

How to conduct a register-based census

Examples from Norwegian Censuses

Regional Training

Producing Register-based Population statistics in Developing countries

Tehran, 27 – 31 October 2010

Presented by Harald Utne, Statistics Norway

Harald.utne@ssb.no

Establishing a register-based census in Norway

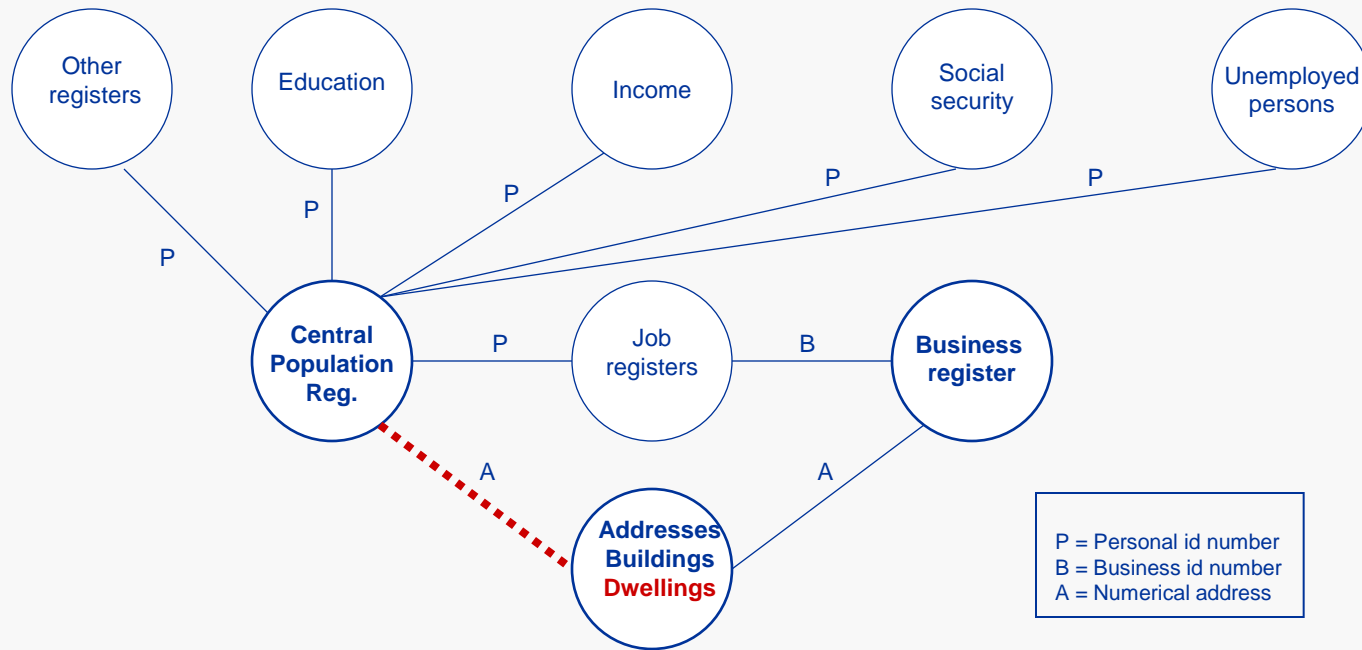
- Step-by step development
 - Subject matter statistics tested and published
 - Register-based variables introduced when quality was sufficient
 - Last major step: Include dwellings and households

Norwegian 2001 Census

Goals

- Produce Census statistics for 2001
- Establish a basis for the 2011 register-based census
 - The Dwelling Address Project

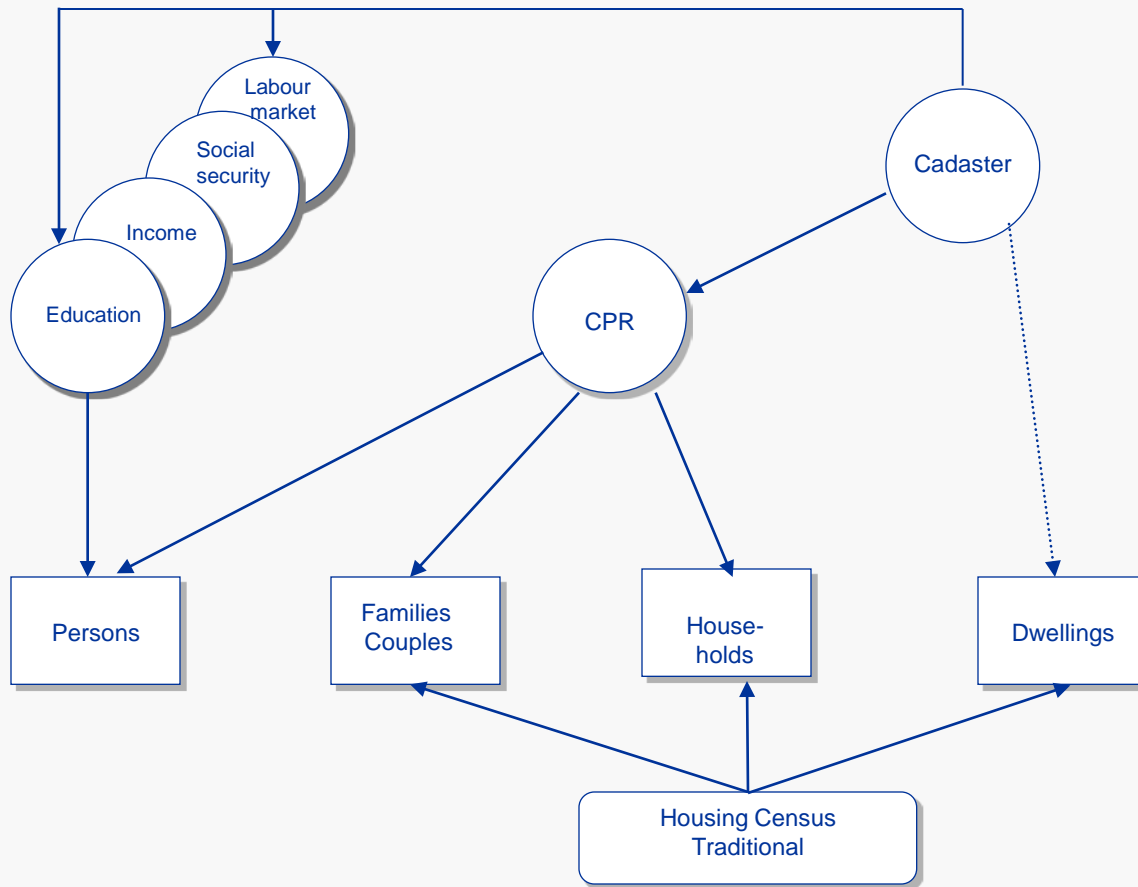
Census data system 2001



No register on dwellings

No link person- dwelling, that is: household formation not possible

Census 2001: Combined census



Persons:
Registers

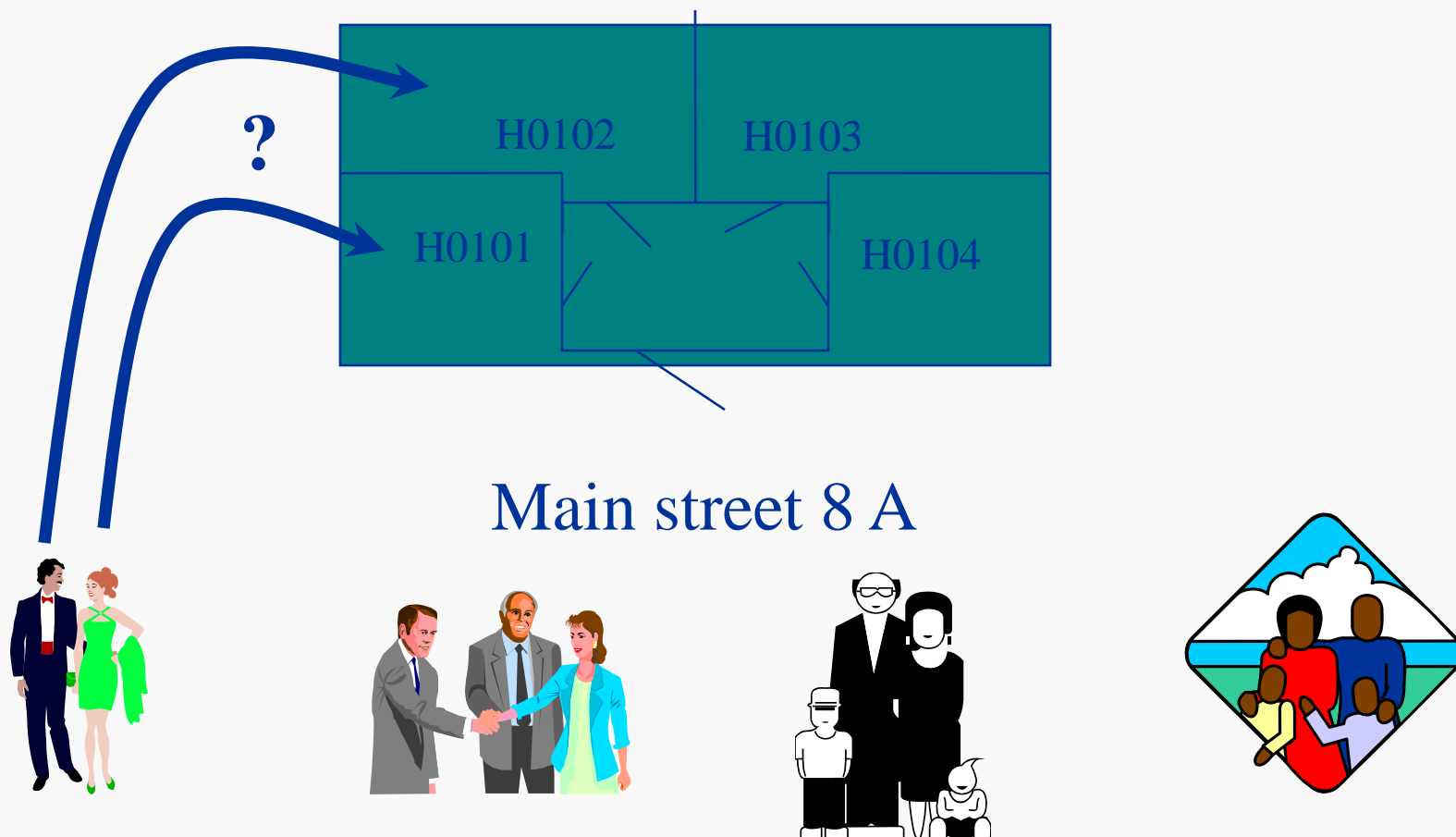
Families and households:
Registers and forms

Housing and dwellings:
Census forms

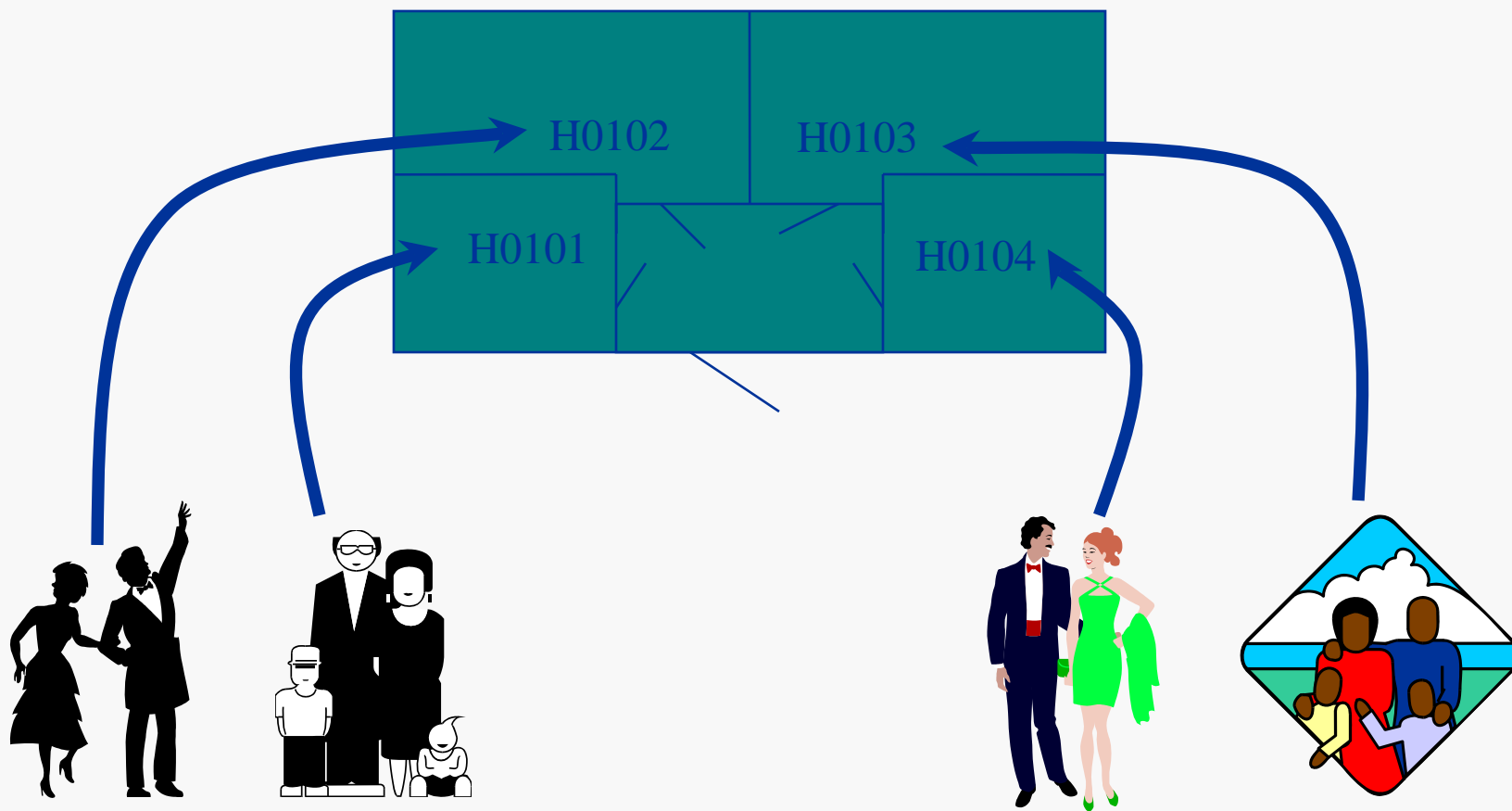
Dwelling address project

- Extend the Cadastre to comprise dwellings, not only buildings
 - Add dwelling number to street address
 - Main Street 8A, H0103
 - Establish a link between dwellings and resident persons (in CPR)
 - Using data from census forms
- Main problem: Multi-dwelling buildings
- Participants in project
 - Statistics Norway (Census 2001)
 - Register authorities: Owners of CPR and Cadastre
- Use “census data” for administrative purposes
 - One-way traffic?
 - Multiple legal base for Census 2001

Multi-dwelling buildings before Census 2001



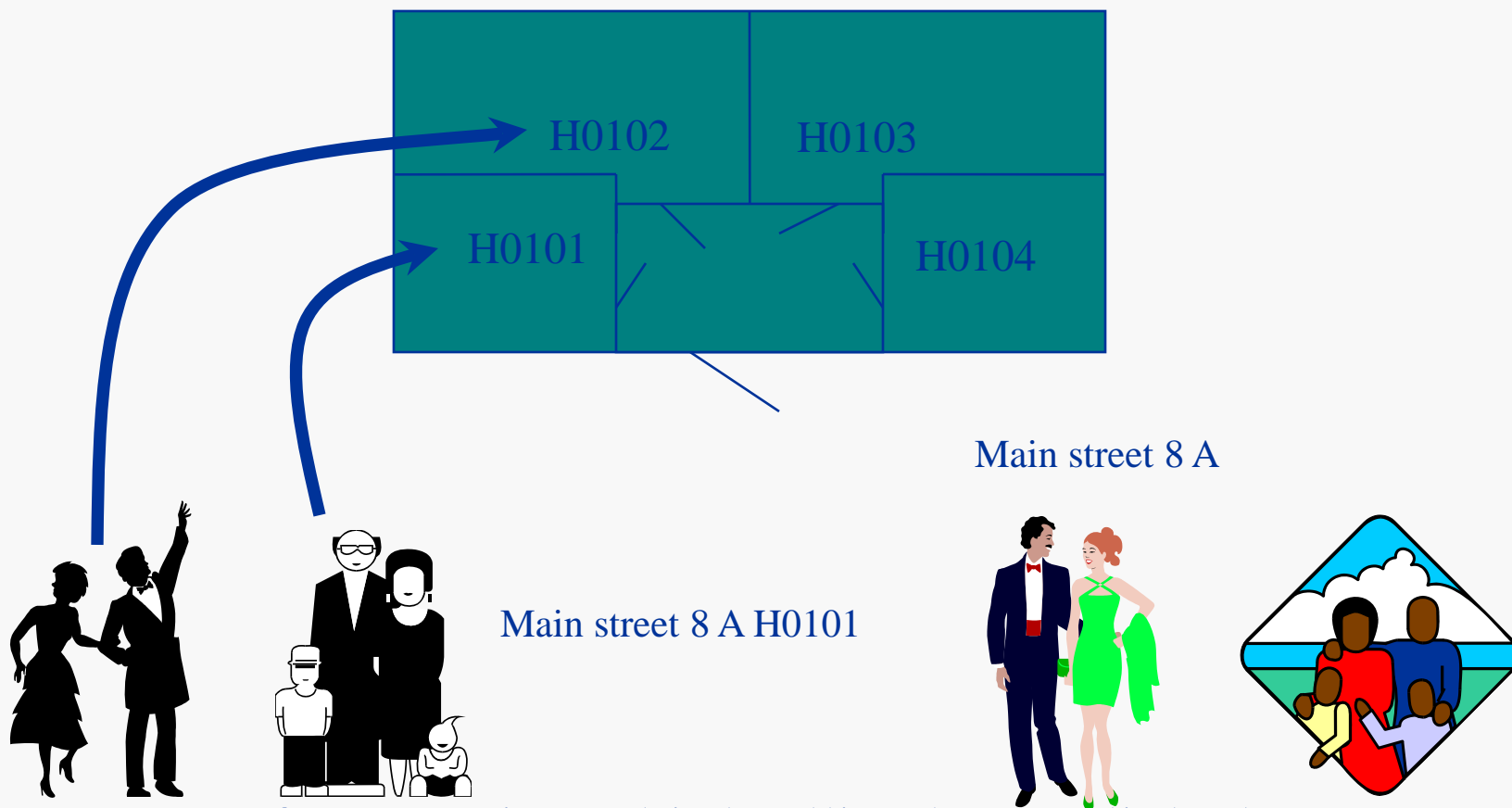
Multi-dwelling buildings, expected outcome



Main street 8 A H0101

BUT-----

Multi-dwelling buildings after Census 2001, result



55 % of persons in multi-dwelling houses linked to a unique dwelling address. Following up necessary!

Following up on the Dwelling Address Project

- Statistics Norway playing an active role – pushing forward
 - Quality monitoring
- Register owners improved quality in administrative registers
- Situation by end of 2010: 95 % of population linked to a dwelling
 - The same today

Organisation of 2011 Norwegian Census

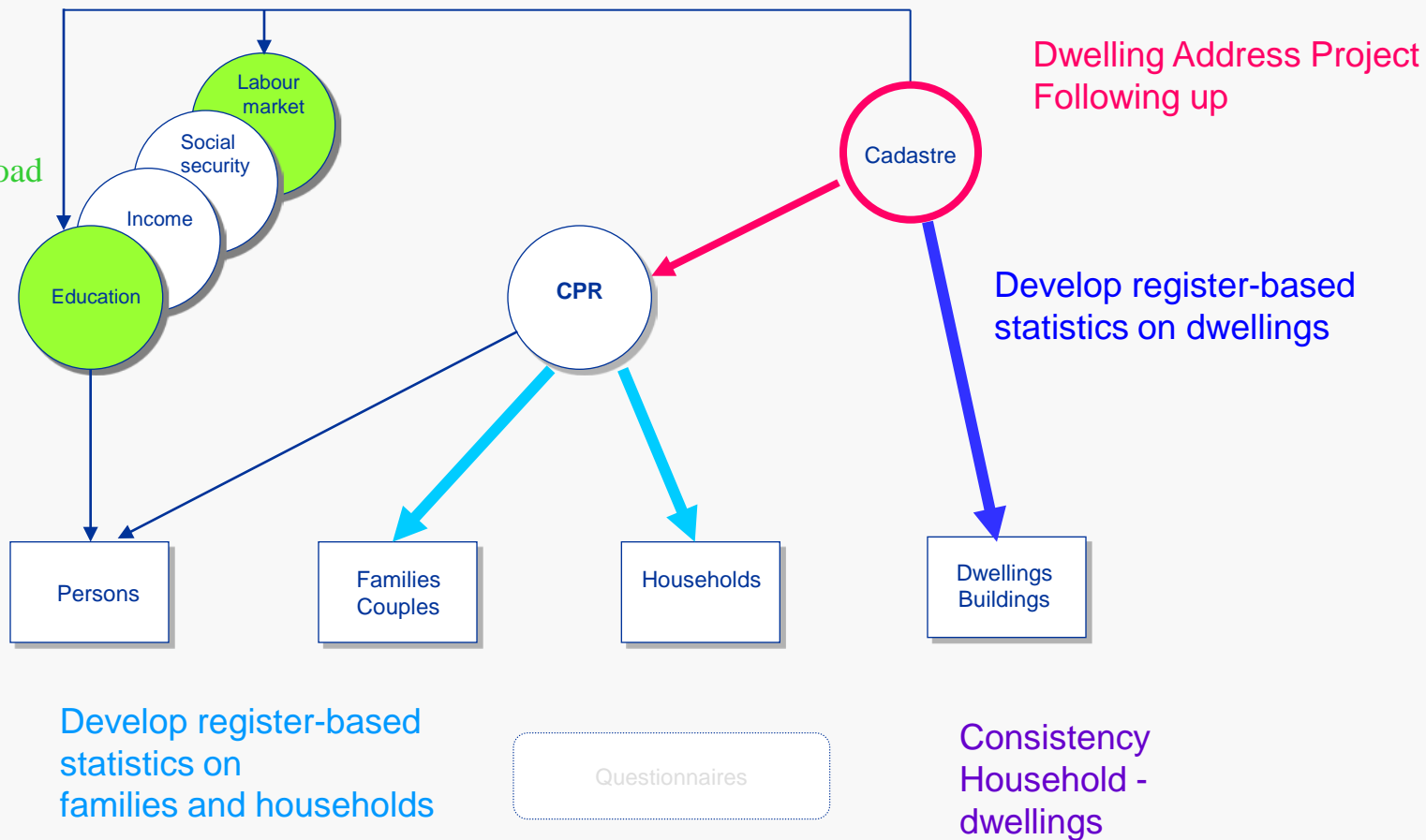
- Project in Division for Population Statistics
 - Not a separate unit as in previous censuses
- Small project group (2-3 persons)
- Cooperation with subject matter units in SN
 - Important part of the project
- Total budget 13 mill. NOK (2,3 mill US \$)
 - 10 per cent of costs in 2001

Data improvements for 2011 census

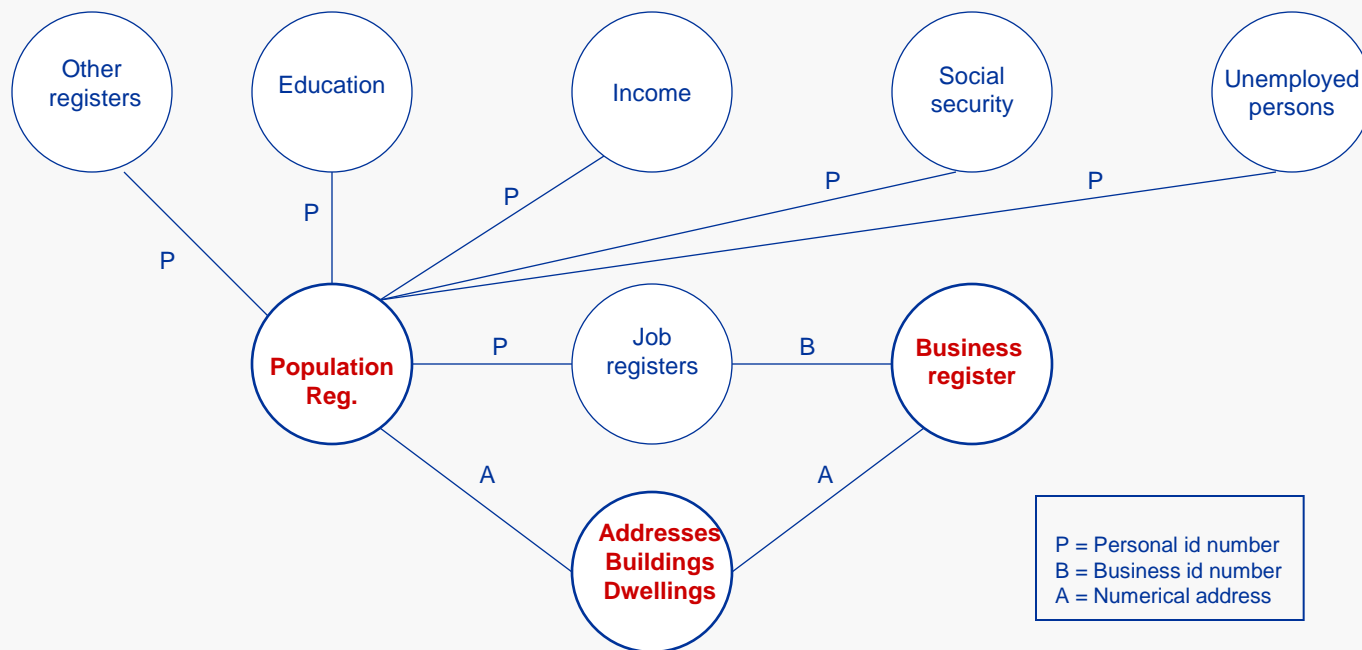
Persons

Improvement for some variables, i.e.

- Occupation
- Education taken abroad
- +++



Register-based population and housing census system



- Units covered in **base registers**: Persons, dwellings/buildings and enterprises/establishment
- Derived units: Families and households
- Persons linked to
 - Dwellings
 - Workplaces (establishments) through job registers

Registers/register systems used in Census 2011 in Norway

- Population register
 - Place of living, demography, migration, families, households
- Register of addresses, buildings and dwellings
 - Housing, geographical characteristics
- Business register
 - Self-employment, place of work, industry
- Job registers
 - Current activity status (employment), occupation, status in employment
- Register of unemployment
 - Current activity status (unemployment)

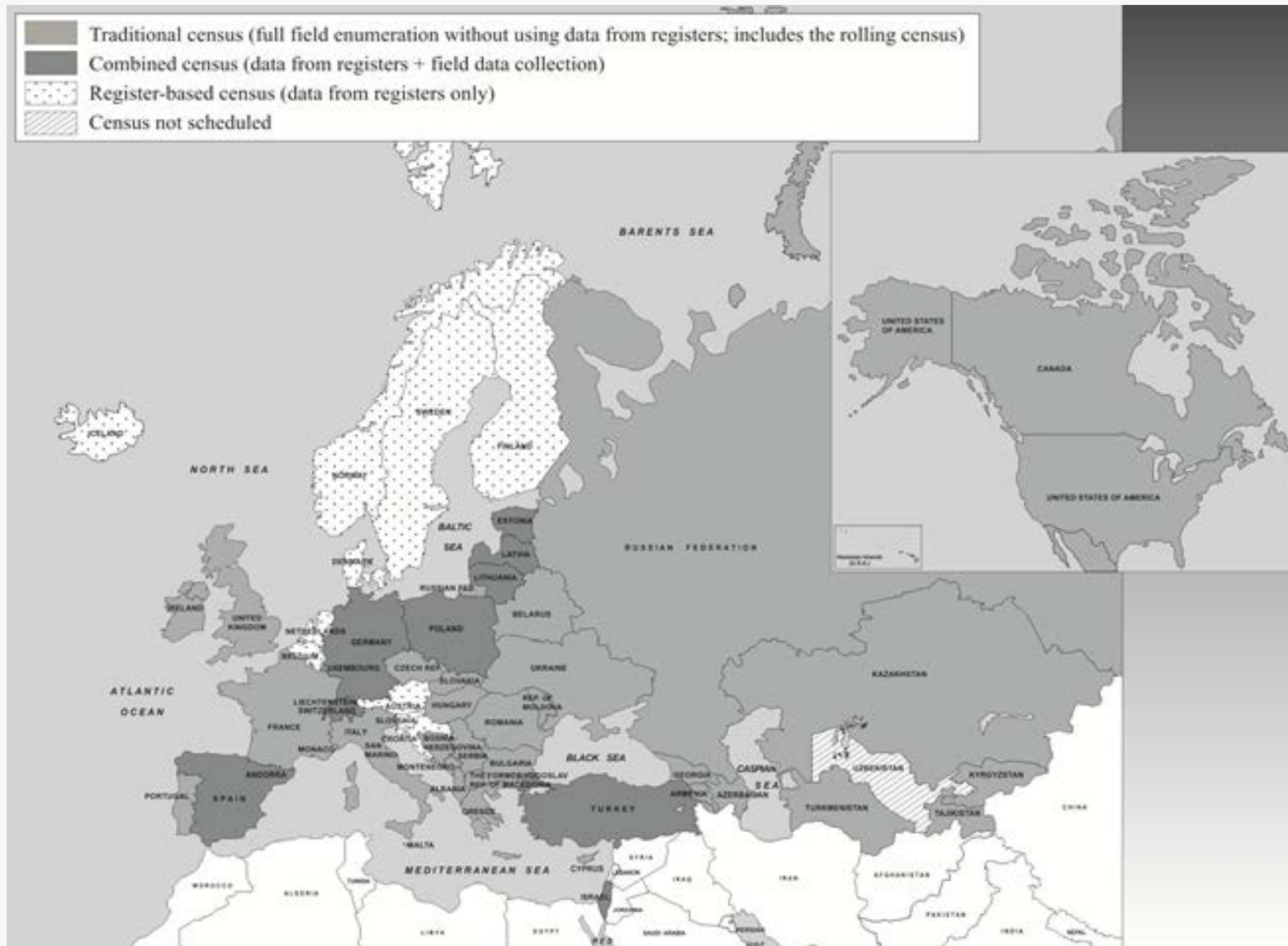
Registers/register systems used in 2011 Census in Norway (cont)

- Register of education
 - Educational attainment, current activity status (students)
- Pensions registers
 - Current activity status (pensions)
- Income registers
 - Income, current activity status (self-employed, capital income)
- Register of vehicles
 - Private cars in household

Alternative census methodologies

- Total register-based census
- Combined censuses
 - Use sample data for a few variables, no separate data collection
 - Enumeration based on registers, sample data for some variables, separate data collection
 - Full enumeration, some data from registers
- Traditional censuses
 - New technologies may be cost effective
 - ◆ Hand held computers/smart phones
 - ◆ GPS
 - ◆ Internet response

State of affairs in UNECE region



Census costs

Census costs in UNECE countries (Europe and North America)

- Traditional census (30): 5,57 \$ per capita
- Combined censuses (10): 3,94 \$ per capita
- Register-based censuses (9) : 0,24 \$ per capita

- Traditional censuses
 - Variation in costs caused by national circumstances, legislation
 - From 1 to 40 \$ per capita
- Combined censuses
 - Most expensive in countries with full enumeration
- Register-based censuses
 - Most expensive for countries using registers for the first time
 - Norway 0,50 \$ - 10 % of costs in 2001 Census

- Major savings: Data collection

Is a register-based census a real census?

- Comply with essential features
- Census operation: No
- Census statistics: Yes
- “Virtual census” (as in the Netherlands)?
- “Census” not used in national statistics at all (as in Denmark)

Register-based censuses in the national and international statistical system

When a well functioning register-based system is established

National system

- Combine micro data from subject matter statistics
- Census fully integrated with annual statistics
- **No visible census ?**

International system

- Participate in international census preparations
- Produce comparable census statistics according to international recommendations and regulations
- **Census statistics visible!!**

Thank you very much for your attention!