LABOR MARKET BRIEFINGS SERIES

LABOR MARKET INFORMATION FOR RESEARCHERS

THE AGRICULTURE AND FORESTRY SECTOR IN EUROPE
As part of the Labor Market Briefings Series, this report will give an overview of the Agriculture & Forestry sector specifically in Europe and how European researchers can begin making their career in the sector. While providing a general overview of the Agriculture & Forestry sector, this report will focus on the Agricultural sector in France and Italy and on the Forestry sector in Sweden and Finland. It should be noted that this is a general overview of the Agriculture & Forestry sector and does not seek to give specific information, rather a glimpse of the sector.
Agriculture-

The Merriam Webster dictionary defines agriculture as, “the science, art, or practice of cultivating the soil, producing crops, and raising livestock and in varying degrees the preparation and marketing of the resulting products.” The Agricultural market in Europe produces over €357bl Euros annually and is, therefore, an important sector. The European climate is often described as mild and temperate. Europe experiences unique wind patterns and ocean currents which keep Europe warmer than other landmasses at similar latitudes. Most of Europe lies at a very northern latitude, and it is these wind patterns and ocean currents that allow Europe to have a warmer climate than it should for its geo-positioning. Because of this mild climate, Europe can produce multiple varieties of high-end agricultural products.

The European climate can be broken down into two categories: the marine west coast and the Mediterranean. Each of these climates supports a variety of agricultural products. The marine west coast climate covers much of northwestern Europe except for Scandinavia and the mountainous regions of Eastern Germany, Poland, and Switzerland. This region is characterized by mild summer and winter temperatures as well as consistent rainfall and cloud cover. The region’s principal crops include wheat, grapeseed, and potatoes. Livestock, such as sheep and cattle, are an import source of meat, dairy, and wool products. Some of the world’s finest cheeses come from this climatic region.

Forestry-

The Mediterranean climate covers the majority of Southern Europe, with the inclusion of Spain, Portugal, southern France, southern Italy, and Greece. Hot, nearly rainless summers and mild, rainy winters characterize this climate. Olives and grapes are two important crops that have thrived in this climate for more than a thousand years. Spain, Italy, and Greece are the top three producers of olives in the world. Additionally, France, Italy, and Spain are the top three producers of wine grapes in the world.

Forestry can be described as, “the management of trees and other vegetation in forests”. It is one the most important industries in European accounting for an annual production of more than €490bl making this an extremely lucrative sector. Forestry and timber industries employ 3.7 million people and account for 9 percent of Europe’s manufacturing GDP.

The European continent has an abundance of forests with the majority located in the middle and to the north of the continent. Europe’s most important forest industries are woodworking, paper products, construction, and furniture products. In addition, Europe produces large amounts of value-added forestry products meaning finished goods made from raw forestry materials. While wood dominates the forestry industry Europe also has a thriving non-wood forestry sector, which includes mushroom and truffle gathering, fruit and berry collection, and cultivation of medicinal plants, honey, and cork. Europe accounts for 80 percent of total cork production worldwide.
The Agriculture & Forestry sector is nothing new for the European economy, as this sector has been around since the beginning of human settlement on the continent. Despite the industrial and technological changes to European economies throughout the centuries, the Agriculture and Forestry sector has remained one of Europe’s most significant and lucrative sectors. As Europe and the European economic area are diverse places with significant distinctions between the economies of the different member states, a focus on the Agriculture & Forestry sector in a few specific countries can help us glean an overview of the sector in Europe. Two countries within Europe with significant national Agriculture sectors are France and Italy. Two countries with significant forestry industries are Sweden and Finland.

**France**

France has the strongest agricultural sector in the European Union accounting for 17% of all agricultural output from the union. In addition, France’s Agriculture, Forestry, and Fishing industries add about 1.5% of all Gross value added to the EU annually. France’s most significant agricultural products are milk and dairy products accounting for 13% of agricultural production, cereals and cereal products accounting for 19% of agricultural production, and wine accounting for 13% of agricultural production.

The most productive agricultural area of France is the northern area where the soil and climate are ideal for agricultural production. Yet, specialized areas, such as the vegetable farms of Brittany, the great commercial vineyards of the Languedoc, Burgundy, and Bordeaux districts, and the flower gardens, olive groves, and orchards of Provence, also contribute heavily to France’s agricultural sector and renown. It should be noted that France is one of the only countries in Europe to be completely self-sufficient in basic food production. Furthermore, France is renowned globally for the high quality of its agricultural products which heavily contributes to the excellence and the fame of its cuisine. France’s wheat, sugar, wine, and beef are considered some of the best in the world not to mention its cheeses.

**Italy**

Italy has the second strongest Agricultural sector in Europe accounting for 13% of all agricultural output for the union. 4.3 percent of Italy’s labor force is employed in the Agricultural sector. Italy’s most significant agricultural products are wine accounting for 13% of output, fruits which account for 11% of output, and vegetables and horticultural products which account for 20% of agricultural output.

Like French cuisine, Italian cuisine is renowned worldwide and is often a result of superior Italian agricultural products. Olives and grapes are two of Italy’s most famous exports and account for a large part of Italy’s agricultural production. Italy is the world’s largest exporter of olive oil. Olive production can be found mostly in the Puglia, Sicily, and Calabria regions. Grapes, on the other hand, are produced throughout Italy with each Italian region producing different types of its renowned wine. In addition, Southern Italy is known for its Citrus fruit and nuts. Which is produced in Sicily, Calabria, Campania, Puglia, and Emilia-Romagna.
THE EUROPEAN AGRICULTURE & FORESTRY SECTOR AT A GLANCE

Forestry

Sweden-

Sweden is covered in forests with 57% of the country being covered in forests. About 85 million cubic meters of forest are felled every year in Sweden making it the largest forestry product producing country in the world (tied with Canada) let alone in Europe. Despite this Sweden has one of the most economical and sustainable forestry industries in the world as it only fells about 75% of new forest growth annually. Of the annual felled forest growth 45% becomes timber, 40-45% becomes pulpwood, and about 10% becomes biofuel. The forestry sector is the second most important Swedish economic sector after metal-based industries. About 60% percent of all forestry production in Sweden is exported making it an extremely lucrative industry. In 2001, forestry goods accounted for 14% of all Swedish exports and brought in a revenue of 10.6 billion dollars, these numbers have only increased as Swedish forestry companies have acquired better technologies and production methods. To put the Swedish forestry industry in perspective this tiny country alone produces 4% of the world’s paper and board. Almost half of all Swedish forests are owned by private citizens with forty percent being owned by private corporations. The remaining ten percent is owned by the Swedish government and can be found to the North of the country. While mostly viewed through the lens of the production of forestry goods, the Swedish forestry sector also has a leisure aspect. As Swedes often take to the forests for their recreational and leisure pursuits making the forests a hub for Swedish recreation and travel.

Finland-

Finland is the most heavily forested country in Europe with 86% of the country being covered in forests. 60% of the forests are owned by private citizens with 30% owned by the government and the remaining 10% owned by private industry. Similarly, to Sweden, the number of forest acreage in Finland is increasing annually despite the size of the forestry industry. Forestry industries make up about 5% of Finland’s GDP and about 20% of its exports. The value of its forestry exports stood at about 11.5 billion dollars in 2016. Of its forestry, related export’s 40% is printing and writing-paper and 20% are sawn or wood-based goods. Most of the Finnish forestry exports go to the EU specifically to Germany, the UK, France, and Spain. Much like the Swedes the Finnish take to the forests for their leisure pursuits. A large part of the Finnish leisure and travel industries are in fact forest based. In addition, Finnish forests are an agricultural boon to the country as they are a large agricultural source for the production of berries and mushroom.
The Agriculture and Forestry sector employs close to 23 million Europeans with Agriculture and Forestry based/connected jobs accounting for about 48 million European jobs. While the exact amount is disputed, about 5% of the European labor force is employed in agricultural or forestry industries. Most of the enterprises in the European Agriculture and Forestry sector are small to medium-sized enterprises. It is still quite common to find farms and agricultural producers which are still family owned and or operated by farming collectives across Europe. In regard to, forestry industries throughout Europe, the majority are run by medium-sized enterprises with large production being the exception rather than the rule. Part-time seasonal work is a common European practice in both Agriculture and Forestry. Yet despite this, some significant Agricultural and Forestry employers can be found on the continent. The sector is extremely diverse, making an estimation of the average salary for the sector almost impossible. This can be explained by simply looking at the income disparity between wine producers in the Bordeaux region of France and wine producers in Southern Greece.

Some of the largest European Agriculture and Forestry companies are:

**Agriculture**
- **Europe**: Frieslandcampina, Baywa, Arlafoods.
- **France**: InVivo, Tereos, Sodiaal.
- **Italy**: Conserve Italia, Granarolo, Apo Conerpo.

**Forestry**
- **Europe**: Schweighofer, Pheifer Grouppe, Moelven.
- **Sweden**: Svenska Cellulosa Aktiebolaget (SCA), Sodra Timber, Setra Group AB.
- **Finland**: Stora Enso, UPM, Metsaliitto-konserni.
When new graduates enter the job market they do not often think of the Agriculture and Forestry industry. The first association of many graduates is of small-time farmers and lumberjacks performing hard manual labor. Truthfully much of the European Agriculture and Forestry sector is still like this. Yet, the sector has grown exponentially throughout the previous century and as such, the demand for highly educated workers has grown.

In agriculture, the demand for biochemists and chemical engineers has risen exponentially. As the world is seeking to feed an ever-expanding population the need for more efficient production of crops has risen. Better feed, pesticides, fertilizers, and supplements are constantly in demand and large agricultural firms are seeking to hire the best bio and chemical engineers around. In addition, with new farming techniques and food production methods constantly in demand agricultural companies are willing to pay up for the best technology designers, making agriculture a great place for STEM graduates. Lastly, Ph.D.'s in Agriculture and Agriculture related studies are quite rare and as such, significant employment in this sector is all but guaranteed.

The forestry industry is much the same as the Agricultural industry. As the world population has skyrocketed more forestry products such as wood and paper are needed to meet their demand. The production of forestry-related goods has been forced to become more efficient and to maximize its resources. As such many forestry firms have put an emphasis on better harvesting and material production techniques, this has been done mostly through increased emphasis on technologies.

Therefore, many forestry companies are looking for the best mechanical and industrial engineers to meet their technology demands for harvest and production. Additionally, Chemical and Bioengineers are in high demand by the forestry industry as they are needed to advance production and manufacturing methods.

While not often thought of as a career path for Ph.D. holders there are significant employment opportunities in the Agriculture and Forestry industry. Specifically, for Botanists, Bioengineers, Chemists, Mechanical engineers, Industrial Engineers, and Agriculturists. Since many graduates do not think to enter this sector competition levels are low with high demand.

Some important skills to have for potential employees in the sector are numeracy, initiative/innovation, organization, the ability to plan and conduct research, teamwork, and Project management ability.
While one of Europe’s oldest economic sectors the Agriculture & Forestry sector is alive and well. Year after year the sector continues to bring employment and income to millions of Europeans and to uphold Europe’s place as a world leader in both Agriculture and Forestry. Employment in this sector is relatively easy to come by and the sector looks to be with us for the foreseeable future. While often researchers do not consider this sector when deciding upon career paths the sector needs researchers especially STEM graduates and highly specialized Ph.D. holders such as Botanists and Agriculturalists. Overall the Agriculture & Forestry sector is a steady dependable sector in which significant employment is more than a possibility.

Other useful sources of information and links

European Agriculture and Forestry Resources-
https://www.nationalgeographic.org/encyclopedia/europe-resources/

The state of Agriculture in the EU- Statistics-

EU Jobs and Growth in Food and Farming (Agriculture)-

Finnish Forestry-
http://www.metla.fi/metla/finland/finland-forests.html

Swedish Forestry-

French Agriculture-
http://www.nationsencyclopedia.com/Europe/France-AGRICULTURE.html

Italian Agriculture-
http://www.nationsencyclopedia.com/Europe/Italy-AGRICULTURE.html