

Rice Sector in Greece

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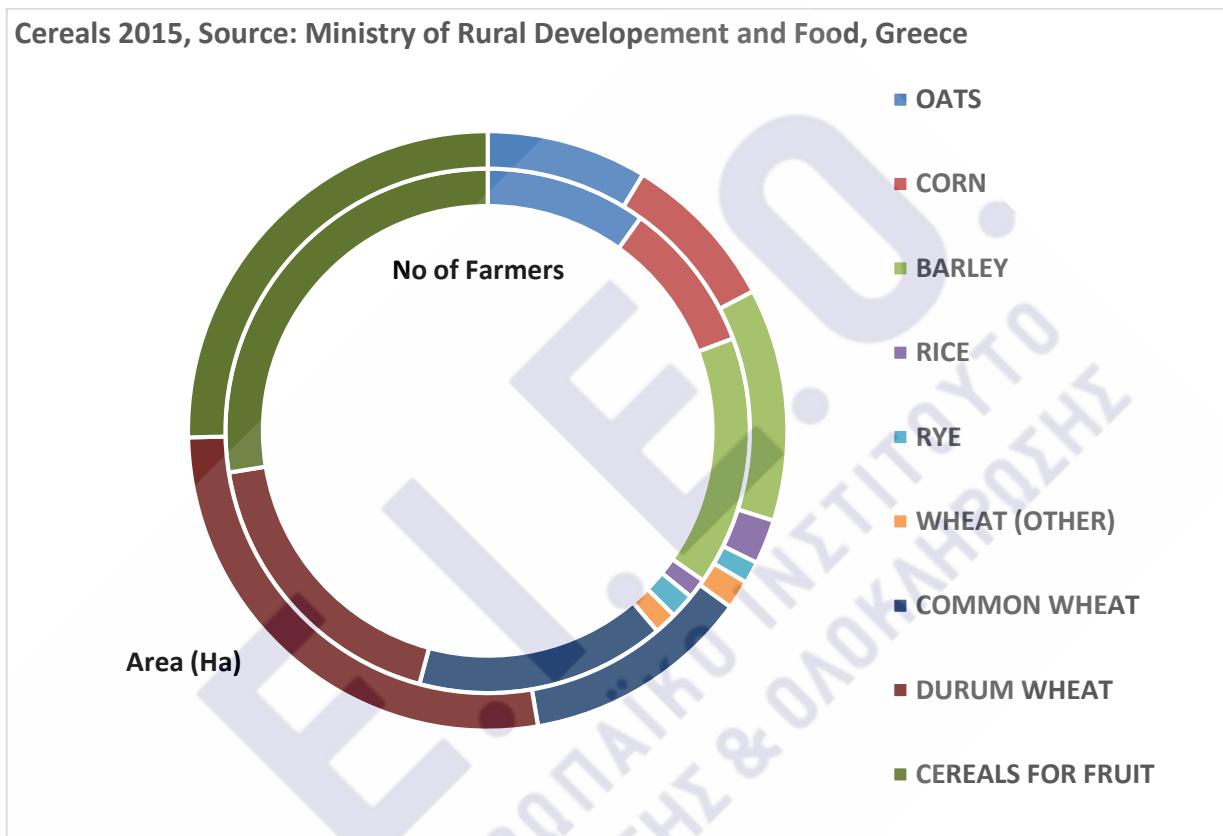
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2 Cereals and rice primary production

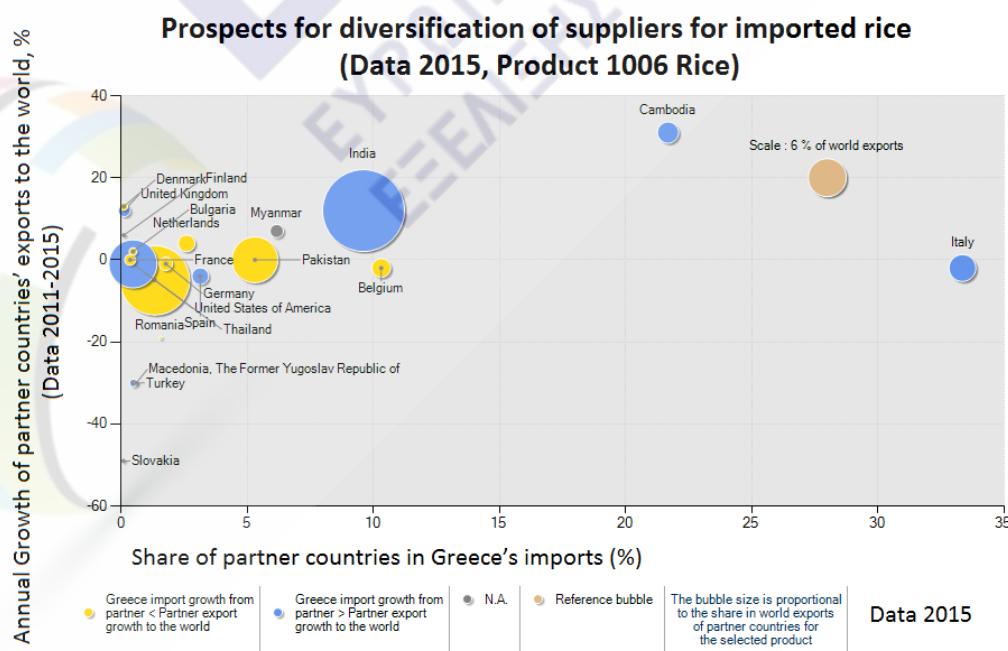
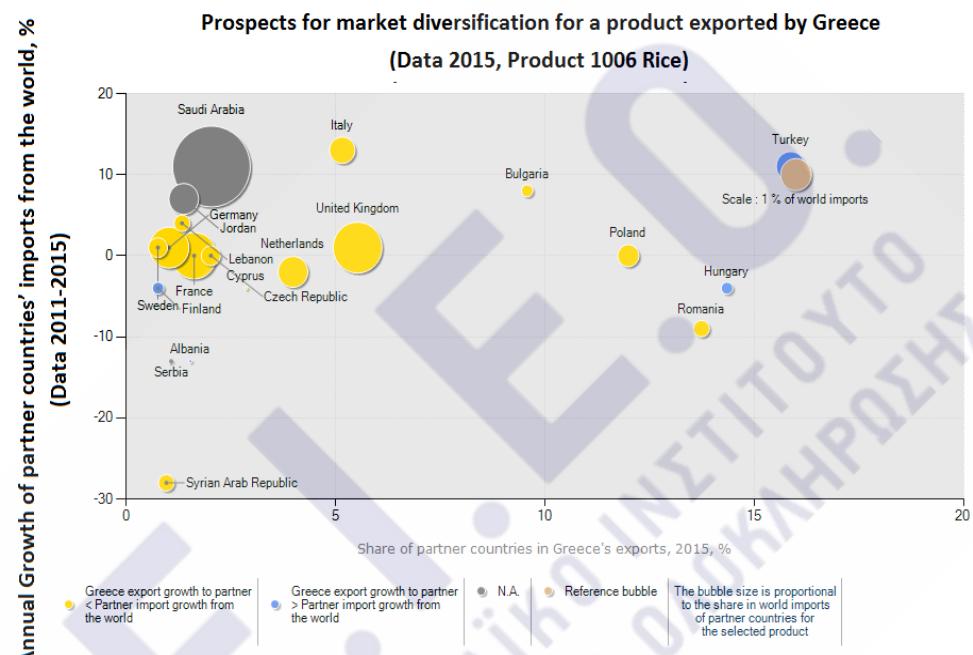
The overall view of the cereals and rice sector in Greece is presented in the following chart:



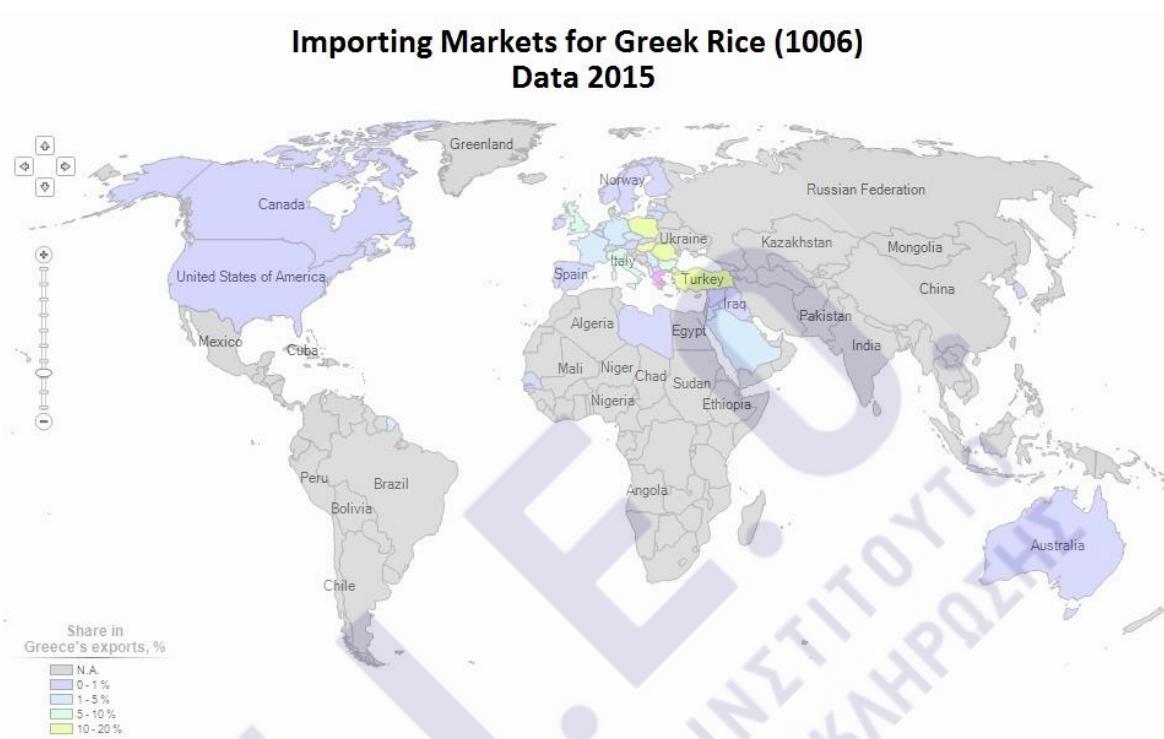
It is obvious that the most competitive product is Durum Wheat. The overall balance exports vs imports for 2015 in Durum Wheat can be seen in the following chapter. Rice is only the 2% of the total cultivated area. However, is one of the most competitive exporting products of Greece (see relevant chart). Common Wheat covers the 12% however, only the 20% of the national demand is covered, means that the rest should be imported.

ω Rice trade in Greece

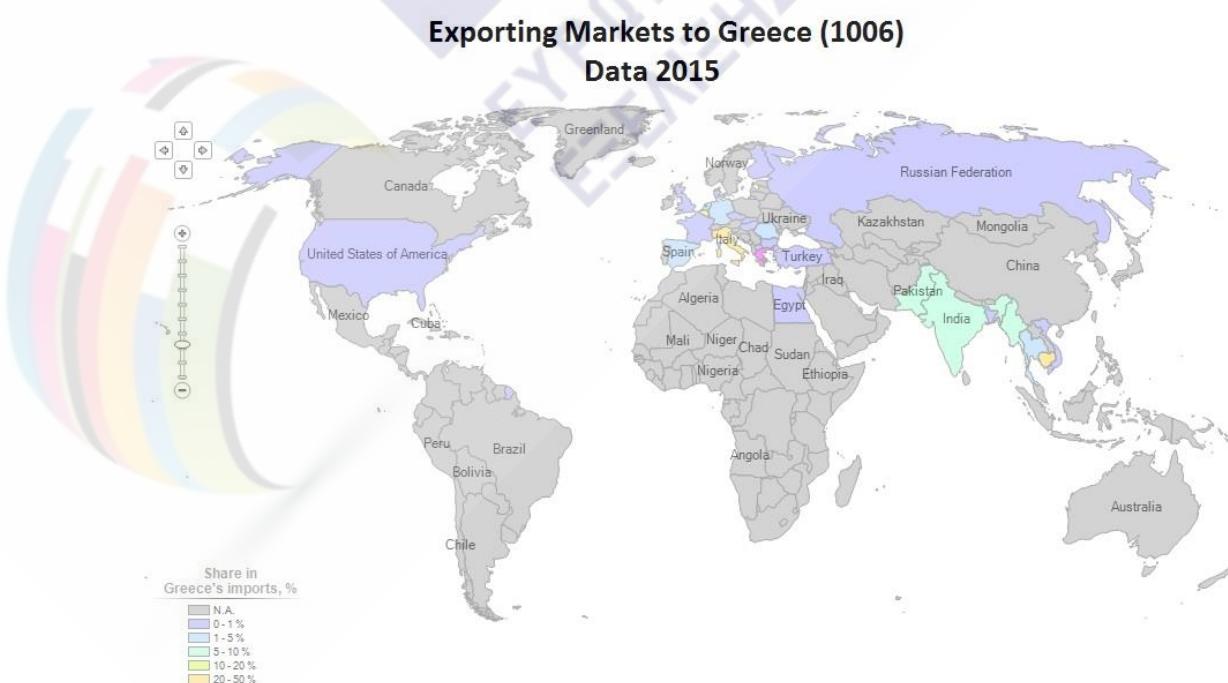
The case of rice is interesting to present, as it is a small portion from the cultivated area aspect, but it is one of the most competitive exporting Greek products. The following charts presents prospects for market diversification for the product (code 1006):



The list of importing countries can be seen in the following map:
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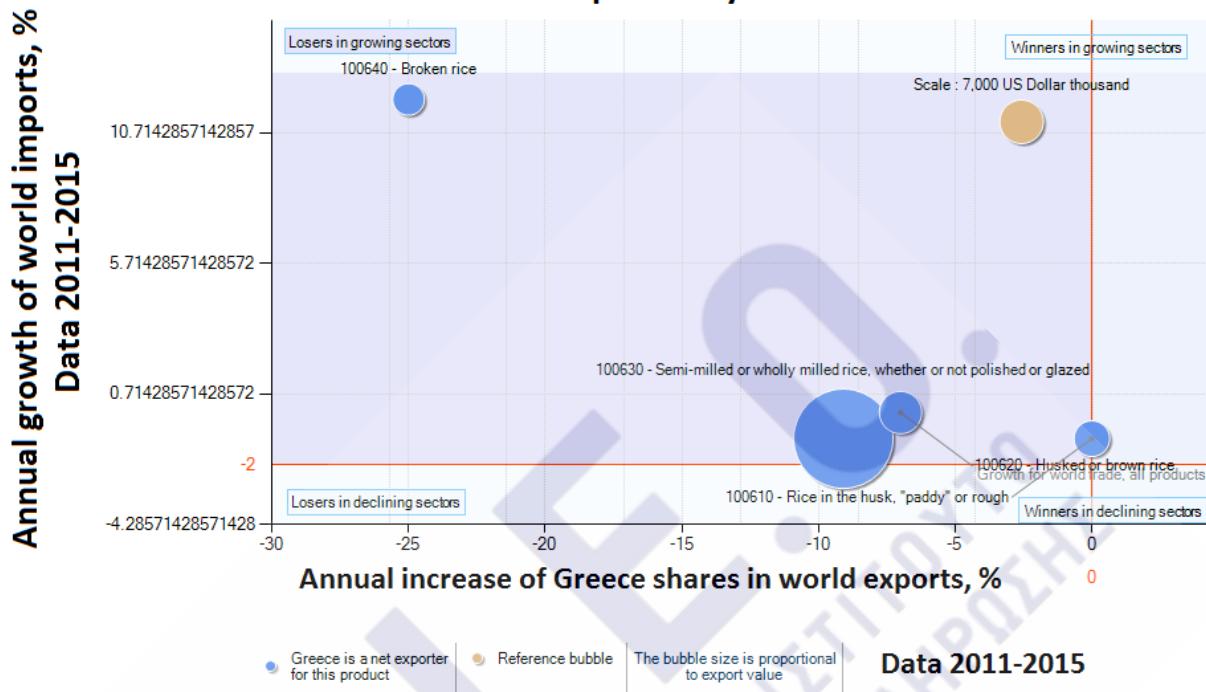
Respectively the list of markets supplying rice to Greece, is presented in the following map:



Growth of national supply and international demand for rice exported by Greece:

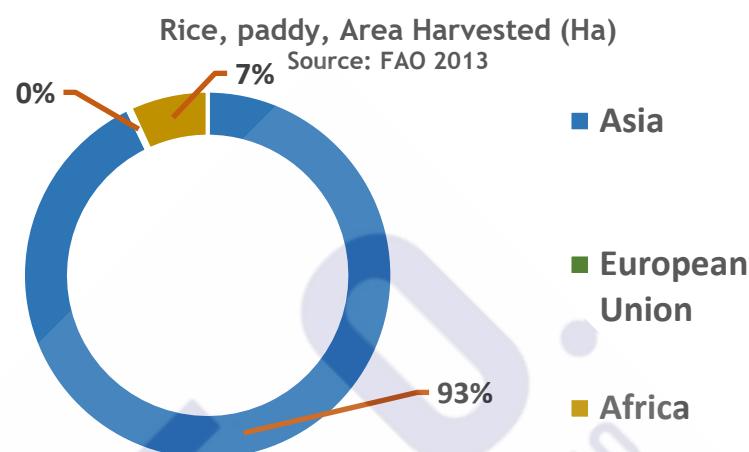
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Growth of national supply and international demand for rice exported by Greece in 2015



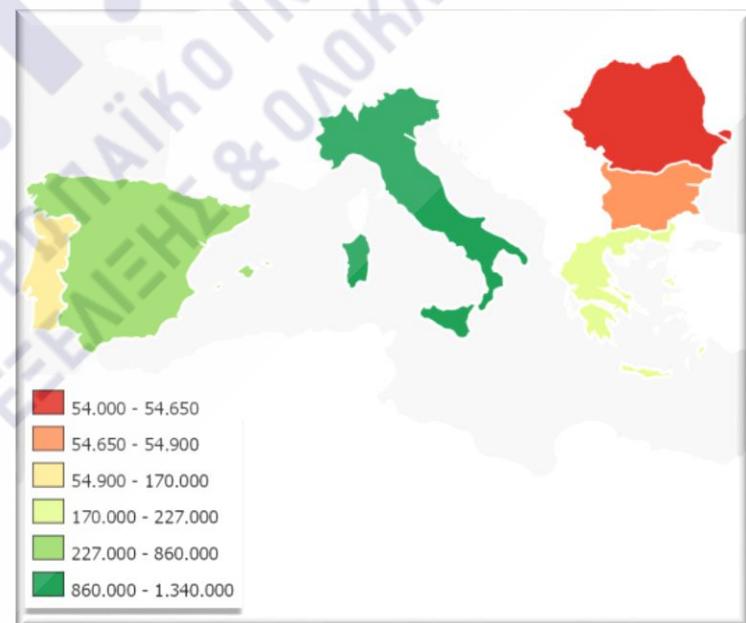
9 Cultivation and Production of Rice in the EU

Rice is one of the 21 Agricultural Market sectors of the European Union (EU) and is also one of the major cultivations in the EU. However, on a global basis rice production in Europe is not significant. In 2013 it was only 430,479 Ha.



Around 70% of the rice consumed by European citizens is grown in the EU. This is supplemented by imports of different varieties, mainly long-grain indica rice such as basmati from India and Pakistan, which is very popular and cannot be grown in the European area.

A small quantity of European rice - mainly japonica is exported. Crop-specific payments for rice have been abolished as from 2012, however in some countries like Greece a coupled payment is provided to the farmers who reach a certain production limit per hectare and are able to document it. Italy is the leading country in rice production in the EU, followed by Spain, Greece, Portugal. Bulgaria and Romania are minor players in the rice sector. Greece produces approximately the 12% of the EU rice production.

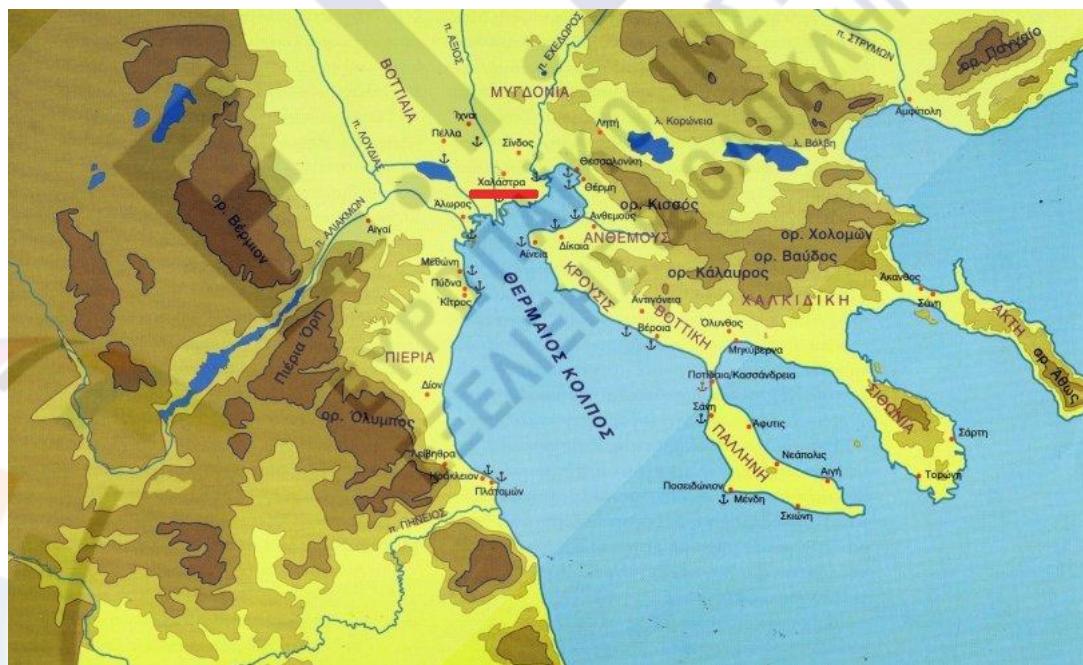


Source: Eurostat, Data 2006-2013

Cultivation and Production of Rice in Greece

The largest rice cultivated area of South East Europe is located in Central Macedonia, more specifically in the area of Chalastra. As it can be seen from the following map it is the place where four rivers meet. The area is defined as NATURA area and the cultivation of rice is not only important from an economical point of view, but also from the social and environmental aspect, due to the fact that it is almost impossible to cultivate anything else and is a place where many wild species live and reproduce.

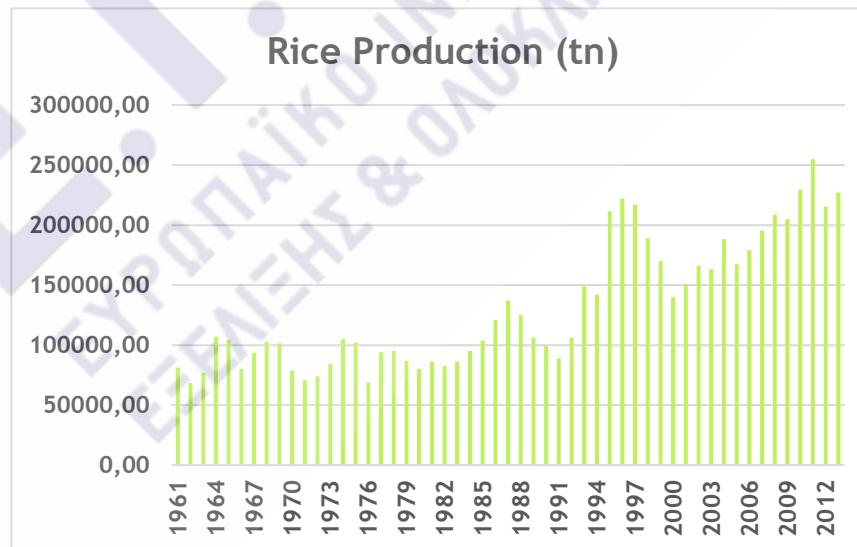
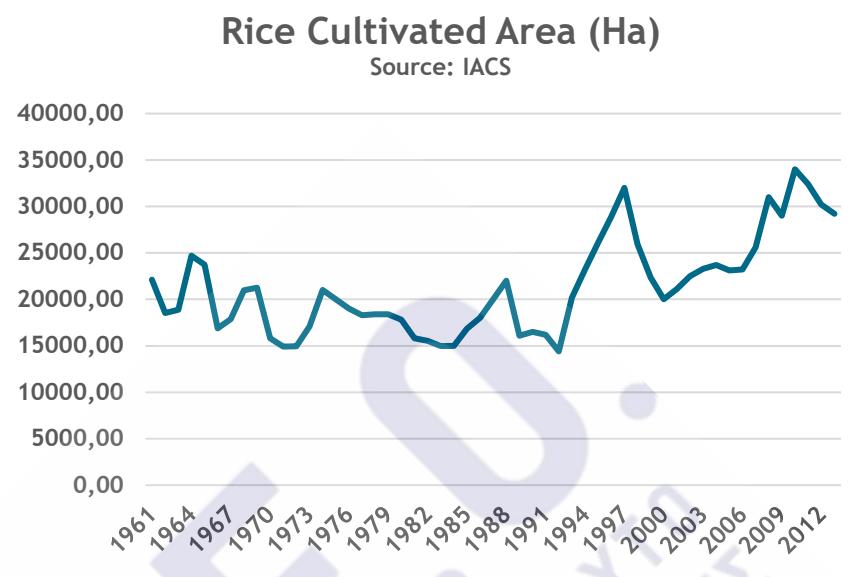
The area is also very close to the Harbor of Thessaloniki, which a major factor considering exports. Some of the major Greek companies are exporting rice in several areas from Europe to Asia. At this moment the largest rice mill in Greece and second largest in Europe is Macedonian Rice Mills in Kalochori, run by Kanakas Bros Ltd. The company is exporting to 45 countries and cooperates with approximately 1.500 Greek rice growers. The rest of the rice mills are located in an area of a radius of approximately five Km.



Except Chalastra, rice is cultivated in Serres, Fiotida area and Etoloakarnania in minor quantities. The total average cultivated area is 30.000 Ha, since 1995, from which the 20.000 Ha are located in Chalastra.

∞ The cultivated area ranging between 200.000 Ha to 300.000 Ha. The coupled payment for rice in 2015 was estimated according to the 300.000Ha base as eligible area. Due to exporting opportunities for rice the cultivated area is increasing and the Greek rice is regarded among the most qualitative types of rice worldly. However, the Greek production is very limited and the lack of local genetic material is a major obstacle for further development of the sector.

In the past there were efforts for the production of genetic material of Greek origin, but due to lack of financial resources and interest from the milling industry, there was no result.



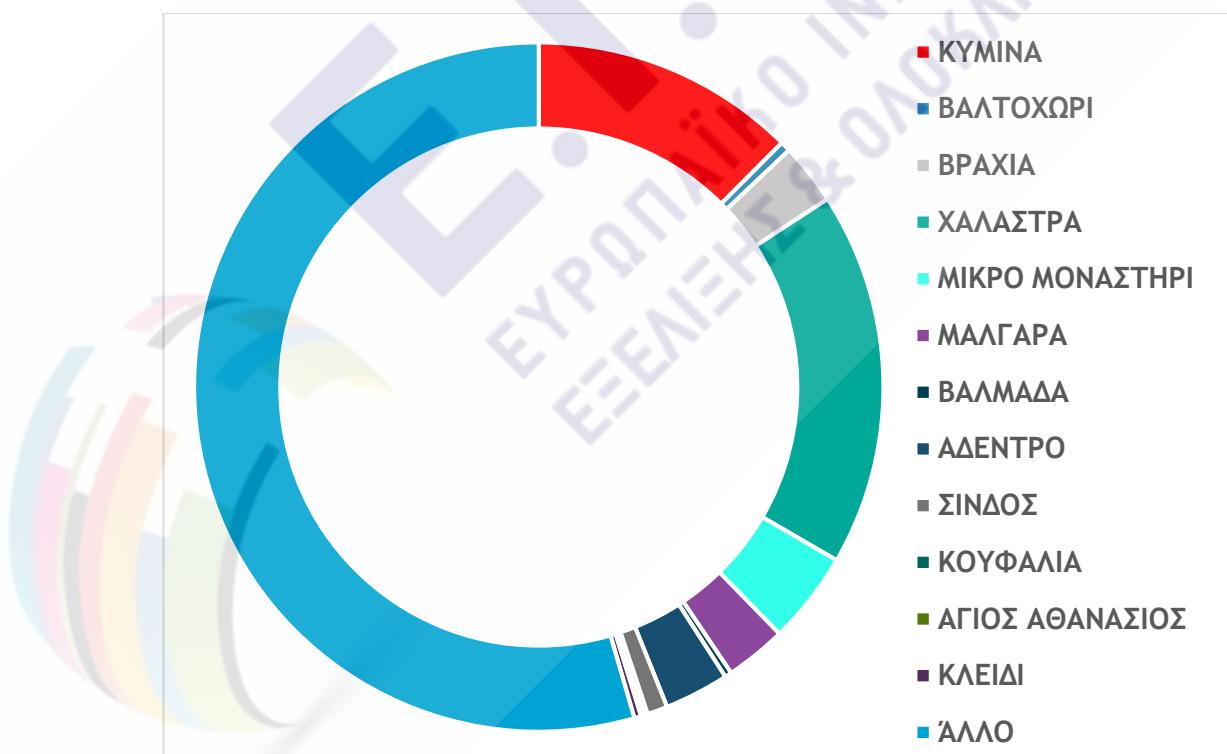
6 Profile of Rice Growers

From October 2015 to December 2015 EIEO examined a sample of 637 rice growers. The sample corresponds to the 40% of the rice growers in the largest rice producing area of South East Europe, mainly located in Central Macedonia. The research took place during the above period and data derived from the local rice mills.

The farmers of the sample were categorized according to their age, sex, production, and geographical location of the holding.

Processing of the above described data has given the following results:

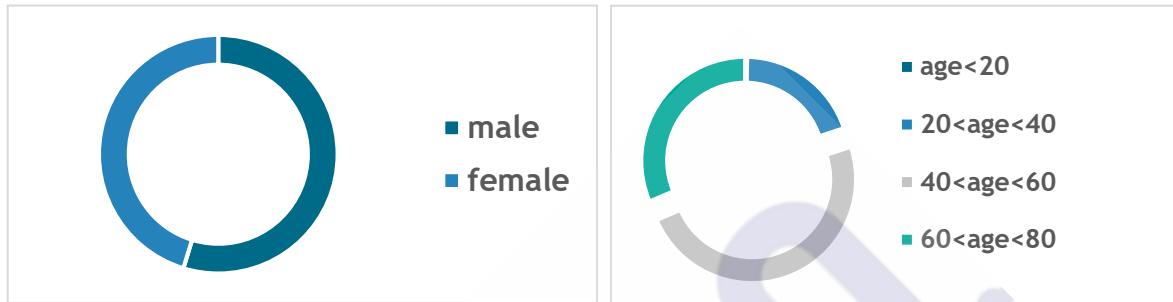
Regarding the cultivation area of the crop, 54% is located to several parts of Central Macedonia referred as “Other”, other than the described in the chart and 18% from Chalastra area and 12% from Kymina. In most cases in the “Other” category the product is produced in several places of Macedonia and Central Greece, thus it is declared as other. Most of the farmers of this category are located in Chalastra area, but are not regarded as part of Chalastra’s farmers.



As far it concerns the other parameters, the maximum quantity delivered was 468.467,00kg, the average 43.792,46kg and the minimum 1.170,00kg.

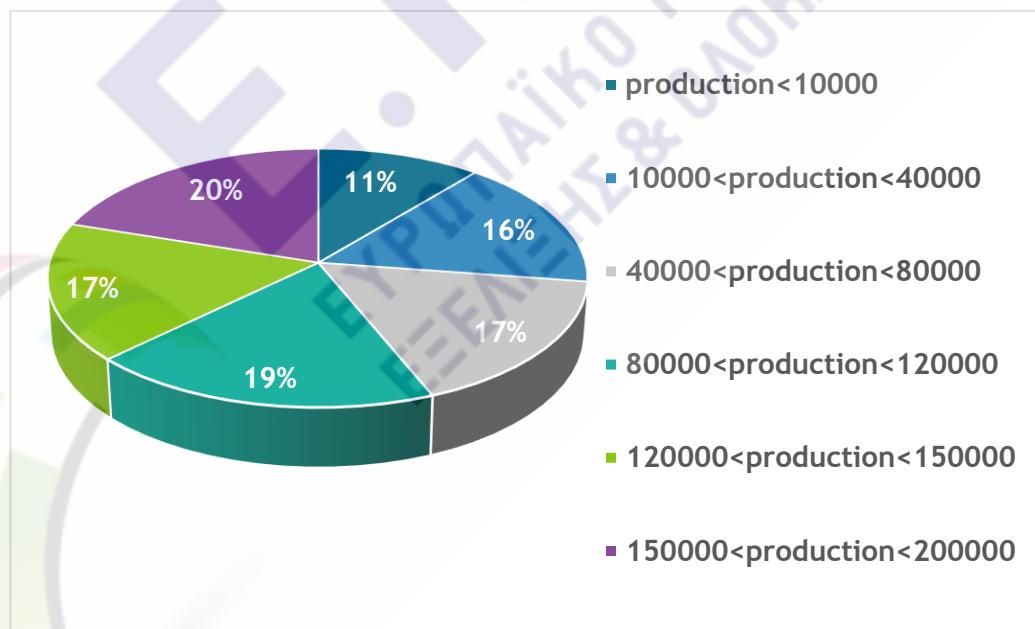
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Regarding the sex of the farmers delivered product this year 54,7% was male and 45,3% female.



The age of the farmers was: 19 years old the youngest, 75 years old the oldest and the average age was 46 years and most of them was between 40 and 60 years old.

The distribution of the farmers in different production categories as described in the following diagram, it seems that there is a distribution without peaks, almost the same percentage of farmers to its category.



Rice Classification

European Classification of Goods (CN) applies to husked rice, milled rice and parboiled rice for direct human consumption, presented in packaged form or loose direct to the consumer. It also applies to other products derived from rice.

According to CN rice belongs to Heading 1006 and is broken down into four subheadings:

1006 10 - Rice in the husk (paddy or rough), which is rice that has retained its husk after threshing is referred to as paddy or rough rice. This means that the rice grains are still tightly enveloped by the husk.

1006 20 - Husked (brown) rice, where Husked (brown) rice from which only the husk has been removed. Brown rice is unpolished rice, which has been milled to remove the hull from the kernel but retain the rice bran layer and the germ, which give it a nutty flavour and chewy texture. Long grains of brown rice tend to be less fluffy and tender, and short grains less sticky. Brown rice also takes about twice as long to cook and has a much shorter shelf life (because of the oil in the germ).

Examples of rice falling within this definition are those with the commercial descriptions 'brown rice', 'cargo rice', 'loonzain' and 'riso sabamato'.

Husked brown rice (cargo rice) which although the husk has been removed by mechanical hullers, is still enclosed in the pericarp. Husked rice almost always still contains a small quantity of paddy.

1006 30 - Semi milled or wholly milled rice, whether or not polished or glazed rice can also be milled to remove the pericarp (the outer layer of the rice which is still present in brown rice). Rice of this sort has either been semi-milled or wholly milled (also referred to as bleached rice).

Semi-milled rice is consisting from rice, from which the husk, part of the germ and the whole or part of the outer layers of the pericarp, but not the inner layers, have been removed.

Wholly milled rice consists of whole rice, from which the pericarp has been completely removed by passage through special tapering cylinders. Wholly milled rice can also be polished and subsequently glazed in order to improve its appearance. The polishing process (which is designed to embellish the mat surface of the plain milled rice is carried out in brush machines or 'polishing cones'. Glazing consists of coating the grains with a mixture of glucose and talcum in special glazing drums. The heading also includes 'Camolino' rice, which consists of milled rice coated with a film of oil.

Rice can also be referred to as parboiled. This means that the grains of rice, whilst still in the husk and before any other process has been carried out (e.g. husking, milling, etc), has been soaked in hot water or steamed and then dried. The grain structure of parboiled rice is only modified to a minor extent by the process it has undergone and

is not classed as cooked rice. Such rice, after milling, polishing, etc, takes from 20 to 35 minutes to cook fully. Parboiled rice is usually puffed in appearance. Uncle Ben's® is a well-known brand.

1006 40 - Broken rice, which is damaged white rice, broken during processing. During the milling process grain fragments, the length of which does not exceed three quarters of the average length of the whole grain, are separated from the white rice, whose shape remains intact. This is classed as broken rice.

A grain of broken rice gives a low fiber texture and low nutrient level, while retaining its high energy. Broken Rice contains more grain fragments within the grain. This type of rice is of a lower quality and is usually used for baby formulas, rice cereals, pet foods, rice wine and rice flour, as well as pre-package or canned goods.

There are some exclusions from the code 1006, such as:

Products from the milling of rice are excluded. Also is excluded rice which has been submitted to a treatment, that has considerably modified the grain structure.

Precooked rice consisting of worked grains which have been either fully or partially cooked and then dehydrated fall in heading 1904.

Partially pre-cooked rice takes 5 to 12 minutes to prepare for consumption, whereas fully precooked rice needs only to be soaked in water and brought to the boil before consumption.

'Puffed' rice obtained by the swelling process and ready for consumption is also classified in heading 1904. See later the guidelines on classifying cooked rice.

Classifying the size of the grain of rice

Rice is generally classified according to the size of the grain. The length to width ratio of the grain size is also take into account. To calculate this, divide the average length of the grain by the average width. Alternatively, arrange four pieces of rice. If the piece along the top is shorter than the other three then the length/width ration equals less than three, if it is the same length or longer then the length/width ration will be equal or greater than three.

Short grain rice (also referred to as round) is almost round, with moist grains that stick together when cooked and is generally used for making rice puddings and the like. This type of rice has grains which are of a length not exceeding 5.2 mm and of a length/width ratio of less than 2. Short grain rice has a short, plump, almost round kernel.

3 Medium grain rice is shorter and plumper and works well in dishes such as Paella and Risotto. This type of rice has grains of which are of a length exceeding 5.2 mm but not exceeding 6.0 mm and of a length/width ratio of less than 3.

Long grain rice is long and slender; the grains stay separate after cooking. This type of rice, the grains of which are of a length exceeding 6.0 mm.

Classifying cooked rice

Cooked rice dishes are classified under heading 1904. The following are some examples of products included.

Ready-made meals, consisting of the following two individually packed components, put up in a set for retail sale: (a) pre-cooked rice (150 g), and (b) curry (200 g) consisting of coconut milk (72 %), chicken meat (20 %), a mixture of spices (7 %), lemon grass (0,5 %) and anchovy extract (0,5 %).

Ready-made meals, consisting of the following two individually packed components, put up in a set for retail sale: (a) pre-cooked rice (150 g), and (b) curry (200 g) consisting of coconut milk (65 %), chicken meat (14 %), a mixture of spices (13,2 %), aubergines (3 %), basil (2,5 %) and anchovy extract (2,3 %).

Ready-made meals, consisting of the following two individually packed components, put up in a set for retail sale: (a) pre-cooked rice (150 g), and (b) curry (200 g) consisting of coconut milk (65,4 %), chicken meat (15,5 %), potatoes (10 %), a mixture of spices (7,1 %) and anchovy extract (2 %).

Ready-made meals, consisting of the following two individually packed components, put up in a set for retail sale: (a) pre-cooked rice (150 g), and (b) curry (200 g) consisting of coconut milk (50 %), beef (20 %), potatoes (15 %), a mixture of spices (7 %), groundnuts (3 %), anchovy extract (3 %) and onions (2 %).

Microwaveable instant fried rice, with green curry and meat. Ingredients include instant rice, meat (16%), seasoning pack.

If a ready-made rice-based meal contains more than 20% of any kind of meat, fish, crustacean or mollusc (calculated as a percentage of the whole dish) it should be classified as a preparation of that meat or fish.

Types, varieties and forms of rice

There are many varieties of rice now available, ranging from the familiar white or brown long-grain rice to speciality ones such as basmati and the so-called glutinous rice used in Japanese cooking to make sushi. Rice is also marketed in a variety of convenience packs. Some of these are listed below.

4 Della, Delrose, and Delmont - These varieties combine the qualities of regular long grain rice and basmati rice. They have an aroma similar to basmati. However, cooked grains swell in both length and width, like regular long grain rice.

Black Japonica - This is an aromatic rice with a dark black bran. Like brown rice, it is minimally processed to retain its bran layers and takes 45 to 50 minutes to prepare. Cooked grains are slightly chewy with a subtle sweet spiciness.

Brown long-grain rice - This rice retains the natural bran layer which is rich in many vitamins and minerals, including rice bran oil. This long-grain rice is firm in texture, with a slightly nutty flavour.

White long-grain rice - Long-grain rice is the separating grain which is delicious in the many international dishes of Asia, India and Spain.

White medium-grain rice - Better known as Risotto or Arborio rice This is the softer cooking medium-grain rice which has the advantage of being able to carry flavours and colours well. Its soft, creamy texture makes it ideal for desserts such as creamy rice pudding. It absorbs as much as five times its weight in liquid.

Arborio rice - A type of short-grain rice traditionally grown in Italy and used to make risotto. The high starch content of Arborio rice gives risotto its characteristic creamy texture.

Easy-cook long-grain white or brown rice - Sometimes called parboiled or pre-fluffed rice. It is steamed under pressure before milling which hardens the grain, reducing the possibility of over-cooking. This process also helps to retain much of the natural vitamin and mineral content.

Jasmine or Thai fragrant rice - This long-grain white rice has a delicate Jasmine fragrance which makes it perfect for inclusion in Asian dishes and with curries and seafood. A long-grain variety popular in Thailand and appreciated for its sweet aroma and nutty flavour. It is used as a cheap substitute for Basmati rice.

Kalijira rice - This tiny aromatic rice is grown in Bangladesh, cooks fast and is especially used in rice puddings.

Basmati - A variety of long grain rice. It is an aromatic, fragrant and slender, and is a non-glutinous rice. When cooked it swells only lengthwise, resulting in long slender grains that are very dry, light and separate not sticky. Pakistan and India are the largest cultivators and exporters of rice; it is primarily grown through paddy field farming in the Punjab region. The grains of Basmati are longer than most other types of rice. Cooked grains of Basmati rice are characteristically free flowing rather than sticky. As with most long grain rice, cooked Basmati rice can be uniquely identified by its fragrance. Basmati rice is available as either white or brown.

The approved varieties of basmati rice are:

1. Basmati 370
2. Basmati 386 (India)
3. Type-3 (Dehradun India)
4. Taraori Basmati (HBC-19 India)
5. Basmati 217 (India)
6. Ranbir Basmati (India)
7. Kernel (Basmati Pakistan)
8. Pusa Basmati
9. Super Basmati

Wild rice - is a tall aquatic grass of North America with a grain which is two or more times the length of the long grain rice varieties of Asia (*Oryza*). The name wild rice is misleading because it actually the seed of a type of wild grass (*Zizaniopsis miliacea*) which grows in the shallow lake area of North America. Its long slender seeds are dark brown which turn purple when cooked. Despite of its name it is not related to domesticated rice (*Oryza*).

References

Data obtained from the Intellectual Output 01 of the Erasmus+ KA2 VET project Green Logistics e-Training in Cereal/Rice Sector.