

Between ideology and science: higher agricultural education in Belgium and the development of a Catholic agricultural network, 1850–1914^{*}

by Yves Segers and Roeland Hermans

Abstract

As in neighbouring countries, a number of initiatives were undertaken in Belgium during the second half of the nineteenth century to establish higher agricultural training. The State Agricultural College in Gembloux was founded in 1860, the Agricultural Institute in Leuven, attached to the Catholic University of Leuven, followed in 1878. This article focuses on the changing profile of the Leuven Agricultural Institute and the specific factors that motivated its initiators. It reveals that Catholic politicians and intellectuals perceived the liberal Gembloux to be a threat to the agricultural sector and the countryside. Through raising awareness of agricultural science, via a new education offensive and a Catholic agricultural network, they not only wanted to modernize the sector, but also hoped to curtail liberal and socialist influence. Professors and graduates from Leuven, who held influential positions at the Ministry of Agriculture and the Belgian Farmers' Union, played a key role in this strategy. Meanwhile the character of the agricultural education offered by Leuven changed profoundly. Initially the focus was on theoretical and encyclopaedic instruction. From the 1890s onwards agriculture-oriented courses were developed, and the first scientific research centres started.

From the 1870s onwards, Western European farmers faced mass imports of cheap agricultural produce from the United States of America and, to a lesser extent, from Canada, Australia and Russia. As a result, farmers' incomes, which at that time were still heavily dependent on arable farming and grain cultivation, came under increasing pressure. Despite widespread protests, the Belgian government and the new Ministry of Agriculture, created in 1884, decided against the complete dismantling of free trade, unlike France and Germany. Instead, the Belgian leaders opted for a limited and selective protection policy. Cheap staple foods, they reasoned, meant peaceful social conditions and no pressure to raise workers' wages in the industrial and service sectors. The import of bread grain was therefore left free of duty. The import of livestock and meat, pasta, fruit, vegetable-, meat- and fish-conserves, butter, milk and margarine was subject

^{*} We are grateful to the colleagues of the Leuven Ruralia Group and to the anonymous referees for their advice and comments on an earlier version of this article.

to limited import duty, as the government wanted to provide the developing Belgian food industry with some protection. At the same time, selective customs duties were used in an attempt to re-orient farming towards more profitable and future-oriented agricultural activities such as cattle breeding, dairying, vegetable cultivation and fruit production.¹

In this quest for a modern, more profitable type of farming, scientific research and agricultural education had a pre-eminent role to play. A highly effective knowledge network needed to convey the new scientific insights to ordinary farmers and market gardeners, and hence safeguard the sector's economic future. This knowledge offensive was largely steered by the government, but other actors also played a significant role. In Belgium, the official agricultural committees (*Sociétés provinciales d'agriculture* and *Comices agricoles*) and the farmers' organizations via their consultants and numerous commercial enterprises were also highly active in this regard. The emphasis on the importance of knowledge and innovation as an escape route from crisis or agrarian depression was nothing new, nor was it typically Belgian. As early as the start of the nineteenth century, agricultural schools and colleges, research stations and scientific centres were being set up in a number of western European countries. Higher agricultural education was a crucial link in this knowledge network, for within these institutions, research and education were combined. Agricultural theory and practice came together. Tomorrow's elite and tomorrow's farmers were trained there. In the mid-1880s, the government in Belgium could rely on two institutions to steer the modernization process: Gembloux and Leuven.

In this article, we consider the development of higher agricultural education in Belgium as a part of larger developments within western Europe. The first initiatives from the decade of the 1840s are described, but the primary focus is on the development of the *Institut agronomique* in Leuven, which was launched in 1878. A number of questions are posed. Which foreign institutions served as models? What was the relationship between fundamental scientific research and practice in the Institute? Who studied there? Special attention is paid to the factors which prompted the establishment of the Leuven institution. After all, Belgium's educational system in the nineteenth century was completely absorbed with the ideological conflict between liberals and Catholics, which left its mark on politics and society for many decades. The question posed here is whether this also applied to higher agricultural education, and to what extent the foundation of the agricultural college in Leuven was a dimension of this larger conflict.

Hitherto, historians of agriculture and science in Belgium have paid very little attention to the development of agricultural education and agricultural science over the past two centuries. They have mainly considered political, institutional and socio-economic aspects, with a definite preference for the quantitative approach. So, the history of the farmers' organizations, of agricultural policy and of production and output is relatively well known, particularly for the period before the Second World War.² At present, however, we know relatively little about the development of agronomy and higher agricultural education in Belgium. Academic

¹ J. Blomme, *The economic development of Belgian agriculture, 1880–1980. A quantitative and qualitative analysis* (1992), pp. 290–2; E. Vanhaute and L. Van Molle, 'Het einde van de overlevingslandbouw, 1750–1880', in Y. Segers and L. Van Molle (eds), *Leven van het land. Boeren in België, 1750–2000* (2004), pp. 50–1.

² E. Vanhaute and L. Van Molle, 'Belgian agrarian and rural history, 1800–2000', in E. Thoen and L. Van Molle (eds), *Rural history in the North Sea area. An overview of recent research (middle ages – twentieth century)* (2006), pp. 217–48.

discussions have been confined to a number of fairly small contributions about such subjects as research into and the introduction of artificial fertilizer, and the history of veterinary medicine in Belgium.³ In the last few years, though, a number of research initiatives looking at the relationship between agriculture, science and education have commenced. A thorough study of the history of the Faculty of Bioscience Engineering at the University of Leuven has recently appeared,⁴ and Leen Van Molle has published an overview of agricultural education in Western Europe covering 1800–1940.⁵ These initiatives have sought to respond to the growing international interest in the development of knowledge networks in the agricultural sector.⁶

I

The Belgian government's interest in the development of a 'knowledge network' during the third quarter of the nineteenth century was certainly nothing new. As far back as the late eighteenth century, agricultural schools had been active in a number of countries. But what did they amount to? Outlining the character of early higher agricultural education is no easy task. To begin with, there is the problem of definition. Most historians start their surveys of agricultural education with the early veterinary schools of the eighteenth and early nineteenth centuries: Lyon (1762), Alfort (1765), Copenhagen (1773), Vienna (1777), Dresden (1778), Hanover (1784), Munich (1790), Berlin (1790), London (1792), Utrecht (1821), and so on. By their advocacy of drastic measures, the early veterinary practitioners made a direct contribution to the fight against infectious cattle diseases. They symbolized the 'promise' of science, and by extension of scientific education. Because these schools were the first to devote themselves to (academic) agrarian education in the broad sense of the term, and contributed to its acceptance, it seems justified to characterize them as the forerunners of higher agricultural education as a whole. Yet for a long time, the status of veterinary science was ambiguous: was it a specialization in agricultural science, or a science related to medicine? This debate raged at the end of the eighteenth century in various countries including France, which was a pioneer in the field of veterinary science. Proponents of the second viewpoint pointed out how insights from veterinary science enriched medicine and noted the similarities between the two disciplines. In view of veterinary science's contribution to breeding programmes and hence to agricultural

³ J. Vanpaemel, 'De bemestingsleer van Liebig en het landbouwonderwijs in België', *Het ingenieursblad*, 12 (1993), pp. 537–53; and H. Mammerickx, *Histoire de médecine vétérinaire belge* (1967). Anniversaries at a number of academic institutions have prompted a number of publications, but in terms of conception and research findings these are sub-standard. See e.g. E. Van Damme, *Jubileumboek 1920–95. Universiteit Gent. Faculteit Landbouwkundige en Toegepaste Biologische Wetenschappen* (1995).

⁴ B. Woestenborghs, R. Hermans and Y. Segers, *In het spoor van Demeter. Faculteit Bio-ingenieurswetenschappen K.U.Leuven, 1878–2003* (2005).

⁵ L. Van Molle, 'Kulturkampf in the countryside.

Agricultural education, 1800–1940: a multifaceted offensive', in C. Sarasua, P. Scholliers and L. Van Molle (eds), *Land, shops and kitchens. Technology and the food chain in twentieth-century Europe* (2005), pp. 139–69.

⁶ See e.g. the publications of J. Harwood, *Technology's dilemma: agricultural colleges between science and practice in Germany, 1860–1934* (2005); N. Jas, *Au carrefour de la chimie et de l'agriculture. Les sciences agronomiques en France et en Allemagne, 1840–1914* (2001); and J. Pan-Montojo, *Apostolado, profesión y tecnología. Una historia de los ingenieros agrónomos en España. 1855–2000* (2005). Also some contributions in N. Vivier (ed.), *The state, government and rural societies: the choice of the state* (2009).

practice, others regarded it as a research field related to agriculture. The French government adopted this line of reasoning in 1794.⁷

In most European countries, agricultural education was mainly a top-down affair. Knowledge and insights were passed down from father to son, from mother to daughter. Probably, few farmers felt the need for agricultural education in daily practice. It was primarily a bourgeois elite which occupied itself with agricultural questions and sought an appropriate institutional base for their activities. Incidentally, this need for recognition lay at the root of the professionalization of agricultural science, but also ultimately created the need for accessible and popularising agricultural education.⁸ Against this background, the educational standard achieved seems a useful criterion. However, this is not very easy to assess, and needs to be situated in a much wider pedagogical, comparative framework. The most obvious gauge is the status granted to the institution by the government, although the Dutch example shows that even this is not a decisive criterion. In addition to the Veterinary School in Utrecht, from 1842 the Netherlands also had a privately run rural economics school (*Landhuishoudkundige school*) in Groningen. Its course lasted three or four years, and was more practical than theoretical in nature. In 1847, the Groningen school sought permission to confer the degree of doctor in rural economics and hence implicitly to secure higher education status. The government ruled that the subject was insufficiently scientific in nature and, moreover, the degree of doctor was the sole preserve of the universities, at which applied scientific practice had yet to acquire a place. In the early 1860s the school again took the initiative in seeking college status, but the attempt failed once more because of the excessively practice-based nature of the education. As a result, a debate began in the Dutch farming press over the merits of theoretical and practical agricultural education. But it was too late for the school in Groningen: in 1871 it closed its doors for financial reasons and a lack of students. With the founding of the State Agricultural School (*Rijkslandbouwschool*) in Wageningen in 1876, the Netherlands finally took the step towards higher (and later university) agricultural education. The government had realized by this time that education provision and its associated research, for instance into the positive aspects of artificial fertilizers, could deliver a substantial contribution to progress in agriculture. Unsurprisingly, considerable attention was paid in Wageningen to practical instruction in the form of excursions and demonstrations on test fields.⁹

The importance attached by the schools in Groningen (despite its failure to gain recognition) and in Wageningen to practical instruction shows that the motives for establishing higher agricultural education in the second half of the nineteenth century were closely tied to the practical relevance of agricultural science. In France, the founders of the first private agricultural colleges – including Roville (1822) and Grignon (1826) – were convinced that a good balance between theory and practice was the best way of helping modernize the agricultural sector. It

⁷ B. Bach-Lijour, 'Vétérinaires, enseignement vétérinaire: une nécessité mais une place difficile à trouver, 1761–1804', in M. Boulet (ed.), *Les enjeux de la formation des acteurs de l'agriculture, 1760–1945* (2000), pp. 364–5.

⁸ Van Molle, 'Kulturkampf in the countryside', pp. 10–11.

⁹ This paragraph is based on N. B. Goudswaard, *Agrarisch onderwijs in Nederland, 1783–1983. Hoe het wor(s)telde en groeide* (1986), pp. 103–5, 136–54; and J. van der Haar, *De geschiedenis van de Landbouwwuniversiteit Wageningen (deel 1). Van school naar hogeschool, 1873–1945* (1993).

is no coincidence that a variety of learned (agricultural) societies played a stimulatory role in disseminating the insights that emerged from the experiments and practical research at these institutes. The first initiatives taken by the French government in higher agricultural education, which were far earlier than in the Netherlands and in Belgium, show that other 'interests' could also be involved. The initiators of the law on agricultural education of 1848, for example, hoped that the spread of insights from agricultural science would consolidate the (economic) position of the rural elite and stem the exodus of farm labourers from the countryside.¹⁰ One of the educational institutions which was supposed to contribute to this social stabilization offered higher agricultural education: this was the *Institut national agronomique* in Versailles. Its objectives clearly reveal the elite character of the sponsors and the target public: 'to re-instil a taste for and the habits of the rural occupations in large landowners who have grown too remote from such occupations, yet who are alone capable of restoring vigour and dynamism to agriculture by applying their capital and their intelligence to it'.¹¹ Thus the Institute was supposed to help preserve the equilibrium between country and town, agriculture and industry. However, it did not have the opportunity to do this, as it too closed in 1852 for financial reasons. It was not until the late 1860s and early 1870s that (higher) agricultural education in France was to receive fresh impetus. A more diverse and specialized group of institutions emerged. As well as institutes of agricultural education, there were others for horticulture, dairy farming and the agricultural industry. The institution with the highest profile outside France was without doubt the new *Institut national agronomique*, which was founded in 1876 with the support of the *Société des agriculteurs de France* among other sponsors. Agricultural education at universities only started in around 1900 in France.¹²

Germany led the way in the integration of agricultural education into universities. The first agricultural academy was opened in 1802 in Celle near Hanover, and was followed by that in Möglin near Berlin (1806). In the first half of the nineteenth century, no fewer than twenty institutions followed, the best known of which was the academy at Hohenheim (1818). At these academies, the sons of landowners and gentleman farmers received both theoretical and practical training. Agricultural institutes attached to the universities followed in the 1860s: Göttingen (1859), Halle (1859), Bonn (1867), Leipzig (1869), and so on. The success of agricultural education in gaining a place in the German academic world so early was primarily due to the scientific 'ambience' of farming in Germany, following the example of the well-known chemist Justus von Liebig. In the early 1860s, Germany had no fewer than twelve research centres, backed up by a national and international network. At the same time, the German government took a great interest in agriculture, on the grounds that success in farming contributed to the welfare of the emerging 'nation'. Finally, there emerged in Germany at a very early stage a

¹⁰ The law provided for the establishment of farming schools at the lowest level, regional schools at secondary level and the *Institut national agronomique* for higher agricultural education. A. Bleton-Ruget, 'La paysannerie en débat: autour du décret de 3 octobre 1848 sur l'enseignement agricole', in M. Boulet (ed.), *Les enjeux de la formation des acteurs de l'agriculture, 1760-1945* (2000), p. 48.

¹¹ Quoted in Th. Charmasson, A.-M. Lelorrain and Y. Ripa, *L'enseignement agricole et vétérinaire de la Révolution à la Libération* (1992), p. li.

¹² Charmasson, Lelorrain and Ripa, *L'enseignement agricole et vétérinaire*, pp. lxxxi-xc; M. Boulet, 'La formation des acteurs de l'agriculture: l'école des paysans', in Boulet (ed.), *Les enjeux de la formation l'agriculture, 1760-1945* (2000), pp. 23-30.

variety of (local) agricultural societies, which fulfilled an intermediate role between science and practice, and hence stimulated the institutionalization of higher agricultural education.¹³

The situation in England was very different. There were a few research centres there, such as Rothamsted, but they received little financial or other support from the government. This was because the economic situation did not urgently require agriculture to be placed on a more scientific basis. In contrast to other European countries, where the agricultural crisis of the 1880s prompted new agricultural policies, English politicians, preoccupied by colonial and industrial success, were slow to react. Nor was the agricultural sector itself noted for its interest in agricultural science during the second half of the nineteenth century. The small number of agricultural societies compared with the continent is a sufficient illustration of this. Moreover, until the 1890s, the elite English universities were not particularly well-disposed towards applied science, whether agricultural or of any other kind. Naturally, this general lack of interest in agricultural science had an impact on higher agricultural education. There was a chair in rural economy at Oxford from 1796, but students could not read for a degree in agriculture there until the early twentieth century. The Royal Agricultural College at Cirencester was founded in 1845, but student numbers were low at first, and, according to its critics, the instruction provided by the school was too academic and insufficiently practical. Even so, it was graduates from this school who went on to found other institutions in the 1880s. But the real breakthrough only came in the 1890s, by which time the continent was already in the midst of its second agricultural education offensive. It was partly thanks to the Education Committee of the Royal Agricultural Society that higher agricultural education gained a place in the universities in the late nineteenth century. By the turn of the century, most universities had created departments of agriculture. Thus, the development of higher agricultural education was roughly contemporary with and only made possible by the incorporation of agricultural science in academic circles.¹⁴

II

Agricultural education in Belgium may be dated from the creation of a department of agriculture at the college in Antoing in 1832.¹⁵ Another boost came – as in neighbouring countries – from the veterinary schools. In Liège, a veterinary school functioned between 1835 and 1839. Of more immediate and direct interest for agricultural education – albeit through just a handful of graduates in agriculture – was the veterinary school in Kuregem, founded in 1831, which was state-controlled from 1836. The school built up a good reputation over the years for its training of veterinarians. This occurred in parallel with the scientific recognition of veterinary science in Belgium. The department of agronomy which the school ran from 1836 to 1850 was less successful. Despite scholarships from the government, the number of agriculture students remained extremely low. The handful of students who successfully completed the course were offered the opportunity by the government to complete their education in Grignon in France

¹³ Van Molle, 'Kulturkampf in the countryside', pp. 11–14; Harwood, *Technology's dilemma*; Jas, *Au carrefour*.

¹⁴ P. Brassley, 'Agricultural science and education', in E. J. T. Collins (ed.), *The agrarian history of England and*

Wales, VII, 1850–1914 (2 vols, 2000), I, pp. 618–40.

¹⁵ R. Smet and A. Vannecke, *Historiek van het technisch en beroepsonderwijs 1830–1990* (2002), pp. 84–7.

reflecting an appreciation that the Belgian institutions were lagging behind the best institutions abroad. Ultimately, just three students availed themselves of this possibility. Two of them, Phocas Lejeune and Guillaume Fouquet, were to play an important role later in the development of agricultural education: first as director of secondary agricultural schools and later as directors of the college in Gembloux.¹⁶ In 1842, a curriculum in agronomy and forestry was also introduced at the College in Liège. The botanist Charles Morren was engaged as professor. Among other things, Morren conducted research into the causes of the potato blight which caused a serious famine in the Flemish countryside in the 1840s.¹⁷

Although some of the discoveries made by the new science of agronomy, such as those of Morren, could have been useful in the countryside, interest on the part of the agrarian sector was virtually non-existent. The elite character of the scientific societies and the low educational attainment of the rural population in Belgium explain the lack of contacts and exchanges between the two. Moreover, no information or other networks existed to bring the graduates of agricultural schools into contact with the ordinary farmer and it would take years for the first insights from agricultural science to have a serious impact on daily farming practice. Only the veterinarians, with their vigorous response to infectious cattle diseases, made a contribution to the farming economy. However, at this time, they were only capable of damage limitation (using a range of sanitary measures and the slaughter of infected or suspect animals), and engaged in little preventive work.

The difficult genesis of agricultural education in Belgium was undoubtedly also connected with the limited interest that the government took in the agricultural sector. Although politicians in the young Belgian state did endeavour to create an institutional framework for their agricultural policy, that policy could not really be described as either structured or vigorous. For instance, the High Council for Agriculture (*Conseil supérieure de l'agriculture*), under whose aegis the provincial agricultural committees (*sociétés provinciales d'agriculture*) operated, met just twice between its foundation in 1834 and the start of the agricultural crisis in 1845. It operated a supply-side policy: import and export provisions were attuned to the harvest figures, so that the food supply would not be jeopardized.¹⁸

This lethargy was changed by the agricultural crisis of the 1840s. Failed harvests, continuing population increases, high rents and the parcelling out of the land into extremely small areas suddenly brought Belgian farming up against the limits of its possibilities. The government was aware of the precarious situation into which agriculture had fallen, and stepped in. In addition to a gradual liberalization of trade and the encouragement of wasteland cultivation, Charles Rogier's liberal government (1847–52) also set about modernising agriculture. A belief in progress, and optimism about the possibilities of science and technology as means of dealing with the crisis, were very strong. Rogier's ministry believed that its task was to intervene in

¹⁶ Lejeune was director of the college in Gembloux from 1860 to 1881; Fouquet from 1881 to 1890. M. Mammerickx, 'Les origines de l'enseignement agronomique supérieur en Belgique', *Annales de Gembloux* (1964) pp. 67–8.

¹⁷ C. O'Grada, R. Paping and E. Vanhaute (eds), *When*

the potato failed: causes and effects of the 'last' European subsistence crisis, 1845–50 (2007).

¹⁸ M. Van Dijk, *De wetenschap van de wetgever. De klassieke politieke economie en het Belgische landbouwbeleid, 1830–84* (2008) and Vanhaute and Van Molle, 'Het einde van de overlevingslandbouw', pp. 31–3.

agriculture to bring about its modernization. Agricultural education seemed the obvious way of doing this. After years of somnolence, the High Council for Agriculture was also wheeled into action. Among other things, the Council used the example of Germany – where a high scientific level was being achieved – to encourage the government in its planned educational offensive.¹⁹

By 1849, much had been achieved: across the country, no fewer than ten secondary agricultural schools and two horticultural schools had opened their doors. The state subsidized the education they dispensed, but continued to work with existing agricultural and horticultural companies, not just in order to keep costs down, but also to offer students a practice-based training. The idea was that the contrast with the situation in real life, where one learnt through experience, should not be too great. But despite this approach, student numbers remained very low. Only around 30 students, most from prosperous backgrounds, obtained a diploma in the space of ten years. It was therefore not surprising that all the agricultural schools were financially unviable and quickly closed in the course of the 1850s. The two horticultural schools fared somewhat better. Although the student population remained low there too, they attained a higher standard and were able to survive.²⁰

Thus the first initiatives in the field of agricultural education could hardly be called a success. But this did not seem to temper the enthusiasm for placing agriculture on a more scientific footing. The Prime Minister, Charles Rogier, again took the lead and submitted a new proposal to parliament in 1860. He argued that the veterinary school at Kuregem and the two horticultural schools had proven their worth and should be retained as state schools. Rogier re-opened a debate which had been current at the time of the first agricultural education offensive in the 1840s. Should a country like Belgium, with a sizeable agrarian sector, not train its own agronomists at an agricultural college? When this idea had previously been canvassed, it had met with stiff resistance. Not least, it had been the expected cost that had led to the plans for Belgium's own agricultural college being shelved.

Rogier realized that higher agricultural education in other countries could be a model for Belgium. Together with Lambert Bellefroid, the director-general of the Agricultural Department at the Ministry of Internal Affairs, he went on a fact-finding mission to the schools at Grignon in France and at Hohenheim in Germany, two institutes with a good European reputation.²¹ The old monastic buildings in Gembloux seemed the ideal location for a Belgian college: not too far from Brussels, with a good rail connection and the possibility of gaining the use of extra land for cultivation, for, as well as scientific knowledge, the students were also to have the opportunity to acquire practical experience.²² However, the intention was not that ordinary farmers' sons would receive instruction here. Rogier had in mind 'higher education for the sons of landowners and large-scale farmers, so that they may then disseminate in the countryside the treasures of science that they have acquired at the higher institute.'²³ He undoubtedly had something of a paternalistic

¹⁹ Vanhaute and Van Molle, 'Het einde van de overlevingslandbouw', pp. 38–41; Smet and Vannecke, *Historiek van het technisch en beroepsonderwijs*, p. 85.

²⁰ E. Niesten and Y. Segers, *Smaken van het land. Groenten en fruit, vroeger en nu* (2007), pp. 56–9; Smet and Vannecke, *Historiek van het technisch en beroepsonderwijs*, pp. 85–7.

²¹ *L'Institut agricole de l'Etat à Gembloux, 1860–1910* (1910), p. 8.

²² *La faculté des sciences agronomiques de l'état à Gembloux: 1860–1985* (1985), p. 7.

²³ C. Rogier, *Annales parlementaires*, 26 June 1860, p. 1644.

outlook: the agrarian population needed to be led and instructed by an 'enlightened' elite. His intention to limit education to the sons of gentleman farmers and landowners was also informed by the fact that under the levy-based suffrage system, their fathers formed part of the electorate. And in any case, at that time, 'ordinary' farmers did not study.

The Catholic members of parliament were immediately opposed to the government's proposal. They publicly called into question the need for higher agricultural education. They argued that agriculture had progressed in previous years, despite the lack of education. Moreover, the commendable agricultural situation in England showed that the absence of public provision for agricultural education need not be a hindrance to agrarian development. In any case, it was questionable whether, in the countries where higher agricultural education existed, its graduates were true 'apostles of agricultural progress' as Rogier liked to claim. According to the Catholic parliamentarian Jean De Naeyer, himself the son of a wealthy farmer, the artificial learning environment in the schools bore no relation to everyday reality in the countryside, and the schools were therefore pointless.²⁴ The most significant argument that the Catholics raised against the idea, however, was one of a moral nature. The Catholics in Belgium regarded the countryside as a beacon of values and norms, where traditions still had their place. The farmer was also the defender of state and church, and because he was responsible for food production, he upheld the social balance between town and country.²⁵ The formation of a state agricultural college threatened the countryside as a refuge from 'modern dangers'. A good farmer – in both the technical and the moral sense – became one not through training at school, but through practice on the farm. Fathers imparted the necessary farming knowledge to their sons, and 'the necessary moral qualities to succeed' were also handed down from generation to generation. De Naeyer feared for the future of agriculture if instruction was now to take place in 'an artificial setting', an environment which could only form 'a deracinated class'.²⁶ This was the origin of the notion that Gembloux was a liberal stronghold, and hence anti-agrarian (and so anti-Catholic).

Despite the Catholic objections, a majority of members of parliament voted in favour of Rogier's proposal. The Institute opened its doors on 7 January 1861. The teaching staff consisted of five professors and was largely composed of old retainers from the secondary schools that had been closed down. Lejeune was appointed director. Student numbers remained rather low in the early years (see Figure 1). During the academic year 1863–4 Gembloux had 31 students; in 1870–1 this number had doubled to 61 students. Slightly over half of those who enrolled during the first decade were foreigners. A clear majority of the students answered to the profile that Rogier had proposed, and were sons of the managers or owners of large farms. They were the only ones who could afford the high fees.²⁷ Although their numbers remained very low, its graduates set about modernising the farming sector. Together with lecturers

²⁴ J. De Naeyer, *Annales parlementaires*, 27 June 1860, p. 1655.

²⁵ In a later period these ideas developed into a true Catholic ideology of agriculture. See here L. Van Molle, *Katholieken en landbouw. Landbouwpolitiek in België, 1884–1914* (1989), pp. 47–80.

²⁶ J. De Naeyer, *Annales parlementaires*, 27 June 1860,

pp. 1656–7. Despite protests from several Catholic politicians, the law was approved by a substantial majority: 54 in favour, 7 against and 3 abstentions in the House of Representatives. In the Senate, 29 voted in favour, 9 voted against and 2 abstained.

²⁷ *L'Institut agricole de l'Etat à Gembloux*, pp. 19–23.

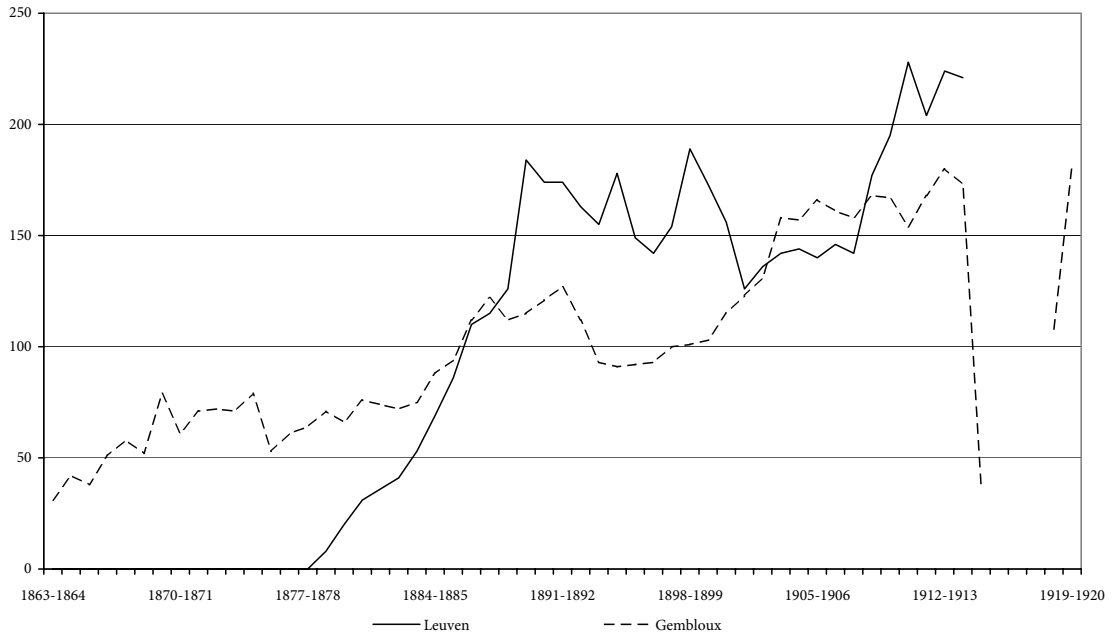


FIGURE 1. Total number of students enrolled in each of the agricultural colleges of Leuven and Gembloux, 1863-1920

Source: B. Woestenborghs, R. Hermans and Y. Segers, *In het spoor van Demeter. Faculteit Bio-ingenieurswetenschappen K.U.Leuven, 1878-2003* (2005), p. 201.

from the horticultural schools, veterinarians, members of agricultural committees, they gave lectures to uneducated farmers. This was in accordance with the law of 1860, which did not just make provision for higher agricultural education: the organization of 'public lectures' was also subsidized by the government. In 1867 alone, officials counted no fewer than 879 lectures, with a combined audience of around 20,000.²⁸ In view of the rather small-scale, practice-based character of these lectures, the Catholics were initially well-disposed towards this initiative. Because of their extensive representation in the various branches of the agricultural network, they often gave the lectures themselves.

However, the State Agricultural College in Gembloux remained a thorn in the flesh of the Catholics. In reaction, a handful of Catholic leaders started canvassing for support for their own Catholic agricultural college. The first forum was the *Société Centrale d'Agriculture de Belgique*, established in 1853. This learned society, which brought together virtually all parties with an interest in farming, acquired a predominantly Catholic profile from 1860.²⁹ Its direct impact was rather slight, but it did function as a common point of reference in the long journey towards Catholic higher agricultural education. Moreover, the *Société* was behind the formation in 1871 of the *Association pour la fondation des stations agricole en Belgique*, whose purpose

²⁸ Vanhaute and Van Molle, 'Het einde van de overlevingslandbouw', pp. 42-3. Figures in: Smet and Vannecke,

Historiek van het technisch en beroepsonderwijs, p. 89.

²⁹ Van Molle, *Katholieken en landbouw*, pp. 93-4.

was to encourage practice-oriented agricultural research. The first agricultural station opened in December of that same year. Although it was based at Gembloux, through its members the *Association* formed part of the broad Catholic organizational network which gradually took shape in the 1870s. It is no coincidence that Catholics formed the national government between 1870 and 1878.³⁰ Examining the governing bodies of the *Société* and the *Association*, one repeatedly comes across the same people. Four men are particularly worthy of note. The central figure was without any doubt Léon 't Serstevens. As a member of parliament and major landowner, he was definitely one of the most influential figures in the whole network. Alphonse Proost was more of an intellectual. He had studied in Brussels and at the Sorbonne and had been taught in Paris by the agronomist Georges Ville, among others. Alphonse Demarbaix had also opted to complete his education abroad after studying veterinary science in Kuregem, and therefore travelled to Utrecht. Both these men were thus well acquainted with agricultural education abroad. Jules Cartuyvels, as well as being the manager of a farm, was the brother of Charles Cartuyvels, who was vice-rector of the Catholic University of Leuven from 1872.

At the start of the academic year 1873–4, the rector of the Catholic University of Leuven, Alexandre Namèche, had called for Catholic higher agricultural education.³¹ Namèche saw the exodus from the countryside as a threat to the rural social model. For many young people, burgeoning urban industry offered an attractive escape route from the agrarian sector, but Namèche argued that the cities were 'hotbeds for pernicious theories and social unrest'. The training of the sons of landowners and large-scale farmers, who could then in turn serve as an 'enlightened' vanguard, could turn the tide. The broad education that they would receive must enable them, as representatives of the local community, the area, the district, the province or even the nation, to defend the interests of agriculture with the ultimate aim of 'maintaining the religious and conservative influence in our countryside'.³²

Namèche alone was not influential enough. Moreover, the decision about a new course lay with the bishops as the instituting power of the university, and not with the rector. It was a new society, the *Société Scientifique de Bruxelles*, that was responsible for convincing the bishops of the need for higher agricultural education in Leuven.³³ A number of members of the *Société Centrale d'Agriculture de Belgique* established this society in 1875 with the aim of striking a balance between the new scientific insights and Catholic doctrine, which was challenged by these insights. Precisely because of the close links between the two societies, higher agricultural education became a priority for the new *Société* in its early years. Thus at the general meeting of October 1876, 't Serstevens discussed the situation of the agricultural

³⁰ Van Dijck, *De wetenschap*, p. 247.

³¹ In the late 1870s his Ghent colleague Filibert Soupert also called for higher agricultural education at his university. He sought advice abroad and was impressed by the German model in which an agricultural institute was attached to a university. By contrast with Gembloux, he wanted to provide more theoretical scientific education. The journal of the *Société Centrale d'Agriculture de Belgique* took up his initiative and supported it. However, because of the high financial cost, the Belgian government did not take up the proposal. Van Damme,

Jubileumboek, 1920–95, pp. 14–15.

³² 'Discours prononcé à la salle des Promotions de l'Université catholique de Louvain, le 8 octobre, jour de l'ouverture des cours académiques, après la messe du St.-Esprit, par Mgr. A. J. Namèche, recteur magnifique de l'Université, in *Annuaire de l'Université Catholique de Louvain* (1874), pp. 319–23.

³³ E. Leplae, 'La Société Scientifique de Bruxelles et la fondation de l'Institut Agronomique de l'Université de Louvain', *Revue des questions scientifiques* (1938), pp. 80–3.

sector. Like the rector at Leuven, he talked of the danger from the depopulation and secularization of the countryside, but at the same time he referred to the possibilities for making agriculture more scientific. The dissemination of the insights from agronomy, which was still in its infancy, could ensure farmers a higher income and return, and this would dissuade them from taking up factory work. This was a matter of such importance that it could not just be left to the State Agricultural College in Gembloux, argued 't Serstevens. Referring to the principle of freedom of education enshrined in the constitution, he called for a free initiative, for 'In a country such as ours, the exercise of an important liberty is no optional matter: liberty turns against those who are incapable of availing themselves of it'.³⁴ In this way he referred to the possible negative consequences for the position of the Catholic element in society if it did not mount a defence against the extension of the liberal sphere of influence to the countryside. The *Société* took this task upon itself.

In mid-July 1877, a special committee submitted a substantive and financial plan to the bishops for a college in Leuven. A comparison between the budget of Gembloux and the expected annual budget of Leuven was intended to convince the bishops of the relatively modest additional cost of a separate school. For ideas about the curriculum, the committee had sent Alphonse Proost to the new *Institut agronomique* in Paris. The bishops were initially somewhat suspicious. Alarmed at the youthful enthusiasm and progressiveness of the *Société*, they feared the erosion of their powers as administrators of the university.³⁵ Once this point had been cleared up for their benefit, on 21 January 1878 they sent a joint circular letter in which they granted their support for the foundation of Catholic higher agricultural education in Leuven. The liberals' electoral triumph on 11 June 1878 prompted the Catholics to speed up the preparatory activities. They feared that the uniformly liberal Frère-Orban cabinet would put a spanner in the works.

III

Between the granting of the bishops' approval in January and the first lectures at the *Ecole supérieure d'agriculture* in October 1878, there were a crucial eight months in which to arrange the college's finances, its organizational structure and the content of its course. Fund-raising among affluent Catholics, who were needed to give the school the necessary financial helping hand, was no easy matter. This was something that would give cause for regret later on. It seemed simpler to put together a curriculum: there were interesting models abroad. Once again, Proost, this time accompanied by Jules Cartuyvels, who was appointed by the bishops as the college's only professor, visited the *Institut agronomique* in Paris. The attractiveness and reputation of the Institute in Paris was considerable during this period. However, Paris was not the only point of reference for the college's founders: the agricultural institutes in Germany also served as exemplars. In view of the limited funding, everyone accepted that a separate

³⁴ 'Discussion sur la situation de l'agriculture', *Annales de la Société Scientifique de Bruxelles* (1878), pp. 172–83.

³⁵ Handwritten comment (4 Nov. 1877) on letter from Ferdinand Lefèbvre, professor at the Faculty of Science,

to Archbishop Victor Dechamps, 31 Oct. 1877. Aarts-bisschoppelijk Archief Mechelen, *Fonds Universiteit Leuven*, box 1878–1909.

school, as at Paris, was not practicable. A college attached to the university, as at Halle and Leipzig, seemed to be the solution. This approach offered sufficient guarantees of academic credibility and reduced costs. The Faculty of Science seemed the ideal point by which the college could be attached to the university: after all, agronomy was merely a particular form of the sciences studied in the Faculty, so many of the topics could be taught by professors from the Faculty. Unlike the major model, Paris, the course would last three rather than two years. This made it possible to work on the moral and religious training of the students as well as on their scientific education. The decision by the college's founders to confer the title *ingénieur agricole* on their graduates, as had been done at Gembloux since 1868, illustrated their academic ambitions. By choosing this title, the colleges sought to enhance the social status of the education they provided: the tasks of 'agricultural engineers' were no less important to society than those of civil engineers.³⁶

The school's first brochure summed up its ambitious aims:

The goal of this institution is to provide education that is commensurate with the needs of those who are destined not to cultivate the soil in person ..., but ... to direct and oversee such cultivation; who are called on above all to maintain the religious and conservative influence in our countryside; to assume ... high moral authority; to become ... the mainstays of true principles in the moral order and the promoters of whatever progress is genuine and of use in the material order.³⁷

Expectations were high, and everything possible was done to acquaint the first students with agricultural science. The college was unable to meet expectations fully. As elsewhere in the university, the students received a fairly theoretical and encyclopaedic training. Experimental and fundamental research had not yet acquired an undisputed place in the curriculum. The majority of the university's directors were not particularly sympathetic towards intellectual adventures.³⁸ Moreover, as agriculture students were mainly taught by professors from the Faculty of Science, they were lumbered with a considerable amount of background knowledge which was not relevant to agriculture. The low standard of agricultural science attained in the early years revealed the real motive for the foundation of the Leuven college: the bishops had been swayed not by scientific ambitions, but by fear of the deleterious influence of the 'liberal' Gembloux over the agricultural sector and the countryside.

Suspicion of practice-oriented instruction and experimental research was also present within the college itself, although a degree of opportunism also undoubtedly played a role.³⁹

³⁶ The term was first used in 1852 at the *Institut national agronomique* in Versailles. Previously, the title of *ingénieur* had only been used for senior civil servants. By appropriating the title, the founders of higher agricultural education hoped to give their graduates social and professional status. Unlike 'engineer', the French *ingénieur* thus refers to higher education rather than technical vocational education. Marie Benedict-Trocmé, 'Le titre d'ingénieur agronome', in M. Boulot (ed.), *Les enjeux de la formation, 1760-1945*, pp. 367-8.

³⁷ *Ecole supérieure d'Agriculture. Programme de l'école* (1879), p. 3.

³⁸ E. Lamberts, 'De Leuvense universiteit op een belangrijk keerpunt tijdens het rektorat van A. J. Namèche en C. Pieraerts (1872-87)', in *L'Église et l'état à l'époque contemporaine: mélanges dédiés à la mémoire de Mgr. Alois Simon* (1975), pp. 344-56.

³⁹ The discussions on this matter can be found in the minutes of the professors' committee. UCL, *Archives historiques de la Faculté d'Agronomie*.

The professors of the Faculty of Science, headed by Joris Helleputte, mainly wanted to offer a scientific synthesis of the available knowledge. As a prominent advocate of ultramontanist in Belgium, Helleputte probably primarily identified with the social motives of the college, and was less concerned with its scientific endeavours.⁴⁰ For him, agriculture was first and foremost one of the pillars of his corporatist social model.⁴¹ For their part, Professors Cartuyvels, Demarbaix and Proost called for more agriculture- and practice-oriented education. Proost had always been a proponent of the reconciliation of science with Catholic orthodoxy – something for which he was not always thanked. In 1879, however, there were no objections to his appointment as professor.⁴² This was possible because relations with the university itself had also begun to shift. Ultramontanists and liberal Catholics joined forces in the common struggle against liberalism. Meanwhile, in both the Faculties of Medicine and Science, fundamental and experimental research were gradually gaining more of a foothold.⁴³ Agricultural science began to find its place in the university after some time too, although with something of a time lag. The explanation for this is twofold. Firstly, agricultural science was still in its infancy in Belgium (particularly in comparison with Germany), but above all, financial and organizational problems posed a threat to the Leuven college's continued existence in the early 1880s. As a result, the priorities lay elsewhere for a while.

In October 1883, the new rector, Constant Pieraerts, announced that the college would close the following academic year if no financial guarantees were offered.⁴⁴ Helleputte wanted to avoid this at all costs, as it would provide the liberal adversaries with 'the fearful weapons of ridicule and mockery'.⁴⁵ In saying this, he once again made it clear what lay behind the establishment of the college: the ideological conflict with the liberals. Yet, since its establishment, the college had also discovered a new, more urgent and acute reason for existing: the deteriorating situation in the agricultural sector. With their labour-intensive arable farming, the small Belgian farms, especially those in Flanders, were unable to compete with the cheap grain coming from the United States. Only a reorientation from arable farming to cattle breeding and horticulture seemed to offer the prospect of prosperity in the long term. The idea was not entirely new, but now seemed to be more important: agricultural education needed to propagate the new insights of agricultural science as a weapon in the struggle against the severe agricultural crisis.⁴⁶

⁴⁰ Ultramontanist is a doctrine within Catholicism which propounds the Pope's absolute authority in matters of faith and discipline. Political ultramontanist denounced state education, leading among other things to the 'scholastic war' of 1878–84 against secular policy, which it 'won'.

⁴¹ On Helleputte's importance for agriculture see J. De Maeyer and L. Van Molle, *Joris Helleputte. Architect en politicus, 1852–1925. Deel 1: biografie* (1998), pp. 114–15.

⁴² According to a number of ultramontanists, his writings on Darwinism and materialism made him an enemy of the Catholic faith. J. Vander Vaeren, *Alphonse Proost (1847–1931)* (1931), p. 6.

⁴³ This change of attitude was associated with the

arrival of the new rector, Constant Pieraerts, in 1881. Lamberts, 'De Leuvense universiteit', pp. 363–4.

⁴⁴ A rough version of the rector's letter to the professors can be found at K.U.Leuven, *Archief rector Ladeuze*, X/1.

⁴⁵ A comment made by Helleputte during the meeting of the professors' committee. Minutes, 23 October 1882. Université Catholique de Louvain, *Archives historiques de la Faculté d'Agronomie*.

⁴⁶ Pieraerts, the rector of Leuven, mentioned this reason for the college's existence in a letter to the archbishop, 27 February 1883. Aartsbisschoppelijk Archief Mechelen, *Fonds Onderwijsdocumenten negentiende eeuw*, III, 44.



FIGURE 2. 'Char de l'agriculture, rappelant la fondation de l'Institut agronomique' [agricultural float, evoking the foundation of the Agricultural Institute in Leuven], part of the parade organized in 1884 to commemorate the re-establishment 50 years earlier of the University of Leuven.

Photo: University Library, Leuven.

For the members of the *Société Scientifique de Bruxelles* who were behind the college, this was enough to prompt them into action again.⁴⁷ Professors Proost, Demarbaix and Cartuyvels, together with various others formed a committee, with 't Serstevens as chairman, whose goal was to secure the college's future. Financially, the situation remained difficult, but they did manage to obtain greater independence from the Faculty of Science. Eventually, this emancipation made it possible to engage in more agriculture-oriented education and research. In reality, the college was effectively refounded at this time and given a new name. Following the example of Paris, the name *Institut agronomique* was chosen. And so the Institute was able to play its part in the half-centenary celebrations of the university in 1884 with a float reflecting all that was best in Belgian agriculture at the time (Figure 2).

⁴⁷ This has been described in detail in: R. Antoine and G. Hennebert, 'La Faculté des Sciences Agronomiques de l'Université Catholique de Louvain', *Louvain. Revue trimestrielle des amis de l'Université de Louvain* (1985), pp. 11–20.

IV

The Institute may have had a difficult start, but the number of enrolments developed positively, from around 20 in 1879 to nearly 70 five years later. From the second half of the 1880s onwards, Leuven had more students than Gembloux. In the 1890s, the numbers even exceeded 150. After dipping around the turn of the century, student numbers rose to around 220 on the eve of the First World War, an increase partly caused by the establishment of an optional year and a two-year bachelor's degree (Figure 1). The crisis of the early 1880s also enabled the Institute to refine its profile scientifically. A new generation of professors at the end of the nineteenth century gave practice-oriented research proper shape. Among other things, they set up experimental stations on the farm of a nearby girls' secondary school, and the Institute's first autonomous research centre opened in 1908. The young professor Leopold Frateur had conceived the idea of establishing a research centre for zootechnics at Leuven during fact-finding missions to Halle and Berlin. In his explanation to the rector, Frateur referred explicitly to these foreign examples and to the increasing importance of cattle breeding in Belgium. During the early years, he mainly carried out applied research into feed recipes and disease-control measures. Real scientific renown came to Frateur through his experimental research into animal hereditary applying the theories of Mendel.⁴⁸ With the opening of the Seed Research Station in 1913, the Leuven-based institute went further down the road of applied research.

The gradual widening of the research focus, the raising of the scientific standards and above all, its more applied character made the Leuven Agricultural Institute an important research centre in the late nineteenth and early twentieth centuries. It was up to the professors to put these accomplishments to good use in the education they dispensed. Because the Institute had been able to establish a more autonomous relationship with the Faculty of Science since 1882, it was possible to place more of an emphasis on agriculture-oriented knowledge. Here, the professors sought to strike a balance between theory and practice. The latter component gained in importance when, from 1886 onwards, the students were assigned the task of writing a final dissertation and undergoing an internship at a farm. By the mid-1890s, the professors realized that it was no longer possible to teach the expanding discipline of agricultural science in three years. Starting with the academic year 1895–6 they therefore made provision for a fourth, optional year, which from 1903 presented four possible specializations: agronomy, agrarian chemistry, water and forest management or colonial agricultural science. With the last of these courses, Leuven was following an international trend. In 1902, the *Ecole nationale supérieure d'agriculture coloniale* had opened in France, and Wageningen also offered a colonial course from 1904 onwards.⁴⁹

The education which was provided increasingly came to reflect the research at the Institute: more agriculture-oriented, more experimental in character and of a high quality. The rising standards meant that almost no sons of farmers embarked on a course of studies there. Although the education which was offered and the associated research were oriented to agriculture, they had very little to do with day-to-day practice on the farm. Because of this, in 1908 the Institute

⁴⁸ A. Gobin, *Professor J.-Leopold Frateur en de omwenteling in de veeuitbating* (1999), pp. 29–45.

⁴⁹ Goudswaard, *Agrarisch onderwijs in Nederland*, p. 150.

started a separate, two-year bachelor's degree course in which agricultural practice was covered more extensively.⁵⁰ Philibert Biourge, professor of microbiology at the Institute, said of the introduction of the bachelor's degree: 'We will have done something of use to our homeland, to our religion and to the Catholic party'.⁵¹ Biourge's statement was made against the background of fierce rivalry between Leuven and Gembloux which had characterized higher agricultural education since the 1880s. However, this new initiative did not mean that the student population took on a less elitist character. Studying at either the Institute or at the University of Leuven was far from cheap. The annual registration fee was around 300 Belgian Francs. In addition, examination fees were due to the professors, and the use of the laboratories, museum and library was not free either. In around 1900, a year of study in Leuven, including the purchase of study materials and rent for a room, cost between 1,500 and 2,000 Belgian Francs. This was equivalent to the annual wage of a well-paid manual worker.⁵²

The introduction of the bachelor's degree, plus the introduction of the optional fourth year and the pronounced focus on colonial agriculture fitted in with the Institute's strategy of projecting itself as forward-looking compared with Gembloux. The rivalry between the two institutions had existed since the Leuven college's foundation, but intensified from 1884. In that year, after six years of liberal government, the Catholics gained a majority in parliament. The long period (from 1884 to 1914) in which the Catholics had a parliamentary majority and the conceptual unity in the numerous initiatives that they took on agriculture means that this period we reasonably talk of a Catholic agricultural policy, with the establishment of a separate Ministry of Agriculture as the symbolic starting-point.⁵³ By contrast with the liberal government, which had not been particularly industrious on the agrarian front, the Catholic ministers and members of parliament developed an active rural policy in which education had a prominent place. The pronounced concern with the countryside and agrarian interests was definitely inspired partly by the success of the socialist movement, especially after the introduction of the plural universal suffrage in 1893.

The special role assigned by Catholics to farmers as defenders of the social consensus, with the countryside being defined as a beacon of Christian traditions, explains the importance they attached to agricultural education. In addition to the transfer of knowledge about farming, they had the moral training of the rural population in mind. This was why over the next few decades the Catholic governments did not just subsidize education for the sons of the farmers, but for their daughters too. And precisely because they did not view agriculture purely as an economic sector in difficulties, but as a link in a broader social project, the Catholic agricultural

⁵⁰ Edmond Leplae, professor at the Agricultural Institute, to rector Adolphe Hebbelynck, 29 Sept. 1908. In this 13-page report, he set out a proposed curriculum for the new option. K.U.Leuven, Universiteitsarchief, *Archief rector Ladeuze*, X/2.

⁵¹ Philibert Biourge to rector Adolphe Hebbelynck, 5 Oct. 1908. K.U.Leuven, Universiteitsarchief, *Archief rector Ladeuze*, X/2.

⁵² E. Lamberts and J. Roegiers, *De universiteit te Leuven, 1425-1985* (1986); K.U.Leuven, Universiteitsarchief, *Archief rector Ladeuze*, X/1.

⁵³ In fact this was the eclectic Ministry of Agriculture, Industry and Public Works. Before 1884, agriculture had been an area of competency of the Ministry of Interior Affairs. The conflict between clerics and liberals over education in the previous decade had led the liberal government to set up a Ministry of Public Education in 1878. In 1884 the Catholics went into the elections with the promise that they would abolish this ministry and set up a Ministry of Agriculture. L. Van Molle, '100 jaar Ministerie van Landbouw', *Agricontact* 154 (1984), special issue.

reformers did not focus exclusively on higher agricultural education. In addition to the existing state schools, they developed a whole network of subsidized Catholic primary and secondary agricultural and horticultural schools which, like the Leuven Agricultural Institute, had the goal of safeguarding the economic, social, political and religious status quo.⁵⁴

Thus, from the late 1880s, the Agricultural Institute in Leuven, which for a long time had been one of the few Catholic institutions, became just one part of a much broader Catholic agricultural network. Strange though it may sound, the college at Gembloux also started to become part of this network, as the brand-new Ministry of Agriculture gradually increased its influence over the college and so sought to neutralize its liberal atmosphere. In 1871 the Catholic government had already tried to counter the liberal dominance of the school's supervisory committee by appointing 't Serstevens to it. However, liberal appointments in subsequent years restored the balance in favour of the free-thinkers. When the Catholics gained the opportunity in 1884, they again pursued an active appointments policy. Against the wishes of the liberal politicians and the students, they appointed a director who was not an agronomist and added a number of Catholic figures to the supervisory committee.⁵⁵ Yet this extension of the Catholic sphere of influence to Gembloux did not mean that the Catholic politicians gave preferential treatment to this institution: the state schools were not permitted to constitute a threat to the Catholics' own educational institutions. It was with considerable hesitation and little conviction that the politicians modified the legislative framework of the college at Gembloux. For example, an optional fourth year only came to Gembloux two years after Leuven. By 1914 Gembloux had more research centres than Leuven: a *Station laitière* (1900), a *Station de Zoologie appliquée* (1909), a *Station de Génie rural* (1912) and a *Station d'amélioration des plantes* (1913). Yet both the Catholic majority in government and the liberal opposition realized that Gembloux was lagging behind Leuven academically.⁵⁶ The government's attitude did not contribute to the reputation of Gembloux as an educational institution, either. By contrast with Leuven with its leaning towards fundamental scientific education, Gembloux gave its students a more vocational training, orientated towards agricultural practice. Although student numbers continued to grow, the college did not have the same reputation in its own country as Leuven, and the influx of students mainly consisted of foreigners. Only towards the end of the nineteenth century did a number of young professors, including a few graduates from Leuven, raise academic and educational standards at Gembloux.

However, the employment destinations of graduates remained an indicator of the differing educational standards of the two institutions. Particularly striking was the dominance of Leuven graduates in state employment.⁵⁷ The more academic education at Leuven meant that its graduates were better prepared for the state exams, but they also had an edge when it came to public appointments. The most striking example of this was the recruitment of public agronomists by the ministry from 1885. As part of the government's overall education and enlightenment offensive,

⁵⁴ Y. Segers, L. Van Molle and G. Vanpaemel, 'In de greep van de vooruitgang, 1880–1950' in Y. Segers and L. Van Molle (eds), *Leven van het land*, pp. 88–90.

⁵⁵ Van Molle, *Katholieken en landbouw*, pp. 96–7, 118–19. *L'Institut agricole de l'état à Gembloux*, pp. 29–33.

⁵⁶ Van Molle, *Katholieken en landbouw*, p. 279.

⁵⁷ For Leuven, Lepae, 'La Société Scientifique de Bruxelles', p. 89. For Gembloux, H. R. Julien, *L'enseignement supérieur agricole. Ingénieur d'agriculture coloniale, Ingénieur agronome, Docteur en sciences agronomiques* (1900), p. 7; *L'Institut agricole de l'état à Gembloux*, p. 23.

they were given the task of informing farmers about the discoveries made by agricultural science in a comprehensible, accessible manner.⁵⁸ Of the 27 public agronomists appointed between 1885 and 1894, twelve held diplomas from Leuven, while just eight had diplomas from Gembloux. On the eve of the First World War, the Catholic predominance was even clearer: of the 30 public agronomists, just three had obtained their diploma from Gembloux; at least 17 had graduated from the Leuven Agricultural Institute.⁵⁹ But not all its graduates entered public service. Around 20 per cent entered industry (agribusiness and other branches), and 10 per cent made careers in education. Others found jobs at various governmental departments and farmers' organizations and in wide variety of economic sectors and organizations.⁶⁰

The close links between the Ministry of Agriculture and the Agricultural Institute were not confined to graduates. From the time the ministry was established, a number of professors from the institute were also active in Brussels. For instance, Proost and Cartuyvels – two figures who, whether coincidentally or not, had been involved in the establishment of the college at Leuven – were among those who took their careers further at the ministry, as Director-General and Inspector-General respectively. At the ministry, Proost became one of the most enthusiastic advocates of agricultural education and a great many achievements in this field are attributable to his convictions.⁶¹ For his part, Joris Helleputte switched over to active politics, and from 1907 helped shape policy as minister.⁶²

It was not just through the Ministry of Agriculture with its public agronomists that the Leuven Agricultural Institute became involved in the broader Catholic agricultural network. By 1914, many of the institute's graduates were also working for the Belgian Farmers' Union, the largest and most influential farmers' organization in the country.⁶³ Joris Helleputte, his brother-in-law Franz Schollaert, and the priest Jacob-Ferdinand Mellaerts founded this organization in Leuven in 1890. It was completely based on foreign models and saw itself as the champion of the agricultural sector, one of the essential building blocks of Christian corporative society. From the beginning, graduates and professors from the Institute were involved in the Farmers' Union. The graduates were primarily involved in the everyday activities of the organization, which became even more distinctive in the early twentieth century with *Raiffeisenkassen* banks, joint purchasing of cattle feeds and fertilizers, business insurance, cooperative dairies, and so on. The Farmers' Union also turned out to be a promoter of agricultural science: after all, educating farmers helped make the sector more competitive. This was a task for the professors of the Institute in Leuven. In 1891, no fewer than three professors were on the editorial committee of *De Boer*, the journal for members of the Farmers' Union which, apart from information about

⁵⁸ Similar initiatives arose elsewhere in Europe. In the Netherlands, for example, the government took the lead in 1890. Most of the Dutch 'agricultural consultants' were educated in Wageningen. As in Belgium, they played an intermediate role between agricultural science and farming practice. Goudswaard, *Agrarisch onderwijs in Nederland*, pp. 147–50.

⁵⁹ Figures in: Van Molle, *Katholieken en landbouw*, pp. 119 and 279.

⁶⁰ Woestenborghs, Hermans and Segers, *In het spoor van Demeter*, p. 70.

⁶¹ Vander Vaeren, *Alphonse Proost*, pp. 10–16.

⁶² Helleputte became Minister of Agriculture for the first time in May 1907. In the years thereafter he went on to hold various ministerial offices, including Agriculture. He mainly continued the policies of his predecessors. De Maeyer and Van Molle, *Joris Helleputte*, pp. 183–4.

⁶³ For the history of the Farmers' Union see L. Van Molle, *Chacun pour tous. Le Boerenbond belge, 1890–1990* (1990). The book focuses mainly on the period before 1945. See also De Maeyer and Van Molle, *Joris Helleputte*, pp. 111–21.

the organization, also featured popularising articles about agricultural science and technology. From 1904, Professor Frateur from the Institute for Domestic Animal Science was also a permanent staff member of *De Boer*. In his contributions, he focused on cattle farming, an area of growing importance after the agrarian crisis. He also gave frequent lectures to members of the Farmers' Union, which in 1906 launched its own Cattle Farmers' Associations.⁶⁴ The Institute and the Farmers' Union thus found common purposes in areas which concerned ordinary farmers, such as the composition of highly accessible publications for them.

V

During the nineteenth century, Western European governments developed higher agricultural education with a variety of motives in mind. In some countries, it represented a new phase in the institutionalization of agricultural science. In others, it was an expression of confidence in the contribution science could make to farming practice and to the economic modernization of the agricultural sector. In others again, education was regarded as an important means of social stabilization. All these motivations can be identified in Belgium. However, the situation there differed because of one crucial factor: the conflict between liberals and Catholics which was also to provide a stimulus (possibly the most important stimulus) for the development of higher agricultural education. In reaction to the expansion of liberal power, and appealing to the many liberties enshrined in the Belgian constitution, from the 1870s onwards Catholics sought to defend or expand their influence in every area of society. They regarded agriculture, and by extension agricultural education, as strongholds to be defended against the liberal threat. And thus it was that higher agricultural education in Belgium, more than in neighbouring countries, became an ideological battleground.

Catholic politicians and intellectuals perceived industrialization, urbanization and the new (liberal) agricultural college in Gembloux as threats to the Catholic faith and to their influence in the countryside. Moreover, the profound crisis which hit the agricultural sector from the 1880s onwards could not be met with small-scale palliatives as in previous decades. A more integrated approach was required. The response to these challenges can be described as a true Catholic agricultural offensive, initiated by various areas of society with the government's support, and resulting in the Catholic politicization of the countryside. Scientists, politicians and philanthropists came together in a common social project. The Leuven college, associated with the local Catholic University and designed according to Parisian and German models, had a key role in this agricultural network and associated knowledge offensive as the sole Catholic institution for higher agricultural education. Thus it was striking that numerous graduates from Leuven were able to develop careers in agricultural administration and maintained close relations with the (Catholic) Belgian Farmers' Union.

The principles underpinning the agricultural education provided at Leuven underwent enormous changes between the college's foundation and the First World War. Initially, theoretical and encyclopaedic instruction were uppermost at the *Ecole supérieure d'agriculture*. Given the college's attachment to the Faculty of Science, it was not surprising that real agricultural topics

⁶⁴ Gobin, *Professor J.-Leopold Frateur*, pp. 29–45.

only made a limited appearance in the curriculum. Little attention was paid to research or vocational training. It was only at the end of the nineteenth century, thanks in part to the arrival of a new generation of young professors, that a better balance was found between more general science topics and agriculture-oriented courses. The interchange between theory and practice also proceeded more harmoniously. Both were developed in Leuven, and a closer relationship with the agricultural sector developed. Thus students had to attend a compulsory internship on a farm and compose a dissertation, which in practice was usually an incisive analysis of a farming concern. But despite this evolution towards a more practice-oriented approach, most effort was put into the development of fundamental scientific research on several agricultural topics. The establishment of a station for zootechnics and a station for seed improvement before the First World War illustrates this trend, as does the introduction of a fourth year with several different specialist options. As was also occurring at other European institutions, there was an 'academic drift' at Leuven: the importance of science in the curriculum expanded.⁶⁵ One of the factors in this development was the rivalry with Gembloux and the quest for a distinctive identity. For a long time, the emphasis at Gembloux was primarily directed towards agricultural practice rather than academic or fundamental scientific research. Moreover, many of its students came from abroad. In this sense, up to the First World War, Leuven and Gembloux seem to have developed largely in a complementary fashion in terms of both the education they provided and their scientific profile.

⁶⁵ But at the same time the close relationship with the Boerenbond remained. It would be very interesting to analyse in depth the development of the Leuven curriculum, following the criteria Harwood discerns (laboratories, model farms, experimental fields, teaching programs, research orientation, types of publications etc.). We will develop this in a separate paper. J. Harwood, 'Engineering education between science and practice: rethinking the historiography', *Hist. and Technology* (2006), pp. 53–79.