Updating Farm Register using a combination of administrative data and survey data

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Farm Register i Sweden

Swedish Farm Register (FR) has been produced yearly since 1968

- It is a register over alla Swedish farms

- The thresholds for beeing included in FR has changes during time

- The threshold for FR is the same as the threshold for FSS/IFS.
    - For Sweden 2010-2023
        - at least 2 ha of arable land or 5 ha of agricultural land or
        - horticultural covering more than 2500 m^2 in open or 200 m^2 i greenhouse
        - at least 10 cattle or 10 sows or 50 pigs or 20 sheep and lambs or 1000 poultry

- Most agricultural statistics (structural) in Sweden is based on these thresholds

Farm Register i Sweden
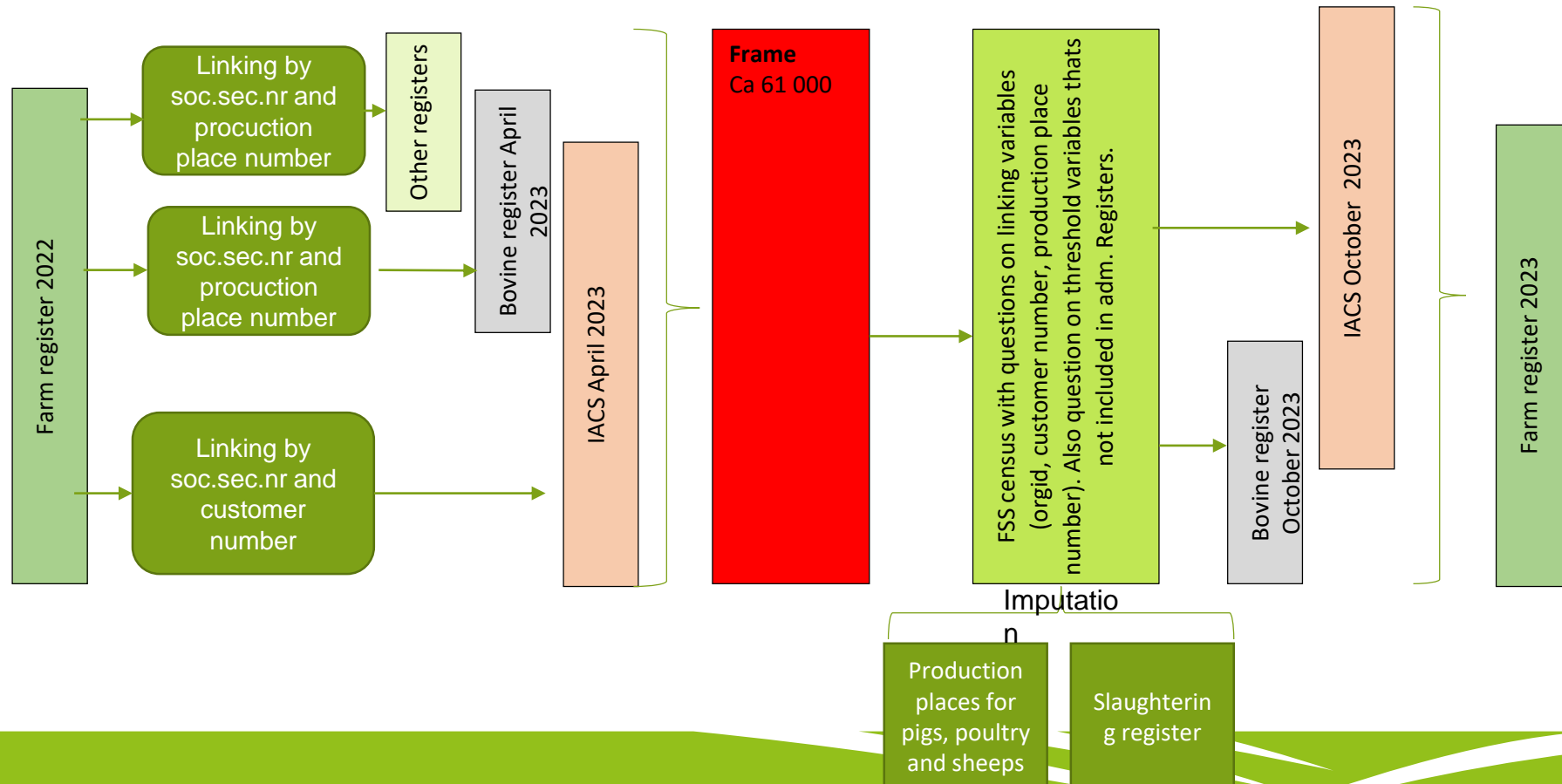
Number of agricultural holdings in Sweden
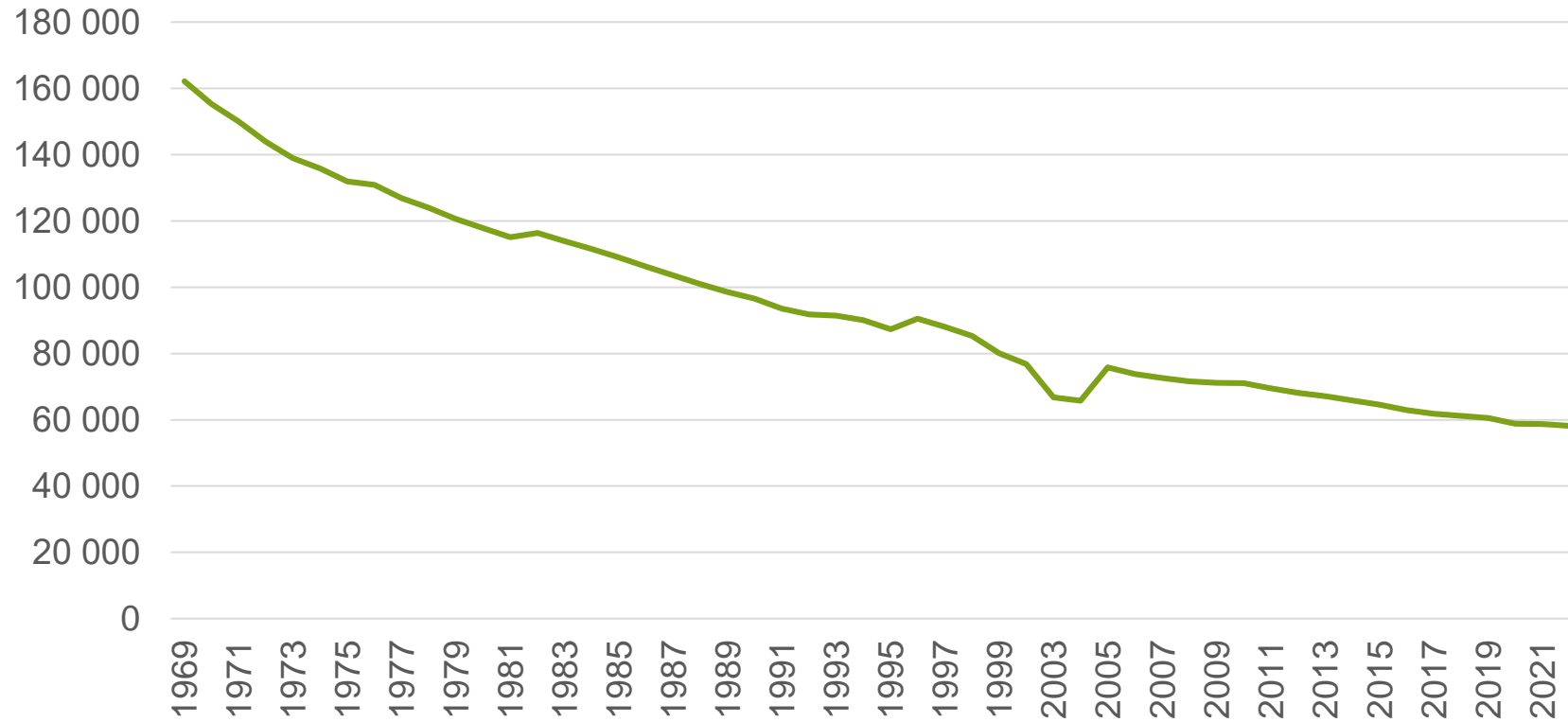
Farm Register i Sweden

- Historicaly the FR has been updated by yearly census on the agricultural holdings

- Since 2000 the FR is updated by a combination of census-data, survey data and administrative data
    - Constantly developments of method

- A FR with good quality is essential for
    - Monotoring development of farms
    - As a input for different surveys, for example to reduce sample size, better quality and less response burden. Also as a base for using administrative data for statistics and developments of inovative methods for statistics.
    - Statistics on low regional level

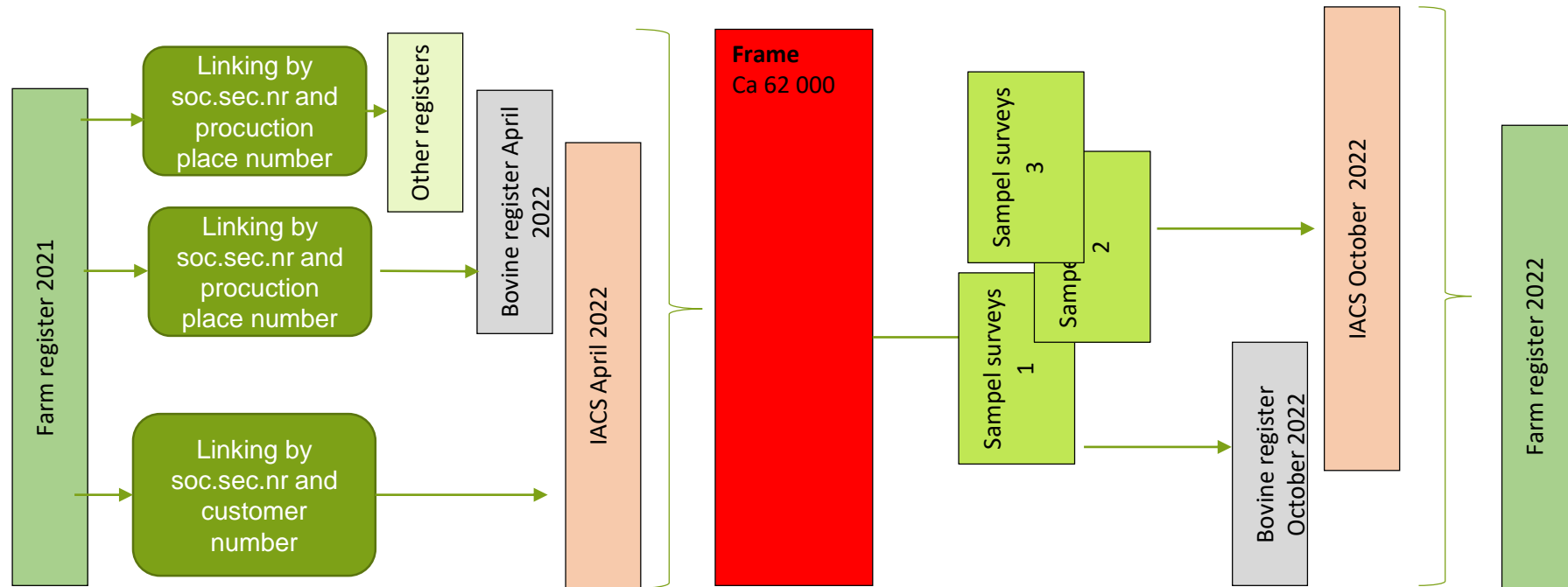➢In Sweden we do FSS/IFS as a census every time (….2016, 2020, 2023, 2026…..)

Farm Register i Sweden

Creating new farm register FSS/IFS years

- Farm register 2022
- Linking by soc.sec.nr and procuction place number
- Linking by soc.sec.nr and procuction place number
- Linking by soc.sec.nr and customer number
- Other registers
- Bovine register April 2023
- IACS April 2023
- **Frame** Ca 61 000
- FSS census with questions on linking variables (orgid, customer number, production place number). Also question on threshold variables thats not included in adm. Registers.
- Bovine register October 2023
- IACS October 2023
- Farm register 2023

Imputation
- Production places for pigs, poultry and sheeps
- Slaughtering register

Farm Register i Sweden

Creating new farm register not FSS/IFS years

Farm Register i Sweden

Main tables
Statistical data
Adm. data
Linking tables
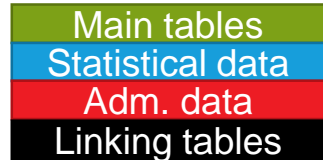
Persons/holders
- HoldingID
- PersonID
- If Holder (Y/N)
- Adress info

Regions
- Location
- County
- Municipality

Bovine register
- PPN
- .....

Slaughtering reg.
- PPN
- .....

Areas
- HoldingID
- PersonID
- Code of crop
- Crop area
- Location of area

Holdings
- HoldingID
- Location (lowest level)
- Total areas
- Astat, dstat, tstat, LBR

Production place (animal)
- Production place nr (PPN)
- Type of animal
- Maximum nr of animals
- Holdingid

Areas (greenh.)
- HoldingID
- PersonID
- Custumer nr
- Code of crop
- Crop area

Animals
- HoldingID
- Code of animal
- Nr of animals

Customer nr
- Customer nr
- Holdingid

Ecological costumer nr
- Eco Customer nr
- Holdingid

Ecological reg.
- Customer nr
- …

IAKS
- Customer nr
- …

Farm Register i Sweden

Persons/holders

Customer nr

Production place (animal)

Ecological costumer nr

Preprinted

Step 1: Updating linking tables with survey data

Step 2: Linking data to registers

Bovine register

IAKS

Ecological reg.

Slaughtering reg.

Black box of data-processing
(Step 3: handle all illogical information from different sources)

Step 4: Update all FR tables
- Holdings
- Persons/holders
- Areas
- Ecologial areas
- Animals
- Customer nr
- Ecological customar nr
- Production places

Farm Census
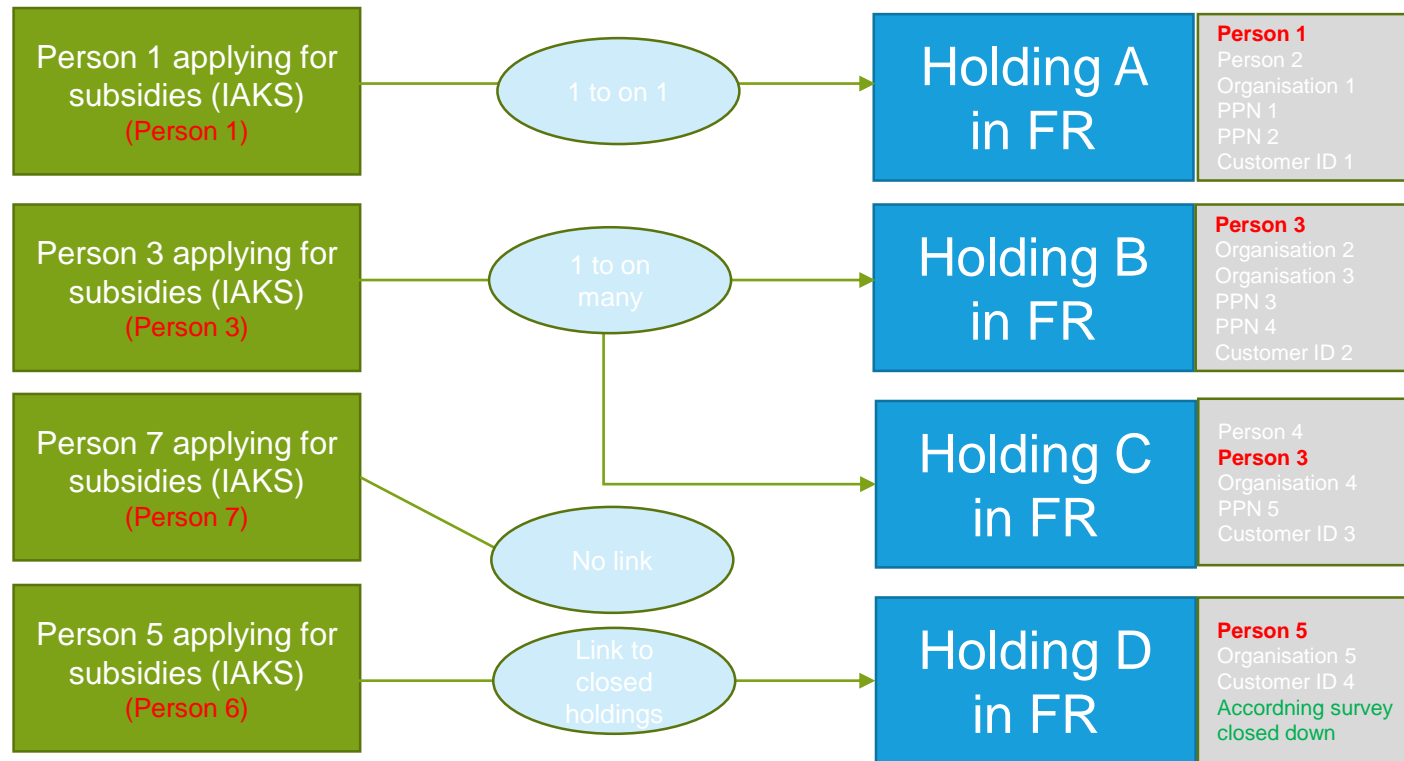With information on linking variabels than can be changed by farmers

Farm Register i Sweden

Problems with using administrative data

- Linking
  - Farm register has not correct linking information
  - Farmers on several holdings
  - Missmatch between questionnaire and register
  - Registers are not updated

Farm Register i Sweden

Problems with linking – Example from IAKS

Person 1 applying for subsidies (IAKS) (Person 1)	→ 1 to on 1 →	Holding A in FR	**Person 1** Person 2 Organisation 1 PPN 1 PPN 2 Customer ID 1
Person 3 applying for subsidies (IAKS) (Person 3)	→ 1 to on many →	Holding B in FR	**Person 3** Organisation 2 Organisation 3 PPN 3 PPN 4 Customer ID 2
Person 7 applying for subsidies (IAKS) (Person 7)	No link	Holding C in FR	Person 4 **Person 3** Organisation 4 PPN 5 Customer ID 3
Person 5 applying for subsidies (IAKS) (Person 6)	→ Link to closed holdings →	Holding D in FR	**Person 5** Organisation 5 Customer ID 4 Accordning survey closed down

Farm Register i Sweden

Problems with linking – Example from IAKS

Solving linking problems
1. Use IFS to give as much information as possible on linking variables.
2. In case of one to many relation – create linking rules.
3. In case of "empty" links – create new holdings
4. In case of mismatches – create linking rules

Farm Register i Sweden

Constantly developments

The results from the black box of data-processing gives us:
1. Information on how to improve questionnarie
2. Information on how to improve comunication with farmers
3. Improvements on linking data between different sources

Farm Register i Sweden

The result of doing a census every third year

- We have a verry stable source for making samples for other surveys – The total responce burden is less
- We can produce statistics from other administrative sources with good quality
- We can develop innovative methods/models with good quality.
- Every third year we can produce statistics on low regional level on basic variables
- It is used for evaluating proposals for policy-decisions. For example in situation of crises.