

Agriculture

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Introduction

The Economic Accounts for Agriculture (EAA) are a satellite account of the European System of Accounts (ESA 1995), providing detailed monetary data on agriculture. The main purpose of the EAA is to analyse the production process and the primary income which it generates. They integrate a wide range of statistics and administrative information on agriculture. The maps in this publication are based on the regional EAA and show some of the ways in which these data can be used for analyses and be combined with agricultural statistics from other domains (Farm Structure Survey, etc.).

Eurostat has been collecting, processing and publishing data on the EAA in the form of a regional breakdown for more than 15 years. Eurostat's free dissemination database contains detailed information on the EAA in a NUTS 2 regional breakdown, covering the period from 1990 to 2008. The regional data, which also cover candidate countries and EFTA countries, are not complete for the time being. Where necessary, data at country or NUTS 1 level have been used in the analyses instead.

Contribution of agriculture to GVA

In national accounts' terminology, gross value added (GVA) at market prices is a main final result of the production activity of various branches ('resident producer units') of an economy. Comparison of the GVA of a given branch with the overall GVA therefore gives a rough measure of its economic importance. It is only a rough measure. Given the close economic relationships between individual branches, it would be somewhat short-sighted to consider each in isolation. Map 13.1 shows that agriculture's contribution to GVA is generally quite low. However, since the EU underwent enlargement, there is now more diversity.

Looking at the EU-27 average, agriculture's contribution to total GVA was only around 1.4 % in 2007. But the economic importance of agriculture is generally much greater in the east and south than in the west and north. Its share in GVA is higher than 6.0 % in 23 out of the 223 regional entities shown: 7 (out of 8) regions in Romania, 7 in Greece, 5 in Bulgaria, 2 in Hungary, 1 in France (Champagne-Ardenne), and also in the former Yugoslav Republic of Macedonia.

The regions showing a contribution of between 3 % and 6 % from agriculture include six regions in Italy, five in France, four in Greece, four in the Netherlands, three in Hungary, two each in Poland and Portugal, and one in Austria.

The regions with the lowest share for agriculture are mainly located in the United Kingdom and Germany. Furthermore, the share of agricultural activity is typically very low in regions around big cities, and this applies to eastern and central Europe too. Bratislava and București are examples, as are the Île de France (the region including Paris), and the German cities Berlin, Bremen and Hamburg in western Europe.

Labour productivity of agriculture

Productivity indicators are ratios of measures of output to measures of input. They can be used to measure and compare levels and rates of growth in productivity between Member States and industries. Agriculture is a highly labour-intensive sector. It is revealing to compile a partial productivity indicator from the gross value added data from the EAA and the corresponding agricultural labour input data, broken down using the latest Farm Structure Survey (FSS). This indicator is also used in the statistics on rural areas.

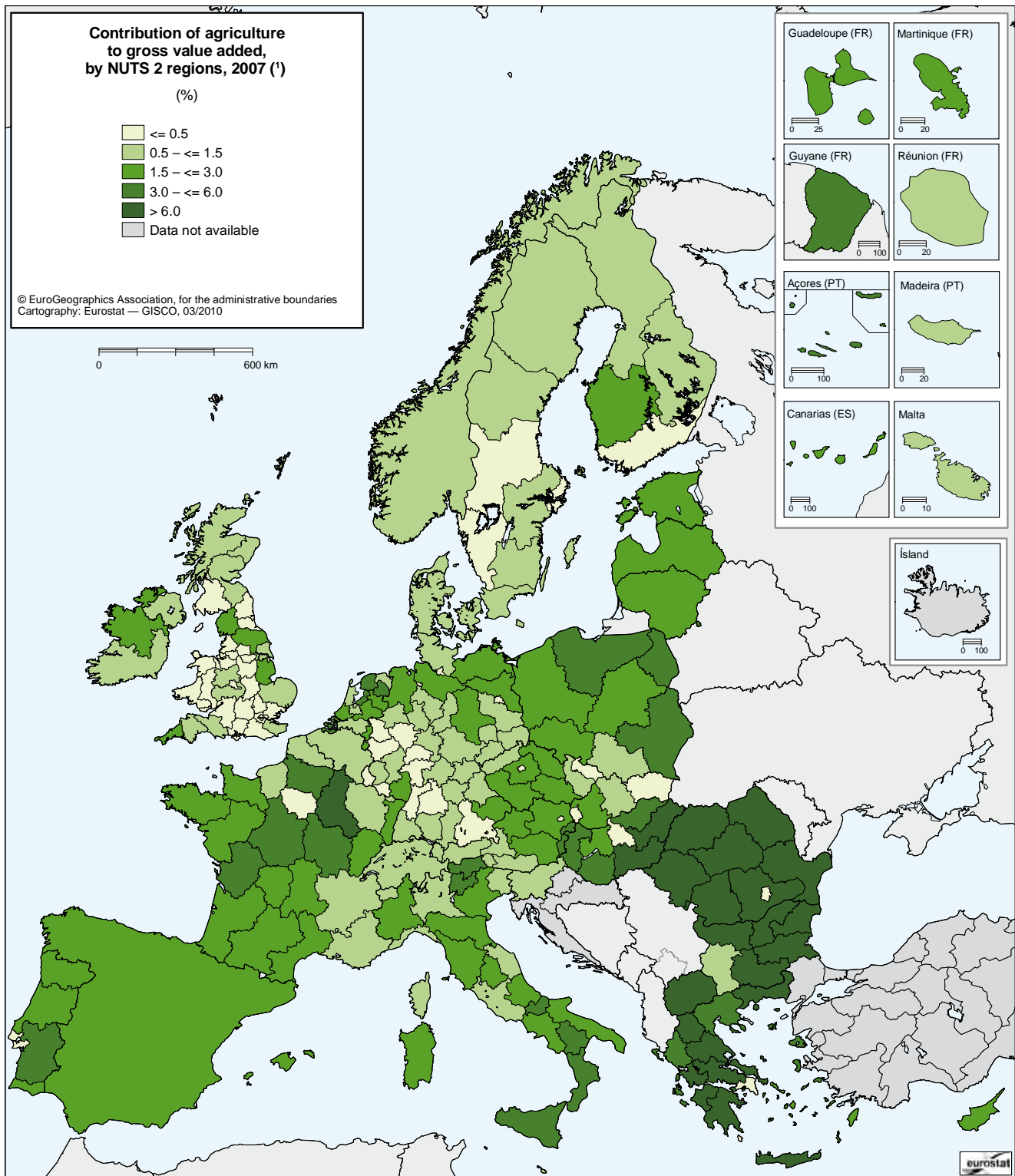
To take account of part-time and seasonal work, agricultural labour is measured in annual work units (AWU). One AWU corresponds to the input, measured in working time, of one person engaged in agricultural activities in an agricultural unit on a full-time basis over an entire year. Map 13.2 shows the gross value added in agriculture per AWU. When comparing levels between Member States and regions, it should be borne in mind that these data are not adjusted by purchasing power parities (PPP). In other words, they do not reflect general differences in price levels.

On average for the EU, the gross value added per annual work unit is about EUR 13 000. In 27 regions, mainly in Denmark, France, Germany, the Netherlands and the United Kingdom, the gross value added per annual work unit is higher than EUR 40 000 in 2007.

Map 13.2 clearly shows a big difference between the western and eastern parts of Europe. Only regions in central and eastern Europe, plus three regions in Portugal (Norte, Centro and Madeira) show results lower than EUR 5 000 per annual work



Map 13.1: Contribution of agriculture to gross value added, by NUTS 2 regions, 2007 ⁽¹⁾ (%)



⁽¹⁾ Belgium, Denmark, Spain, Slovenia, Norway and Switzerland, national data; Poland, by NUTS 1 regions and 2005 data; Portugal, 2006 data.

Source: Eurostat ([reg_e3vabp95](#), [agr_r_accts](#) and [aact_eaa01](#)).



unit. Labour productivity is strongly influenced by farm structures. In most of the eastern (and also in some southern) Member States, average farm sizes are small, the level of mechanisation is low, and a significant part of production is for on-farm consumption. The influence of farm structures on labour productivity can, for example, be noted in the Czech Republic, a Member State with many large cooperatives. Two regions in the Czech Republic (Střední Čechy and Severozápad) show results over EUR 10 000 per annual work unit.

Another factor which influences the comparability of productivity of agricultural labour is the structure of production. For example, production of fruit and vegetables requires more labour than production of arable crops, while capital costs are relatively lower. Therefore, the GVA per annual work unit cannot be taken as the only indicator for productivity.

Importance of crop production

An important content of the EAA is information on the value of output, which also makes it possible to show how the composition of output differs between regions. Map 13.3 shows the significance of crop output compared to total agricultural goods output, monitored in basic prices. At the same time, the map also shows the significance of animal output, as crop output plus animal output amounts to total agricultural goods output. The regions with light colours are, therefore, regions with high animal production. The total area of arable land, soil quality, climate conditions and consumer demand may influence the composition of output.

On average, crop output is about 55 % and animal output about 45 % of total agricultural goods output. Regions with the highest share from crop output are found mainly in the southern part of Europe, with their high production of, for example, wine, fruits, olive oil and vegetables, but for some regions, intensive production of cereals is of high importance.

Regions with high levels of animal production are to be found in many parts of Europe, depending on local conditions. Cattle and milk production is often linked to large areas of grassland, as found, for example, in Ireland and the western part of the UK, but also in mountainous areas of central Europe. In other regions, for example in the north-west of Germany (Weser-Ems and

Münster) and in western France (Bretagne and Basse-Normandie), very intensive pig production is one of the main reasons for the high level of animal production.

In the new Member States, there are few differences among regions within a country, though Bulgaria is an exception, as its six regions comprise four different categories of importance for crop and animal production. At country level, Poland (where the figures are for NUTS 1 regions) and Malta show high levels of animal production among the new Member States.

Agricultural productivity

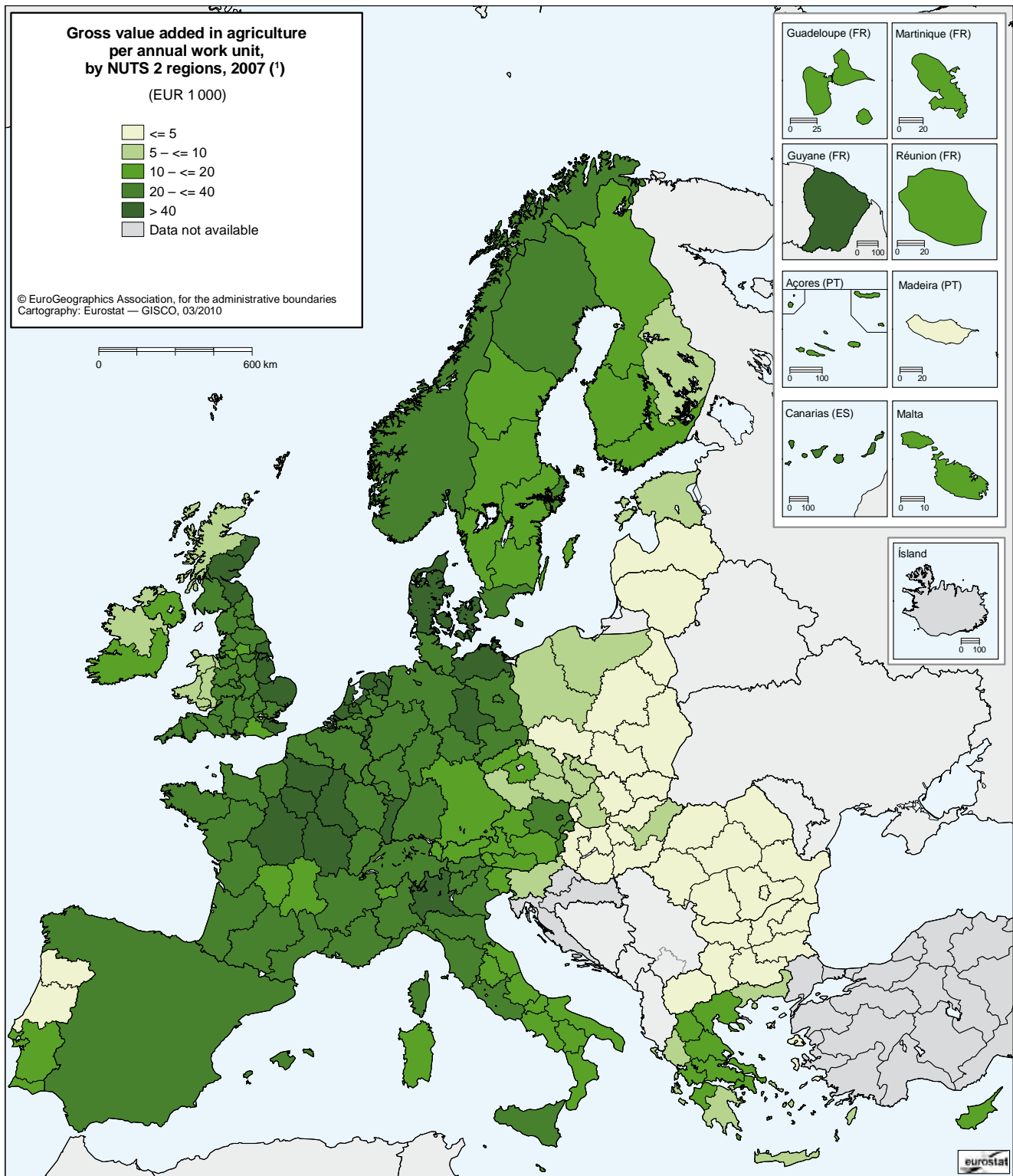
Map 13.4 shows the value of crop output per hectare of agricultural area. However, it focuses on intensive crop production, so output of forage plants and the area they cover are excluded from the calculation. The value of crop output per hectare, which on average is about EUR 1 800, depends mainly on the type of crop. Vegetables, wine, fruit-growing and olive oil production can generate a value over 10 times higher per hectare than, for example, cereal production. Furthermore, growing under glass or plastic means high output on a limited area of land, which explains why most regions in the Netherlands show very high output per hectare. Other regions with more than EUR 8 000 per hectare are found in Switzerland and Austria, where the amount of land suitable for intensive production is low, and is used for vegetables, fruits, flowers, etc. The overseas departments of France (Guadeloupe, Martinique and Guyane) plus Madeira and Açores (Portugal) show very high productivity for crop production.

Low crop production values per hectare (less than EUR 1 000 per hectare) are predominantly found in eastern and northern Europe. Regarding eastern Europe, low figures are explained by a combination of lower yields and lower prices. In the case of Poland, the use of data from 2005 may impact the result, as crop prices increased by about 20 % in real terms from 2005 to 2007.

The big difference in crop output per hectare between Norway and neighbouring regions in northern Europe seems to be explained mainly by the way in which subsidies are granted. In Norway a larger proportion of subsidies are included in basic prices than in EU Member States, where subsidies are predominantly granted to support income, and not as product-related subsidies.



Map 13.2: Gross value added in agriculture per annual work unit, by NUTS 2 regions, 2007 ⁽¹⁾
(EUR 1 000)

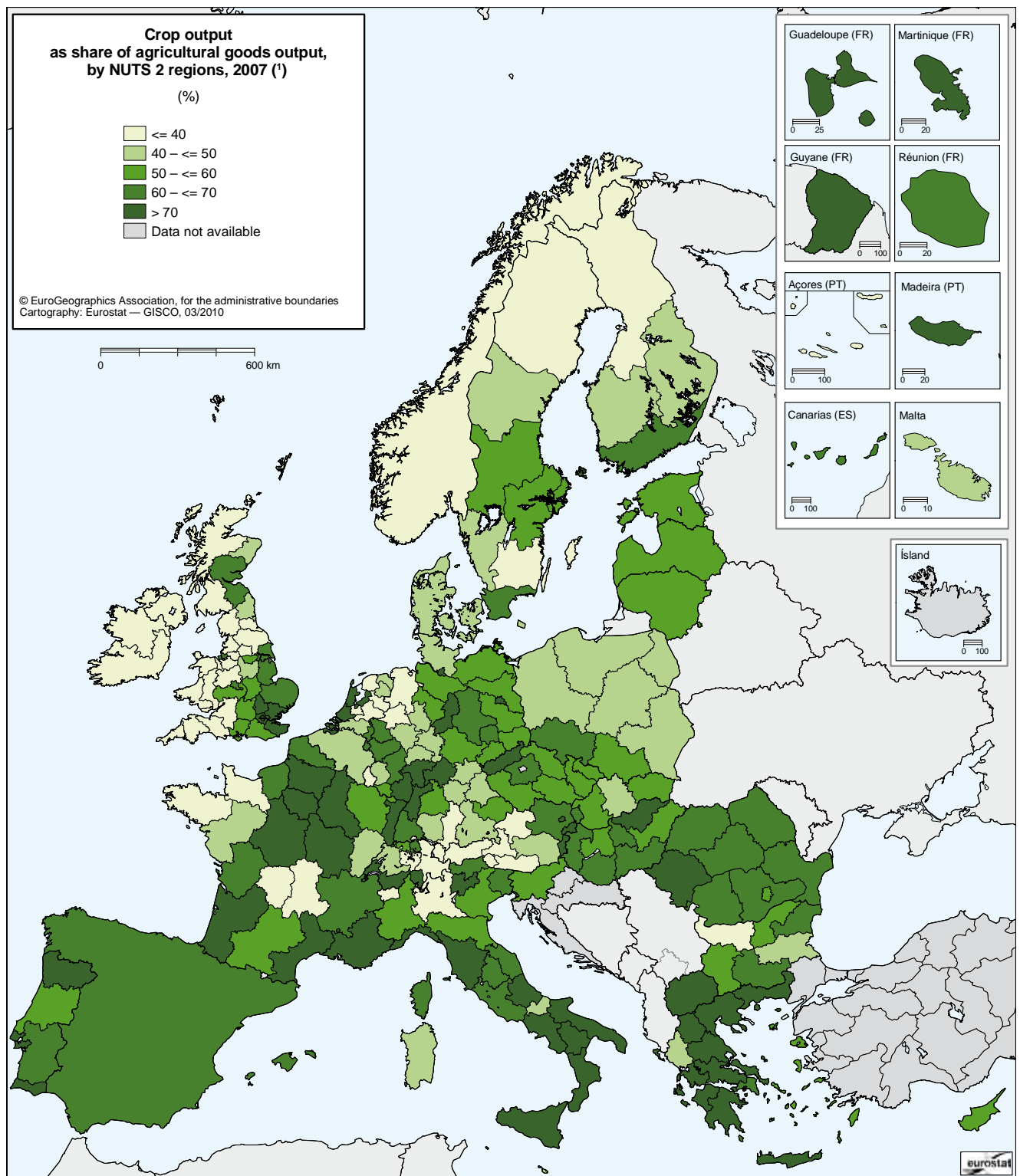


⁽¹⁾ Belgium, Denmark, Spain, Slovenia, Norway and Switzerland, national data; Germany, by NUTS 1 regions; Poland, by NUTS 1 regions and 2005 data; Portugal, 2006 data.

Source: Eurostat ([agr_r_accts](#), [aact_eaa01](#), [ef_ov_kvaa](#) and [aact_ali01](#)).



Map 13.3: Crop output as share of agricultural goods output, by NUTS 2 regions, 2007 ⁽¹⁾ (%)



⁽¹⁾ Belgium, Denmark, Spain, Slovenia and Norway, national data; Poland, by NUTS 1 regions and 2005 data; Portugal, 2006 data.

Source: Eurostat ([agr_r_accts](#) and [aact_eaa01](#)).



Map 13.5 shows the value of animal output in basic prices per livestock unit, that is, the value of output of live animals and animal products per 500 kilograms of live animals. The value depends, among other factors, on the balance between meat and livestock production and the production of animal products (such as milk and eggs), as animal products generate higher income per livestock unit than the production of meat. On average the output per livestock unit is about EUR 1 000.

The picture for EU and EFTA countries is mixed. Many regions in eastern Europe show low productivity using this indicator. Ireland and several regions in northern and western parts of the United Kingdom are in the lowest group, too. In eastern Europe, prices below the EU average can explain this, while low-intensity beef production seems to explain the results for Ireland and the United Kingdom.

Regarding high output per unit of livestock in the north, this is partly due to special subsidies in less favoured areas, while high figures for Norway and Switzerland are due to subsidy systems that differ from those in the EU. The high results in many regions in central Italy seem to be explained by high product prices.

Energy costs in agriculture

Map 13.6 shows the costs of energy and lubricants compared to the value of output. The share of energy costs can be considered as an agro-environmental indicator, as energy consumption is a core element in policies related to environment and climate. Energy costs are — generally speaking — expected to be highest where mechanisation is very developed. Cross-country comparison of figures can be affected by differences in prices and taxes on energy, and by the products in the agricultural basket.

The picture presented by Map 13.6 shows high energy costs in particular in regions in eastern Europe, despite the fact that the level of mechanisation in most of these countries is low. The high figures in eastern Europe, therefore, are to be explained by other factors, for example lower productivity and lower prices for output. In the case of Poland, relatively high energy costs are not explained by use of data from 2005, as prices for output and for energy increased by almost the same percentage between 2005 and 2007.

The high figures for regions in the Netherlands (in particular Zuid-Holland) and in regions such as Essex, Outer London and Inner London are most probably explained by intensive production in greenhouses, with high energy consumption for heating. The relatively high costs in Norway, Sweden and Finland can — apart from the high demand for heating for some kinds of agricultural production because of the cold climate — be explained by high transport costs in regions with low population density.

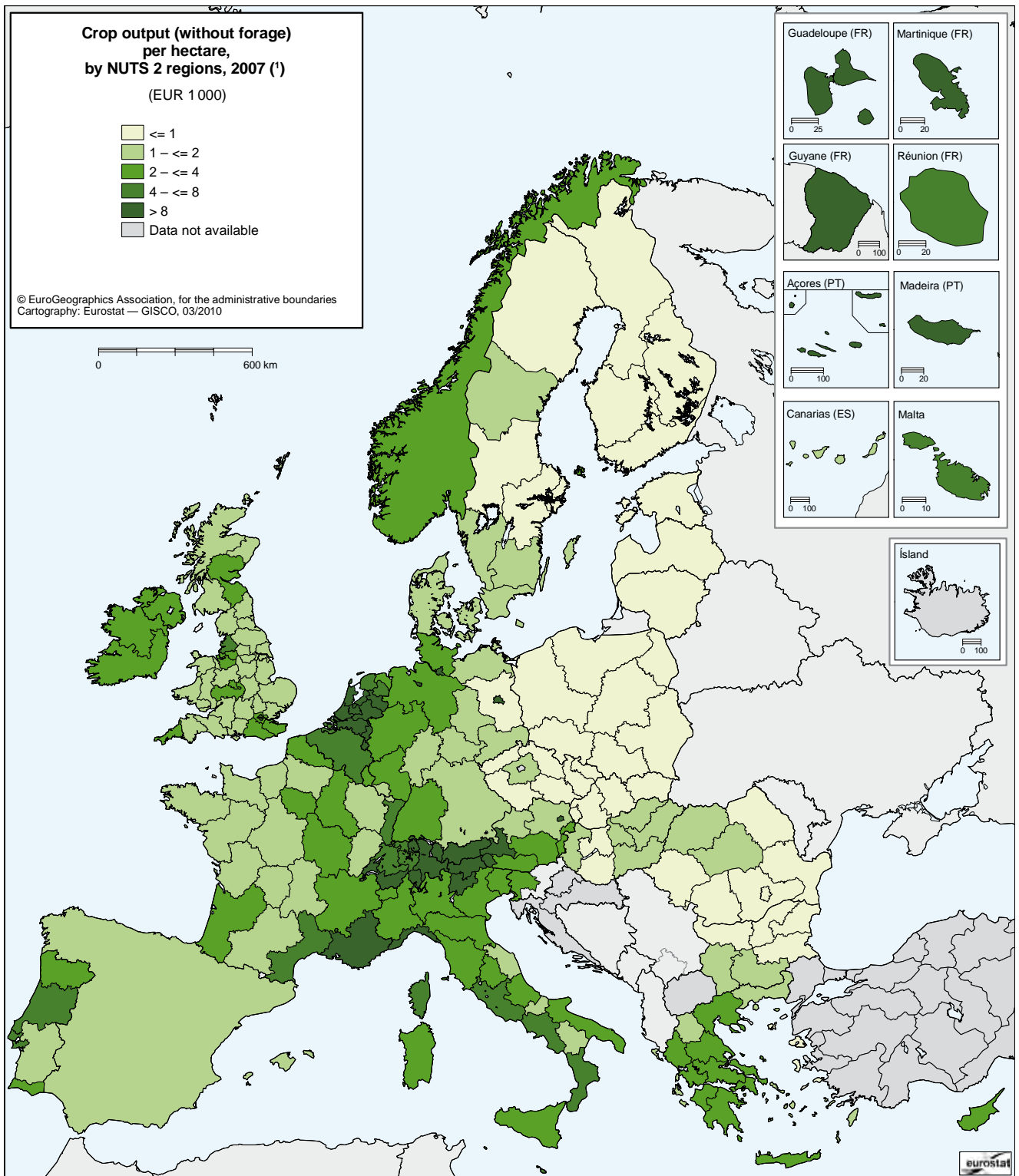
Low energy costs are mainly found in south-western parts of Europe, which most probably can be explained by higher output prices (compared to eastern Europe) and by more efficient use of energy.

Conclusion

The regional EAA are an appropriate source of information for analysing agricultural production, input and income. Since they are a synthesis of a wide range of statistics and administrative data on agriculture, they can be connected with any other agricultural information systems and data on other branches of the national economy. Recent developments and new demands for data for rural development statistics and for more information on environment-related information have added to their importance. Current gaps in the data are expected to be filled in the near future.



Map 13.4: Crop output (without forage) per hectare, by NUTS 2 regions, 2007 ⁽¹⁾
(EUR 1 000)

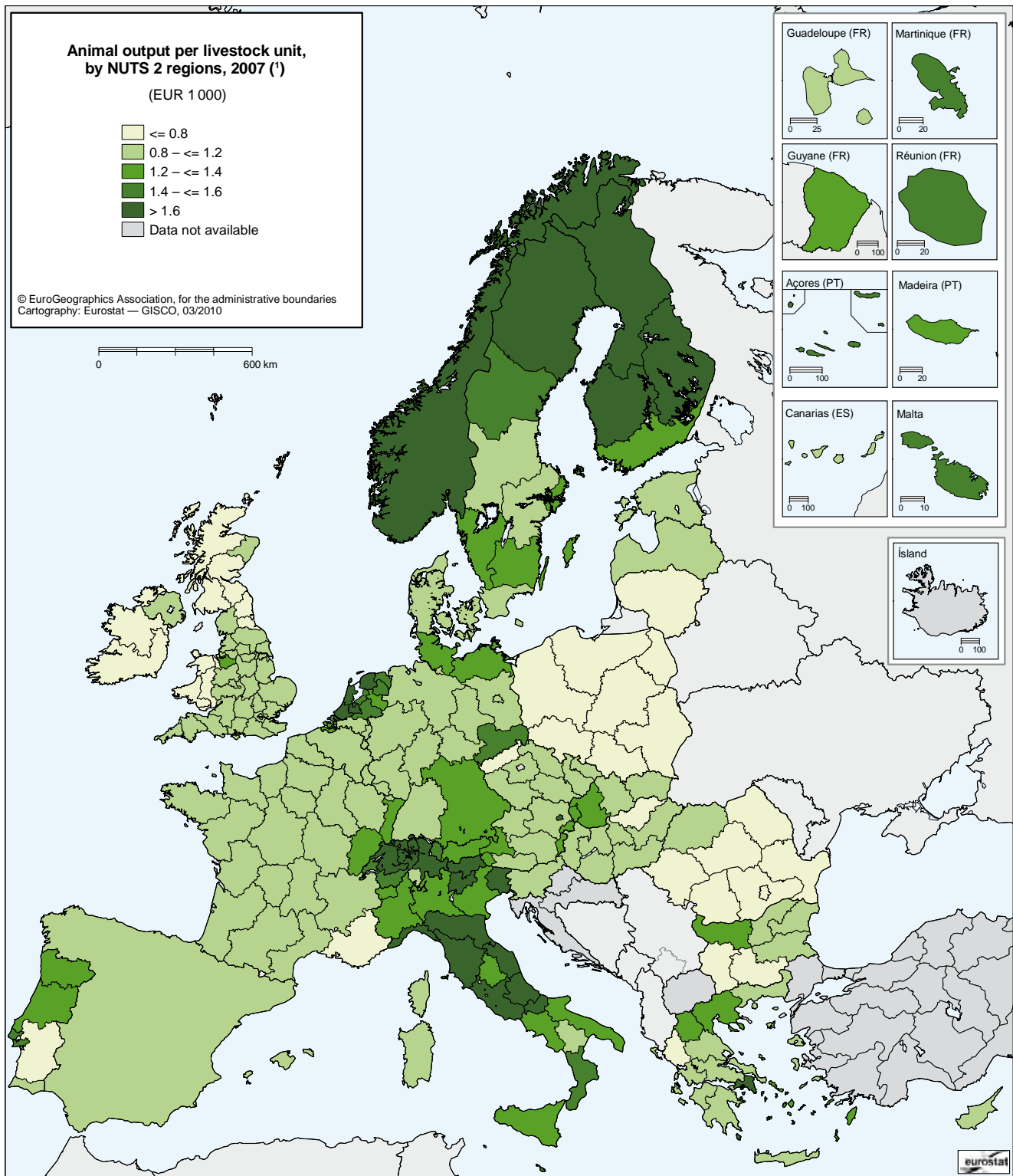


⁽¹⁾ Belgium, Denmark, Spain, Slovenia and Norway, national data; Germany, by NUTS 1 regions; Poland, by NUTS 1 regions and 2005 data; Portugal, 2006 data.

Source: Eurostat ([agr_r_accts](#), [aact_eaa01](#) and [ef_lu_ovcropaa](#)).



Map 13.5: Animal output per livestock unit, by NUTS 2 regions, 2007 ⁽¹⁾
(EUR 1 000)

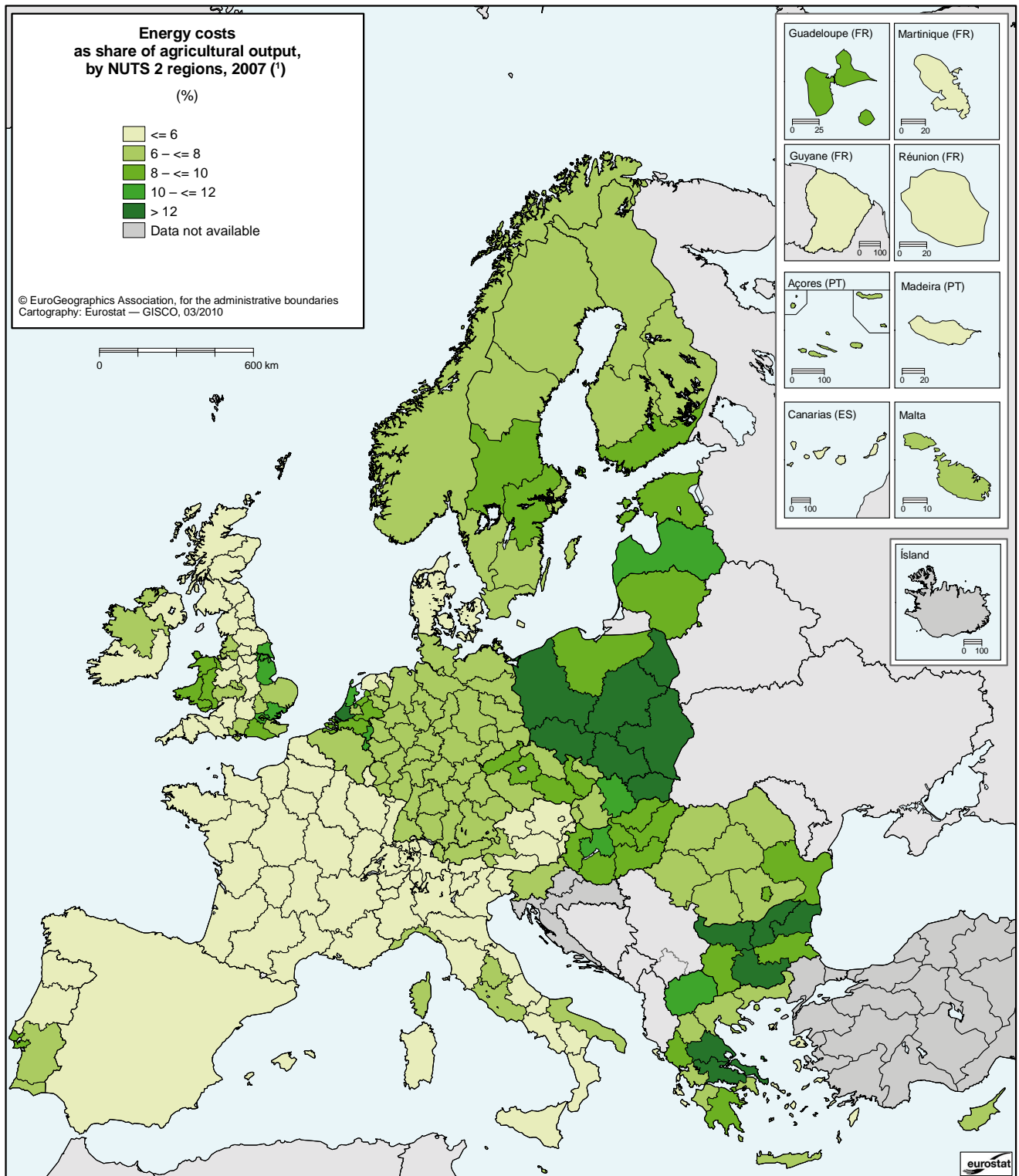


⁽¹⁾ Belgium, Denmark, Spain, Slovenia and Norway, national data; Germany, by NUTS 1 regions; Poland, by NUTS 1 regions and 2005 data; Portugal, 2006 data.

Source: Eurostat ([agr_r_accts](#), [aact_eaa01](#) and [ef_ov_kvaa](#)).



Map 13.6: Energy costs as share of agricultural output, by NUTS 2 regions, 2007 ⁽¹⁾
(%)



⁽¹⁾ Belgium, Denmark, Spain, Slovenia and Norway, national data; Poland, by NUTS 1 regions and 2005 data; Portugal, 2006 data.

Source: Eurostat ([agr_r_accts](#) and [aact_eaa01](#)).



Methodological notes

The agricultural accounts data at regional level are compiled in the same context as the **Economic Accounts for Agriculture (EAA)** at national level. The regional data are for output items which are often building blocks for the result at national level, while the regional data for intermediate consumption (direct input of goods and services in the production) are often broken down from national results using other information, using a top-down approach. The regional results are, therefore, often less accurate than data at national level.

The **output** of the agricultural sector is the sum of the output of agricultural products and of the goods and services produced in inseparable non-agricultural secondary activities. Output of agricultural products comprises the total value of sales (except trade in animals between agricultural holdings), changes in stocks held by producers, on-farm final consumption (of agricultural products), processing of agricultural products by producers (in the form of separable activities) and the value of intra-unit consumption of crop products used in animal feed.

Gross value added (GVA) is the difference in basic prices between the value of output and the value of intermediate consumption.

The **crop area** is based on data from the Farm Structure Survey (FSS), which covers slightly less than the production covered by the EAA, as the FSS excludes the smallest farms. The area used in Map 13.4. includes utilised arable land (for crops other than forage) and land under permanent crops, while the exclusion of forage land (including permanent grassland) is partly due to a wish to refine the analyses, and partly due to quality problems in the values for forage.

For certain purposes, various categories of livestock need to be aggregated, e.g. piglets, breeding sows and other pigs. By using coefficients, all animals are converted into a common measurement unit, named **livestock units (LU)**. The LU is compiled in the context of the FSS.

To take into account the very large proportion of part-time work in agriculture and opportunities for part-time work in other sectors of the economy, information on employment in agriculture is expressed in **annual work units (AWU)**. One AWU corresponds to the work performed by one person performing agricultural work on a holding over a 12-month period on a full-time basis. The yearly working time of each such worker is 1 800 hours (225 working days of 8 hours per day), unless national provisions governing contracts of employment specify otherwise. The number of persons working (full-time or part-time) in agriculture is shown in the FSS statistics.