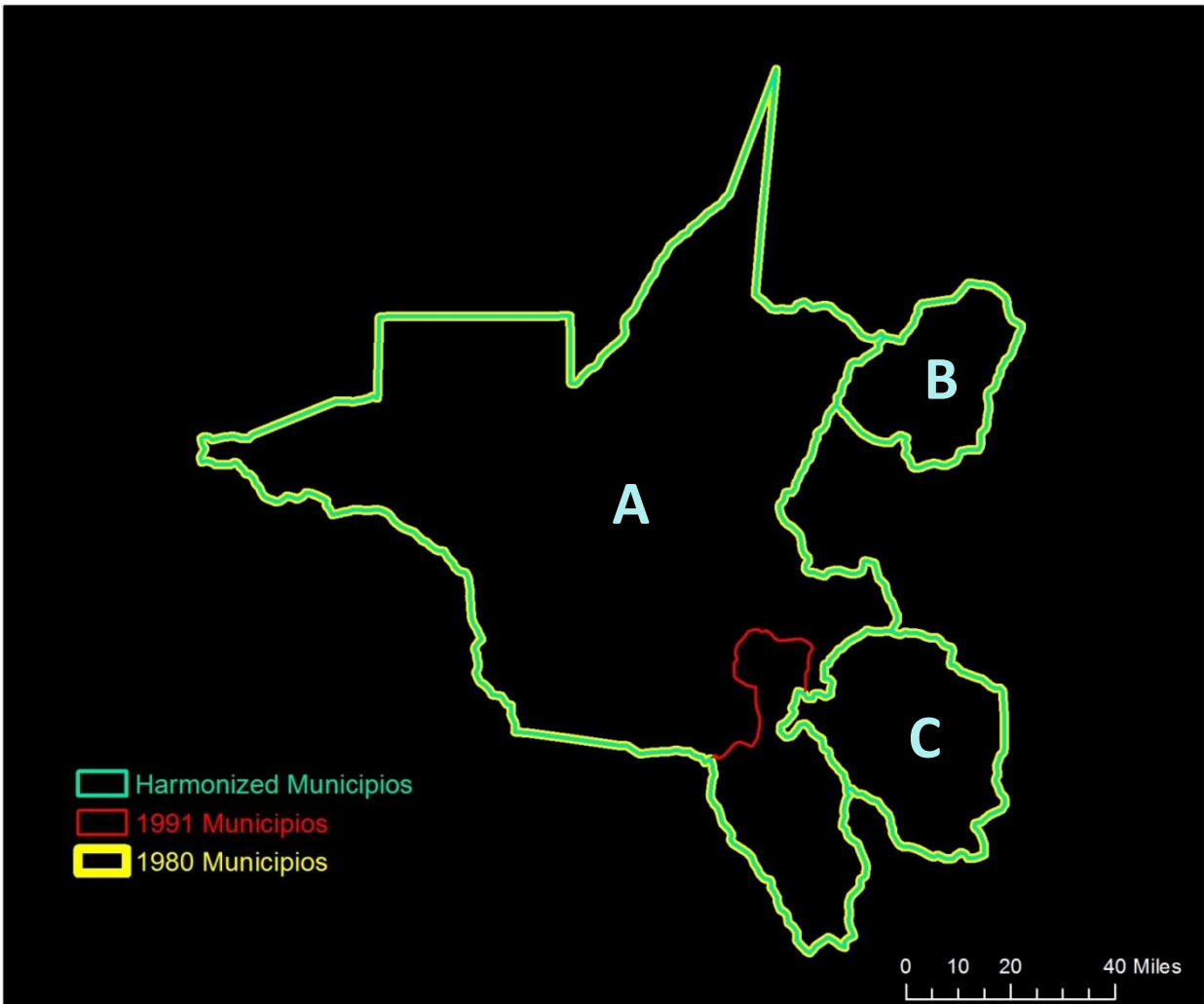
Regionalization (confidentialization)

Criteria: adjacency and density within first-level units

B

A

Population < 20,000

C

Hamonized, Regionalized Municipios
1991 Municipios
1980 Municipios

0   10   20   40 Miles
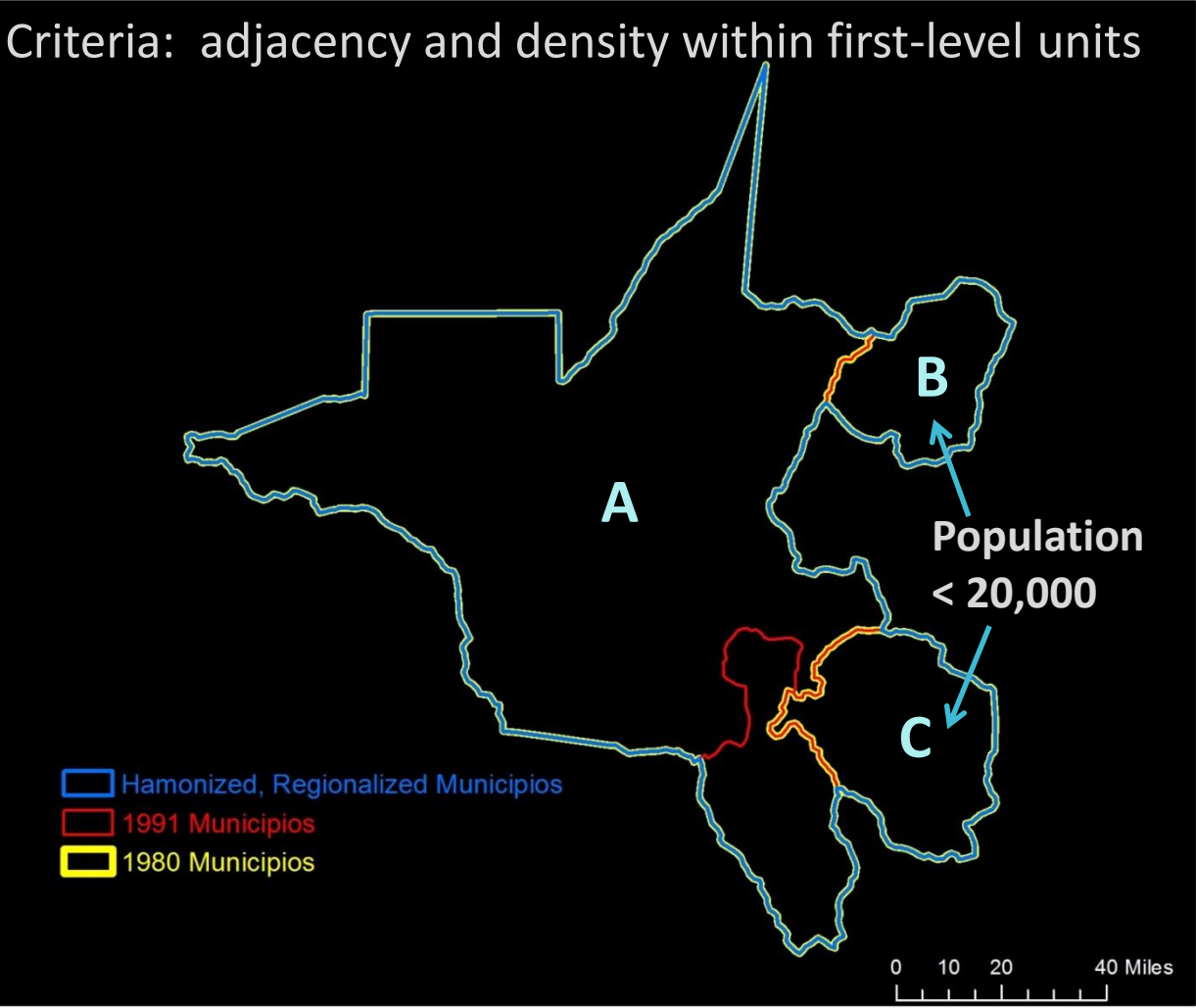
Harmonized-regionalized geography

Second-level geography in IPUMS

Integrated second-level boundaries available

No second-level geography in IPUMS/ in progress

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Year-specific geography

South Africa, 1996
(45 units)

South Africa, 2007
(52 units)

Integrated Second-level Geography
(26 units)

South Africa, 2001
(54 units)

South Africa, 2011
(52 units)

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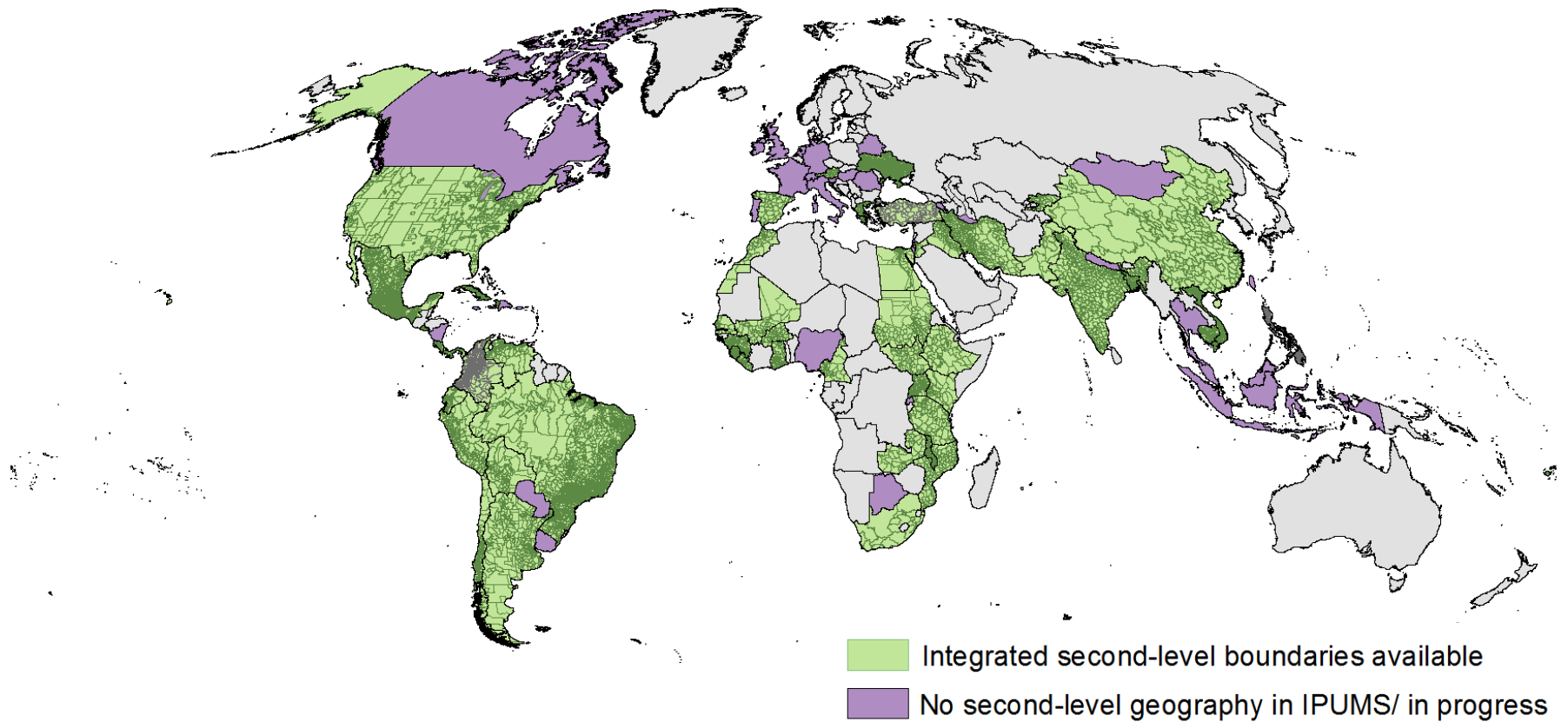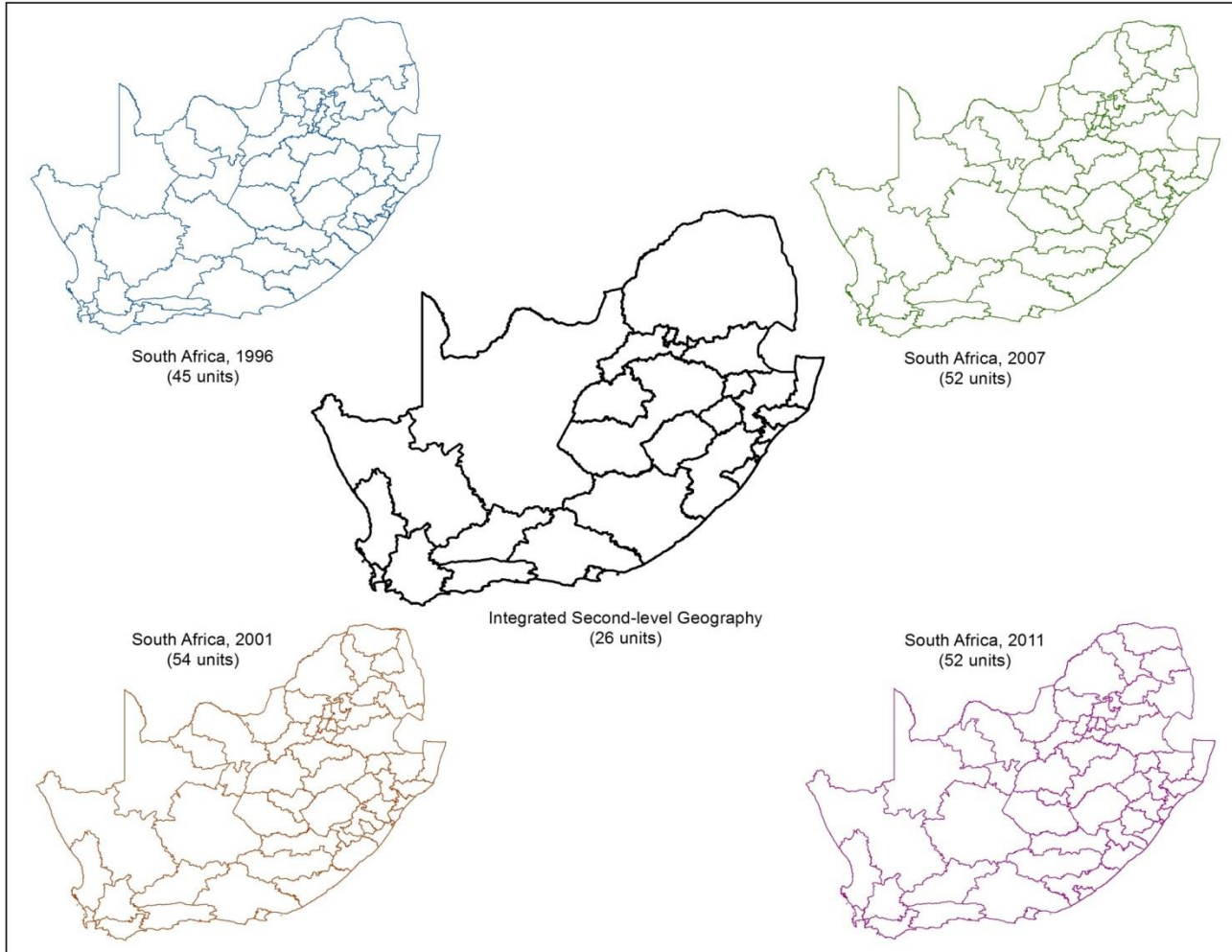
Harmonizing by space and time

code	label	missing	mw1987a	mw1998a	mw2008a
rectype	GEO1_MW			H	H
columns	Malawi, District 1998 - 2008 [Level 1; consistent boundaries, GIS]				
norecode					
hide					
proj1			MW1987A_0021	MW1998A_0021	MW2008A_0022
proj2					
proj3					
proj4					
proj5					
proj6					
<tt>					
	# Northern Region				
454101	Chitipa		101 = Chitipa {1982}	101 = Chitipa {2581}	101 = Chitipa {3832}
454102	Karonga		102 = Karonga {2787}	102 = Karonga {4011}	102 = Karonga {5758}
454103	Nkhata Bay, Likoma				
454103	Nkhata Bay		103 = Nkhata Bay {2781}	103 = Nkhata Bay {3340}	103 = Nkhata Bay {4311}
454103	Likoma		106 = Likoma {154}	106 = Likoma {155}	106 = Likoma {229}
454104	Rumphi		104 = Rumphi {1992}	104 = Rumphi {2539}	104 = Rumphi {3808}
454105	Mzimba, Mzuzu city				
454105	Mzimba (1998)		105 = Mzimba {9355}	105 = Mzimba {11728}	
454105	Mzimba (2008)				105 = Mzimba {14314}
454105	Mzuzu city (2008)				107 = Mzuzu City {3043}
	# Central Region				
454201	Kasungu		201 = Kasungu {7245}	201 = Kasungu {9687}	201 = Kasungu {13096}
454202	Nkhota Kota		202 = Nkhotakota {3930}	202 = Nkhota Kota {5006}	202 = Nkhota Kota {6273}
454203	Ntchisi		203 = Ntchisi {2639}	203 = Ntchisi {3617}	203 = Ntchisi {4754}
454204	Dowa		204 = Dowa {7180}	204 = Dowa {9045}	204 = Dowa {12407}
454205	Salima		205 = Salima {4713}	205 = Salima {5869}	205 = Salima {7737}
454206	Lilongwe, Lilongwe city				
454206	Lilongwe (1998)		206 = Lilongwe {22720}	206 = Lilongwe {31102}	
454206	Lilongwe (2008)				206 = Lilongwe {27562}
454206	Lilongwe city (2008)				210 = Lilongwe City {15651}
454207	Mchinji		207 = Mchinji {5687}	207 = Mchinji {7086}	207 = Mchinji {9917}
454208	Dedza		208 = Dedza {9551}	208 = Dedza {11404}	208 = Dedza {14652}
454209	Ntcheu		209 = Ntcheu {8114}	209 = Ntcheu {8558}	209 = Ntcheu {11312}
	# Southern Region				
454301	Mangochi		301 = Mangochi {12315}	301 = Mangochi {15214}	301 = Mangochi {18518}
454302	Machinga		302 = Machinga {7595}	302 = Machinga {9020}	302 = Machinga {11477}
454303	Zomba, Zomba city				
454303	Zomba (1998)		303 = Zomba {11033}	303 = Zomba {13836}	
454303	Zomba (2008)				303 = Zomba {14241}
454303	Zomba city (2008)				314 = Zomba City {2545}
454304	Chiradzulu		304 = Chiradzulu {5002}	304 = Chiradzulu {5879}	304 = Chiradzulu {7226}
454305	Blantyre, Blantyre city				
454305	Blantyre (1998)		305 = Blantyre {14452}	305 = Blantyre {19929}	
454305	Blantyre (2008)				305 = Blantyre {8417}
454305	Blantyre city (2008)				315 = Blantyre City {15631}
454307	Thyolo		307 = Thyolo {10232}	307 = Thyolo {11301}	307 = Thyolo {14254}
454308	Mulanje		308 = Mulanje {10041}	308 = Mulanje {10445}	308 = Mulanje {12776}
454309	Phalombe		309 = Phalombe {5319}	309 = Phalombe {5965}	309 = Phalombe {7568}
454310	Chikwawa		310 = Chikwawa {6961}	310 = Chikwawa {8002}	310 = Chikwawa {9691}
454311	Nsanje		311 = Nsanje {4689}	311 = Nsanje {4357}	311 = Nsanje {5301}
454312	Balaka		312 = Balaka {4968}	312 = Balaka {6071}	312 = Balaka {7569}
454313	Mwanza, Neno				
454313	Mwanza (1998)		306 = Mwanza {2833}	306 = Mwanza {3258}	
454313	Mwanza (2008)				306 = Mwanza {2241}
454313	Neno (2008)				313 = Neno {2496}
</tt>					
<univ>					
mw1998a mw2008a [all]					
</univ>					

1987	Rural %	Urban %
Mzimba/Mzuzu city	87.1	12.2
Lilongwe/Lilingwe city	77.6	22.4
Blantyre/ Blantyre city	42.0	58.0

1998	Rural %	Urban %
Mzimba/Mzuzu city	83.7	16.3
Lilongwe/Lilingwe city	67.4	32.6
Blantyre/ Blantyre city	37.7	62.3

2008	Rural %	Urban %
Mzimba/Mzuzu city	82.1	17.9
ºLilongwe/Lilingwe city	64.6	34.1
×Blantyre/ Blantyre city	36.1	58.2

º 1.4% unknown
× 5.7% unknown

IPUMS International

GIS workshop: geographic expertise

Country NSOs send:
- Geographic experts
- Paper maps or images

**IPUMS, ESRI,
and funders provide:**
- Digital camera
- Tripod
- 1-year ArcGIS license
- Digitization training

Outcomes:
- Digital maps
- Code-matched to census units
- Harmonization incorporates local expertise

UN Sustainable Development Goals
Measurable with Census Microdata

Goal #	Title
1.4:	Proportion of population living in households with access to basic services
3.2:	Under-five mortality rate (deaths per 1,000 live births)
3.7:	Universal access to sexual and reproductive health-care
3.c:	Health care workers
4.1:	Enrollment ratios by level and type of education
4.3:	Enrollment ratios by level and type of technical, vocational, and tertiary education
4.4:	Percentage of people participating in education or training (skill development focus)
4.5:	Parity indices in education
4.6:	Literacy and numeracy (limited capacity to measure literacy, no questions on numeracy)
4.c:	Supply of qualified teachers
5.3:	Early marriage
5.5:	Women's participation in societal decision-making
6.1:	Percentage of population using safely managed drinking water services
6.2:	Percentage of population using safely managed sanitation services
7.1:	Modern energy services, electricity
7.2:	Renewable energy, fuels
8.3:	Share or informal employment in non-agriculture employment by sex
8.5:	Full and productive employment
8.6:	Percentage of youth (15-24) not in education, employment, or training (NEET)
8.7:	Child labor
9.2:	Inclusive industrialization
9.5:	Enhance scientific research

Microdata for Disaggregation

sustainabledevelopment.un.org
Full indicator list at unstats.un.org/indicators/database   2016

SDG GOAL 8.6.1: Proportion of youth (aged 15-24) not in education, employment or training (NEET)

Reconfigured to positive measure:
Percentage in Employment, Education or Training (PEET)

1st Administrative level disaggregation
- **Cambodia and Vietnam**
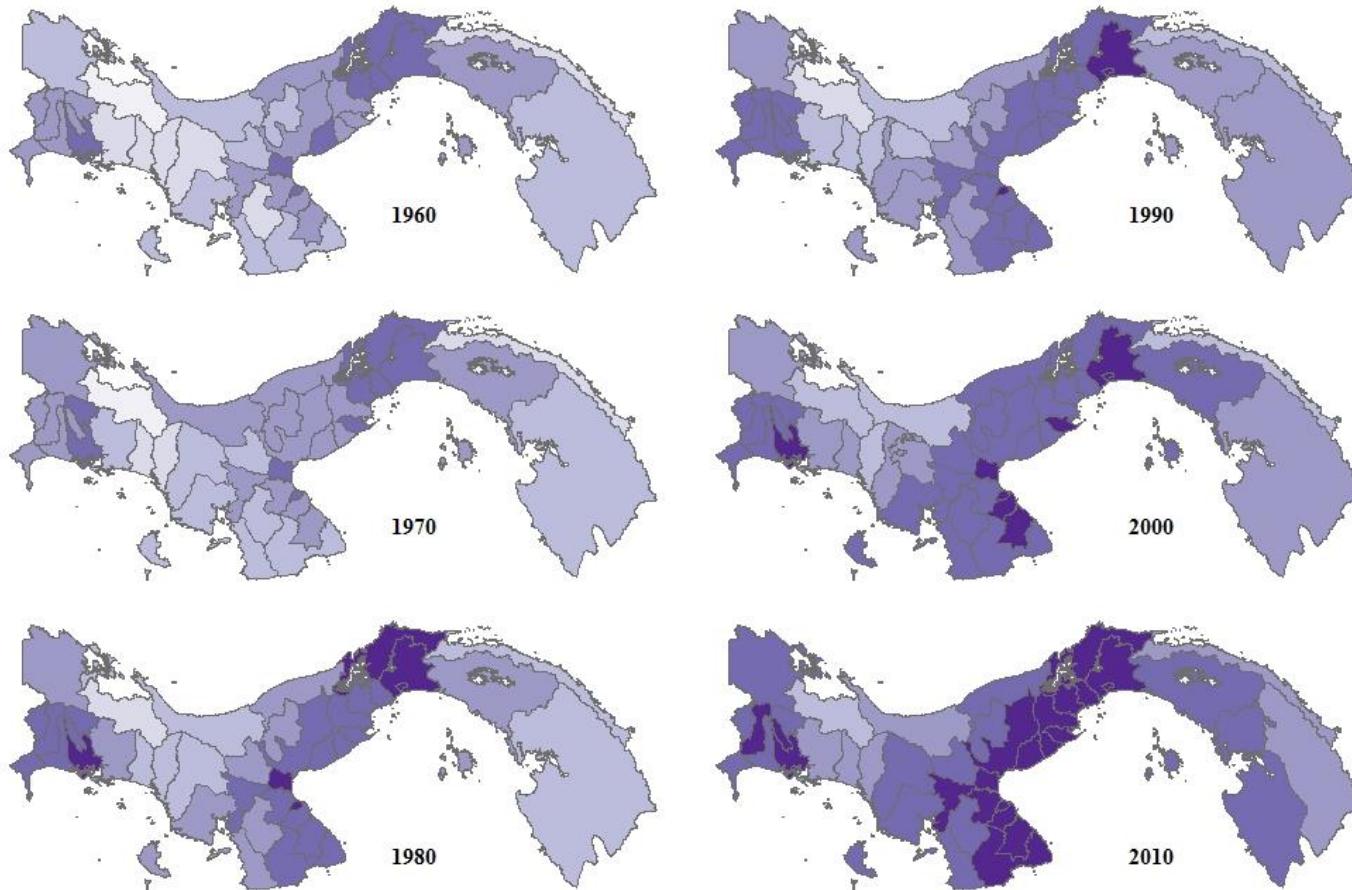- **2000 and 2010 round censuses**
- **Mapped by sex**

Percentage in Employment, Education or Training (PEET)
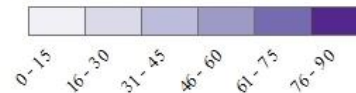## Cambodia (1998, 2008) and Vietnam (1999, 2009)

Females age 15-24

Percentage in Employment, Education or Training (PEET)
Cambodia (1998, 2008) and Vietnam (1999, 2009)

Males age 15-24
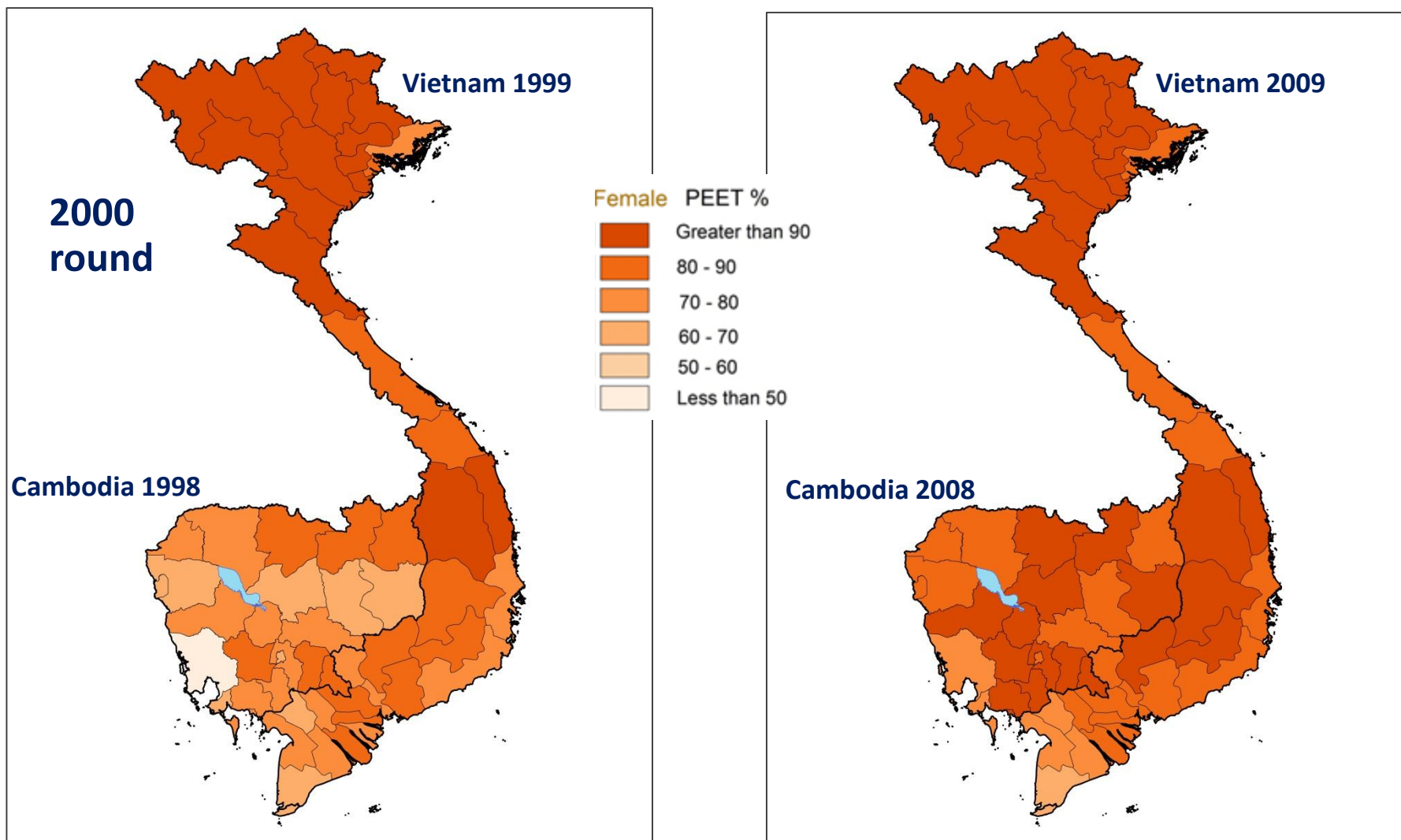
Spatially consistent geography

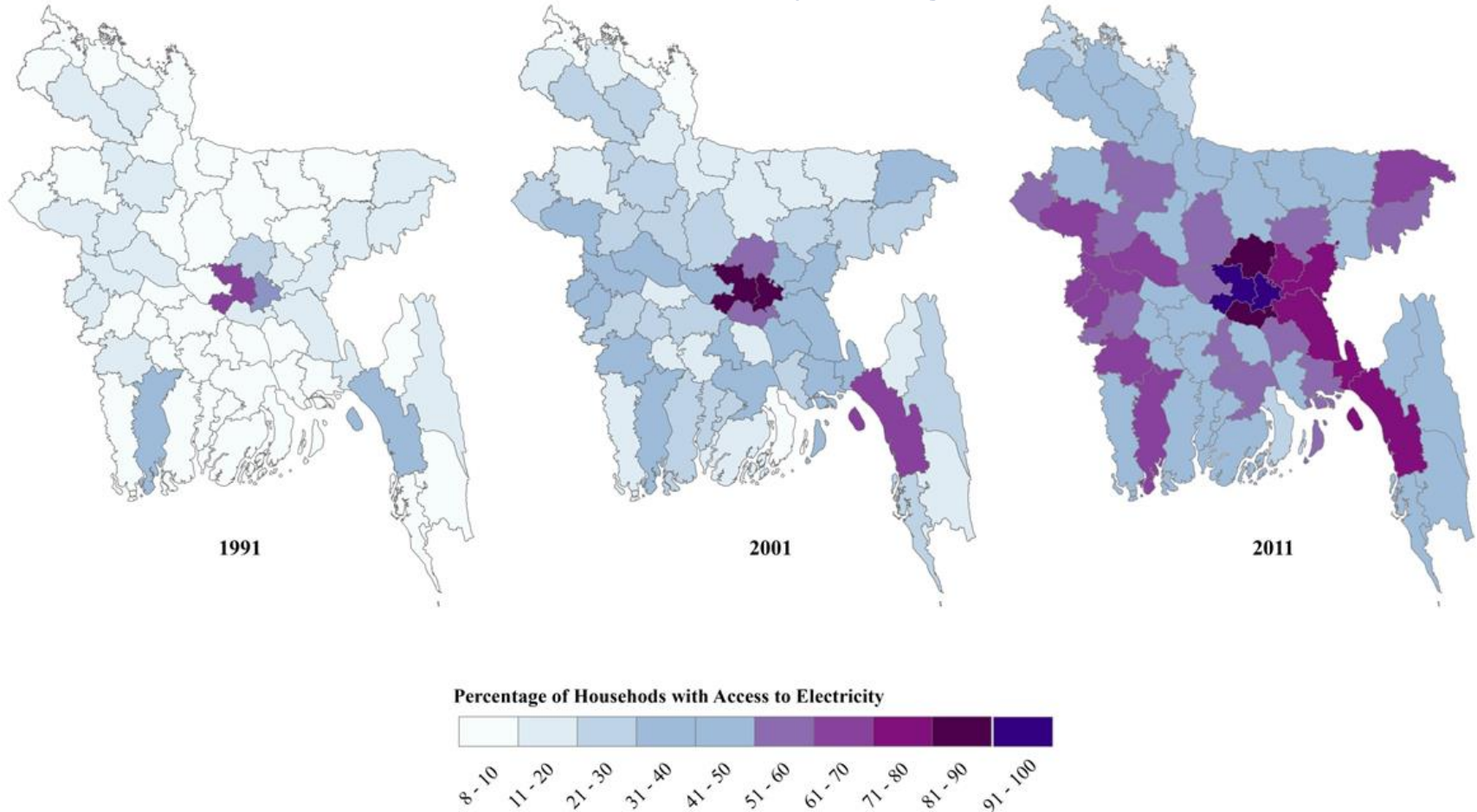Changes in literate population 1960 to 2010, Panama

Percentage of Literate Population

0 - 15 | 16 - 30 | 31 - 45 | 46 - 60 | 61 - 75 | 76 - 90

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Spatially consistent geography

Household Access to Electricity, Bangladesh (1991-2011)

1991   2001   2011

Percentage of Households with Access to Electricity

8 - 10   11 - 20   21 - 30   31 - 40   41 - 50   51 - 60   61 - 70   71 - 80   81 - 90   91 - 100
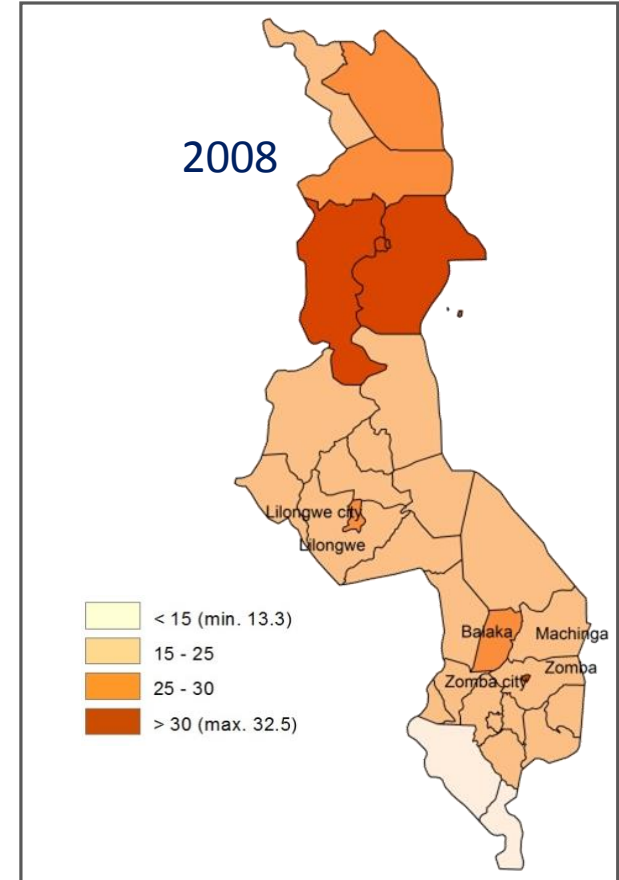
IPUMS International

Utility of year-specific detail

% of Females Employed in Wage Labor

SPATIALLY CONSISTENT BOUNDARIES
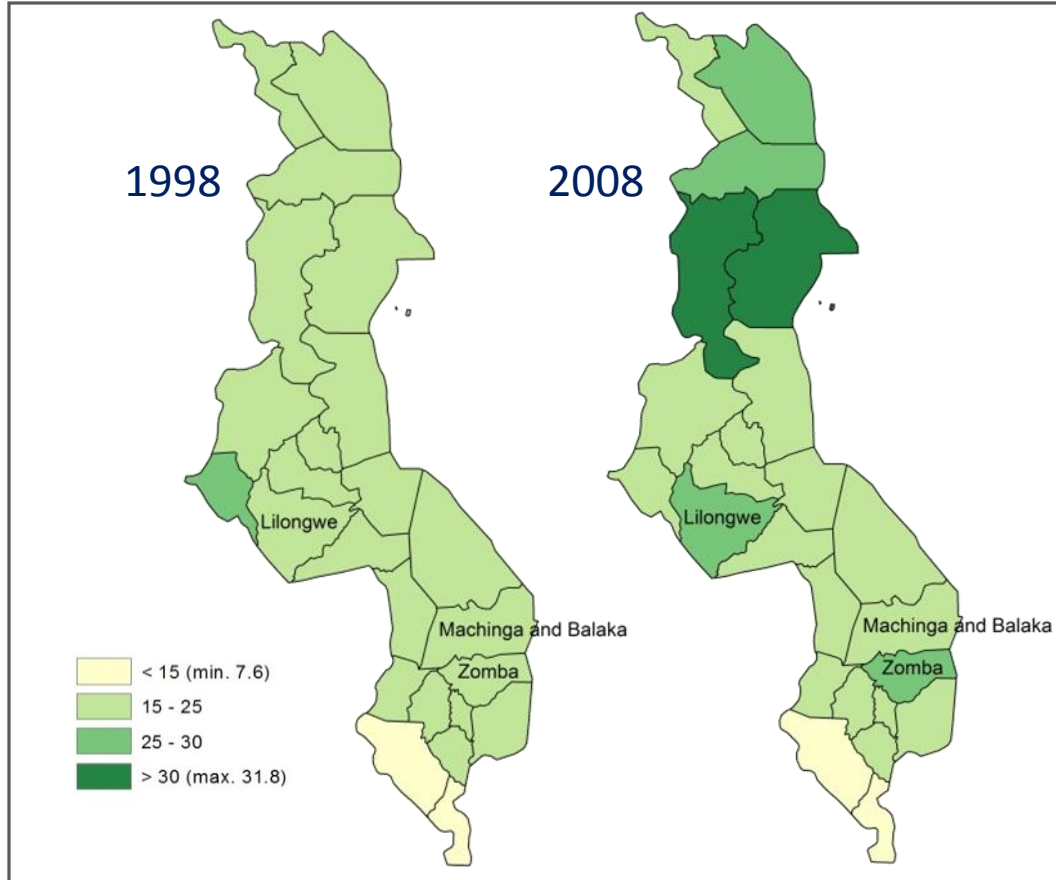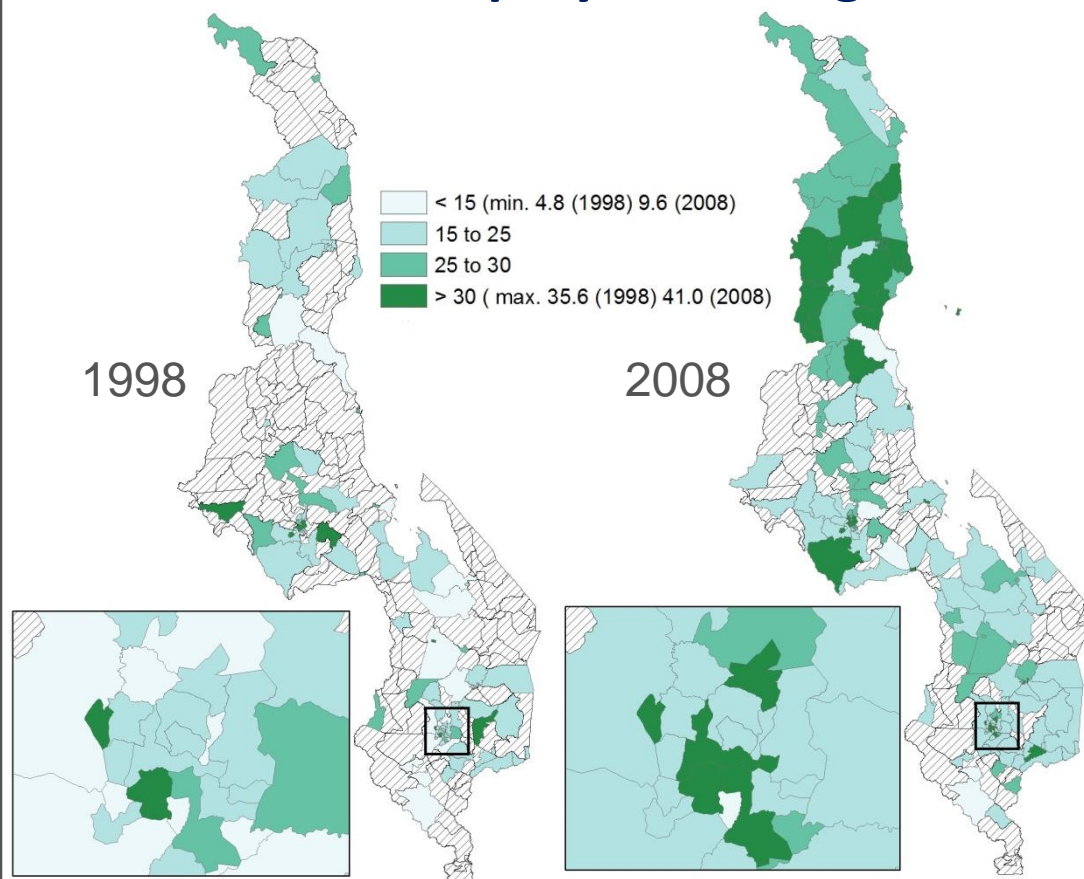
YEAR-SPECIFIC BOUNDARIES

Malawi, Districts

Advantages and limitations of small units

% of Females Employed in Wage Labor

Legend:
- < 15 (min. 4.8 (1998) 9.6 (2008)
- 15 to 25
- 25 to 30
- > 30 (max. 35.6 (1998) 41.0 (2008)

1998   2008

Malawi, Traditional Authorities

- Precision and detail in highly populated urban areas

- Enables targeted policy response

- Facilitates quasi-experimental design research

- Data "too thin" in some areas = limits of small areas and sample data
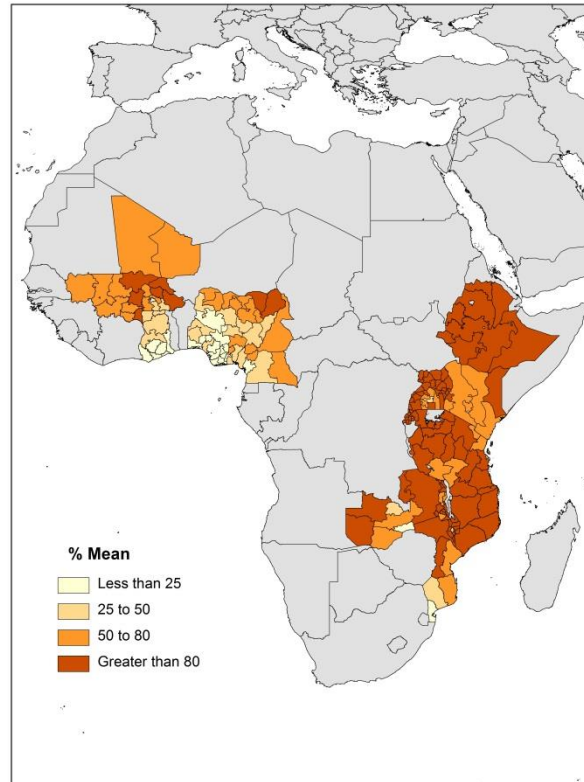
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Multi-scale options

Percentage of children who are less than 5 years old and live in a dwelling with dirt floor, Africa (single census per country 2000s)
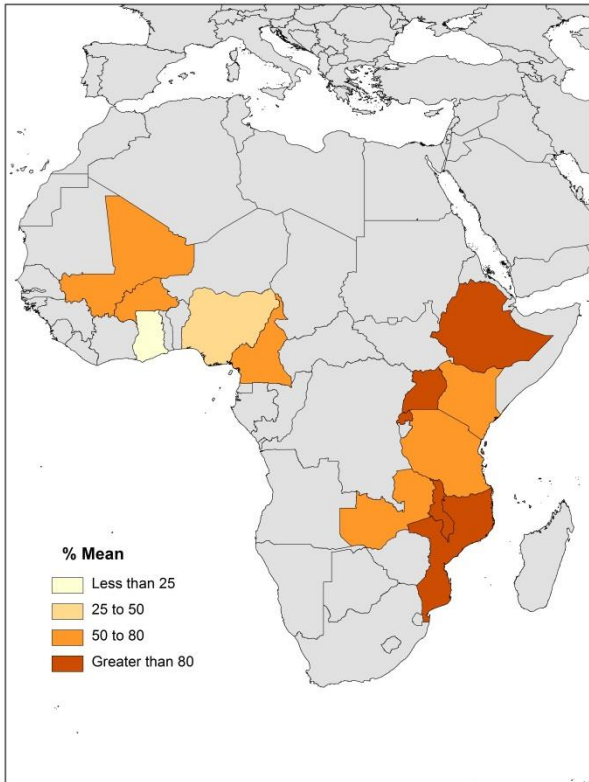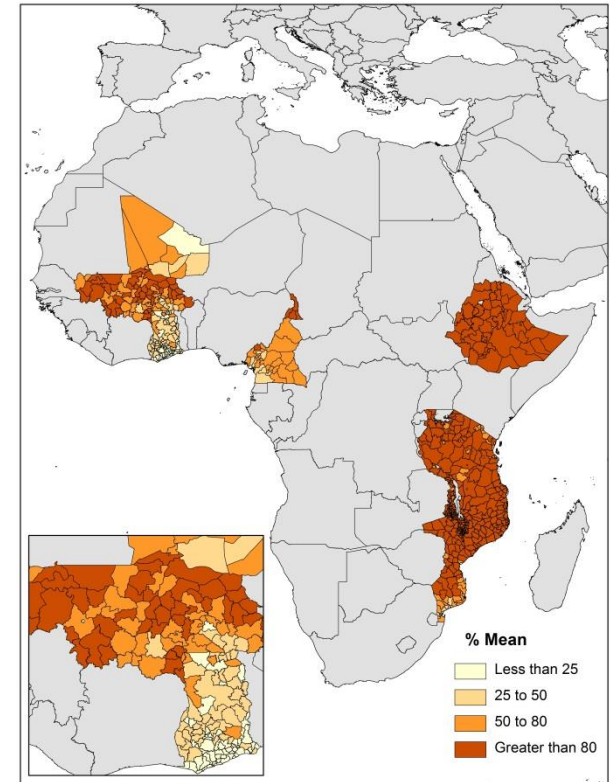
Country   1ˢᵗ Admin level   2ⁿᵈ Admin level

Conclusions

Microdata

- Essential for data disaggregation

- Facilitate appropriate aggregation calculations

Value added by IPUMS to meet mapping needs

- GIS Boundary files

- Year-specific geographic units and maps

- Cross-temporally consistent units and maps

- Available at country-level as well as
1st and 2nd Administrative Units where possible

IPUMS
International

UN-DESA Encourages Microdata Dissemination

United Nations
Department of Economic and Social Affairs

Resolution 2016/1 UN Commission on Population and Development
Strengthening the demographic evidence base for the 2030 Agenda for Sustainable Development

22. *Encourages* **Governments to adopt open-data policies allowing** *the dissemination of public-use, geo-referenced and anonymized microdata from censuses,* **household surveys, civil registration, population registers, health information systems and other relevant administrative records with respect for confidentiality;**

http://www.un.org/en/development/desa/population/pdf/commission/2016/documents/CPD49%20Resolution%202.pdf

Thank You!

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International