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2 Arable productivity in Belgian agriculture, c.1800-c.1950

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I. Introduction¹

The aim of this chapter is to present an overview of trends in arable production in the 19th and the first half of the 20th centuries. We shall concentrate on the reconstruction and interpretation of a consistent series of arable yields between 1850 and 1950.² First of all, we will describe some basic trends in the structural transformation that reshaped Belgian agriculture from the 19th century onwards. We will then focus on the evolution of crop yields, both on the national and regional levels. In the final section we relate the trends in productivity changes to two other important determinants in recent agricultural history, the growing importance of livestock farming and increasing intermediate consumption (of extra inputs as commercial forage and artificial fertilizers).

II. Belgian agriculture in the 19th and the first half of the 20th centuries

From the beginning of the 19th century onwards, the Belgian economy was reshaped by a huge structural transformation. The early breakthrough of the Industrial Revolution challenged the century-long domination of agriculture, especially after the middle of the century. The diminishing economic weight of the primary sector is reflected in the subdivision of the gross national product (Buyst, 1995: 355-56) (see Table 2.1). At the beginning of the 19th century, agriculture was still responsible for almost half of the surplus value realized in the national economy. This share declined to something over one-third in the middle of the century and, eventually to only 13 per cent in 1910. From the third quarter of the century, industrial production was the leading sector, closely followed by trade and services. Although these estimates are still provisional, they indicate the landslide that restructured the Belgian economic landscape in the second half of the 19th century. The industrial expansion generated an annual economic growth rate of more than 1 per cent, quadrupling the GNP per capita between 1820 and 1950. Eighteenth-century growth is, in contrast, estimated to amount to not much higher than 0.1 per cent per year (Blomme and Van der Wee, 1994: 91; Maddison, 1991: 198, 226-29).

¹ For a map with the Belgian provinces: see figure 1.1 of the previous chapter.

² Although we have some estimates of arable productivity from 1812 onwards (Goossens 1812-46, Gadisseur 1845-12, Blomme 1880-1980), an integrated overview is still lacking. See Goossens, 1992: 85-91; Gadisseur, 1990: 228-300; Blomme, 1992: 320-22.

Table 2.1 Sectoral division of the value added in Belgium, 1812–1910

year	agriculture	industry	trade and services
1812	44	26	30
1846	37	33	30
1910	13	45	42

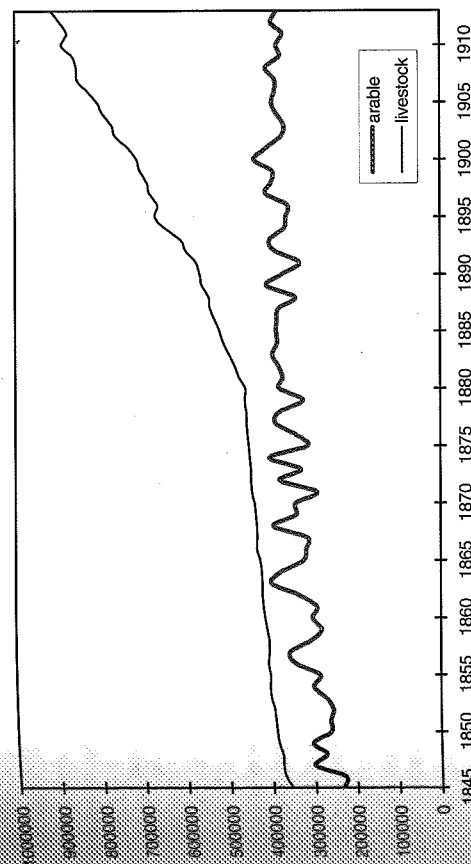
Note: value added is defined as the real surplus value generated by the national economy in one year. Unpublished data by courtesy of Antoon Soete, Catholic University Louvain.

The diminishing role of agriculture in economic life is also reflected in the numbers of people making a living from land and livestock. In 1846, almost two of every three Belgian households (64 per cent) farmed some land and/or owned some cattle. One of every five families cultivated more than two hectares, and can therefore be regarded as independent farmers. Four decades later, only 53 per cent of all households had an (additional) agricultural income, and only 13 per cent made a living from it (Vanhaute, 1993: 216). The registered labour input declined by 30 per cent between 1850 and 1910. In 1910, only 22 per cent of the registered labour force was active in the primary sector, against 47 per cent in industry and 31 per cent in trade and services. In 1846, more than half of the active population earned the greatest part of its income from agricultural activities; a century later (1947), the figure was only 13 per cent (De Brabander, 1984: 131–34, 175, 184).

Around 1880, Belgian agriculture went through a double turning point. First, households that depended on an (additional) income from land or livestock became an ever-decreasing minority. The remaining farmers became more and more dependant on household labour. In 1937, only 16 per cent of the agricultural labour input came from hired labour, against 37 per cent in 1880 (Blomme, 1992: 222). Second, under pressure from the 'agricultural invasion', the output was reoriented towards livestock farming.³ Due to the huge growth in the import of cheap grain from North America and Russia, the prices of vegetal products declined much more than did those of animal products. The divergent price trend caused an impressive shift in the output structure. The transition from a mixed agricultural system based on the production of basic food stuffs towards commercial livestock farming is reflected in Figure 2.1, which plots the nominal value of gross agricultural output between 1850 and 1913.⁴

³ Between 1877 and 1895, the crop prices at the market declined by 43 per cent, whereas the livestock prices declined by only 20 per cent (Blomme, 1992: 202–03).

⁴ This graph is based on data from Blomme, 1992 and Gadisseur, 1990. For a methodological justification, see Dejongh, 1996.

Figure 2.1 Output value of arable and livestock farming in Belgium, 1845–1914, prices of 1910 (Belgian francs x 1000)

Between 1880 and 1910 the output value of livestock farming almost doubled (an increase of 94 per cent), whereas the value of arable farming fluctuated around the same level. In 1880, 55 per cent of the gross output in Belgian agriculture came from cattle breeding, and 45 per cent came from the arable sector. Three decades later, the shares were 70 per cent and 30 per cent, respectively.

The growth in livestock production affected arable farming in two ways. First, higher yields could be obtained through more intensive manuring. Second, rural land use was reshuffled. As the agrarian sector lost more and more of its traditional position as producer of basic foodstuffs, the acreage reserved for bread cereals declined by 25 per cent between 1850 and 1910. Potato cultivation expanded until the last decades of the century (by 53 per cent between 1846 and 1885), but starts to fall back afterwards. Because of the boom in livestock farming, the amount of land given over to pasture and fodder crops increased sharply in this period, by 39 per cent and 62 per cent respectively. Figure 2.2 summarizes the trends, while Table 2.2 presents the annual growth rates in Belgian agriculture between 1850 and 1910.

Figure 2.2 Trends in land use in Belgium, five-yearly means, 1850-1910 (1846-1850=100)

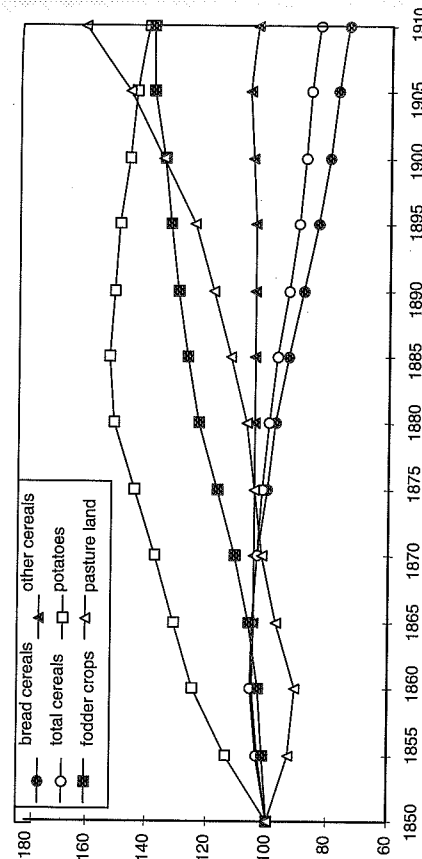


Table 2.2 Average annual growth rate of the arable and livestock production in Belgium, 1850-1910

period	growth % arable sector	growth % livestock sector	growth % total output	growth % population
1850-1880	1.25	0.58	0.86	0.74
1880-1895	-0.27	2.55	1.42	0.97
1895-1910	0.39	1.92	1.40	1.01

Note: Figures are given in prices of 1910. Annual growth figures can be found in Blomme, 1993: 288-89.

In the third quarter of the 19th century, progress in productivity and technology was still very limited. The growth rate of total agricultural output (0.86 per cent) was just slightly higher than that of the population (0.74 per cent), which reveals an uninterrupted Malthusian tension. The years of crisis between 1880 and 1895 mark a period of structural changes. Specialization in cattle breeding generated a growth rate 4.3 times higher than in the previous period. Arable farming, on the other hand, showed a negative growth rate. This gap between animal and vegetal production declines after 1895, although the growth rates of the first sector were still considerably higher than of the second sector.

III. Trends in land productivity in Belgium, 1850-1940

Traditionally, land productivity is calculated in two ways. The first approach focuses on the output of a particular crop in relation to the area on which it was grown. The gross yield per cropped area is expressed in units of volume or weight (hectolitres or kilograms per hectare). Yields estimated in this way are a reliable indicator of the physical productivity of the cropped parcels of land. They fail, however, to measure total land productivity because no account is taken of the share of fallow and fodder area in the arable land and the frequency with which the land is cropped. In the second approach, the crop yields are computed in terms of output per unit of sown seed. In historical literature, the gross individual crop yield per seed is indicated as 'yield ratio'. The difference between the two ways of measuring land productivity lies in the fact that the yield ratios are related to the sowing density. An increase in the amount of seed used for sowing, which could generate higher gross yields per cropped area, results in a decrease of the yield ratio. Because the gross yield per cropped area has up to now been the most common yardstick to measure land productivity, we have decided to calculate Belgian arable productivity in this way. This makes our data comparable with most yield estimates for other European regions.

The gross yield figures are expressed in metric measures (kilograms per hectare). In 19th-century Belgium, 1 ton of wheat contained 12.82 hectolitres, 1 ton of rye 14.08 hectolitres, 1 ton of spelt 22.73 hectolitres, 1 ton of barley 16.39 hectolitres, 1 ton of oats 22.73 hectolitres and 1 ton of potatoes from 14.9 to 15.4 hectolitres.⁵

Our calculations are restricted to the productivity of bread grains (rye, wheat, maslin, spelt), summer grains (barley, oats) and potatoes. The basic figures come from Gadisseur (1990) for the period 1845-1913, and Blomme (1992) for the period 1913-39. In Table 2.3, the gross yields are calculated as five-yearly means. In order to get a better view of the long-term trends these figures are plotted as indices in Figure 2.3 (1846-50 = 100). Between 1850 and 1880, the rise in gross grain yields is negligible. Rye and oats register a small gain of 6-11 per cent, wheat and maslin stagnate and the yields of spelt and barley even fall back by 6 per cent in the third quarter of the 19th century. A diachronic analysis reveals that the five-yearly averages in those three decades oscillate within a margin of 12 per cent around the level of 1846-1850. The yields of spelt and oats have a more inconstant character, fluctuating by 15 per cent (spelt) to 20 per cent (oats) around the mid-century level. What is more, the estimates show that until the third quarter of the 19th century, Belgian farmers were technically unable to harvest more than 17 tons of bread grain per hectare. The culture of summer grains had also reached its productivity ceiling. The mean harvest results of oats and barley remained under the level of 20 tons per hectare.

⁵ Agricultural censuses of 1846 and 1895.

Figure 2.3 Indices of yields of grain and potatoes in Belgium, 1850-1940, five-yearly means (1846-1850 = index 100)

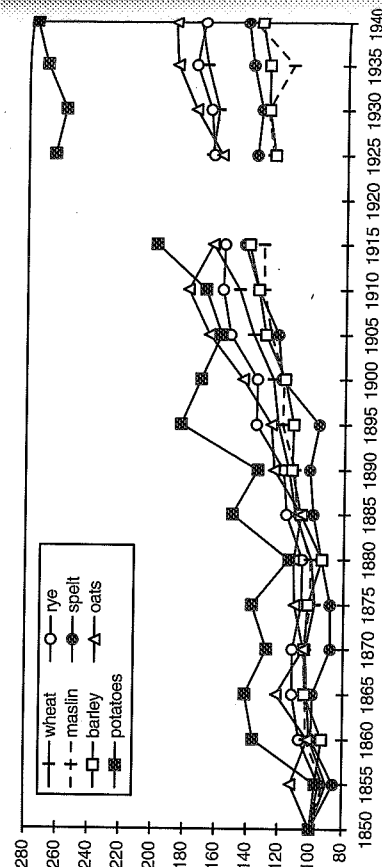


Table 2.3 Yields of grains and potatoes in five-yearly means, 1850-1940 (kg per hectare).

Period	wheat	rye	maslin	spelt	barley	oats	potatoes
1846-1850	1,584	1,411	1,532	1,506	1,909	1,413	9,920
1851-1855	1,426	1,338	1,411	1,290	1,851	1,589	9,620
1856-1860	1,595	1,514	1,578	1,503	1,774	1,445	13,520
1861-1865	1,630	1,580	1,592	1,490	1,984	1,721	14,030
1866-1870	1,645	1,576	1,610	1,328	1,990	1,486	12,720
1871-1875	1,554	1,501	1,541	1,332	1,958	1,566	13,650
1876-1880	1,591	1,499	1,547	1,418	1,792	1,574	11,350
1881-1885	1,750	1,639	1,682	1,496	2,046	1,509	14,890
1886-1890	1,817	1,667	1,704	1,532	2,151	1,753	13,340
1891-1895	1,932	1,913	1,823	1,446	2,138	1,783	18,150
1896-1900	1,981	1,906	1,817	1,802	2,247	2,040	16,920
1901-1905	2,184	2,149	1,945	1,842	2,487	2,341	15,660
1906-1910	2,328	2,221	2,016	2,034	2,576	2,531	16,660
1911-1915	2,593	2,205	2,021	2,163	2,689	2,311	19,760
1921-1925	2,612	2,307	1,940	2,058	2,387	2,244	26,120
1926-1930	2,547	2,337	1,992	2,010	2,466	2,473	25,470
1931-1935	2,666	2,470	1,747	2,096	2,466	2,644	26,660
1936-1940	2,752	2,414	2,144	2,169	2,583	2,683	27,520

Around 1880 (for spelt, only after 1895) this fluctuating trend changed to a sharp and durable productivity growth. The productivity ceiling of the preceding century was radically broken through, and record grain yields of up to 28 tons per hectare were recorded. Interestingly, the gain in land productivity was seriously disturbed by the First World War, chiefly in the culture of maslin, spelt and barley. Maslin and spelt reached their prewar level only in the late 1930s, and farmers growing barley had to wait until after the Second World War to surpass the yields of the beginning of the century. Potatoes are a notable exception in the slowdown which occurred during the interwar period.

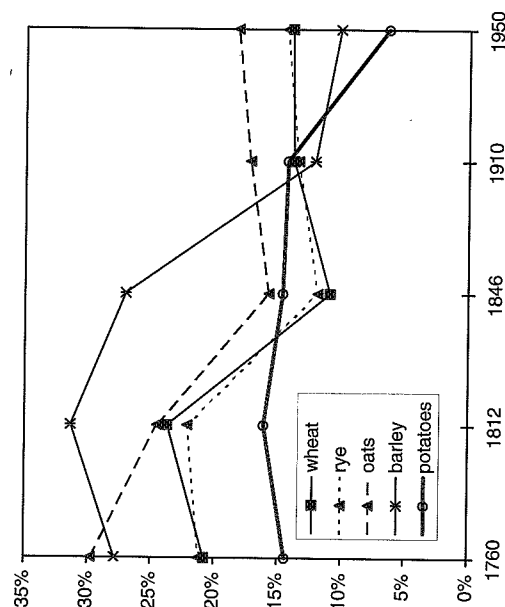
Taking the period between the middle of the 19th and the middle of the 20th centuries as a whole, oats registers the strongest yields improvements (90 per cent). The average yields of rye and wheat are 71 per cent and 74 per cent higher in 1940 than a century before. Spelt, maslin and barley score remarkably less, with improvements of 44 per cent, 40 per cent and 35 per cent respectively.

Potatoes are the culture with the most capricious changes in yields. Unlike the grain yields, the harvest of potatoes shows an upward movement in the late 1850s and early 1860s. Between 1865 and 1880 the trend is negative once more; this is reversed after 1880, but the yields keep fluctuating sharply, between 15 and 20 tons per hectare. It is only in the interwar period that the cultivation of potatoes is marked by a constant increase of the yields. On the eve of the Second World War, one hectare of land yielded 40 per cent more potatoes than four decades before. Potato yields increased by 177 per cent over the course of the century, an increase considerably greater than that of grains.

IV. Some regional trends

In the appendix to this chapter, we add some figures revealing regional trends in land productivity. Even though the data per administrative province do not coincide with geographical regions, substantial geographic differences are recorded. These disparities decline over time, as indicated by Figure 2.4.⁶ Until the beginning of the 19th century, the coefficients of variation in grain yields fluctuate between 20 and 30 per cent. From the end of the century onwards, the rate of oscillation drops to under 15 per cent on average. The regional differences in potato yields are much more moderate, with variation coefficients of 15 per cent until the beginning of the 20th century and 6 per cent in 1950.

Figure 2.4 Coefficients of variation between regional data on crop productivity in Belgium, 1760-1950



The provinces with the highest yields per area sown are situated in the west of the country, in West and East Flanders and Hainault. Average grain yields surpassed the national figures by 20-25 per cent until the middle of the 19th century. This difference declined to 9 per cent in 1910 and 7 per cent in 1950. Between the middle of the 18th century and the beginning of the 19th century, the differences between 'rich' and 'poor' regions even increased. The gap decreased from the second quarter of the century for bread grains, after 1850 for barley and only in the interwar period for oats. The regional yields of the potato crop follow more or less the same pattern. The three regions with the highest soil productivity (West and East Flanders and Hainault) had yields that were 15 per cent higher than the average in 1760 and 20 per cent higher

in 1812. In 1846 and 1910, the ratio was 8 per cent and 13 per cent respectively, by 1950 the differences had almost disappeared.

A notable example of this trend of convergence is the province of Limbourg, which until the beginning of the 20th century was renowned for its extensive plains of heath-land. In the second part of the 18th century, grain yields amounted to barely 60 per cent of the produce ratio in the most productive province. This gap declined from 40 per cent before 1800 to 30 per cent in the middle of the 19th century, and 20 per cent around 1910. In 1950 the yields in Limbourg were about the highest in the country.

V. The productivity growth in context

On average, grain yields increased by 0.2-0.5 per cent per year in the second half of the 18th century, 0.5-0.7 per cent per year in the 19th century, and 0.7-1 per cent per year in the first half of the 20th century. Until 1880 the growth rates oscillated around 0.4 and 0.5 per cent. However, these averages hide fluctuations over time. While the years between 1820 and 1845 saw high productivity gains, the third quarter of the century was one of stagnation. After 1880 the average growth rates doubled. With growth rates well over 1 per cent per year, the two decades before 1900 are probably the period with the most exuberant yield increases before the second half of the 20th century. This is also true for potato cultivation, which reached a growth rate of more than 2 per cent in these years. Before, this culture was still too unreliable to gain stable productivity improvements.

This leads us to two conclusions. First, the century before 1880 was not without gains in land productivity. Moreover, in certain periods this growth was substantial (notably, the second quarter of the 19th century). On the other hand, the slow recovery from the crisis of the 1840s and the stagnation in the third quarter of the century show that the internal growth potential of the traditional farming system had reached its limits. Improvements in systems of crop rotation and permanent stabling lost their growth effects, and labour input in an already labour-intensive agriculture had grown to its maximum. It is even plausible that the gains in physical land productivity before 1880 took place at the cost of a diminishing labour productivity.

The renewed and now durable improvement of land productivity after 1880 is closely linked with two other developments in Belgian agriculture. The first points to the transition of a mixed farming system to a system based upon market-oriented cattle breeding. The radical shift in the output structure generated a more generous organic manuring per unit of land. As a result of the continuous decrease of the arable area (by 12 per cent) and the increase in livestock population (by 92 per cent), the cattle density per hectare more than doubled between the middle of the 19th and the middle of the 20th centuries.⁷

⁷ Livestock data on horses, horned cattle and pigs. Because of unreliable figures, sheep are excluded. See Goossens, 1992: 100, 105, 108 (for 1846) and Blomme, 1992: 385-86.

⁶ The coefficient of variation expresses the ratio between the standard deviation and the mean.

Table 2.4 Livestock population and arable land in Belgium, 1846-1940

Period	livestock number	index 1846=100	arable land hectares	index 1846=100	livestock per hectare
1846	2,153,553	100	1,324,586	100	1.6
1877-1880	2,245,846	104	1,543,252	117	1.5
1881-1885	2,366,497	110	1,525,160	115	1.6
1886-1890	2,561,963	119	1,498,909	113	1.7
1891-1895	2,898,839	135	1,472,410	111	2.0
1896-1900	3,153,635	146	1,446,517	109	2.2
1901-1905	3,415,703	159	1,421,502	107	2.4
1906-1910	3,618,121	168	1,389,274	105	2.6
1921-1925	2,955,673	137	1,303,839	98	2.3
1926-1930	3,568,034	166	1,327,906	100	2.7
1931-1935	4,089,104	190	1,298,978	98	3.1
1936-1939	4,130,436	192	1,163,673	88	3.5

A second major factor influencing the improvement of the land yields after 1880 is the increasing use of external capital inputs. These high-performance inputs include commercial feeds (cattle cake, fresh and dried swill, sprouted barley, meat meal, pulp, molasses, maize and bran) and artificial fertilizers (nitrate, phosphate and potash fertilizers). The volume of cattle fodder and manure brought in from outside the farm doubled and quadrupled between 1880 and 1910 respectively (Blomme, 1994: 285).

The increase in intermediate consumption in Belgian agriculture can be measured by comparing the value of external inputs with the value of the total output (see Table 2.5).

In the middle of the 19th century, the value of external inputs in Belgian agriculture equaled 13 per cent of total output. This ratio increased to up to 30 per cent after 1900, and 35 per cent after 1925. The share of commercial feeds and fertilizers increased from a negligible 4 per cent in 1846 to more than 20 per cent after 1895, and more than 25 per cent after 1925.

The use of forage and manure from outside the farm was promoted by a favorable evolution of the price levels of these products. As a result of decreasing transport costs and rapid technological developments in Belgian industry, the cost price of these commercial inputs declined with regard to the cost of the production factors labour (wages) and land (rents). The increasing input of these external capital goods turned out to be the most efficient way to maximize farm productivity.

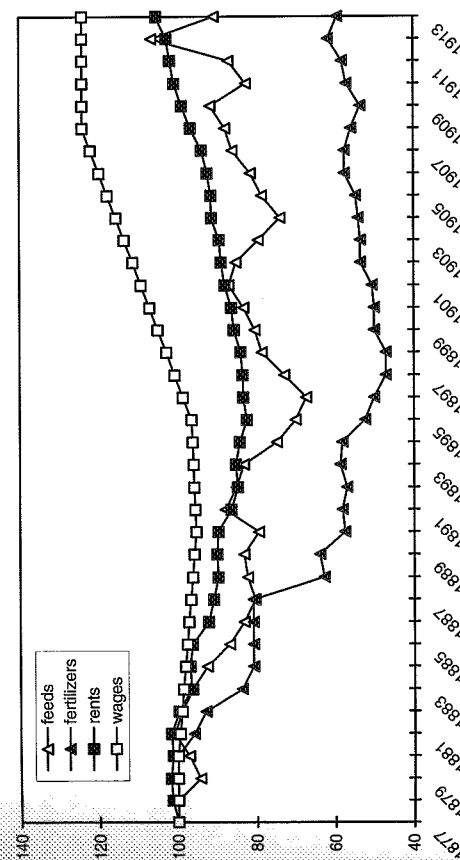
Table 2.5 A comparison of the input and output values in Belgian agriculture, 1881-1939

period	value total output (1)	value commercial feeds (2)	value commercial fertilisers (3)	value total inputs (4)	(2) + (3) as % of (1)	(4) as % of (1)
1846	502,877	12,857	8,686	64,133	4	13
1881-1885	915,370	113,484	36,604	218,797	16	24
1886-1890	846,778	106,298	39,083	211,274	17	25
1891-1895	901,042	126,956	41,959	235,854	19	26
1896-1900	924,265	149,166	44,599	270,587	21	29
1901-1905	1,083,539	193,399	55,248	336,838	23	31
1906-1910	1,259,208	236,843	71,595	408,098	24	32
1911-1915	1,401,033	312,519	86,921	510,941	23	30
1921-1925	6,667,589	954,371	386,971	1,795,687	20	27
1926-1930	12,385,527	2,454,373	961,161	4,318,057	28	35
1931-1935	8,492,316	1,482,712	428,567	2,605,922	22	31
1936-1939	9,523,266	2,042,463	413,716	3,228,069	26	34

Note: Prices are given in current prices, as five-yearly averages.

Source: Goossens, 1992: 148 (for 1846); Blomme, 1992: 352, 397 (1877-1939)

Figure 2.5 Indices of the price of commercial feeds and fertilizers, wages and rents in Belgium, 1877-1913 (index 1877=100)



What about other capital inputs such as machines? Until 1940, mechanization was responsible for only 5–8 per cent of total output (compare chapter 8 for the English case). Before the middle of the 20th century, the effect of technological progress on the improvement of agrarian productivity was modest (Blomme, 1993: 233–37). Only after 1950 a completely new range of machines was introduced, including milking machines, cooling tanks for milk and combine harvesters. These were no longer based on hand-generated power and horse traction, but on the technology of combustion engines and electric motors. In twenty years time (1950–70) the stock of modern machinery increased fivefold, which caused an unprecedented boom of agricultural productivity.

Appendix: Land productivity in Belgian regions, 19th–20th centuries: some sources and results

This overview starts from the figures published in the official censuses and has to be read as a sequence of 'sections'. A complete series of yearly figures per province is published in Gadisseur (1990: 305–537), but covers only the period 1845–1913. They are based on the estimations made by the *commissions provinciales d'agriculture* (provincial agricultural committees), and published in the *Bulletins of the Conseil Supérieur de l'Agriculture* (Gadisseur, 1990: 305–06). The publication of Jan Blomme provides only national averages (e.g. Blomme, 1992: 261, 320–22).

The figures covering the period from 1846 to 1950 can be regarded as 'official' averages, used by contemporary agronomists to make comparisons in time and space. These ratios can be compared with the reconstructed yields on previous points of time (1760 and 1812).

All the figures can claim to be 'averages', but the ways in which they are constructed differs considerably. Details are as follows:

- 1760. Yields in a 'normal' harvest year in the period 1760–70 as calculated by G. Dejongh. Figures are based on a sample of probate inventories (Antwerp, Brabant, East Flanders and West Flanders), a cadastral survey (Luxembourg) and literature.
- 1812. Yields in a 'average' year, as calculated by Goossens (1993: 84–91). Based on 1812 and 1813 harvest statistics with information on both the amount of seed used for sowing and the yield ratios in a normal year.
- 1846. Yields in a 'normal' year. Because of the unusually low yields of 1846, the organizers of the 1846 agricultural census added information on yields in a 'normal year'.
- 1866. Yields of the year 1866, based on the 1866 reports of the *commissions provinciales d'agriculture*.
- 1895. Average yields for the years 1886–1895, as recorded by state agronomists.
- 1910. Average yields for the years 1900–1909, as recorded by state agronomists.
- 1929. Average yields for 1929, as recorded by state agronomists. Information about the 1929 crop harvests is included: winter wheat and winter barley, bad; potatoes, good; other crops, normal. Information on seed used for sowing is from Blomme (1992: 93).
- 1950. Average yields for the year 1950. No further information.

WHEAT (winter wheat), kg/ha

	1760	1812	1846	1866	1895	1910	1929	1950
Antwerp								
yields	1,069	1,209	1,391	1,126	1,925	2,162	2,573	2,790
sowing seed		128	125		152	157		
Brabant								
yields	920	952	1,283	1,365	1,840	2,318	2,035	3,280
sowing seed		137	150		158	151		
Limburg								
yields	858	991	1,338	1,197	1,667	2,123	2,085	3,410
sowing seed		121	126		145	141		
East Flanders								
yields	1,147	1,466	1,568	1,759	2,076	2,385	2,918	3,370
sowing seed		112	134		154	137		
West Flanders								
yields	1,045	1,201	1,571	1,940	1,964	2,523	3,499	3,330
sowing seed		135	157		164	147		
Hainault								
yields	1,162	1,404	1,534	1,566	2,080	2,462	2,644	3,420
sowing seed		156	146		152	143		
Liège								
yields		1,053	1,329	1,456	1,849	2,307	1,813	3,290
sowing seed		126	149		164	157		
Luxembourg								
yields	546	608	1,150	1,068	1,454	1,482	1,229	2,220
sowing seed		130	142		144	160		
Namur								
yields	936	980	1,240	1,281	1,751	2,317	1,326	2,630
sowing seed		131	147		174	155		
BELGIUM (total)	959	1,097	1,381	1,418	1,931	2,363	2,425	3,240
		131	144		158	148	165	

RYE, kg/ha

	1760	1812	1846	1866	1895	1910	1929	1950
Antwerp								
yields	888	1,187	1,296	1,511	1,774	1,944	2,556	2,270
sowing seed		99	116		145	153		
Brabant								
yields	902	937	1,182	1,453	1,679	2,137	2,154	2,870
sowing seed		107	124		146	135		
Limburg								
yields	817	1,023	1,093	1,562	1,542	1,816	1,958	2,560
sowing seed		116	121		158	154		
East Flanders								
yields	1,150	1,416	1,536	1,814	2,113	2,485	3,018	2,940
sowing seed		86	109		130	131		
West Flanders								
yields	944	1,176	1,507	2,094	1,950	2,525	2,801	3,000
sowing seed		111	126		135	123		
Hainault								
yields	1,342	1,704	1,438	1,627	1,872	2,209	2,467	2,800
sowing seed		142	114		141	132		
Liège								
yields		1,182	1,267	1,436	1,684	2,165	2,127	2,670
sowing seed		123	123		148	137		
Luxembourg								
yields	731	888	1,375	1,264	1,446	1,717	2,037	1,960
sowing seed		197	125		130	138		
Namur								
yields	817	990	1,166	1,362	1,355	1,893	1,661	2,160
sowing seed		89	119		141	146		
BELGIUM (total)	944	1,167	1,326	1,569	1,786	2,154	2,504	2,690
		119	119		142	139	170	

OATS, kg/ha

	1760	1812	1846	1866	1895	1910	1929	1950
Antwerp	981	1,305	1,482	1,324	2,021	2,075	2,223	2,210
	yields	88	105		149	153		
	sowing seed							
Brabant	862	968	1,433	1,637	1,856	2,671	2,293	3,130
	yields	77	115		165	155		
	sowing seed							
Limburg	484	774	1,241	1,409	1,776	2,207	2,240	3,000
	yields	78	124		155	162		
	sowing seed							
East Flanders	1,135	1,144	1,731	1,940	1,880	2,681	2,553	2,970
	yields	55	97		126	126		
	sowing seed							
West Flanders	1,109	1,440	1,595	1,992	2,448	3,171	3,425	3,410
	yields	102	120		145	133		
	sowing seed							
Hainault	928	1,232	1,592	1,882	2,137	2,697	2,836	2,960
	yields	88	127		157	148		
	sowing seed							
Liège		1,131	1,248	1,530	2,327	2,496	2,640	3,120
	yields	111	136		180	160		
	sowing seed							
Luxembourg	466	589	1,126	1,209	1,680	1,841	2,116	1,800
	yields	97	177		206	191		
	sowing seed							
Namur	880	1,182	1,131	1,312	1,903	2,049	2,142	2,550
	yields	91	144		171	170		
	sowing seed							
BELGIUM	858	1,085	1,372	1,575	2,000	2,401	2,544	2,840
(total)	83	127		168	158	140		

BARLEY (winter barley), kg/ha

	1760	1812	1846	1866	1895	1910	1929	1950
Antwerp	1,252	1,548	1,883	1,612	2,168	2,498	2,160	2,690
	yields	95	108		137	142		
	sowing seed							
Brabant	1,259	1,337	1,754	2,140	2,236	2,873	1,961	3,220
	yields	124	131		147	134		
	sowing seed							
Limburg	868	812	1,528	1,663	1,865	2,696	2,365	3,280
	yields	90	109		146	144		
	sowing seed							
East Flanders	1,395	1,427	2,042	2,289	2,260	2,582	2,991	3,300
	yields	88	118		127	131		
	sowing seed							
West Flanders	1,451	1,831	2,549	2,290	2,187	2,836	3,411	3,820
	yields	128	139		161	142		
	sowing seed							
Hainault	1,240	1,682	2,249	2,516	2,704	3,033	2,745	3,210
	yields	120	115		140	128		
	sowing seed							
Liège		1,122	1,226	1,542	2,171	2,948	1,774	3,100
	yields	107	120		149	132		
	sowing seed							
Luxembourg	558	621	1,100	1,153	1,809	1,943	887	2,940
	yields	134	98		118	145		
	sowing seed							
Namur		1,087	1,486	1,846	2,081	2,751	1,436	2,880
	yields	97	113		139	129		
	sowing seed							
BELGIUM	1,147	1,274	1,748	1,895	2,149	2,826	2,369	3,190
(total)	109	120	118	137	134	120		

POTATOES, kg/ha

	1760	1812	1846	1866	1895	1910	1929	1950
Antwerp								
yields	8,640	11,064	16,571	9,327	16,553	18,064	26,852	22,090
sowing seed		1,575						
Brabant								
yields	7,200	8,825	14,110	8,530	14,019	14,182	19,893	24,680
sowing seed		735						
Limburg								
yields	7,200	10,032	13,170	9,000	15,223	14,797	17,090	22,890
sowing seed								
East Flanders								
yields	10,166	11,436	14,402	12,500	17,948	17,995	25,694	26,290
sowing seed		837						
West Flanders								
yields	8,777	11,088	15,787	11,475	16,328	18,717	22,943	25,740
sowing seed		918						
Hainault								
yields	7,200	8,640	13,288	10,000	15,251	14,256	21,950	23,020
sowing seed		864						
Liège								
yields		8,620	17,478	9,863	14,577	13,424	19,125	23,220
sowing seed		1,679						
Luxembourg								
yields	7,056	7,560	12,184	12,333	14,762	16,300	22,593	22,660
sowing seed		1,26						
Namur								
yields	7,200	7,560	11,051	7,305	12,776	12,685	18,301	22,540
sowing seed								
BELGIUM								
(total)	7,956	9,425	14,392	10,037	15,598	16,209	22,818	24,000
sowing seed		1,125			1,500		2,000	

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