INNOVATION OF THE AGRICULTURE STATISTICS AT STATISTICS NETHERLANDS

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1. Introduction

In the last decades the Agriculture Statistics at Statistics Netherlands (*SN*) have fallen behind the fast changing circumstances. To guarantee their continuing existence, it is necessary to innovate and adapt these statistics to new circumstances.

The core question is: what is – given the changing circumstances, available means and uncertainties – the best position for the Agriculture Statistics in the short and the long run?

This paper describes a system needed to ensure a good position for the Agriculture Statistics in the future. In paragraph 2 the current situation of the Agriculture Statistics at SN is described briefly. Paragraph 3 goes into the elements of change. Paragraph 4 deals with the desired situation. Integration and coupling of datasets is a key issue here. Finally, in paragraph 5 some remarks are made on work in progress.

2. The current situation

The core of the Agricultural Statistics at SN is the yearly Farm Structure Survey (*FSS,* ±90.000 units), which focuses on the physical production of agricultural activities (e.g. area of crops, number of animals etc.). The FSS is a co-production with the Ministry of Agriculture, Nature and Food Quality (*LNV*). The Ministry of LNV is responsible for the maintenance of the population (register), the data collection and checking. SN produces the statistics. The FSS is a full survey where all units of the population are approached with a questionnaire each year. Since several years it has become a part of the main data collection of the Ministry of LNV in May each year, which also includes requests for subsidies and income support and geographical information on parcels (e.g. crops).

The FSS is supplemented with a set of 13 to 14 smaller surveys (*satellites*), which mostly zoom in on a specific subject of the FSS, such as animal production, biological production, and so forth. These satellites are sample surveys, which are

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carried out, from beginning to end, by SN itself. Although there is a link with the FSS, results of these satellites are not integrated with the FSS. This also accounts for the Agriculture Accounts and statistics on prices, which are not produced by the section of Agriculture Statistics, but by the section of the National Accounts of SN.

Additionally, existing registers, such as on cattle and crops, are not used. Also, with domains such as nature, environment and geographical statistics, the relation is very limited.

Agriculture Statistics have their own population of agriculture units (*AR*), which is a derivation of the register of units of the Ministry of LNV. The approach of the registry is a functional one, that is: it pretends to contain every unit in the Netherlands which has some kind of agriculture activity. There is no connection with the central Business Registry (*BR*) of SN. Until now the section of Agriculture, Forestry and Fishing (NACE section A) of the BR was not adequately filled in and used. This, however, will change in the coming years. Due to the new regulation on the BR from the European Union SN will be obliged to fill in and update this section. The approach of the BR is not functional but institutional, that is: containing every unit that has some kind of agricultural production as their *main* activity. So, the set of units in the BR is smaller than the set of units of the *AR*.

Summarizing: the way Agriculture Statistics are produced at the moment at SN can be seen as a stand-alone system and a stovepipe model, which focuses strongly on the information needs of the European Union only.

Table 1: The main Agriculture Statistics at SN

Statistic	Domain	Frequency/Sample
Farm Structure Survey (Netherlands)	Physical aspects of the agriculture production	Yearly/Full survey
European FSS	Physical aspects of the agriculture production	3 times per 10 years/Full survey
Economic demography	The birth, death etc. of agriculture enterprises	Yearly, stopped temporary
Tree cultivation	Deepening of the elements of the FSS	Every 5 years/full survey
Cows	Number of cows per category	Yearly/sample from FSS
Pigs	Number of pigs per category	Two times per year/Sample from FSS
Slaughtering of animals	Number of slaughtered animals	Monthly
Pastureland	Size and use of pastureland; production of grass and hay	Yearly/Sample from FSS
Biological production	Deepening of the elements of the FSS	Yearly, stopped temporary
Area fruit	Deepening of the elements of the FSS	Every 5 years/full survey
Assessment of the harvesting of fruit (apples and peers)	Deepening of the elements of the FSS	Yearly/Sample from FSS
Assessment of the harvesting of	Deepening of the elements of the	Yearly/Sample from FSS

Statistic	Domain	Frequency/Sample
farming and maize	FSS	
Dairy production	Dairy production and dairy products	Monthly/Full survey
Supply of fish	Amount and price of fish	Monthly/Full survey
Food safety	Elements of the total food chain	Yearly
Agriculture Accounts	Financial aspects of farming, related to the National Accounts	Yearly (National Accounts)
Price	Production prices	Monthly (National Accounts)

3. Changing circumstances

Due to changing circumstances, SN is being pressured to redesign the way its statistics are produced. Key developments are:

- *Changing data needs of customers*. Increasingly, customers want their data more quickly and often also integrated with or related to other domains (theme-orientated). In the case of Agriculture there is, for example, the changing information needs due to the new Common Agricultural Policy of the European Union (*CAP*). But also for example, due to the bigger focus on the competition of the use of land between agriculture, recreation, nature and housing. Other trends are:

  o Increasing need for information on the so called four P's (Production, Profit, Planet and People) and their interrelations.

  o Increasing need to place agriculture in relation to other domains, vertically (agro-chain from supply to consumption) and horizontally (development of the country side, environment and land use).

  o Growing attention for sustainable production methods (including food safety).

  o Attention for green energy (e.g. biomass and wind energy).

  o The need for integrated micro-data (for researchers).

  o Growing need for data on a regional level (using GIS-data), also because of the ongoing decentralisation of policymaking.

- *Growing competition.* Data is more and more electronic available, as a result of which other organizations can easily provide the same and often more detailed statistics in their own domain then SN. This is reinforced by the possibilities which are offered by the Internet.

- *Pressure to reduce the survey burden.* To increase (international) competitiveness, a major goal of the Dutch government is to decrease the administrative burden on enterprises. This especially accounts for farmers. For the data collection this means, that SN can only set up or expand a survey, if the desired data is not available in an existing register.

- *Redesigning the processes and supporting information systems*, mainly by using new technologies and methodologies ("operational excellence"). The trend is moving from a stovepipe model with separate custom-made production lines to one general production line with standardized tools for all statistics.

- And, first and foremost, *the need for increased efficiency* due to budget cuts. Practically, this means for SN: producing the same output however with less staff.

Especially the growing competition from other organisations forces SN to *add extra value* to its current output ("product leadership"). Simply producing stand-alone statistics within a stovepipe model is not enough anymore. This extra value can foremost be added by integrating and coupling the different sources to a new overall dataset. This also accounts for the domain of agriculture. This not only increases competitiveness, but it also contributes to the changing needs of customers and the reduction of the survey burden. Here SN is in a unique position, because SN has the disposal over a fast amount of different data sources, among which tax data.

So, SN and thereby the Agriculture Statistics find themselves in a process of change from a stovepipe way of producing statistics with own surveys, own processes and information systems to a much more complex way of producing statistics.

Figure 1: Old and new way of producing statistics at SN
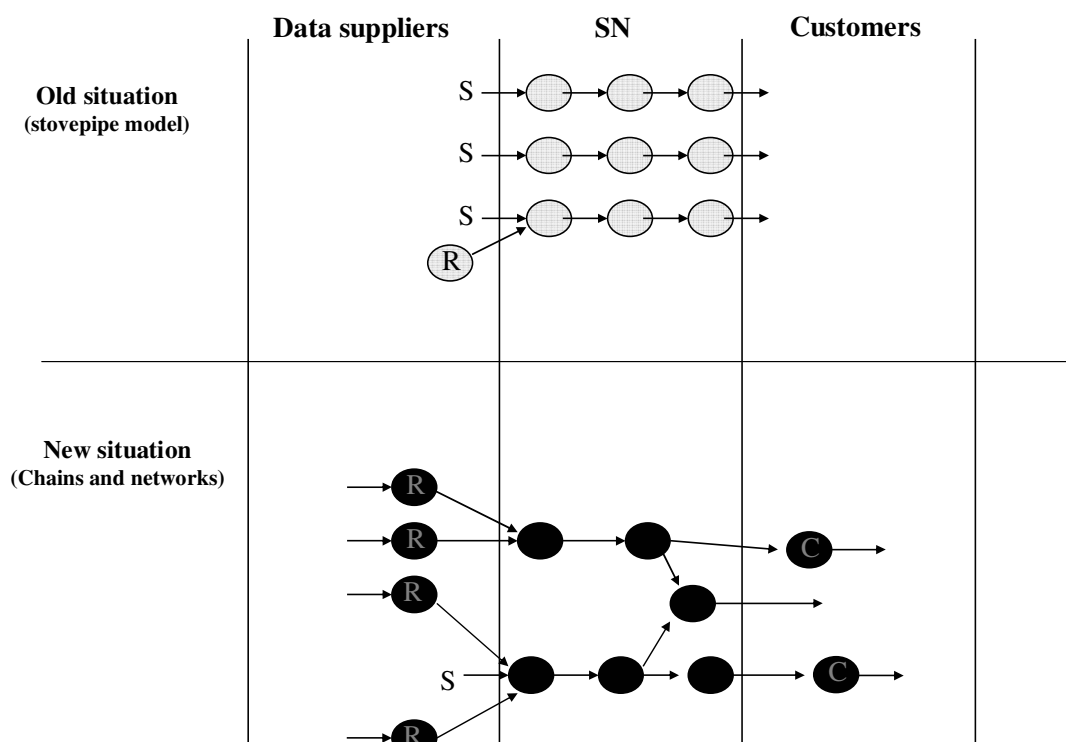
R=Registers; S= Own surveys; C=Cooperation with third parties

On the input side the use of already existing registers is leading, and whereby surveys are only a supplementation. This is supported by only one production line set up with general and standardized tools instead of separate production lines for every single statistic with custom-made tools. On the output side important issues are product innovation (more theme-orientated) and the stimulation of cooperation with third parties. Value added is foremost produced by the integration of the different datasets, registers as well as surveys. See figure 1.

4. The desired situation

So, it is obvious that the current way of producing Agriculture Statistics does not fit new developments and carries a big risk if simply continued. Key issues for the new situation are:

- Re-evaluation and update of the current output (the "what-question"). See paragraph 3 Changing circumstances.
- Improvement of the demarcation and quality of the population frame, including a relation between the AR and the BR.
- Re-designing of the processes and supporting information systems ("the how-question").
- Increased use of existing registers.
- Integration of the available datasets, with the AR and BR as the main core.

To support these issues the following new system for the Agriculture Statistics is considered. Se also figure 2.

The core of the new system exists of two population registers which are connected to each other. The first is the AR, derived from the population register maintained by the Ministry of LNV (an improvement of the current situation). The second is the BR. In the BR two parts can be distinguished, that is: (1) NACE group 01 Agriculture, which contains units with their main activity in agriculture (institutional approach) and (2) added by units in other NACE groups with a secondary activity in agriculture. For example a campground with some small agriculture activities. Some units in the AR will be too small to lead to a unit in the BR.

This core of two population registers is the central link and interface with other registers and surveys. First, the derived AR is the frame for the yearly FSS and its satellites. Second, it is also the basis for the economic demography of agriculture enterprises. And finally, as the AR is mainly maintained by the Ministry of LNV, the identification key in the AR can also be used to link to other registers of the Ministry. Existing registers are for example:

- a register on parcels (*BRP*), including data on crops and geographical information.
- a register on animal production (e.g. cows, pigs, sheep and goats).
- a register on nature conservation.

4

- a register on subsidies and income support.
- a register on land use (already available at SN).
- a register on biological production (*SKAL*).

On the other side of the core we have the BR of SN with a filled in and updated section of Agriculture, Forestry and Fishing. The AR will be connected to the BR. This makes it possible to use BR-related statistics for agriculture and link these sources with AR-related sources. Examples are:

- the use of financial data, especially tax data.
- the use of income data.
- the use of employment data.
- the use of data on R&D.
- the use of data on International Trade.

Figure 2: The desired system of the Agriculture Statistics at SN
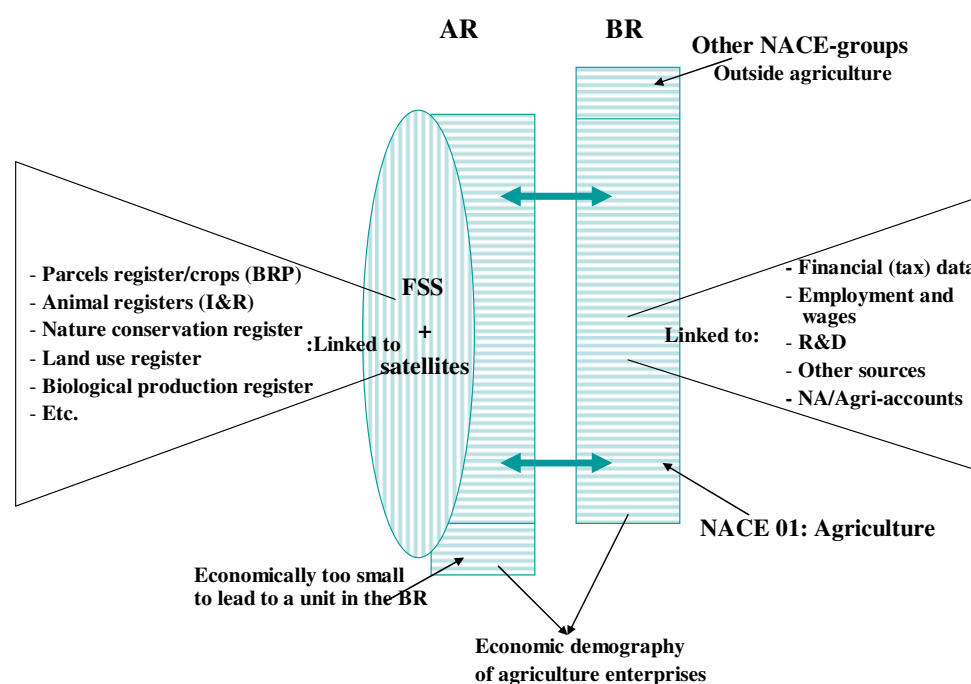
5. Epilogue: work in progress

The last year research has been conducted to see if the integration and coupling of datasets and registers is possible and useful in the context of the new system. Some first results are:

- The *connection between the AR and BR*. Lately, in a new version of the BR, the section of Agriculture, Forestry and Fishing was filled in and updated. A

5

comparison was made between the AR and the BR. Main issues:

- o Still a lot of smaller units from the AR are missing in the BR. Quality of BR is lacking.
- o If the way units are categorised in the AR is compared with the way it is done in the BR there are still a lot of differences.
- o It is not really easy to couple units of the AR and BR on the basis of name, address and postcode only. There are still a lot of mis- or no-matches. Until now 70.000 of the 90.000 units from the AR were identified in the BR.
- o In the future it is, however, expected that the AR and BR will converge, because they will (partly) be based on the same new source, that is: a central Dutch register of enterprises (*BBR*). Also social security numbers and enterprise identification numbers (from the Chamber of Commerce) will be come available in the different registers, making it much more easy to integrate these sources.

- The *use of tax data* to produce a financial Production Statistic on Agriculture (coupling FSS to BR and BR to tax data). Main issues:

  - o The main conclusion is that it is possible to set up such a statistic, without bothering the farmers with questionnaires. However there are still a lot of problems to be solved.
  - o A main problem with tax data is that financial data on agriculture activities are difficult to separate from financial data on non-agriculture activities. For most of the smaller enterprises this not a problem.
  - o The quality of the tax data is difficult to asses. Often one has to deal with specific problems, like extension of payments and settling of payments.
  - o The problem of the time lack of tax data.
  - o It is difficult to choice the right weighing method, because the set of coupled units is not representative of the population.

- The *use of a register on cows* (coupling AR and I&R-Cow). Main issues:

  - o It is possible to use this register, but foremost on the macro-level.
  - o This makes it possible to delete or minimise (e.g. smaller sample) surveys or delete questions in surveys (e.g. FSS).
  - o On an enterprise-level, however, still big differences occur between the data from the I&R-Cow and the data from the FSS.

- The *use of a register on parcels* (crops, coupling FSS to BRP). Main issues:

  - o It is possible to use this data in stead of data based on questions in the FSS. However in some cases the categories used are not detailed enough. This can hopefully be resolved with the data users.
  - o Because GIS-information is available, much better regional data can be produced than based on data of the FSS (based on headquarters).

At the end of 2007 the research phase will be finished. Then a Business Analysis phase (*BA*) will be conducted, especially directed towards the "what-question". Finally, the BA must, in a third phase, lead to a step-by-step implementation of the desired situation.

6

A crucial element in this path of innovation, is the availability of (extra) staff. Due to the ongoing cuts at SN in staff towards 2012, one cannot be to optimistic.