

How big is the bio-business?¹

Address on the occasion of the presentation of an honorary degree to Prof. W.J.M. Heijman of Wageningen University.

Mr Rector, Madam Dean, Ladies and Gentlemen,

It is a great honor for me to stand here today as honorary doctor of the Slovak University of Agriculture in Nitra and to address you. I have known this university for a long time through all kinds of contacts, such as our cooperation in Agrimba, the network for the development of MBA studies in agriculture and commerce, the 20th anniversary of which we celebrated last month in Warsaw. Whenever somebody asks me what kind of a university Nitra is I always say that it is the Slovakian Wageningen University. Usually, he or she is satisfied with the answer. For both universities, the bio-economy is of crucial importance and that is why I would like to spend some time describing the size of this economy in the Netherlands.

The bio-economy is gaining more and more attention. For example, in the field of energy, the general idea is that with the help of biomass sources, it may become possible to facilitate the transition from a fossil fuel based economy to an economy that is based for the largest part on renewable resources. However, it is not only in this area that the bio-economy is drawing attention; both food and non-food applications of biomaterials are topical issues, especially where GMOs in the food chain are involved. In order to evaluate whether the development of the bio-economy will live up to its expectations, it is useful to measure its size at the macro-level. In a recent article, I have tried to develop a method for this, and I would like to describe it briefly in this address.

One source of high expectations for the bio-economy is the EU. In 2012, the Commission adopted a strategy named “Innovating for sustainable growth: A bioeconomy for Europe”. The Strategy builds on the Seventh Framework Programme for Research and Technological Development (FP7) and the EU Framework Programme for Research and Innovation (generally known as Horizon 2020). “The Commission estimates that the EU's bio-economy sectors are worth 2 trillion Euros in annual turnover and account for more than 22 million jobs, which equals approximately 9% of the workforce. The Commission is convinced that to solve the problems connected with the scarcity of non-renewable resources, global warming, and environmental pollution, the development of the bio-economy is crucial”.

In the past, there have been various attempts to measure the size of the bio-economy. For example, in Belgium, VanderMeulen and others tried to measure the size of the Flemish bio-economy by computing the gross margin and the employment of the bio-economic sectors. In the United States, the USDA followed a different approach, developing a set of Bio-based Economy Indicators. Of course, the questions of which indicators to select and how to define them are the challenges here. As a result, the two ways of measuring which I have mentioned have the disadvantage that it is virtually impossible to compare the results between countries. The method that I applied in my research allows for easy international comparison and aggregation of results of countries with UN standardized input-output tables.

¹ This address is based upon: Heijman W., 2015. How big is the bio-business? Notes on the size of the Dutch bio-economy. *NJAS*, Vol. 77, June 2016, pp 5-8. Additional research for the years 2013 and 2014 was done by Thijs Schepman.

For the purpose of this research the bio-economy is defined as the sector of primary bio-based production: this is represented mainly by agriculture, together with the parts of all the other sectors that use agricultural and related inputs, which is generally referred to as the bio-business. This idea is presented in Figure 1.

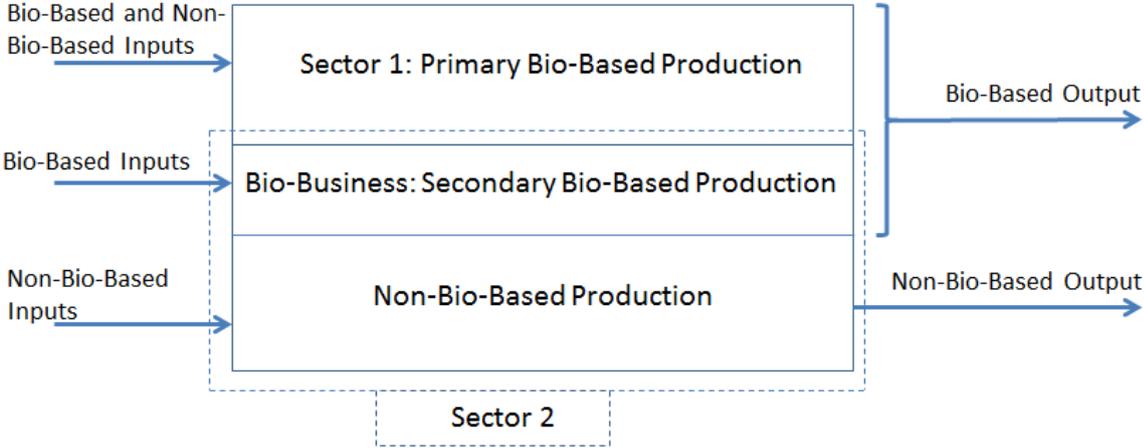


Figure 1: Bio-Based and Non-Bio-Based Input and Output.

Figure 2 presents the research results. The estimated value added of the bio-business in 2014 was higher compared to its value in 2008. In the period mentioned, this resulted in an increase of the bio-economy, whereas the Dutch economy as a whole shrank by 33 billion euro.

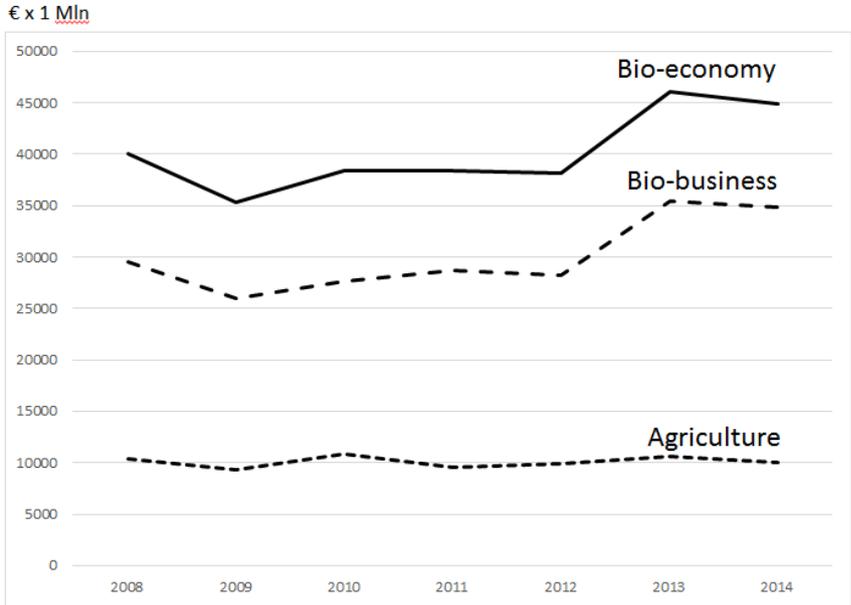


Figure 2: Value added of Agriculture, Bio-business and the Bio-economy in the Netherlands for the years 2008-2014.

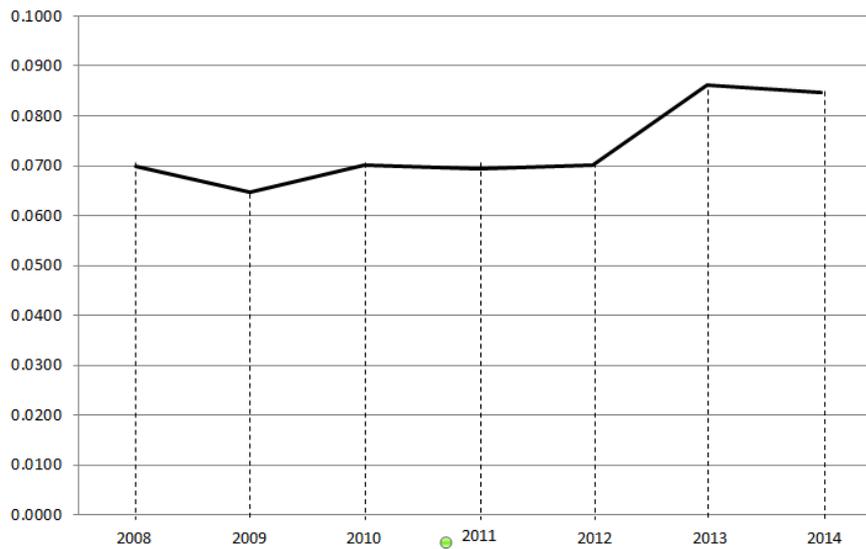


Figure 3: Share of bio-economy of total value added.

Figure 3 presents the share of the bio-economy in total value added for the years 2008-2014. The results show that the recovery of the bio-economy from the financial crisis has developed more smoothly than the recovery of the economy as a whole, resulting in a larger share of the total value added (from 6.6% in 2008 to 8.5% in 2014). Apparently, the non-bio-based sector of the economy has been more severely hit by the financial crisis than the bio-economy. This makes sense, because the financial services sector has taken especially heavy losses during the crisis. However, it can be stated that the bio-economy still is a relatively small sector with a high growth potential, the development of which will be interesting to follow in the years to come.

Ladies and gentlemen, I have come to the end of my address. Nowadays, in order to be successful in research and education, universities need to cooperate internationally. I know that academic staff and management are open to this both in Nitra and in Wageningen. Unfortunately, at present, especially but not only in the United Kingdom, EU-bashing has become fashionable, but we should not forget that to a large extent, it has been the European Union that has made the international cooperation between universities possible through all kinds of programs such as Tempus, Erasmus and Horizon 2020. I hope that I can continue contributing to a successful cooperation between Nitra and Wageningen in the years to come. Thank you very much for your attention.

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