

# Agricoltura, zootecnia e pesca

## Agricultural crops

Up until 1926, when ISTAT was founded, there was no a national service for agricultural statistics in Italy. Data collected before that year concerned the quantities of product of some crops, but not always the areas.

In 1907, a special office was set up in the Ministry of Agriculture, Industry and Commerce with the aim of setting up a system of agricultural statistics. Such system included a local organisation network with a Commissioner as head of agricultural statistics in each Province. The commissioner was usually the same Director of the “cattedre ambulanti di agricoltura”.

This organisation network was used to build up the first agricultural land register in 1909, with the aim of creating a base for new agricultural statistics. At the end of the data collection, the results were published for the following regions: Lombardia, Veneto, Marche, Umbria and Lazio, while the results for the remaining regions were not considered reliable and therefore were never released.

In 1924, the foundation of the Institute of Economics and Agricultural Statistics which took over even agricultural statistics did not improve the situation. Because of such problems, when agricultural statistics were transferred to the Central Statistical Institute in 1927, it was decided to create a general survey to form a reference base for obtaining reliable ongoing statistics and to describe the various aspects of agriculture in Italy – as the 1909 registry was intended . Operations for the second agricultural land registry began in 1929 and were concluded ten years later with the publication of a general report. The responsibility for the survey in each region was entrusted to the Directors of the “cattedre ambulanti di agricoltura” , The Directors delegated the survey operations to technical staff. In order to achieve absolute conformity in survey operations, precise guidelines were issued for the various phases of the survey along with detailed regulations relating to the definitions and methodology to be used. An area within a municipality of approximately 100 hectares, named section, was adopted as data collection unit . In each section the surveyors verified the productive area (agricultural or forest) and how the area was divided among types of cultivation (arable land, specialised permanent crops, permanent grassland, forests, productive fallow), which in turn were divided into subcategories of types and methods of cultivation. At the same time, normal average production was estimated and even the number of plants for timber cultivation. The analytical results of the survey were published in provincial reports, divided by municipal districts, agricultural areas and zones.

It only became possible to associate ongoing agricultural surveys with the agricultural land registry in 1936, while up to this date the data for area and production were recorded separately for each type of crop or group of crops, and are not therefore comparable. In 1936 annual updating of the distribution of provincial areas by type and method of crop began. At the same time the number of crops covered by the survey was extended, and Provincial agricultural inspectors were asked to formulate forecasts for cereal, grape and olive productions and to provide information regarding the state of crops, the climate performance and parasite attacks.

During the war and in the following years , production estimates were made taking into account information provided by the institutions responsible for governing the use and distribution of food. Therefore it can be presumed that the estimates produced were considerably underestimated. When normality returned, the need for more reliable details on the areas invested in the different types of crop increased. Therefore, in 1950 a new survey was carried out and a series of corrections were introduced concerning the current surveys. An additional analysis on vegetable crops was introduced, a systematic survey of flower growers was begun, and a distinction between the production areas and total area was introduced in the case of permanent crops. The introduction of sampling techniques to

estimate the production of some crops is particularly noteworthy, in addition to the usual estimation methods used by Provincial agricultural inspectors. In particular, this method of surveying was adopted in 1952 for wheat, grapes and olives and it was extended to citrus plants in 1954 and almonds and maize in the two following years.

In practical terms the agricultural area was split into agricultural fractions (approximately 230,000) of a dimension of between 90 and 120 hectares, forming a panel from which the sample units (*area sampling* method) were extracted using rigorous statistical methods. For each unit expert evaluations on features of interest were recorded. The sampling design was stratified in each province. The provincial sample size was split among strata using the criteria of improved proportional distribution, i.e. by taking into account the variability of yield within each stratus.

Adequately organised local offices, both in terms of quality and quantity, were responsible for performing the functions indicated above. The organization included 19 departmental statistics workers, 94 provincial staff and 600 correspondents. The staff in these structures had a high level of professional training and quantity controls were performed jointly by civil servants from the Provincial agricultural inspectors and by ISTAT. This organisation allowed for the efficient performance of the function until the mid-1960s, with very satisfactory results also for the crops recorded using traditional estimation methods.

The transfer of some of these functions from Agricultural inspectors to Regional authorities, the new criteria adopted by the EU for the definition of primary and secondary areas and the introduction of the concept of intended use of products made it necessary to give up this mixed method and to come back to estimates made using the old criteria, both for the calculation of the areas invested and the harvest. In fact, the new concepts would have entailed in a review of agricultural fractions (for the purposes of reclassifying the normal productivity classes), which was not compatible with the organisational structures available, most of which had to be transferred to Regional authorities. In reality, the devolution of responsibilities from Inspectors to the Regions created serious problems for the surveys based on expert evaluations, because of the reduction in personnel used and their subsequent estrangement from life on the agricultural holdings, and because the conditions of production that changed from the classic rotation scheme to successive crops

From 1981, the restructuring of the agricultural statistical system required by the ECC included the gradual introduction of a coherent statistics programme to be done using a sampling of holdings and well trained personnel. This personnel was designed to be part of a regional technical-administrative structure that was to ensure the survey was carried out and subsequently it had to submit the data recorded to ISTAT. Since 1981, ISTAT was delegated by the Italian government to perform these functions, thereby passing from simply receiving the data for processing and validation, to directly coordinating the restructuring of the surveys, from both a technical-methodological and organisational point of view.

To get around these issues, various initiatives have been launched including the introduction of an agreement between ISTAT, the Ministry of Agriculture and Forestry and the Regions, establishing a programme of surveys based both on samples of holdings and elicitation of experts. Calendars and methods for submitting results to ISTAT were established. The methods of data collections and data transmission, communicated by post, specified the acquisition of information indicated in a previously agreed calendar before the 10<sup>th</sup> of each month, while the Regional ISTAT office performed a final control and immediately sent the information to the central office in paper form. Precise and fast reception of the information was necessary to ensure a quick turnaround of results regarding national, provincial, regional and district level calculations, to be returned to the regions themselves.

Over the years the schedule of the survey had several changes in order to meet EU regulatory requirements (regulation no. 837/90 on cereals and regulation no. 959/93 on non-cereal crops) and national information requirements. Nonetheless, the collaboration among ISTAT, the Ministry of Agricultural and Forestry Policies and the autonomous Regions and Provinces still represents the cornerstone of the production of agricultural statistics by the National statistical system. Even today, the evaluation by expert method is one of the most widely used survey technique for agricultural areas and crop productions. In fact, data are recorded using monthly estimates supplied by the Provincial agricultural authorities or similar Offices in the autonomous Regions and Provinces. In order to improve the timeliness and quality of the information collected, data capturing techniques have been adopted using ISTAT's "Indata" portal. The designed software allows for a controlled data acquisition.

Note that data on agricultural area and crop productivity refer to the agricultural year, which begins on 01<sup>st</sup> November and ends on 31<sup>st</sup> October of the following year. For crops which are harvested after the end of the agricultural year, production is attributed to the year in which most of the crop matured. The survey calendar has recently been modified with the approval of new EU regulations (regulation no. 543/2009), to substitute the previous framework (Regulations no. 837/90 and no. 959/93).

Over the last few years, in order to calculate production performance in tobacco, rice and sugarbeet sectors, ISTAT used data provided by the Agricultural Payments Agency (AGEA), the National Rice Institution and the Italian sugarbeet growers association (ABSI) respectively. In last years the “Agrit” survey carried out by Ministry of Agriculture has taken on an essential role. Such survey collects information on areas, yield and production and it is a *point frames sample survey*, that is through a direct observation of the land. Because of its quality it can be used to fill in the requirements indicated in EC regulation no. 543/2009.

### *Warnings for time series comparisons*

- In the period between 1877-1909 the production data for “sugarbeet” are calculated according to annual national sugar production.
- In the period between 1909-1935 the production data for “chick peas”, “peas” and “lentils” were calculated by dividing total production into the same proportions as recorded in the 1929 agricultural registry survey.
- From 1971 arable land excludes crop tares and areas not used during the course of the year. Arable land lying fallow and kitchen gardens are included.
- Up until 1984 permanent grassland production is expressed as “normal hay” and from 1985 in thousands of fodder units.
- From 1985 to 2003 the total forest area also includes the area covered with Mediterranean brush.
- In the period between 1996-1998 the item “watermelons and melons” does not include watermelons.
- From 1999 cardoons are no longer included in the item “cardoons, fennel and celery”.
- From 2005 the total forest area does not include other stocked areas.
- From 2005 the definition of forest is taken to be that of the FAO, which specifies a coverage density of 10 per cent rather than 50 per cent as in the previous definition. From 2005 other stocked areas are no longer included.