The Financial Farmer

Financial education and extension to Dutch farmers, 1890-1940.

RMA Thesis

Modern History 1500-2000

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Introduction

Since the Second World War, mechanization had transitioned Dutch agriculture from a labour-intensive to a capital-intensive sector. Farmers were borrowing money to invest in new machines and one- or two-person managed farms increasingly replaced family businesses. A farmer in Haaren calculated that in 1951 he required 700 man-hours a year to produce one hectare of potatoes, while fifteen years later, he only needed 150 man-hours because of mechanization and chemical fertilizers.[1] By the mid-1980s Dutch farming had developed into the most productive agricultural sector of the European Community measured by land productivity, which was three times as high as the EC average. 'Farming became agri-business', in the words of agricultural historian Jan Bieleman.[2] The changing agricultural sector demanded increased knowledge of financial products and agricultural economics in particular. It is therefore no surprise that social-economic courses for young farmers were introduced just then.[3]

In 1959 the Dutch Farm Women's Union and the Dutch Young Farmer's Union started the 'Social-economic course for the young farmer and farm girl'. The course consisted of sixteen lessons of three hours. The first eight lessons discussed topics as finance, investment, bookkeeping, income spending and budgeting. The other eight lessons were used to exercise several economic practices the future farmer needed to master. The students were taught to compose a business plan, calculate yields per business unit and responsibly mechanise the farm. Young farm girls were welcome to join the course, even though the organisers believed the subject matter might be too difficult for them.[4]

And yet, it was not the first time that financial and economic courses were designed for farmers. In the first half of the twentieth century, numerous initiatives were taken to increase financial and economic literacy among farmers. This included education in bookkeeping and business economics at agricultural schools, professional help with rationalisation of the farm and education on household spending for farmer's wives. Furthermore, farmers had access to *voorlichting* or extension, which was advice and consultation on matters concerning their business by experts. Similar to the pre-war

[1] Duffhues, *Voor een betere toekomst. Het werk van de Noordbrabantse Christelijke Boerenbond voor bedrijf en gezin, 1896-1996* (Nijmegen 1996), 179.
[2] J. Bieleman, 'Boeren werd *agri-business* – een synthese', in: *Techniek in Nederland in de twintigste eeuw. Deel III.* (Zutphen 2000).
[3] Duffhues, *Voor een betere toekomst,* 179-193.
[4] Ibid., 192.

initiatives, these accompanied large technological and institutional developments in Dutch agriculture. Therefore, efforts to increase financial and economic literacy among farmers were a constant factor in modernising Dutch agriculture since the 1890s. I will investigate why modernising Dutch agriculture demanded an increase of financial and economic literacy among farmers during the first half of the twentieth century, what incited actors to intervene in the financial and economic sphere of the farm and its household and how these interventions were designed and developed.

This will be examined through the reconstruction of various efforts to increase financial and economic literacy among farmers. First by discussing the development of courses in bookkeeping and business economics at agricultural schools and the design of arithmetic education to fit the required skillset of the modern farmer. Second, by demonstrating the transformation of agricultural extension services to structurally include economic and financial extension as part of their hitherto purely technological extension. Third, by investigating the creation of specific institutions to aid farmers with their bookkeeping and the effect these had on financial behaviour and finally the establishment of several organizations to protect farmers and households from impoverishment by directly intervening in their business model. The development of these efforts demonstrates a recurring discrepancy between financial and economic education stimulating businesses of a minority of big and wealthier farmers, while on the other hand it was utilised to protect the bottom part of the farmers' class from impoverishment at the cost of becoming less competitive. Despite their variety in design and effect, these interventions remained a constant in modernising Dutch agriculture.

Financial literacy in Dutch agriculture

Little is known about improving financial and economic literacy among farmers. Academic literature on education and extension for the advancement of Dutch farmers has predominantly focused on the dissemination of technical innovations within rural society and its influence on economic growth. A similar perspective is taken by Jan-Pieter Smits in *Technological change, institutional development and economic growth in Dutch Agriculture, 1870-1939*. In this publication Smits argues that the Great Agricultural Depression at the end of the nineteenth century promoted important institutional change. Not only did this accelerate economic growth during the first half of the twentieth century, but more importantly an institutional structure was being defined which according to Smits 'would provide fertile grounds to diffuse scientific knowledge in which the quality of agricultural

products would be controlled. In this sense the institutional developments which were induced by the depression laid the foundation of the knowledge infrastructure which would foster the exceptional strong productivity upsurge during the twentieth century.'[5]

Smits demonstrates how farmers reacted to relative price movements by investing in new technologies in order to become less dependent on labour. Contrary to industry, this change was not characterised by mechanization until after the Second World War. First they devised an institutional change by creating economies of scale in the agricultural cooperatives. Their second strategy was the diffusion of technical knowledge through these cooperatives and other agricultural institutions. Smits demonstrates that until the 1930s, technological progress was strong enough to compensate for the decline of relative agricultural prices.[6] Smits therefore agrees with the notion by Jan Bieleman that farmers were no passive "technology-takers", but that technological improvement had been the result of a concerted action by the government, education and research, but also farmers themselves.[7] However, Smits describes that 'during the depression of the 1930s – when agricultural prices plummeted – these institutional and technological strategies proved to be ineffective. New answers were being sought in order to revive the sector.'[8] Smits point towards limited experiments in the field of mechanization and more prominently to the radical change in macroeconomic government policy towards agriculture with the introduction of price regulations as part of government crisis measures.[9]

Smits and Bielemans' research constructs a comprehensive narrative of modernising Dutch agriculture. Both Bieleman and Smits praise the development of the so-called *OVO*-triptych consisting of *Onderzoek, Voorlichting* and *Onderwijs*, or research, extension and education, which was instrumental for the diffusion of technological knowledge and therefore a crucial part of the success of Dutch agriculture during the twentieth century. However, they neglect the fact that the triptych was constantly utilised for the diffusion of economic and financial knowledge to farmers as well. Dutch historiography has provided a few examples of these efforts, particularly on agricultural education, but neither the indirect effects nor the motivation for these efforts have received scholarly interest. Educational historian N.B. Goudswaard has demonstrated the development of agricultural education in the Netherlands

[5] J.P. Smits, 'Technological change, institutional development and economic growth in Dutch agriculture, 1870-1939', in: P. Lains and V. Pinilla, *Agriculture and Economic Development in Europe since 1870* (London 2009) 106.
[6] Smits, 'Technological change',110-113.
[7] Bieleman, 'Boeren werd *agri-business* – een synthese'.
[8] Ibid., 113.
[9] Ibid., 113.

and the expansion of the economic curriculum, particularly after the Second World War. Agricultural historian Margreet van der Burg has done the same for the education of farm girls in her book *Geen Tweede Boer*. Furthermore, the research of agricultural scientist P.J.P. Zuurbier into the agricultural extension services provides an extensive insight into the organisation itself, but is hardly preoccupied with the actual extension during the first half of the twentieth century.[10] Efforts to improve financial and economic literacy among farmers have been restricted to short historic descriptions.

Joseph Schumpeter's economic theory of creative destruction states that improvements of farm management and rationalisation are defined as innovations. Adopting new farm management theories essentially destroys older theories and practices.[11] Economists Alan L. Olmstead and Paul W. Rhode argue that the following three points account for the success of agricultural innovation. First they suggest that innovations are more easily adopted when farmers have the ability to adjust the innovation to local circumstances. If farmers are unable to adapt innovations to local circumstances, innovations fail. Secondly, innovations are more easily adopted when there is a high degree of organisation among farmers. This enables them to exchange information and have easy access to credit to invest. Thirdly, innovations are more easily adopted when there is an exchange of information between the farmers and the actors developing innovations. When the level of education and the literacy rates of farmers increase and when they have better access to knowledge, the exchange of information improves and intensifies.[12]

Agricultural innovation included financial and economic innovation and therefore its success was determined by the ability of farmers to adjust to these innovations. The theory of Olmstead and Rhode suggests that improving financial and economic literacy among farmers was a prerequisite for the successful implementation of a governmental extension programme aimed at improving and innovating farm management and rationalisation. At the same time, the theory stresses the importance of local specific extension and the use of a large network of information exchange for it to become successful. The only difficulty is measuring the actual success of these interventions, because there are no sources on the amount of farmers who successfully implemented farm management innovations, as they can't be measured like the

[10] N.B. Goudswaard, *Agrarisch Onderwijs in Nederland. Hoe het wor(s)telde en groeide* (Culemborg 1986); M. van der Burg, '*Geen Tweede Boer'. Gender, landbouwmodernisering en onderwijs aan plattelandsvrouwen in Nederland, 1863-1968* (Wageningen 2002); P.J.P. Zuurbier, *De besturing en organisatie van de Landbouwvoorlichtingsdienst* (Wageningen 1984).
[11] J.A. Schumpeter, *Capitalism, socialism, and democracy* (London 1994).
[12] A.L. Olmstead and P.W. Rhode, 'Induced Innovation in American Agriculture: A Reconsideration', *Journal of Political Economy* 101, no.1 (1993) 100-118.

amount of fertilizer that was used to measure the success of technical innovations. Nevertheless, it is possible to discern the indirect effects these interventions had on Dutch agriculture.

Adaptive efficiency

The technological modernisation of Dutch agriculture as described by Smits, cannot be separated from the expansion of financial and economic education for farmers. Institutions adapted to changing circumstances to remain economically efficient. Renowned institutional historian Douglass C. North first introduced this concept of "adaptive efficiency" in 2005. Adaptive efficiency is a society's capability to construct effective responses to an ever-changing array of problems and novelties. It entails the creation of institutions and organizations that encourage experimentation, rewards successful innovation and eliminates failures. Schumpeterian competition of creative destruction provides political and economic entrepreneurs with incentives to devise better and more attractive solutions to their society's problems. Economic actors are quick to find and exploit new sources of profits in the changing conditions and the incentives of political actors are changed to find creative solutions to dilemmas in order to stay in power or, as opposition, to rise to power. Simply put, institutions that are no longer efficient for economic growth will disappear or be adjusted and those affected by the inefficiency: the government, organisations or individuals, will have incentives to find solutions to the problem and create new efficient institutions.[13]

The concept of adaptive efficiency demonstrates that adaptations in education and extension were a reaction to emerging economic difficulties. This has been examined by historian Ruben Schalk in his dissertation *Splitting the Bill*. He has demonstrated how the education and training of skilled workers in the Netherlands was adapted to the changing circumstances of industrialisation between 1750 and 1920. He has shown that continuous adaptation of schools was crucial during these early stages of educational change as labour markets were rapidly changing along with the regional variation in demand for certain skills.[14] I will follow a similar approach to examine the adaptations within agricultural education and extension to include financial and economic subjects as part of a reaction to modernising agriculture. In my view, the institutional development of financial and economic education to

[13] Douglass C. North, J.J. Wallis, Barry R. Weingast, *Violence and Social Orders. A conceptual framework for interpreting recorded human history* (Cambridge 2013) 133-136, 144-147, 252-253.
[14] R. Schalk, *Splitting the Bill. Matching schooling to Dutch labour markets, 1750-1920* (Utrecht 2015) 201-203.

farmers during the first half of the twentieth century shows a similar dynamic of trial and error and adjustments to changing economic circumstances.[15]

American historians Wayne D. Rasmussen and Stephen P. Walker have examined this dynamic in their research on the indirect effects of interventions in financial and economic literacy among farmers in the United States. They have investigated American initiatives to improve financial and economic literacy among farmers during the first half of the twentieth century. In his publication *Taking the University to the People*, Rasmussen described the institutional changes that accompanied the efforts for improvement of financial and economic literacy among American farmers.[16] Rasmussen argued how the agricultural depression after the First World War incited American extension services to expand their extension work into the domain of farm management. Their goal was to increase the farmer's knowledge on economic and financial subjects to ensure a growing number of farmers to become self-reliant in times of economic hardship. By properly managing his farm a farmer could more easily adapt to changing circumstances. At the same time, this development created increased attention by the Extension Service for educating farmwomen on home economics using a scientific approach to nutrition, family health and household spending. Rasmussen shows that at the beginning of the 1930s, the Extension Service had become firmly established in about three-fourths of the US. It had developed an educational methodology emphasizing an objective teaching method through demonstration and home visits aimed at improving both technological as financial and economic literacy.[17]

Walker's recent publication on *Accounting and rural rehabilitation in New Deal America* demonstrated how the Great Depression of the 1930s instigated a new institutional change towards farm management education.[18] Walker described how the American government wanted to rehabilitate farmers as part of the New Deal program: 'rehabilitation became understood as a "very broad concept", as the process by which low-income farm families became permanently self-sustaining and the conditions of rural life were improved.'[19]

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[15] Economic historian Sheilagh Ogilvie has demonstrated that people should be cautious with the perception of institutions as 'whatever is, is right.' Ogilvie's analysis of pre-modern institutions such as serfdom in Eastern Europe and craft guilds has shown that institutions did not necessarily survive because of its economic efficiency. An institutional analysis therefore needs to include distributional implications and socio-political struggles. S. Ogilvie, 'Whatever Is, Is Right? Economic Institutions in pre-Industrial Europe', *The Economic History Review*, vol. 60, no. 4.

[16] W.D. Rasmussen, *Taking the university to the people: seventy-five years of cooperative extension* (Ames 1989).

[17] Rasmussen, *Taking the university to the people*, 81-94.

[18] S.P. Walker, 'Accounting and rural rehabilitation in New Deal America', *Accounting, Organizations and Society* 39 (2014) 208-235.

[19] Walker, 'Accounting and rural rehabilitation', 212.

The newly established Farm Security Administration (FSA) attempted to achieve this process by utilizing supervised credit to farmers that were unable to secure finance from commercial lenders. After receiving a loan by the FSA, the farmers would be supervised by government officials who would secure the safety of the tax-payers money and ensure the farmers used the proper techniques for farm management, i.e. accounting. [20]

Walker argues accounting was an important emancipatory practice that would alleviate the farmers from their economic plight and make them more self-reliant. Similar to Rasmussen, Walker describes the importance of home economics as part of the supervision of farm families.[21] Another important aspect of the rehabilitation program was the expansion of a state-activated movement in empirical sociology. According to Walker the state 'sought to generate knowledge about the farming population as a foundation for pursuing its amelioration and advancement.'[22] However, Walker argues that this was more than a technology of data gathering for state agencies: 'At the micro-level it was also a focal-point for supervised, educative activity designed to secure the betterment of the rural poor.'[23]

The research by both Walker and Rasmussen shows that the interventions in financial and economic literacy among farmers were often instigated by changes in economic circumstances. Also, the design of the interventions was highly influenced by the modernisation of American agriculture, which was already becoming highly mechanised and therefore focused its interventions on providing credit to farmers, which would allow them to acquire proper machines. Because these interventions accompanied the modernisation of agriculture, the design of these interventions could highly differ between agricultural sectors that were modernising in a dissimilar matter. Therefore, the technological innovations in agriculture partly defined the development and innovations in financial and economic education.

There has been some academic debate on the actual effect of interventions in financial literacy. The main question being: does the increase of financial literacy actually improve proper financial behaviour? The literature suggests it hardly does. Two meta-analyses of the literature on financial literacy by researchers Fernandes et al. and Miller et al. suggested that the effects of financial literacy were minimal. [24] According to Fernandes et al. the

[20] Walker, 'Accounting and rural rehabilitation', 213-214.
[21] Ibid., 213-214.
[22] Ibid., 228.
[23] Ibid., 231.
[24] D. Fernandes, J.G.J. Lynch & R.G. Netemeyer,' Financial Literacy, Financial Education, and Downstream Financial Behaviors', *Management Science* 60 (8)(2014), 1861-1883; M. Miller, J. Reichelstein, C. Salas & B.

interventions in financial literacy accounted for only 0,1% of financial behaviour. They concluded financial behaviour was primarily influenced by other variables, such as personality and self-efficacy (one's belief they can behave in a certain way) and that the effect of the interventions decreased as time passes.[25] Furthermore, scientific research by communication scientists has shown that general literacy has a more profound effect on ones ability to comprehend difficult financial products than specific financial knowledge.[26]

However, the research into financial literacy does not account for the long-term indirect effects of the interventions, nor does it accomplish to reconstruct why these initiatives remained a constant in modernising societies since the end of the nineteenth century. I do not suggest that these interventions were crucial factors in the modernisation of Dutch agriculture, but I emphasize that this modernisation was constantly accompanied by renewed initiatives to increase financial and economic literacy among farmers. As the direct effects of increased financial literacy seem negligent, this thesis will focus on the long-term indirect effects of interventions to increase financial literacy. These effects can be discerned in three domains. First, in the information supply, which was adjusted to increase the public's knowledge on financial topics through the publication of course material, pre-pressed accounting books and periodicals. The second domain consists of efforts to directly influence financial behaviour through personal contact, extension and even rehabilitation. The third domain is concerned with the adjustments of government regulations to restrict the financial market and to protect the public from dishonest practices.[27]

Method and sources

This thesis is primarily based on archival research. I have used primary sources on the four domains of agricultural education, extension, accounting bureaus and the Small Farmers' Service. To get an insight in the actual subject matter of the economic courses, my research on agricultural education has focused on the curricula, school-used textbooks and annual reports of the school. This proved more difficult for the examination of economic extension, which is largely based on basic reports by employees of the agricultural extension service and their general meetings, supplemented with articles from the service's periodical. Nevertheless,

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Zia, 'Can You Help Someone Become Financially Capable? A Meta-Analysis of the Literature', *Policy Research Working Paper* 6745 (Washington D.C. 2014).

[25] Fernandes, ' Financial Literacy, Financial Education, and Downstream Financial Behaviors', 1861-1883.

[26] L. Lentz, L. Nel land H.P. Maat, 'Begrijpelijkheid van pensioencommunicatie: effecten van wetgeving, geletterdheid en revisies', *Tijdschrift voor Taalbeheersing 39 (2)* (2017) 191-208.

[27] These ideas originated from the academic research project of the University of Utrecht called "Zorgen om Geldzorgen? Twee eeuwen financiële voorlichting in Nederland".

these give a general idea on the subjects that were deemed important for farmers and the incentives to create these institutions.

The archives on the accounting bureaus for investigated period are very limited. However, with annual reports and a helpful publication, I was able to get a good observation of its practices. In addition, I was able to acquire a few filled in examples of accounting books through the academic project *Het Kasboekje van Nederland* by the history department of the University of Utrecht.[28] I encountered the same difficulties with the Small Farmer's Service as with the agricultural extension service. It was difficult to get a good insight in the actual subject matter of the extension, which is primarily based on short reports by extension officers and a few articles in periodicals. With the available sources it has proven to be impossible to measure the actual effects of increased financial literacy on financial behaviour. Numbers on the amount of farmers that do their own bookkeeping or adjusted their farm because of the education they received are non-existent. Nevertheless, the thesis provides an answer to what indirect effects these interventions had, what instigated the increase of financial literacy and how this was fitted to changing economic circumstances.

[28] I am grateful for the opportunity to have access to primary source material gathered through the academic project *Het Kasboekje van Nederland* of the University of Utrecht. https://kasboekjevannederland.nl/

Dutch Agriculture

After the Great Agricultural Depression at the end of the nineteenth century, Dutch agriculture rapidly modernised. Smits has demonstrated how technological and institutional changes reshaped the agricultural landscape. Farmers adjusted their business and flourished, but also struggled through recurring agricultural crises. This process was accompanied by a constant effort to increase financial and economic literacy among Dutch farmers as a reaction to changing economic circumstances. Rasmussen and Walker have shown that economic circumstances and the process of modernisation determined the design of interventions in financial and economic education. Furthermore, North has demonstrated that economic actors play an important role in de adjustment of institutions to remain economically efficient. Thus, influential actors within Dutch agriculture determined the organisation of financial and economic education. Therefore, an overview of the development of Dutch agriculture and its organisations since the 1880s provides an important background for analysing interventions in economic and financial education.

Historians have long argued that the Great Agricultural Depression was a watershed moment for Dutch farmers. The Dutch farmer before 1880 was depicted as getting rich 'while sleeping'. Historians believed that the depression had served as a sort of shock therapy for Dutch farmers, who had largely ignored technological innovations until the depression ended in 1895. The depression had finally convinced them to start modernising, which allowed Dutch farmers to become highly successful in the next decades. However, economic historian Jan Luiten van Zanden has emphasized that the agricultural depression was a catalyst of technological innovation, but should not be considered a turning point. Many of the innovations that were implemented after 1895 were developed before 1880, which was one of the reasons they were so rapidly applied after 1895.[29] Agricultural historian Jan Bieleman even suggests the depression temporarily slowed down the modernisation process, which was readily under way since the 1860s.[30] The position of Van Zanden and Bieleman is further substantiated by Smits, who states that the slow adjustment to technical improvement can be explained by the diversified structure of Dutch agriculture. There existed serious

[29] J.L. van Zanden, *De economische ontwikkeling van de Nederlandse landbouw in de negentiende eeuw, 1800-1914* (Wageningen 1985) 246.
[30] J. Bieleman, *Boeren in Nederland. Geschiedenis van de landbouw 1500-2000* (Amsterdam 2008), 281.

coordination problems concerning modern technologies between the coexisting big capital-intensive farms and small labour intensive farms.[31]

The structure of Dutch agriculture would remain practically unchanged during the first half of the twentieth century. Its diversified nature was based on the great variety of cultivated soil in the Netherlands. As shown by map 1, the Netherlands was divided in a great variety of agricultural districts, each with different forms of farming and soil for cultivation. The marine clay districts of Zeeland and Groningen proved fertile grounds for arable farming, which resulted primarily in bigger farms that were cultivated with the help of agricultural wageworkers. Livestock farming was most prominent in the pasture districts in Holland, Friesland and Overijssel. Mixed farming, a combination of arable and livestock farming, was most commonly found in the sandy soil districts in Noord-Brabant, Gelderland, Overijssel, Drenthe and Friesland and in the river clay districts. These farms were mostly small sized, highly labour-intensive and normally cultivated by the farmer's family members. The Holland districts along the North Sea were mostly cultivated by horticulturalists. It must be emphasized that the different forms of farming did not solely take place in the corresponding districts. Mixed farming could be found on the marine clay districts as much as horticulture could be found in the sandy districts. This demonstrates that interventions in financial and economic education and extension needed to cope with a great variety of business models and were required to adapt to local circumstances.[32]

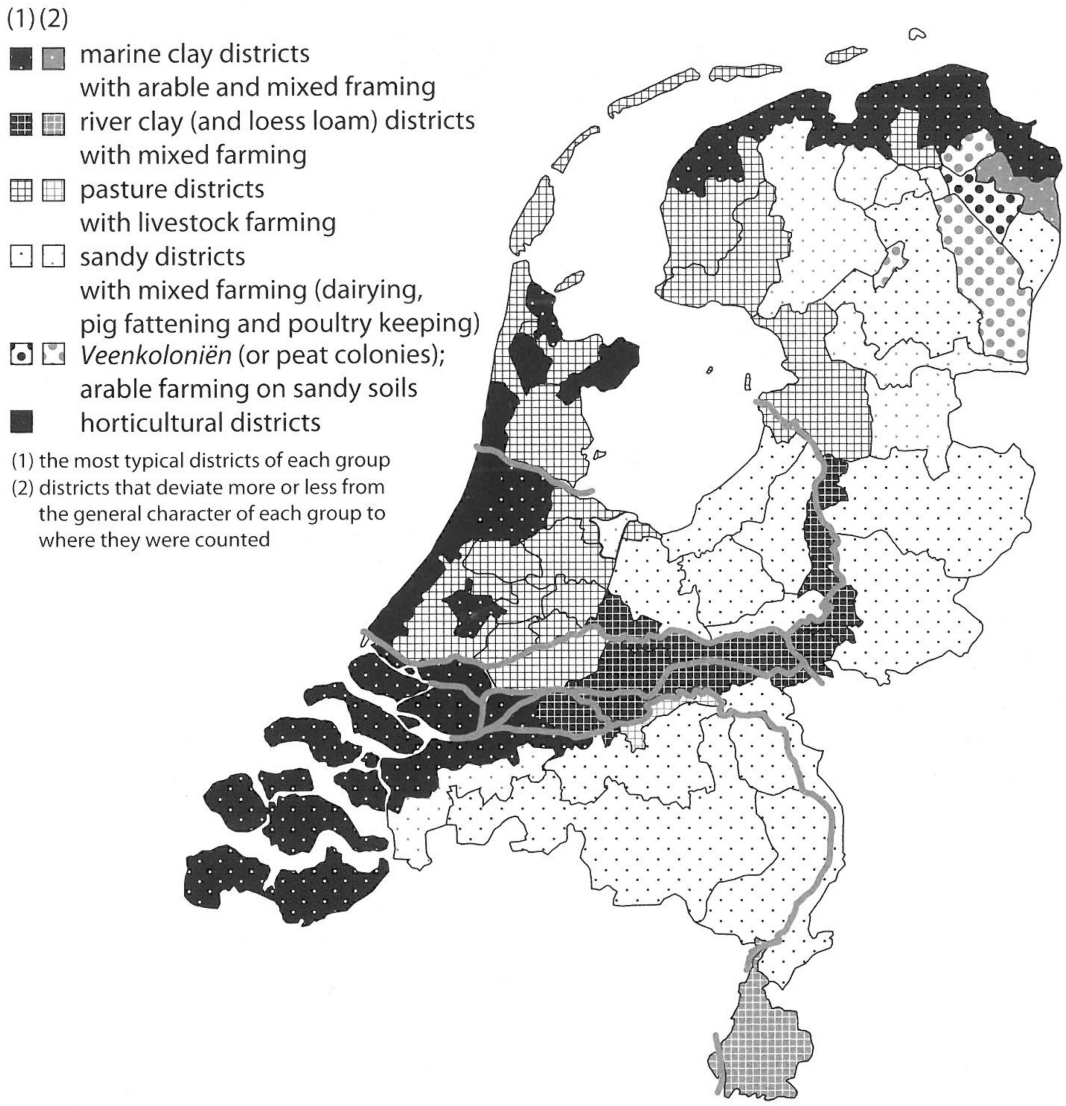
Crisis and cooperation

The Great Agricultural Depression first displayed the vulnerability of the Dutch farmers' dependence on the export market. Since the 1850s, farmers had been able to profit from the rapid rise in agricultural prices as a result of the population growth and rising wages in Europe. The flourishing economies of the industrialising neighbouring countries and the liberalisation of international trade sparked the demand for especially livestock and horticultural products. Furthermore, technological changes in transport made it faster and cheaper to export agricultural products. Bieleman stated that, 'like nowhere else, it was Dutch farmers and horticulturists who capitalised on this changing market.'[33] For example, as prices of livestock products were rising much faster than that of arable products, especially farmers in the sandy districts in the Netherlands reacted by shifting to the production and sale of butter

[31] Smits, 'Technological change', 103-105.
[32] J. Bieleman, *Five centuries of farming. A short history of Dutch agriculture 1500-2000* (Wageningen 2010). 28-29.
[33] Bieleman, *Five centuries of farming*, 150.

and pork. The arable products they produced were increasingly used to feed the livestock on their own farm. Therefore, former cash crops turned into fodder crops. Consequently, Dutch agriculture increasingly transitioned into a peripheral economy where the exports of agricultural products were to be counterbalanced by imports of all kinds of industrial goods.[34]

Map 1: The division of the Netherlands in agricultural districts as it was introduced in 1910-12.[35]



The depression first affected arable farming. Because of bigger and faster steamships the European market was flooded with cheap grains and other agricultural commodities from

[34] Bieleman, *Boeren in Nederland,* 276 ; Bieleman, *Five centuries of farming*, 150-53, 203.
[35] Bieleman, *Five centuries of farming*, 29.

the 'New World'. As a result, prices of arable products in Europe plummeted. Between 1871-80 and 1891-95 Dutch wheat prices fell to 54% of their former level. Livestock farming was also suffering from falling prices, especially butter and cheese, but this was mainly due to international competition on the British market and the introduction of the much cheaper substitute margarine.[36] Dutch farmers affected by the crisis demanded the Dutch government to intervene and find a solution to the depression. At the request of the agricultural organizations, an Agricultural Commission was installed in 1886 that would investigate the state of Dutch agriculture and recommend on government involvement in its future development. The Commission determined that the government needed to establish a system of agricultural education and extension throughout the country and promote scientific research by authorizing agricultural research stations.[37] This would be the beginning of the famous OVO-triptych that would become an important part of the Dutch agricultural success after the Second World War. As stated in the introduction, financial and economic education and extension were to become integral parts of this triptych during the first half of the twentieth century.

After 1886, the government commenced with the foundation of agricultural schools and the *Rijkslandbouwvoorlichtingsdienst* or Agricultural Extension Service. This extension service employed *Rijkslandbouwleraren* later *Rijkslandbouwconsulenten*, or agricultural consultants that were responsible for agricultural extension and a growing amount of agricultural research stations.[38] In 1898, a Department of Agriculture was created at the Ministry of Internal Affairs. In the past, agricultural policy hadn't been centralised in one department. In 1905 the department became a more independent unit and was renamed the *Directie van den* Landbouw (Directorate of Agriculture), which was headed by the Director-General of Agriculture.[39] The connection between farmers and the state was hereby solidified.

Besides governmental institutional change, the agricultural depression had also transformed the design of agricultural businesses, which increasingly transitioned into family businesses depending on family members to cultivate the farm. This was the result of two developments. First, as the Netherlands became rapidly industrialised after 1890, it was fairly easy for people to find a job in another industry during the agricultural depression. Many of the wageworkers flocked to the cities to find a job; therefore labour became scarce in

[36] Bieleman, *Five centuries of farming*, 155, Van Zanden, *De economische ontwikkeling van de Nederlandse landbouw,* 248.
[37] Bieleman, *Boeren in Nederland*, 280; D.J. Maltha, *Honderd jaar landbouwkundig onderzoek in Nederland 1876-1976* (Wageningen 1976) 53.
[38] J.G.M. van der Poel, *Het landbouwonderwijs in Nederland tot 1918* (Wageningen 1976) 135-139.
[39] Bieleman, *Boeren in Nederland*, 312.

agriculture.[40] Second, profitability of small business types and labour intensive products was increasing after 1880, which allowed family businesses to flourish. Gradually the Dutch agricultural sector became polarised with on the one hand small family businesses and on the other hand a small amount of big farms that depended on wageworkers. The family business remained the most common form of farming during the first half of the twentieth century. In some agricultural districts in the Netherlands, mostly the sandy soil districts, still over 90% of total labour performance on farms was performed by members of the family at the beginning of the 1950s.[41]

The family businesses hugely benefitted from the cooperative movement in Dutch agriculture. Since the end of the nineteenth century, Dutch farmers started to organise themselves in cooperatives. The purpose of these cooperatives was to provide its members with the benefits of a large company, for example for buying chemical fertilizer at low cost. In 1893 approximately 4% of all Dutch farmers was member of a local buying cooperative, which number increased rapidly to 30% in 1904 and 44% in 1910.[42] In 1920 more than half of Dutch land-users with more than 1 ha of land was member of a local buying cooperative. The cooperative density was highest in Brabant where 93% of all land-users were a member of a buying cooperative.[43]

Van Zanden has demonstrated there were two main reasons for the establishment of cooperatives. First, it allowed farmers to enjoy economies of scale both in selling as in processing their products. Second, it opened up the possibility to sell their products on their own terms without the need of an intermediate, which ensured fairer prices for their products.[44] As shown by Smits, these cooperatives also served as units of quality control, education and supported the diffusion of technological knowledge.[45] In my view, the cooperatives had a crucial effect on the design of financial and economic education during the first half of the twentieth century. The cooperative allowed farmers to increase land productivity without mechanising their farms, essentially preserving the large group of small family businesses. Therefore, financial and economic education became as equally polarised as the agricultural sector itself.

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[40] Van Zanden, *De economische ontwikkeling van de Nederlandse landbouw*, 247-48.
[41] Bieleman, *Boeren in Nederland*, 273.
[42] J.L. van Zanden and A. van Riel, *Nederland 1780-1914. Staat, Instituties en Economische Ontwikkeling* (Amsterdam 2000) 366; J. Jonker, 'Welbegrepen eigenbelang; ontstaan en werkwijze van boerenleenbanken in Noord-Brabant, 1900-1920', In: *Jaarboek voor de Geschiedenis van Bedrijf en Techniek*, 5 (1988) 188-207.
[43] Bieleman, *Boeren in Nederland*, 287.
[44] Ibid., 274.
[45] Smits, 'Technological change', 108.

Especially small farmers, who cultivated a piece of land with a size of 5 hectare or less, benefitted from the cooperatives. These farmers settled everywhere in the Netherlands, but most prominently in the sandy districts. The majority owned a mixed farm, where they produced livestock products for the market and arable products as fodder for their cattle. If possible, small farmers would temporarily work on big farms to earn extra income. Bieleman has shown that these small farmers were quite good in adjusting their business to changing markets, calling 'the sand parts of the country and its farming system without doubt the most dynamic.'[46] Since the 1850s, small farmers had constantly restructured their business to the changing demand of the export market. The one-sided dependence on a market abroad was hardly seen as a problem.[47] Van Zanden has argued that these small farms were able to preserve their small businesses through a process of what he calls de-proletarization. This substantiates the view that the small farmers had great adaptive capabilities. They profited from rising wages, lower rents, technological innovations and institutional innovations. These allowed them to earn a profit with a small amount of land.[48]

Another important development was the establishment of agricultural credit cooperatives or agricultural banks at the end of the nineteenth century. Hitherto, farmers had depended on private lenders or shopkeepers for credit. This changed with the creation of the agricultural banks. The purpose of the banks was to accumulate farmers' savings and use that capital to provide farmers with credit. The banks offered higher interest rates for savings and lower interest rates for credit than other banks. The banks were able to provide credit against lower interest rates because they were governed by farmers and were established in the proximity of their clientele. This meant the banker often knew the farmer requesting credit and could base the interest rate on extensive knowledge of a farmers' creditworthiness.[49]

The number of agricultural banks increased from 46 in 1899 to more than 1000 in 1917 and 1247 banks in 1925. However, these banks were primarily successful as savings banks during the first half of the twentieth century. Few farmers actually received credit from the banks, especially in the southern provinces. There was little demand for credit among Dutch farmers and when they did need credit, farmers used the opportunities of their supply chain. Most of the credit of the agricultural banks was lend out to new cooperatives such as

[46] J. Bieleman, 'Dutch agriculture 1850-1925, Responding to changing markets', *Jahrbuch für Wirtschaftsgeschichte/Economic History Yearbook,* 37.1 (1996) 35.
[47] Bieleman, 'Dutch agriculture', 30-35
[48] Van Zanden, *De economische ontwikkeling van de Nederlandse landbouw*, 335-336
[49] Van Zanden, *Nederland 1780-1914*, 372-276.

the buying societies and the factories.[50] Nevertheless, the agricultural banks provided a new opportunity for farmers to receive credit. Financial and economic education and extension was an important instrument to inform farmers on the merits of borrowing from the agricultural banks.

The Great Depression

Dutch agriculture had flourished after the Great Agricultural Depression, but this was short lived. Changing economic circumstances would once again demand new responses, both in technology as in financial and economic education and extension. After the First World War a situation of over-production caused a sharp fall of agricultural prices. Bieleman describes that by the 1920s, the agricultural price level had dropped to a level at which farming had become barely profitable. After 1927, the income per man-hour of Dutch farmers fell below the level of what farm labourers were paid.[51] Wages and land rents were still at a higher level than before the war, while the prices of agricultural products were much lower than their pre-war level. [52] Furthermore, agriculture's dependence on export made it vulnerable as the number of consumers in Germany was decreasing because of monetary issues and hyperinflation, while competition was growing on the British market from countries as Sweden, New-Zealand and Australia.[53]

Another severe fall in the agricultural price level marked the beginning of a new agricultural depression in 1930. Excellent large crop harvests worldwide in 1928 and 1929 resulted in a rapid fall of prices, which was further aggravated by the Great Depression, which started around the end of 1929. This led to a fall in international trade of agricultural products. Dutch arable prices fell rapidly in 1930 and livestock prices would follow a year later. Agricultural historian Merijn Knibbe has demonstrated that the fall of agricultural prices turned out to be large and lasting and took place when agricultural incomes in the Netherlands had been low to middling, but not exceptionally high as with earlier declines in prices.[54] While the costs of living were at 140% of their pre-war level, the price index numbers of arable and livestock products in 1932/1933 had dropped to respectively 64 and 72 (1910/1914=100). In the mean time, agricultural wages had doubled since 1914. Dutch agriculture hit an absolute low in 1931/1932 when the average return in all of Dutch

[50] Van Zanden, *Nederland 1780-1914*, 372-276; J. Jonker, 'Welbegrepen eigenbelang'.
[51] Bieleman, *Five centuries of farming*, 156-57.
[52] M. Knibbe, *Agriculture in the Netherlands 1851-1950. Production and institutional change* (Amsterdam 1993) 169-170.
[53] Bieleman, *Boeren in Nederland*, 290.
[54] Knibbe, *Agriculture in the Netherlands*, 195-96.

agriculture was minus 73 guilders per hectare. It would take until 1936/1937 for Dutch agriculture to show positive numbers again.[55]

As the agricultural sector became increasingly affected by the crisis, farmers urged the Dutch government to directly intervene. Concerned about the collapsing economy, parliament proved sensitive to their distress call and believed it had no other choice than to directly support its agricultural sector. In November 1930 the *Tarwewet* (Wheat-Law) was announced, which guaranteed minimum prices of wheat at about twice the level of the world-market. As a result wheat production rose from 160.000 to 495.000 tons between 1930 and 1934.[56] However, by 1933 the depression had affected the entire agricultural sector and farmers were demanding increased measures. In 1933 the *Landbouwcrisiswet* (Agricultural Crisis Law) was presented. This law consisted of a multitude of measures to advance agriculture that would be executed and supervised by a central crisis organisation. It was characterised by the fact that the law provided the government with extensive powers over the entire production process of agricultural products. Farmers were forced to adhere to cultivation and production restrictions and when the government declared products as crisis-products, to limit the production of these. Furthermore, the international market position of Dutch farmers was affected by the monopolization of domestic as well as international trade by government imposed import levies. Furthermore, producers of crisis-products were forced to become a member of centralized crisis organizations.[57]

The depression resulted in the establishment of rent control, with the introduction of the *Crisis-Pachtwet* (Crisis Rent Law) in 1932. This law established a court of appeal, which farmers could request to change unreasonable contracts. The difficulty was what determined a contract to be unreasonable. Essentially, farmers could appeal if their rent was higher than the usual rate for their region. Agricultural historian Jerphaas de Hoogh has argued that the indirect effect of this law was that many landowners agreed to downward revisions of running contracts to prevent appeals.[58] Knibbe has shown that indeed average rents dropped relatively quickly from 112 guilders per ha in 1929/1930 to 63 in 1936/1937.[59] In 1937 a more permanent rent law was established, the *Pachtwet*. This law prevented rents from rising to excessive rates. The court of appeal would set the rent at a level that ensured a reasonable

[55] Bieleman, *Boeren in Nederland*, 292-94.
[56] Knibbe, *Agriculture in the Netherlands*, 197-199.
[57] H.M.F. Krips-van der Laan, 'Praktijk als Antwoord. S.L. Louwes en het landbouwcrisisbeleid', in: *Historia Agriculturae*, 16 (Groningen 1885) 65-70.
[58] J. de Hoogh, *Pachtprijsbeheersing en landbouwprijsbeleid in Nederland* (Wageningen 1959) 8-9.
[59] Knibbe, *Agriculture in the Netherlands*, 202.

standard of living. Because it was difficult to specify what was reasonable, the rents were set at a rather stable and relatively low level.[60]

These measures provided the Dutch government with increasing powers to intervene within the financial and economic sphere of farmers, including extensive interventions to increase financial and economic literacy among farmers. These interventions needed to be adapted to changing economic circumstances. For instance, farmers no longer suffered from inordinate rents and therefore cost reduction had to be sought elsewhere. On the other hand, price regulations endangered the adaptive abilities of small farmers and created a large group of farmers who were threatening to fall below the standard of living. Institutions had to be created to ensure this group survived the depression. The growing involvement of the Dutch government in the agricultural sector was ratified in the establishment of an independent Ministry of Agriculture and Fishing in 1935.[61]

Farmer's organisation

Besides the Dutch government, several agricultural organisations defined the political and economic landscape of Dutch agriculture. These organisations would become instrumental in the creation and development of interventions in financial and economic education and extension. In the first half of the nineteenth century, farmers began to organize in so-called *Landbouwmaatschappijen* or Farmer's societies. The first society was founded in Groningen in 1837, followed by Zeeland in 1843. By 1851, all Dutch provinces had established a Farmer's society with the goal to 'familiarize farmers with the basic truths of agriculture'.[62] However, the societies weren't very representative for the agricultural sector. The societies formed a highly heterogeneous group consisting of big landowners and farmers, middle class men that were mostly non-participant members and mid-sized companies. Small and medium sized farmers were barely represented in the societies. Therefore the societies were depicted as "gentlemen's clubs" and were not very popular among farmers.[63]

The societies and its members showed great interest in reinvigorating the agricultural sector. They initiated the organisation of exhibitions for farmers and started some small courses to diffuse scientific agricultural knowledge.[64] Furthermore, in 1846 the Dutch Agricultural Congress (*Het Nederlandsch Landhuishoudkundig Congres*) was established.

[60] De Hoogh, *Pachtprijsbeheersing*, 9-13; Knibbe, *Agriculture in the Netherlands*, 203.
[61] Bieleman, *Boeren in Nederland*, 312.
[62] P.J. Bouman, 'Landbouworganisaties', in: Z.W. Sneller (eds.), *Geschiedenis van de Nederlandse Landbouw 1795-1940* (Groningen 1943) 254-55.
[63] Bouman, 'Landbouworganisaties', 254-56.
[64] Ibid., 256.

This organization started to organise national congresses on an annual basis to discuss all sorts of agricultural issues. The subjects for discussion were primarily technological until the 1900s after which economic subjects were increasingly part of the discussions. A wide variety of visitors participated: agricultural scientists, lawyers, civil servants, industrials, capitalists, occasionally a foreign visitor, but very few farmers.[65] Until the 1880s, farmers barely showed any interest in scientific and technical advancement. Most farmers found they were able to run a profitable business by using the knowledge transmitted to them by their fathers. This mentality provoked future Inspector of Agricultural Education F.B. Löhnis and president of the *Geldersche Maatschappij van Landbouw* C.J. Sickesz, to later characterise these years as a period of intellectual deterioration and depression.[66] However, it could be quite rational to leave the farm practice unchanged as long as one turns a profit.

The large increase in farmer's organisation caused by the cooperative movement did not benefit the Farmers' societies. On the contrary, the societies suffered from competition of the newly created *Boerenbonden*, or Farmers' unions. In 1896 the confessional *Nederlandse Boerenbond* (Dutch Farmers' Union), or NBB was established, following the example of the German *Bauernvereine*. The NBB was the representative body for all provincial and local confessional farmers' unions. Instead of the Farmers' societies, the Farmers' unions aimed at putting the farmer and his family at the centre of all concerns. Their primary goal was to protect the social and spiritual interest of farmers, for instance by helping farmers organize into cooperatives. The unions would become known as *standsorganisaties*, or class-based pressure groups.[67]

The unions were highly successful in organising farmers and their numbers were rapidly growing. In 1900, 32% of the Dutch agricultural labour force was a member of a farmers' union. In 1920 a total of 665 local catholic farmer's unions or departments of larger unions had been established with a total of over 75.000 members, which amounted to 65% of the Dutch agricultural labour force. The influence of the unions was most felt in the homogeneous catholic south. This is demonstrated by the success of the *Noordbrabantsche Christelijke Boerenbond* (Christian Farmer's Union of Noord-Brabant), or NCB. In 1896 the

[65] J.M.G. van der Poel and R.J.C. Wessels, *De verslagen van het Nederlandsch Landhuishoudkundig Congres 1846*-1953 (Meppel 1953) 10-24.
[66] Huizinga, 'De invloed van het onderwijs en van de wetenschap op den landbouw', in: Sneller, *Geschiedenis van de Nederlandse Landbouw* (1943), 238.
[67] Bieleman, *Five centuries of farming*, 162.

NCB had 61 local departments and a number of 5.000 members, which grew to 266 departments in 1920 and a total of 38,848 members.[68]

The establishment of the Farmers' Union was part of a larger process in Dutch society known as *verzuiling* or pillarisation. Since the 1870s, Dutch society became increasingly divided into four "pillars", each with its own ideological foundation: a catholic, protestant, liberal and socialist pillar. Every pillar had its own political parties and unions, and determined people's environment and day-to-day lives. There was hardly any mutual contact between people from the various pillars, who were increasingly living isolated lives. Only at the top of the pillar on a high political and organizational level did the representatives of the different pillars cooperate. As members of the pillars voted for the political party that represented their pillar, but none of the pillars was large enough to receive an absolute majority in parliament, this resulted in a very stable political system, where cooperation of two or more parties was necessary. Pillarisation would last well into the 1960s.[69]

The farmers' organizations were the core of pillarisation in Dutch agriculture. In 1884, the liberal Farmers' societies had organised themselves into one national coordinating body, the *Nederlands Landbouw Comité* (Dutch Agricultural Committee) or NLC. In 1918 the NLC received the prefix *Koninklijk* (Royal) and became known as the KNLC. The NLC was established as the formal representative body of the Dutch agricultural sector with the Dutch government and therefore the NBB initially joined the NLC.[70] However, it left the organisation in 1899 because it would not adhere to its liberal principles. In the mean time the NBB was increasingly transforming into a strictly catholic organisation. This instigated the creation of a new farmer's union with a protestant ideological foundation. In 1918, the *Nederlands Christelijke Boeren- en Tuindersbond* (Dutch Protestant Farmers' and Horticulturists' Union) was established, also known as the CBTB.[71] In 1924 the NBB formalised their strictly catholic ideology and changed its name in *Katholieke Nederlandse Boeren- en Tuindersbond* (Catholic Farmers' and Horticulturists' Union), or KNBTB.[72]

The three large organisations were highly influential within Dutch agriculture during the first half of the twentieth century and would become important actors in the creation of initiatives to increase financial and economic literacy among farmers. The specifically Dutch

[68] Duffhues, *Voor een betere toekomst,* 403.
[69] A. Lijphart, *Verzuiling, pacificatie en kentering in de Nederlandse politiek* (Haarlem 1986).
[70] Bieleman, *Five centuries of farming*, 162.
[71] R.E. van der Woude, *Op Goede Gronden. Geschiedenis van de Christelijke Boeren- en Tuindersbond (1918-1995)* (Hilversum 2001) 93-94.
[72] M.G.M. Smits, *Boeren met beleid. Honderd jaar Katholieke Nederlandse Boeren- en Tuindersbond, 1896-1996* (Nijmegen 1996) 41-46, 74.

development of pillarisation affected the design of financial and economic education, but when needed common ground was sought between the pillars to ensure the welfare of the farmers. Despite their ideological differences, the KNLC approached the KNBTB and the CBTB to cooperate in 1922. Cooperation was sought because the government wanted a unified representative body for Dutch agriculture and the KNLC alone did not speak for the entire agricultural sector. As an independent organisation, the KNLC wanted to organise this without government interference and therefore directly approached the other organisations.

The organisations started to organise meetings on a regular basis to discuss common interests and in case of agreement, they would make joint statements and proposals. The three organisations became known as *Centrale Landbouw Organisaties* (CLO), or central agricultural organisations and represented a large portion of all Dutch farmers organisations. Their meetings were called the 3CLO-meetings and were organised almost every two months and monthly since the 1930s. The 3CLO's didn't form a new organisation to safeguard the independence of its three members. The results of the meetings weren't binding and they would only come forward with a statement when all three members agreed. Nevertheless, the 3CLO-meetings allowed the organisations to serve farmers' interests of all ideological backgrounds and cooperate despite pillarisation. They formed a powerful lobby for all of Dutch agriculture and became important advocates of financial and economic education and extension to farmers.[73]

[73] Smits, *Boeren met beleid*, 84-85.

Agricultural Education

The modernisation of Dutch agriculture was accompanied by important institutional changes that resulted in the famous OVO-triptych. Smits and Bielemans have demonstrated that technological change was fuelled by the development of agricultural research and the diffusion of that research through education and extension.[74] Therefore, education was a necessary instrument for the agricultural sector, which demanded farmers to develop certain skills for the implementation of new technologies. The preoccupation with technological change in Dutch historiography suggests that agricultural education was primarily employed to educate technological subjects in the first half of the twentieth century. This is further substantiated by the work of Dutch historian N.B. Goudswaard on the development of agricultural education in the Netherlands. Goudswaard argues that only after 1945, the schools adapted to educate farmers on an economically efficient way to manage their farm.[75]

Yet, themes as agricultural bookkeeping and business economics were a constant factor in agricultural education. Besides learning how to work the fields, farmers were educated how to manage their farm as a business, something that is overlooked until the second half of the twentieth century when in the words of Bieleman, 'farming became agri-business'.

This chapter investigates the adjustments of agricultural education to changing economic circumstances and demand. I will argue that the establishment of secondary agricultural education was the result of an increased demand for certain agricultural skills, including the improvement of financial and economic literacy. This can be discerned from the curriculum and textbooks, which were designed to meet the skills in demand of the agricultural sector. Furthermore, I will emphasize that financial and economic education developed slowly in the first half of the twentieth century, but was consistently acknowledged as an integral part of the educated farmer's skillset. Therefore it remained a fixed part of a farmer's education. Moreover, agricultural historian Margreet van der Burg has demonstrated that a similar development of financial and economic education for farmer's girls can be discerned in the first half of the twentieth century.[76] I will argue that this development emanated from the same demand in skills from the farmer's wife as the household was acknowledged as an indispensible part of the business.

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[74] Smits, *Boeren met beleid*; Bieleman, 'Boeren werd *agri-business* – een synthese'.
[75] Goudswaard, *Agrarisch Onderwijs in Nederland,* 206.
[76] Van der Burg, '*Geen Tweede Boer'.*

The Agricultural Commission

Agricultural education had scarcely developed in the Netherlands until the Great Agricultural Depression. Besides the emergence of scientific institutions of higher agricultural education in Wageningen and veterinary sciences in Utrecht, the possibility for post-elementary agricultural education was lacking.[77] This was partially caused by the general absence of interest for agricultural education and scientific research among farmers. Agricultural consultant D.S. Huizinga observed: 'there might had been some interest in methods that would increase a farm's productivity (…) but among the large masses of rural population, the use of science as a device for further agricultural development was lacking.'[78] The depression permanently changed this mentality.

The Agricultural Commission of 1886 urged the government to confront the depression through the establishment of a system of research, extension and education. The Commission proposed the establishment of agricultural craft schools and an increase of agricultural winter courses to overcome the educational backlog of Dutch farmers in a market that demanded technologically skilled farmers. The government would subsidize these initiatives for 50% of total costs, granted that these initiatives originated from private initiative and met certain requirements, which were predetermined by the state.[79] This contradicted the cabinet's liberal regime, which promoted private initiative without government funding. Adhering to the Commissions' proposals would mean political creative destruction and new incentives for political actors to create efficient institutions as a solution to the changed circumstances of the agricultural depression.

In 1891, the Dutch government started subsidizing agricultural courses through private agricultural organisations, such as Farmer's societies and unions, which were responsible for further allocating the funds to the actual organisers of the courses.[80] The courses were mostly taught during the winter months, from the beginning of October until the end of March. They were two-year courses, some recurring and some ambulant, with total lecturing hours between 144 and 225. Local teachers with a side-certificate in agronomy mostly taught these courses. The age-minimum for these courses was fifteen years old.[81] Students would be educated on the principals of natural sciences and chemistry, plant and animal knowledge, knowledge on

[77] P. Kooij, 'Het landbouw in de twintigste eeuw', in: M. Duijvendak, E.H. Kaerl and P. Kooij (eds.), 'Groen Onderwijs. Terugblik en uitzicht naar aanleiding van het 100-jarig bestaan van de Vereniging voor Hoger Landbouw Onderwijs (1906-2006)'. *Historia Agriculturae* 41 (Wageningen 2008) 9-13.
[78] Huizinga, 'De invloed van het onderwijs en van de wetenschap op den landbouw', 237.
[79] J.G.M. van der Poel, *Het landbouwonderwijs in Nederland tot 1918*, 135-139.
[80] Van der Burg, '*Geen Tweede Boer',* 149.
[81] Goudswaard, *Agrarisch Onderwijs in Nederland,* 174.

soil, cultivation and soil improvement, general and special cultivation of plants, general and special livestock breeding, dairy-preparation and fertilization theory.[82] In 1900, a total of 160 courses were given to more than 2300 students throughout the Netherlands.[83]

The Commission also proposed the state-promoted establishment of agricultural winterschools. Similar schools already existed in Germany, but the Dutch Farmer's societies and the state hadn't shown the ambition to adopt this form of education.[84] Goudswaard states this changed when newly appointed Inspector of Agricultural Education F.B. Löhnis requested the reservation of 8,500 guilders in the state budget of 1893 for the improvement and development of agricultural education. With the approved budget the inspector could move forward with subsidizing agricultural schools. In 1893, two winterschools were established in Groningen and in Goes (Zeeland). Within seven years, eight more were established.[85] The first catholic winterschool was established in Boxtel in 1914 under the supervision of the NCB.[86] By 1920, twenty winterschools existed, fifteen neutral (liberal) and five confessional schools.[87] Agricultural historian J.M.G. van der Poel emphasized that these schools owed their existence to the Commission of 1886, before which the government could not be persuaded to grant structural financial support to initiatives for secondary agricultural education.[88] This demonstrates that the Great Agricultural depression and the Commission provided political actors with incentives to promote the expansion of agricultural education.

Students of the winterschools followed a two year curriculum, divided in two half years of lectures during the winter months. Students followed classes for 23 hours a week, which would eventually be extended to 29 hours. The minimum age for applying at a winter school was sixteen. Officially, students were required to have finished post-elementary education at the MULO or a three-year HBS, but of the eighteen students accepted at the winterschool in Goes in its first year, seven students had not received any secondary education.[89] The winterschools' curriculum consisted of: natural sciences; chemistry; botany and zoology, mathematics, Dutch and English language and geography, but also special courses like business economics and agricultural bookkeeping. Schools were allowed to slightly differentiate their curriculum to match the form of agriculture most common in the

[82] Poel, *Het landbouwonderwijs in Nederland tot 1918*, 135-139.
[83] Goudswaard, *Agrarisch Onderwijs in Nederland*, 177.
[84] Poel, *Het landbouwonderwijs in Nederland tot 1918*, 140.
[85] In: Sittard (1895); Dordrecht (1896); Schagen (1896); Naaldwijk (1896); Leeuwarden (1897); Aalsmeer (1897); Tiel (1897) and Boskoop (1898); Goudswaard, *Agrarisch Onderwijs in Nederland*, 171.
[86] R.E. van der Woude, *Op Goede Gronden,* 18, 128-132, 162.
[87] Kooij' Het landbouwonderwijs in de twintigste eeuw', 14.
[88] Poel, *Het landbouwonderwijs in Nederland tot 1918*, 141.
[89] Goudswaard, *Agrarisch Onderwijs in Nederland*, 171.

district the school was established.[90] Ruben Schalk has emphasized the importance of educational institutions' ability to adapt to the demand of local industries and technological change.[91] Therefore, ensuring the curriculum of the schools matched the local farming practice was crucial for the creation of skilled farmers that could advance agriculture in their district.

The curriculum of the winterschools suggests that increasing financial and economic literacy was generally considered necessary for the educated farmer. It was designed by the Directorate of Agriculture and approved by the heads of the agricultural winter courses around the country. In contrast to technological subjects, the model-curriculum showed no local divergence in the number of lecturing hours for business economics and bookkeeping. The winterschools spent an average of two hours a week on the subject in the second year. The subject matter of the courses also hardly varied and generally consisted of: cooperatives; capital; labour; law; mortgage and credit.[92] In addition, the winterschool of Goes specified that mathematics should be connected to real-life financial situations farmers might experience, such as mortgage amortization, debt and financial administration.[93] Therefore, it would be wrong to fixate an analysis of financial and economic education to farmers solely on the business economics and bookkeeping courses. The winterschools curriculum remained largely fixed until 1953.[94]

Goudswaard has emphasized that the teachers of the winterschools created a link between theory and practice. The teachers of the winterschools would help the agricultural consultant with his work on agricultural research stations and during the summer period, they would visit their students. This allowed both student and teachers to get familiar with each other's work and to ensure the theoretical approach at the winterschool would be put into practice during the summer. It is unclear if financial and economic subjects were discussed during these visits. To educate skilled farmers, the new winterschools and courses needed qualified personnel with a certificate in agronomy. However, there were not many certified teachers at the end of the nineteenth century, because getting certified was a time-consuming endeavour and applicants had to arrange their own education. Consequently, the government concentrated the training for the certificate at the winterschools since 1893. This increased the

[90] Goudswaard, *Agrarisch Onderwijs in Nederland*, 172.
[91] Schalk, *Splitting the Bill*, 203
[92] Nationaal Archief, Den Haag, (hereafter: NA), 2.11.35, Directie van de Landbouw: Afdeling Landbouw Onderwijs, 1898-1957 (hereafter: LVV/Landbouwonderwijs), inventory number 374, Notulen van de vergadering van Hoofden van Wintercursussen gehouden den 27 mei 1899 te Schagen.
[93] Ibid.
[94] Ibid.

availability of the training throughout the country.[95] The training was given by the agricultural consultants, which were mostly educated in Wageningen and were certified agronomists.[96] In addition to training teachers, the agricultural consultants were appointed as principals of the winter schools in their district.[97]

Business economics and agricultural bookkeeping were a persistent part of the winterschools' curriculum, thus were seen as necessary skills demanded from future farmers. However, their significance should not be overestimated, as the number of lecturing hours spent on increasing financial and economic literacy was small as was the number of students that received an education. Nevertheless, farmers were becoming more perceptive of educational efforts as illiteracy was slowly vanishing and a great majority of children followed elementary education even before it became compulsory by law in 1900.[98] Furthermore, it became easier to reach farmers through the creation of a knowledge infrastructure. This infrastructure would serve as an instrument to diffuse economic and financial education to a growing audience.

Women's education

Agricultural modernisation also affected education for farm girls. Similar to the boys, the girls were expected to develop certain skills that were deemed necessary to successfully manage a farm. This stemmed from the acknowledgement that the farmer's wife and the household were an indispensible part of the entire farming business and therefore should be included in the educational effort. The farmer's wife traditionally had an important and respected position within the family. Women took care of the chickens, did the laundry, got water from a well or a pump, cooked on an open fire and baked bread. Besides her work on the farm she was also responsible for the household and often in control of the economic administration. On large farms the wife was also responsible for personnel living in.[99] Therefore, financial and economic education were a constant factor in farm girls' education as well.

After 1900, agricultural organisations became increasingly convinced it was important for farm girls to receive an agricultural education. Girls were expected to work on the farm from an early age. Even after children became legally obligated to attend six years of elementary education, children in the countryside older than the age of ten could be exempted

[95] Kooij' Het landbouwonderwijs in de twintigste eeuw', 15.
[96] Goudswaard, *Agrarisch Onderwijs in Nederland*, 56.
[97] Ibid, 173.
[98] O.W.A. Boonstra, *De waardij van eene vroege opleiding* (Wageningen 1993) 28-30, 40, 113-115.
[99] Goudswaard, *Agrarisch Onderwijs in Nederland*, 178- 184.

from this rule. During harvest, children would often stay home to help.[100] Wealthy farmers could send their daughters to boarding school, but for lower-middle class and small farmers, there was no affordable alternative.[101] Furthermore, for small farmers the household was of minor importance. Household and farm were often impossible to separate. There were hardly any well-divided living quarters on smaller farms. The living room could also serve as workspace and bedroom.[102]

Nevertheless, the demand for educated farm girls was growing and this was accompanied by the demand to educate girls in financial and economic subjects such as bookkeeping. After 1900, reports from across the border of household education for farm girls, reached the Netherlands. In Belgium, Germany and Denmark, there already existed schools for household education specifically for farm girls. These schools prepared girls for their household chores such as cooking and washing, but also educated the girls on technological farm practices. The education of farm girls was a topic at the Dutch Agricultural Congress in 1905, where D.G. Montenberg suggested the establishment of agricultural household education in the Netherlands. Besides technical education, Montenberg emphasized an essential part of the girls education needed to focus on teaching them how to keep simple accounts of the household and the farm. He believed the women ought to be responsible for this significant task, which would allow farmers to get a better insight in their revenue and costs at different times during the year. The other members of the Congress, who suggested looking at similar initiatives in Germany, substantiated his view of the creation of agricultural household education. These German schools also included bookkeeping in the education of girls.[103] This demonstrates that the demand for bookkeeping skills of farm girls was an international phenomenon.

Montenberg's proposal was put into practice. The first agricultural household course for girls was initiated by the winterschool in Veendam in 1909. This was a two-year course, taught during the summer months, initiated by the Directorate of Agriculture. Other organisations followed and the number of courses grew to 64 in 1912 and to 142 in 1920. By 1930, eight schools were established.[104] In 1913 the first school for educating female agricultural household teachers was founded in Dedemsvaart, called *De Rollecate*.[105] A

[100] A. de Regt, 'Arbeiders, Burgers en Boeren: Gezinsleven in de negentiende eeuw', in: T. Zwaan (eds.) *Familie, Huwelijk en Gezin in West*-Europa (Heerlen 1993) 213.
[101] Goudswaard, *Agrarisch Onderwijs in Nederland*, 182-183.
[102] De Regt, 'Arbeiders, Burgers en Boeren', 213.
[103] Verslag van het Nederlandsch Landhuishoudkundig Congres, 1905.
[104] Goudswaard, *Agrarisch Onderwijs in Nederland*, 186, 270.
[105] Kooij' Het landbouwonderwijs in de twintigste eeuw',17.

religious counterpart to *De Rollecate* was established in Posterholt in 1920. Between 1920 and 1945, 232 certified teachers in agricultural household education would graduate from this school.[106] Agricultural household education was rapidly growing during the first half of the twentieth century, but was still reserved for a minority of Dutch farm girls.

As girls were often in control of the finances, proper financial behaviour needed to be stimulated by proper financial education. The acknowledgement of financial administration as a necessary skill for farm girls is well illustrated by an anecdote of Inspector of Agricultural Education P. Van Hoek. During a discussion of women's agricultural education at a national congress in 1911, Van Hoek spoke of his experience as an agricultural consultant in Noord-Brabant. When he tried to give financial advice to a farmer, he was told to keep his advice and tell it to aunt "Mie" who lived in the same house and had a lot to say about these things.[107] Furthermore, its significance is demonstrated in the curriculum of the agricultural household courses and schools. During their first years the schools and courses focused mainly on farming skills, like milking and dairy preparation, or cheese production and poultry farming. Later the curriculum was expanded with household tasks and general courses, which included: cooking, childcare, washing, nutrition, hygiene, Dutch language, mathematics and also bookkeeping.[108]

The household and farmers' wives were acknowledged as an integral part of the farming business. Therefore, the household was increasingly approached as a business in agricultural household education. Agricultural historian Margreet van der Burg has demonstrated that this development emanated from the schools for agricultural household teachers. During the 1930s, *De Rollecate* shifted its content towards managing a rationalised and efficient household. This shift was influenced by the theory of scientific management, which was introduced in the US at the end of the nineteenth century by F.W. Taylor.[109] Therefore, it is also known as Taylorism. One definition for Taylorism is 'the application of scientific methods to the problem of obtaining maximum efficiency in industrial work or the like'. Because Taylorism encompassed industrial work *or the like*, it could also encompass household work.[110]

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[106] J.W.A. Korsten, *Standhouden door veranderingen. De Limburgse Land- en Tuinbouwbond als behartiger van agrarische belangen, 1896-1996* (Nijmegen 1996) 63.
[107] M. van der Burg and T. Duffhues, *Laat ze maar leren. 100 jaar onderwijs van de Noordbrabantsche Christelijke Boerenbond* (Tilburg 1996) 22.
[108] Goudswaard, *Agrarisch Onderwijs in Nederland*, 186-190.
[109] Ibid., 248-49.
[110] R. Kanigel, *The One Best Way. Frederick Winslow Taylor and the enigma of efficiency* (New York 1997) 7.

Van der Burg has shown that books on household efficiency started appearing in the Netherlands around the 1930s. These had such a significant impact within agricultural household educational circles that it resulted in educational reform at *De Rollecate*.[111] A new course was added, called *huishoudelijke bedrijfsleer* or the business economics of the household, which discussed the means of production: nature, capital and labour within the context of the household. A household needed to be managed within its financial limits, which entailed a proper use of the house and soil, proper management of household budget and creative ways of labour that could save time and money. For instance, a woman would not only lower costs by buying cheaper products, but also by decreasing time, distance and power input. The household education course wasn't a large part of the curriculum, because the principals of Taylorism were included in all the courses.[112]

When the household budget changed, financial and economic education changed with it. The Great Depression forced agricultural household education to start educating a sober lifestyle. This exposed the crucial link between household and farm. When business was bad the household budget was directly affected. Farm girls were educated to cut expenses in the right places, while ensuring a standard of living for their family. During times of crisis, the help of agricultural household teachers was most sought after. This reached beyond the classroom, as the teachers would also go on house calls, give advice and organise afternoon-talks for mothers of their students.[113]

The Great Agricultural depression had instigated the establishment of agricultural education for boys, but girls would have to wait another twenty years. What formed the incentive for the creation of agricultural education for girls? It seems to have been the acknowledgement that a farm girl was an elemental part of a farm's business and that a form of education needed to be designed to ensure the education of skilled girls. The growth of the agricultural family business only increased the need for skilled girls. Since the beginning, the establishment of agricultural household education was essentially an acknowledgement of the household as a business and of the farmer's wife as a skilled business-owner. This is demonstrated by the discussions at agricultural congresses, where it is constantly emphasized that farm girls or women were in control of the finances. Therefore increasing financial and economic literacy was an integral part of the curriculum since the establishment of agricultural household education and started to carry more weight when economic

[111] Van der Burg, '*Geen Tweede* Boer', 254-55.
[112] Ibid., 250-255.
[113] Van der Burg, *Laat ze maar leren*, 53-54.

circumstances demanded changing perspectives on the household as a business. Bookkeeping being an indispensible part of the curriculum demonstrates it was deemed a necessary skill for farm girls and women. However, similar to farmers' education, relatively little lecturing hours was spent on the subject and a minority of farm girls was able to get an education. Therefore, its impact was limited to farmers who could afford sending a daughter to school.

Financial and economic education

Goudswaard has argued that agricultural education started shifting its focus from a mainly technological towards a more economic approach after the First World War, but remained primarily technological until after 1945.[114] Goudswaard neglects to examine why financial and economic education was a constant in farmers education during the first half of the twentieth century. Furthermore, agricultural household education has shown to be sensitive to changing economic circumstances and adapted education to fit the agricultural sectors demand. This suggests that financial and economic education developed into a more important part of farmers' education at the expense of other aspects of the farming business as a reaction to changing economic circumstances and the agricultural sectors' demand for more financially and economically skilled farmers. To investigate this statement, I will examine the expansion of agricultural education after 1920, specifically in Noord-Brabant and Zeeland. By comparing both provinces, I can demonstrate if educational institutions adapted differently to changing economic circumstances. Noord-Brabant consisted mostly of sandy soil and mixed farms and the *Noordbrabantsche Christelijke Boerenbond* (NCB), the provincial catholic Farmer's Union, heavily influenced rural society and the educational institutions. Zeeland on the other hand, mostly consisted of marine clay and bigger farms and its educational institutions were under the control of the liberal *Zeeuwsche Landbouw Maatschappij* (ZLM), or the Farmer's Society of Zeeland.[115]

It is safe to say that agricultural education was far from successful during its first thirty years. After the First World War, the quality of the agricultural courses for boys between the ages of twelve and sixteen was justly criticised to be insufficient. From the perspective of the agricultural sector, these courses needed to educate farmers to become skilled workers, but in reality the courses were not well organised. The courses were mostly ambulant, classrooms were regularly unfit and teaching aid was lacking. Students were often absent and it was difficult to find qualified teachers, who were not evenly spread across the country, which

[114] Goudswaard, *Agrarisch Onderwijs in Nederland*, 206.

meant in some areas they taught a course in a different place every evening. Courses became superficial, because teachers didn't have enough time to prepare. Also, the courses didn't reach enough young people. In 1920, still 80% of the Dutch population between 13 and 19 had never had any form of secondary education. Therefore the agricultural organisations demanded educational reform for this group of young farmers. These demands were institutionalised in the creation of the *lagere landbouwschool* or lower agricultural school, which was first established in Oldeberkoop in 1921 and was in great demand as shown by the rapid increase of schools and students in the NCB districts that included Noord-Brabant and a small part of Gelderland.[116]

Table 1: Number of lower agricultural and horticultural schools of the NCB and the number of students, 1922-1950.[117]

	Number of Schools	Number of Students
1922	2	127
1930	7	487
1940	10	1,052
1950	39	3,475

The lower agricultural school's curriculum was designed by the Directorate of Agriculture and consisted of a four-year education with a total of approximately 900 lecturing hours. During the first year the students would attend the school twice a week for 5 hours a day for a total of 40 weeks. The second year they would attend the school once a week for 5 hours for a total of 40 weeks. For the third and the fourth year they would attend the school once a week for 5 hours for a total of 30 weeks. The first two years of the curriculum were focused on general formative education, while the last two years focused solely on agricultural education. Similar to the winterschools and the agricultural household schools, the curriculum of the lower agricultural schools included financial and economic education.[118]

The financial and economic courses taught students of the lower agricultural schools how a farm should be managed as a business. Therefore, developing financial and economic skills were important. In terms of lecturing hours these courses remained unchanged until 1953. In the first two years a total of 120 hours was spent on mathematics and in the fourth and final year a total of 18 hours was spent on bookkeeping and 24 hours on business

[116] Goudswaard, *Agrarisch Onderwijs in Nederland*, 242-245.
[117] Duffhues, *Voor een betere toekomst*, 404.
[118] Goudswaard, *Agrarisch Onderwijs in Nederland*, 244-245.

economics. This demonstrates that lecturing hours on financial and economic subjects on lower agricultural schools were not adjusted during changing economic circumstances in the first half of the twentieth century.[119]

Expansion of financial and economic education at the lower agricultural schools was debated among the agricultural organisations. In 1939 the Farmer's society of Groningen had sent its departments a questionnaire called 'Does agricultural education satisfy the present demands?'[120] The general consensus was that it did. There were a few departments that felt economic education should be expanded, but the majority of farmers and agricultural consultants didn't share this feeling. They believed economic education was already difficult to comprehend for young students and should therefore not be expanded, as the students would not be able and willing to put in the extra work. Nonetheless, the agricultural consultants endorsed the request to increase the effectiveness of the course in bookkeeping and agreed that it was a necessary skill for every farmer, which should be able to do his bookkeeping on his own. However, no concrete measures were suggested and it is therefore doubtful if this commitment had any real effect on financial education.[121]

The winterschools display a different development. In 1928, the NCB had already doubled the number of lecturing hours for the economic courses on the winterschools. The syllabus of the winterschool in Boxtel shows that the number of lecturing hours for business economics and bookkeeping were expanded to two hours a week on both subjects during the second year of lectures.[122] It would take the winterschool in Goes until 1934 to double the lecturing hours on business economics and another year to do the same with bookkeeping.[123] These courses were supplemented with excursions to cooperatives and state-run agricultural research stations or to local farmers.[124] Goudswaard has demonstrated that in general, the number of lecturing hours for economic courses increased by 1 hour a week for all the

[119] NA, 2.11.35, LVV/Landbouwonderwijs, inventory number 460, onderwijsprogramma's lagere landbouwscholen.
[120] Directie van den Landbouw, 'Eenige bijdragen betreffende het landbouwonderwijs', *Landbouwvoorlichtingsdienst Mededeeling*, no. 19 (Wageningen 1941) 56.
[121] Directie van den Landbouw, 'Eenige bijdragen betreffende het landbouwonderwijs', *Landbouwvoorlichtingsdienst Mededeeling*, no. 19 (Wageningen 1941) 56-65.
[122] Katholiek Documentatie Centrum, Nijmegen (hereafter: KDC), 1256, RK Landbouwwinterschool Boxtel, 1913-1974 (hereafter: LBWS), inventory number 3-4, Jaarverslagen.
[123] ZA, 18.1, RLC, inventory number 223, bedrijfsconsulent voor Zeeland verslag over april 1936 ; NA, 2.11.35, LVV/Landbouwonderwijs, inventory number 391, jaarverslagen van cursussen aan LWS Goes.
[124] NA, 2.11.35, LVV/Landbouwonderwijs, inventory number 390, jaarverslagen van cursussen aan LWS Boxtel, inventory number 391, jaarverslagen van cursussen aan LWS Goes.

winterschools between 1930 and 1940 on a total of 58 weekly lecturing hours.[125] Therefore, Boxtel and Goes seem to have been ahead of the curve.

The lecturing hours of economic and financial subjects were increased at the expense of other subjects, demonstrating the growing importance of economic education in comparison to other subjects. Perhaps the winterschools were able to do so, because their students were primarily sons of bigger farmers. The complexity of these farms demanded farmers to manage their farm off the field as a business. The fact that the winterschool in the district with bigger farms, which was supervised by a liberal agricultural organisation, adjusted its curriculum years later than its catholic counterpart in the sandy district, suggests that the students of the winterschool were quite homogenous and the curriculum was hardly affected by the fact that small mixed farms were most common in the sandy districts. The students of the winterschools had more in common with students of other winter schools than with the majority of small farmers in their district. They needed to be educated to manage a modernised farm as a business. Therefore, for big farmers, the importance of financial and economic education was growing.

On the surface, agricultural education wasn't influenced by shocks. However, adaptation can be discerned at the extra-curricular activities. The schools reached a broader public than just their students. School personnel played an active role within the community. Principals of the winterschools shared their knowledge outside the classroom, through lectures and instructions. The annual reports of the winterschool in Boxtel show that the purely technical subject of these lectures adapted after 1930 and started including lectures on the economic crisis in agriculture and how to 'adjust the farm to the crisis'.[126] These lectures were mostly commissioned by the NCB and were consistently given until 1936, after which the lectures returned to technical subjects, because the economic crisis had mostly waned.[127] The winterschool in Goes started with an adults' course on "legislation" and "agricultural economy" in 1931, which included agricultural bookkeeping. This course was taught for three years and was mostly followed by old students of the winterschool.[128] Furthermore, teachers and principals of lower agricultural schools served as a reliable source for questions on economic and technical issues for the entire community.[129]

[125] Goudswaard, *Agrarisch Onderwijs in Nederland*, 234.
[126] KDC, 1256, LBWS, inventory number 3-4, jaarverslagen.
[127] Ibid.
[128] NA, 2.11.35, LVV/Landbouwonderwijs, inventory number 391, jaarverslagen RLWS Goes.
[129] Van der Burg, *Laat ze maar leren*, 53-54.

Local departments of the NCB could also request winterschool principals to give lectures for their department. At the winterschool in Roosendaal almost all these request concerned lectures on the new Rent Law in 1937.[130] Furthermore, ex-students of the winterschool in Boxtel organised annual repetition and expansion courses for ex-students, which also discussed economic subjects. These consisted of a two-day programme in which several speakers were invited to talk about various topics. In 1928, the director of the Cooperative Central Farm Bank spoke about agricultural credit and the treasurer of the NCB presented the subject of agricultural bookkeeping. In 1934, governmental crisis measures were discussed, followed up the next year with a presentation on 'mixed farms and the crisis'.[131] This demonstrates that the educational institutions used their knowledge infrastructure to diffuse economic and financial information among a larger group than just their students. However, it's impact outside the school should not be overestimated, as it is seems the lectures were mostly aimed at an educated public and probably didn't reach the smaller, uneducated farmers.

Teaching materials

It is not possible to measure the actual effect financial and economic education had on the level of financial literacy of the students. However, it is possible to give an impression of what the students were taught in the classroom. By examining NCB school syllabuses and schoolbooks, I can provide an insight in the subject matter of the economic courses. This has been most difficult to research for the course of business economics, as none of the lower agricultural schools used a schoolbook for this course until the 1940s. Instead, the principal of the school, who is normally the most educated teacher available, customarily teaches the course. Therefore the exact subject matter of the course was subjective, but the syllabuses show which themes would definitely be discussed during the course. These themes consisted of: forms of landed property and use; organisations; credit system; state interference in agriculture and agricultural law.[132]

The lower agricultural schools under the supervision of the NCB used the same books for bookkeeping and mathematics.[133] Therefore, they provide a comprehensive picture of financial and economic education given to young farmers in Brabant. For mathematics the

[130] KDC, 725, Dienst Onderwijs van de Noord-Brabantse Christelijke Boerenbond 1920-1985 (hereafter: NCBO), inventory number 206, aanvraag van cursussen.
[131] KDC, 1256, LBWS, inventory number 15, De Herhalings- en Uitbreidingscursus voor de Oud-Leerlingen der R.K. Landbouwwinterschool te Boxtel.
[132] KDC, 725, NCBO, onderwijsprogramma's van de lagere landbouwscholen.
[133] Ibid.

book *Rekenen voor de praktijk* was used, written by G.J. van Oss, the principal of a lower agricultural school, together with the principal of an elementary school, J. Loeffen. The book was written specifically for agricultural education, as the preface by agricultural consultant J.H.F. Deckers reads: ' "*Rekenen voor de praktijk"* seems to me very suited to familiarise students with some general matters concerning agriculture and to spark their interest in these matters.'[134] The book consists of a total of 220 mathematical problems, concerning weights and measurements, percentage calculations, cost price and profit calculations, interest, rents, insurance etc. These problems were repeatedly questioned in a way they resembled real farm practice or included financial institutions and products a farmer might come into contact with. Students were taught to make up inventories and calculate the depreciation of fixed assets. Furthermore, they calculated income tax and other taxes.[135] For example:

1. Someone buys a farm at ƒ12.000.- He receives a mortgage of ƒ7.000.- against 5%. How many interest does he pay annually? In addition he pays ƒ17.- insurance and ƒ48.- ground-charges. How much does he spend totally?

First he had saved ƒ5.000.- at the Farm Bank against 3%. Therefore he now misses ƒ….. in interest. The sale of the farm therefore annually costs him ƒ…..?

This example demonstrates a farmer how to correctly calculate annual interest costs for a mortgaged house. This skill is instrumental for a farmer to determine his fixed costs. Furthermore, the farmer is pointed at the fact that he lost interest on his savings, because he decided to invest them in a new farm. This suggests that a farmer should always calculate the benefits of an investment, by calculating the losses in revenue.

2. A farmer insures house and barn for ƒ9.000.- against ¾% annually and his furniture for ƒ3.500.- against 1% annually. He pays an extra ƒ1,75 for the insurance policy. What does the insurance cost him the first year? And the years after that?

This example familiarizes the farmer with the subject of insurance and the correct way to calculate the costs of this insurance. Besides being a simple percentage calculation, this skill allows a farmer to really comprehend how much insurance will cost him and if this is worth it.

[134] G.J. van Oss and J. Loeffen, *Rekenen voor de praktijk. Herhalingssommen voor de hoogste klas aan Plattelandscholen en voor Cursussen van voorbereidend Landbouwonderwijs* ('s Hertogenbosch 1927).
[135] Van Oss, *Rekenen voor de praktijk*.

3. A young farmer buys a horse for ƒ500.-. Calculate 5% interest, ƒ50.- annual depreciation, ƒ300.- for fodder, ƒ10.- for insurance, ƒ20.- for litter, ƒ20.- for hoofs and ƒ25.- for other expenses. Also calculate the costs of fertilizer at ƒ50.- and figure out what this horse costs on a daily basis, based on 300 working days. [136]

Finally, this is a primary example of how to correctly appreciate ones assets and the costs of having such assets. This is an indispensible skill for farmers who want to really understand if the revenue that is generated by the asset weighs up to the costs of having it. This will allow a farmer to adequately cut expenses on business units where costs are too high in comparison to the revenue these are generating.

This demonstrates that mathematical problems added to the students' knowledge of financial and economic subjects. Subsequently, it provided the students with the necessary skills to follow the course in bookkeeping. The textbook used for this course was called *Handleiding bij de Enkelvoudige Landbouwboekhouding*, or "Manual for single-entry agricultural bookkeeping". Also written by J.H.F. Deckers. The book explained six forms of administration that needed to be kept by the farmer: notebook, ledger, inventory, debit and credit book, livestock-book and a harvest and fertilizer chart.[137] First and foremost, the farmer had to learn to write everything down that happened on the farm. This included revenue and expenses, but also more detailed information on every purchase and every sale and when these were paid for. Every activity on the farm needed to be noted: fertilization; dates of sowing; the amount of seed; the size of the harvest; births of livestock etc.[138]

Students would practice bookkeeping with practice sheets that were attached to the book. In addition, the book provided the students with an overview of the annual rates of depreciation of all sorts of assets. Furthermore, they would be taught to separate the ledgers of household and farm. The final two chapters of the book demonstrate the two uses of bookkeeping that were deemed most important for farmers. The first subject was the calculation of cost price and turnover per business unit. This would allow the farmer to investigate which part of his business was most profitable or which part was suffering from high costs. The next step would then be to investigate the costs and figure out if they could be lowered. The second subject was the income tax, which was based on a farmer's income. To

[136] Van Oss, *Rekenen voor de praktijk*, 22, 28, 34-35.
[137] J.H.F. Deckers, *Handleiding bij de Enkelvoudige Landbouwboekhouding* (Weert 1923) introduction.
[138] Deckers, *Handleiding bij de Enkelvoudige Landbouwboekhouding*, 6.

ensure that a farmer would be taxed properly, he needed to have proper accounts of his farm.[139]

All things considered, the analysis of agricultural education in the Netherlands until the 1940s demonstrates that the establishment of the educational institutions was part of a growing demand for certain skills in the modernising agricultural sector. The increase of financial an economic literacy was part of this demand since the foundation of the schools, both for boys as for girls. This suggests that it was assumed to be an integral part of the educated farmer's skillset. The fact that the economic courses were not subject to local divergence shows that it was universally deemed important for farmers. Concerning economic courses, the curriculum of the schools was rather fixed and did not respond to economic shocks. However, the schools did adjust their extra-curricular activities during times of economic depression to inform their audience on how to adjust their farm to changing economic circumstances.

Furthermore, the establishment of the lower agricultural school suggests that the general agricultural courses weren't efficient and provided agricultural organisations and the government with the incentive to design a new form of education. Once again, economic education was included in the curriculum, which was now received by a rapidly increasing and younger group of students. The contents of the economic courses show that the students were familiarised with all sorts of financial difficulties of owning a farm and enhanced their understanding of economic institutions. Nevertheless, financial and economic education was still limited to a minor part of rural society. Only those with the means to send their sons or daughters to an agricultural school were able to do so. Therefore, financial and economic education mainly impacted the top of the farmers' class.

[139] Deckers, *Handleiding bij de Enkelvoudige Landbouwboekhouding*.

Agricultural Extension Service

In 1996, A.W. van den Ban, professor of extension science, stated: 'A major role of agricultural extension is to help farmers to make decisions through which they can realise their own goals as well as possible'.[140] This was as much true in 1996 as in the first half of the twentieth century. Agricultural extension was based on the idea that experts inform the farmers on new developments and give advice for the improvement of their farm, but the decision always needed to be taken by the farmer himself. Therefore, the Dutch extension services or the *Rijkslandbouwvoorlichtingsdienst*, shunned the use of a top-down approach by their agricultural consultants or *Rijkslandbouwconsulenten*. The consultants worked on agricultural research station to test technological innovations. By demonstrating these novelties to local farmers, the consultants tried to convince the farmer's to implement these techniques on his own farm.

Jan-Pieter Smits has argued that the establishment of the Dutch extension service and the agricultural cooperatives provided fertile grounds for the diffusion of scientific knowledge and laid the foundation of a knowledge infrastructure, which would foster the strong productivity upsurge during the twentieth century.[141] However, Smits states that 'Dutch agriculture entered a new phase in the 1930s. Technological progress was not strong enough to compensate for the relative price decline of agricultural output. New responses such as mechanization and guaranteed prices were developed.' [142] I agree that technological innovation was indeed of the utmost importance to the agricultural extension services until the 1930s. Rather, I suggest the economic depression of the 1930s demanded farmers to take financial and economic decisions concerning their business to stay profitable. Through a process of trial and error, the extension service transformed into an institution that could advice farmers on these matters and support there decision making. To ensur the success of the extension, it was important to enhance financial and economic literacy among farmers. I argue that extension transitioned into a hybrid form of technological and financial/economic education, based on the belief that farms could only become profitable if they improve technological practices as well as economic farm management, therefore increased financial and economic knowledge was a prerequisite for economic growth.

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[140] A.W. van den Ban, 'Supporting farmers, decision making by agricultural extension', *Journal of Extension Systems*, 14 (1998) 55.
[141] Smits, 'Technological change', 106.
[142] Ibid. 122.

The State Commission of 1886 had recommended the Dutch government to appoint *Rijkslandbouwleraren*, later called *Rijkslandbouwconsulenten*. The first agricultural consultant was appointed in 1890 for the provinces of Gelderland and Overijssel. The concept of the agricultural consultant was inspired by similar initiatives in Germany, Belgium and France. In Belgium and France the consultants were employed by the state, while in Germany they were appointed by private agricultural organizations.[143] Prior to the establishment of the *Rijkslandbouwvoorlichtingsdienst*, several Dutch private agricultural organizations had employed an agricultural consultant themselves, for example the *Noord-Brabantsche Maatschappij van Landbouw* (NBML). This agricultural consultant was reassigned as a state employed agricultural consultant for the province of Noord-Brabant in 1891. The next consultant was appointed for the province of Limburg in 1895 and in 1896 the first horticultural consultant was appointed for Zuid-Holland. In 1896 a specialist dairy consultant was appointed followed by the appointment of a cattle-breeding consultant in 1909. The Commission believed the advisory work could only become successful if the advisers were well organized and were appointed to every province. Therefore, the number of consultants kept growing steadily until the First World War. In 1913, 13 agricultural and 12 horticultural consultants had been appointed in the Netherlands.[144]

The consultants were employed to diffuse technological agricultural knowledge and to assist farmers both theoretically and practically. Farmers could consult with the consultant of their district on various subjects, but primarily the consultants provided advice on technological subjects. Consultants were obliged to provide agricultural knowledge free of charge. Furthermore they were expected to be proactive in its diffusion by giving lectures on the most pressing agricultural issues within their districts. Additionally, the consultants were responsible for the supervision of governmental agricultural research stations, on which they experimented with new crops and fertilization theories.[145] Until the Great Agricultural Depression, only a few research stations had been established in the Netherlands, all by private initiative. The Commission recommended the government to establish state funded research stations to advance agricultural research and subsequently improve Dutch agriculture. The first three research stations were installed in 1890, after which their number

[143] Zuurbier, *Landbouwvoorlichtingsdienst,* 30-31; J. Bieleman, *Five centuries of farming*, 164.
[144] Zuurbier, *Landbouwvoorlichtingsdienst*, 32-35; Goudswaard, *Agrarisch onderwijs in Nederland*, 147-149.
[145] Ibid.

grew rapidly.[146] More than 600 agricultural research stations had been established throughout the country in 1913.[147]

The research stations served a dual purpose. First, they were utilised by the consultants to research new scientific agricultural theories and evaluate the results. Second, the stations were used to educate farmers by demonstrating what these new farming techniques could do. Rather than bothering farmers with a new scientific theory, the consultants could put these theories to the test, and if successful, demonstrate the results on the research stations. The research stations bridged the gap between scientific research and the actual practice, effectively connecting farmers with technological novelties for the improvement of their business. Furthermore, the consultants were often supported by teachers from the agricultural schools in their work on the research stations. This strengthened the connection between the schools, the consultants and the farmers. This is the creation of what Smits called the knowledge infrastructure that would become indispensible for the diffusion of technical knowledge and the productivity upsurge.[148]

The Commission believed the consultants could connect the various forms of agricultural education in the Netherlands, essentially becoming the centre of the knowledge infrastructure. The consultant was supposed to ensure uniformity in the organization and the methods of agricultural education. Therefore, they were often appointed as principals of newly created winterschools in their district and supervised state funded winter courses and courses for agricultural teachers. As state employees, they needed to ensure government subsidies for research stations and education were used for their intended purposes. They would annually report the state of agriculture within their district and the results of the research stations to the Minister of Internal Affairs, effectively enhancing the government's knowledge on agricultural affairs. Finally and most importantly, the consultants needed to gain the rural population's trust by successfully helping farmers develop and improve their business through practical and theoretical consult. The consultant was at the centre of an information web connecting the government, agricultural education, agricultural organizations and farmers.[149]

The importance of the state-controlled agricultural extension services was demonstrated during the 1920s when the government debated its state funding. The government questioned its direct financial aid of agricultural institutions and investigated if it

[146] D.J. Maltha, *Honderd jaar landbouwkundig onderzoek in Nederland,* 25-27, 52-54.
[147] Zuurbier, *Landbouwvoorlichtingsdienst*, 31-35; Goudswaard, *Agrarisch onderwijs in Nederland*, 147-149.
[148] Ibid.
[149]Zuurbier, *Landbouwvoorlichtingsdienst*, 30-31; J. Bieleman, *Five centuries of farming.* 164.

could cut back on expenses. One option was to no longer employ the agricultural consultants themselves, but re-allocating their services to private agricultural organizations as in Germany. However, a commission installed by the government to investigate a reduction of government spending on agriculture, decided the agricultural consultants were indispensible for the positive development of Dutch agriculture and promoted their continued employment by the state. The Commission feared the continuity of the advisers' work could not be guaranteed if it was to become supervised by private agricultural organizations. There were stark ideological divisions between these organizations and advice to non-members could not be safeguarded. Therefore, the advisers wouldn't be able to reach the entire rural population, just members of the organization that employed them. Furthermore, financial support of the advisers and the quality of their work could no longer be ensured. This endangered the continuity of the knowledge infrastructure.[150]

The Commission believed the consultants were of great importance to advising the government on agricultural issues and formed the cornerstone of the agricultural educational system. Therefore, instead of reducing government funding, the budget for the extension service was expanded between 1925 and 1930. This allowed for the appointment of assistant consultants, who would support the consultants in their work. These assistants would work on a local level and be responsible for a smaller part of the head consultant's district.[151] Goudswaard has stated that the appointment of the assistants demonstrates the growing organizational separation of education on the one hand and advisory work on the other. Previously, teachers of agricultural school had helped the consultants with their work on the research stations, now the assistants fulfilled these tasks.[152] Now the consultant and the assistants were at the centre of a knowledge infrastructure where scientific knowledge was provided to them through the research stations and higher agricultural educational institutions, which found its way to rural population in the form of practical advice on technological innovation. Once established, this knowledge infrastructure could be utilised for the diffusion of more than technological advice alone.

Business Consultants

In *De Besturing en Organisatie van de Landbouwvoorlichtingsdienst*, agricultural scientist P.J.P. Zuurbier argues that until the economic crisis of the 1930s, the agricultural consultants

[150] Zuurbier, *Landbouwvoorlichtingsdienst*, 33-37.
[151] Ibid., 33-37.
[152] Goudswaard, *Agrarisch onderwijs in Nederland*, 213.

had given little attention to extension on financial and economic subjects. Zuurbier compares this to the development of the extension services well into the second half of the twentieth century. Zuurbier states that the consultants had been unable to effectively advise farmers on these matters because they lacked the expertise, since their main task had always been to advise on technical issues.[153] However, when during the Great Depression producers and extension officers were reminded that the law of diminishing returns still existed, a more comprehensive approach of extension was demanded.[154] Productivity growth no longer automatically resulted in higher net-returns. Therefore, to increase their net-returns, farmers needed to make different decisions and lower their costs.[155] Extension work was re-designed to battle these difficulties. During the 1930s a new form of economic extension developed parallel to technological extension. Similar to technological extension, economic extension initially used a top-down approach or "vertical extension" in the words of a member of the extension service, A.W.G. Koppejan.[156] Instead of research stations, consultant acquired financial data from the agricultural sector concerning prices and rents, but also financial data from a growing number of farms. This data allowed the consultants to influence the decision making of the farmer by presenting them the analysis of the data. In connection to the academic literature on financial literacy and changing financial behaviour, one can seriously doubt this top-down approach was successful.

To meet the demand for a more comprehensive extension service the government created the *Dienst voor de Bedrijfsconsulenten* or Business Consultants' Service in 1935. This service coexisted with the agricultural extension service and was headed by the Inspector of Agriculture under the Directorate of Agriculture.[157] Six business consultants were appointed for the districts: Zeeland and Western Noord-Brabant; Eastern Noord-Brabant and Limburg, Friesland and Groningen, Drenthe and Overijssel, Gelderland and Utrecht and Noord- and Zuid-Holland. These districts were determined by the soil that was cultivated in these districts. Just as their agricultural counterparts, the consultants were supported by a large group of assistants, which could resort under both a business and an agricultural consultant, creating a complex hierarchical system. The role of the assistants was determined during an assembly of business consultants in 1935. The assistants needed to be in close contact with

[153] Zuurbier, *Landbouwvoorlichtingsdienst*, 42.
[154] ZA, 18.1, RLC, inventory number 223, Bedrijfsconsulent voor Zeeland. Notulen vergadering Rijkslandbouwconsulenten, 29 juli 1938. Paraphrase by Inspector of Agriculture C.P.G. Stevens.
[155] Ibid.
[156] A.W.G. Koppejan, 'Doel en werkwijze der economische bedrijfsvoorlichting in den landbouw', *Mededeelingen voor den Landbouwvoorlichtingsdienst*. Mei (Wageningen 1944) 387.
[157] Zuurbier, *Landbouwvoorlichtingsdienst*, 42.

the farmers and they needed to be well known with the practice of farming, preferably having worked and lived on one since they were young. Also they needed to have a vast amount of theoretical knowledge on agriculture. The assembly believed these assistants could best be picked from excellent graduates of the winterschools.[158] It was stressed that these assistants were employed to extend their advice on the actual farms. Their visits to these farms were a crucial part of the method of the business consultants.[159]

The business consultants were at the centre of the knowledge infrastructure. On the one hand, business consultants were employed to inform the rural population on the agricultural crisis measures implemented by the government. On the other hand, they would inform the government on the economic and social circumstances of Dutch rural society. Consultants collected and examined data from farms within their districts, studied the outcomes and reported this back to the government. In addition, they collected data from private accounting-bureaus to create a comprehensive set of data on which they could base their extension. Subsequently, they would use their attained knowledge from this database for the enhancement of farms in their district and communicate their findings with other consultants who could use that information for improvements in their own districts.[160] By depending on a comprehensive dataset, the consultants provided their extension with a scientific base. Similar to agricultural consultants they were the connection between government, science and farmers, linked in one knowledge infrastructure for financial and business economic extension. The foundation of this infrastructure had already been laid by the agricultural extension service, which was therefore easily adopted by the business consultants. Zuurbier emphasized that its major flaw was that both infrastructures barely cooperated or communicated with one another, effectively isolating both forms of extension.[161]

The business consultant depended on the information that was acquired from the farmers in its district. He would approach farmers with the question if they wanted to send him information on for example, the selling prices of land or agricultural products. Those who were interested would send in a weekly report on price changes. The consultants themselves collected other information like the stipulations in rent contracts within a district and land auctions. Furthermore, consultants were employed by the Crisis Accountancy Service to

[158]NA, 2.11.08.02, Directie van de Landbouw: Afdeling Economische Aangelegenheden (hereafter: Landbouw/Landbouw-Econ. Aang.), inventory number 37, Notulen der vergadering der Bedrijfsconsulenten gehouden op 7 mei 1935.
[159] NA, 2.11.08.02, Landbouw/Landbouw-Econ. Aang., Onderafdeeling II.
[160] Zuurbier, *Landbouwvoorlichtingsdienst*, 42.
[161] Ibid., 42.

investigate the costs per produced units in their districts. Once again, this meant the consultant had to approach willing farmers to provide data, but the business consultant of Zeeland feared that this would be far more difficult, as detailed accounts were often lacking on farm businesses.[162] This demonstrates the interaction between farmers and consultants, necessary to build a scientific database. Farmers were an indispensible part of the process towards a scientifically based and comprehensive form of economic extension.

A national budget research executed by the *Centraal Bureau voor de Statistiek* or Dutch Bureau of Statistic Research (CBS) provides an illustrative example of the lack of financial administration among Dutch farmers in the 1930s. The consultants were employed to find farm households who were willing to become part of this research, covering households from different wealth classes and background.[163] The goal of the research was to investigate how the amount of available money affected household spending and how this affected the way of living. More generally, the CBS wanted to find out the standard of living for each group. During the investigation, the participating household received weekly "householdbooks" for the first five weeks and monthly books after that. For a year they would write down their income and expenditure in these books. These books would be audited and collected by volunteers making house calls. These volunteers were also responsible for aiding and advising the households on their budget during the investigation. Over 600 households participated for the entire year.[164] This demonstrates that financial administration was far from general practice in Dutch agriculture. The majority of the participants did not have any financial administration and lacked the knowledge to correctly administer without the help of a consultant.

In terms of financial and economic extension, the top-down or vertical approach provided farmers with financial data on which to base their decision-making. Essentially, this meant the farmers were told what to do because the extension officer told him it was the right choice.[165] However, as the CBS research has shown, this kind of data was scarcely available. Therefore, the government requested the business consultants to find farms that were "typical" for their districts and if willing, do their accounting. With this dataset, the government could get an overview of product-yields per district and per various forms of

[162] ZA 18.1, RLC, 1893-1958, inventory number 223, Bedrijfsconsulent voor Zeeland. Verslag over de maand september 1935; Verslag over de maand november 1935; verslag over de maand december 1935.
[163] ZA, 18.1, RLC, inventory number 223, Bedrijfsconsulent voor Zeeland. Verslag over de maand September 1935 ; CBS stands for *Centraal Bureau voor de Statistiek*.
[164] NA, 2.11.04, Directie van de Landbouw: Afdeling Tuinbouw (1882) 1900-1957 (hereafter: Landbouw/Tuinbouw), inventory number 31, Onderzoek van het Centraal Bureau voor de Statistiek naar de uitgaven van gezinnen van verschillende welstand.
[165] Koppejan, 'Doel en werkwijze der economische bedrijfsvoorlichting in den landbouw', 387.

farming. This allowed the government to determine which products provided low yields and investigate why, while comparing the results with data from other "type-businesses". At an assembly of business consultants it was emphasized that this data eventually 'would allow for the creation of reliable and fruitful advice.'[166] These accounts provided the government with numbers on: mortgage; farm lease; capital; gross income, net income; business profit; price per produced unit; price per hour of labour etc. This allowed the extension service to get a good insight in the financial difficulties farmers were experiencing.[167] Nonetheless, the effect of this vertical approach was so small, that the extension service decided to design its extension in a different matter. Therefore the vertical approach had primarily been a process of trial and error.

The Horizontal Approach

Since 1936, an increasing amount of business consultants became advocates of a so-called "horizontal" approach to business extension. One of its exponents, A.W.G. Koppejan, described this approach in 1944. Essentially, the horizontal approach would actively incorporate farmers in the design of extension by mutually comparing business results of participating farmers in a certain district. Farmers would then discuss these results with each other, and conclude which changes in their business would be mutually profitable. By comparing the business with your neighbours' businesses, a farmer would be more willing to accept proposed changes to their business model.[168] These left farmers more in control over their decision-making process and allowed them to come to the right conclusions themselves. Yet, similar to agricultural education, only a small group of big farmers would benefit from this financial and economic extension.

The horizontal approach is best visible in the establishment of business study groups. These were groups consisting of farmers who were interested in participating and sharing their knowledge among each other. The assistant consultants headed the groups. In Zeeland these groups were a success and in 1936 a total of six groups were established on Schouwen-Duiveland, Tholen, Zuid-Beveland (2), Western Zeeuws-Vlaanderen and St. Philipsland.[169] The business consultants encouraged the members to keep accounts on production costs, so they could later compare their books and discuss the differences. Of the 30 members of the

[166] NA, 2.11.08.02, Landbouw/Landbouw-Econ. Aang., inventory number 37, Notulen der Vergadering der Bedrijfsconsulenten gehouden op 7 mei 1935.
[167] ZA 18.1, inventory number 223, Opmerkingen betreffende het Ontwerp Landbouwboekhouding.
[168] Koppejan, 'Doel en werkwijze der economische bedrijfsvoorlichting in den landbouw', 387.
[169] ZA, 18.1, RLC, inventory number 223, Bedrijfsconsulent voor Zeeland. Overzicht van Werkzaamheden.

study group of Schouwen-Duiveland, 18 participated by keeping their accounts. The business consultant provided them with the necessary materials: books and weekly return forms. The assistant instructed the participants on the correct use of these materials.[170] The participants weren't expected to keep very detailed accounts. They were only asked to write down the hours spent by man, animal and machine on several crops. This was called time writing.[171]

In 1943 C.H.J. Maliepaard of the *Directie van de Landbouw* argued that these study groups were a manifestations of agriculture's aspiration towards the improvement of economic farm management, which became apparent since the 1930s. According to Maliepaard, farmers had become more concerned with solving economic issues by carefully analysing their economic farm management.[172] However, detailed accounts would cost a farmer too much time. Instead, the simple time writing of the study groups could provide farmers with new perspectives on their farm management. One important perspective was the cost of owning a horse. Most farmers owned a horse that was intensively used for three short periods during an entire year. Therefore, it was much cheaper to rent a horse for the time it was actually needed. Maliepaard describes that this became apparent through proper accounting and farm comparisons and that this sort of management was necessary for a number of issues concerning modernizing farmers.[173]

However, the success of the study groups in Zeeland may be misleading. In reality, only a small amount of big farmers was member of such a group and benefitted from the horizontal financial and economic extension. At an assembly of agricultural consultants in 1938 the promotion of these groups was discussed and the majority of the consultants believed it was undesirable to support these groups by providing them with assistants. One of the main reasons for this negative advice, was the fact that the consultants believed it was a dishonest allocation of government subsidies, as these groups were mostly non-existent on the sandy soil districts of Noord-Brabant and Limburg and other poor areas like Drenthe. Agricultural consultants from these poorer areas, which were mostly inhabited by small mixed farms, objected that the study groups needed the farmer to come towards the consultant, while for small farmers, with no extra time on their hands, it was vital that the consultants come to them. Also, a small contribution was asked of the members of the three groups still in existence in Zeeland. Obviously, small farmers were not able to pay such a fee.

[170] ZA, 18.1, RLC, inventory number 223, Bedrijfsconsulent voor Zeeland, Verslag over de maand februari 1936; Verslag over de maand maart 1936.
[171] C.H.J. Maliepaard, 'Bedrijfsanalyse in den landbouw', *Mededeelingen voor den Landbouwvoorlichtingsdienst*. October (Wageningen 1943) 35.
[172] Maliepaard, 'Bedrijfsanalyse in den landbouw', 33-34.
[173] Ibid., 35-36.

Therefore the assembly decided no longer to support these study groups directly by providing an assistant adviser, but it would not oppose any private initiative to form these groups.[174]

The business study groups allowed farmers to learn from each other with the guidance of the business assistant and through the guidance of a newly created dataset, which at the same time taught the participants something about the importance of accounting for their businesses. The acknowledgement of this importance was one of the reasons the business consultants were necessary in the first place. These accounts could show farmers why a neighbouring farm was able to produce the same product with lower costs. By discussing these differences, participating farmers could adjust their businesses to the most profitable business model. In the end, everyone would profit from lower costs by evaluating their business and comparing it to others. However, similar to agricultural education, only bigger farmers were profiting from these interventions in financial and economic literacy, which exposes the difficulty of designing a uniform system of economic extension for an agricultural sector that suffered from enormous diversity.

Economic education

Besides the vertical and horizontal approach to economic extension, the business consultants also diffused their message through the educational system. Arguably the most important subject of the business consultants' educational efforts was to advance people's knowledge on governmental crisis measures that affected agriculture. To ensure this message reached deep into rural society, the business consultants were employed to educate local agricultural and horticultural teachers on these subjects. After they were educated, the teachers would be certified to teach these courses to adults within their districts.[175] In addition to explaining the crisis measures, the teachers were taught about general economics. The consultants discussed a wide variety of economic subjects ranging from the classical school of Adam Smith and socialism to the means of production, rationalisation and efficiency. Furthermore, the teachers were educated on different forms of credit and relevant forms of taxation. A final segment discussed the merits of accounting for farm management.[176]

In some districts, the business consultants were employed as teachers themselves. The consultant for Zeeland taught business economic, agricultural bookkeeping and political

[174] ZA, 18.1, RLC, inventory number 223, Notulen der vergadering der Rijkslandbouwconsulenten gehouden 29 juli 1938.
[175] NA, 2.11.08.02, Landbouw/Landbouw-Econ. Aang., inventory number 37, Brief 30 oktober 1935, Inspecteur van de Landbouw aan R. Bouman.
[176] NA, 2.11.08.02, Landbouw/Landbouw-Econ. Aang., inventory number 37, Programma van de cursus economie te geven door bedrijfsconsulenten aan de landbouwonderwijzers.

science at the winterschool in Goes. He was also responsible for designing model-inventories to be used during the classes in agricultural bookkeeping.[177] The consultant could also be requested to give lectures and teach courses on economic subjects for adults. These lectures had recurring themes like, adjusting the business, agricultural economics and governmental crisis measures. In March 1936 in Zeeland, three courses for adults were requested on "economy and crisis measures" and two were already almost finished. According to the business consultant, the interest for the courses was great, but the material was experienced to be very difficult and participants were having trouble to 'keep up.'[178] As an addition to the course, Mr. Bouwman, lawyer at the Agricultural Crisis Organization for the province of Zeeland, would attend the last course-day to answer any questions on especially the crisis measures.[179]

The business consultant of Gelderland and Utrecht described that the majority of the lectures he gave were about adjusting the business to changing economic circumstances. As a result of these lectures, the consultant was asked for more advice on how to design the farm in an economically sufficient way. The consultant reported that he particularly advised farmers to cultivate more and better fodder on their farm and to properly conserve it. This would lower the costs of fodder and make the farm more profitable or respectively less unprofitable.[180] With new crisis measures came new requests for lectures. This is demonstrated by the reports of the business consultant of Zeeland. At the end of 1936, the subjects of the lectures changed to inform farmers on new crisis measures like the Rent-law and the Small Farmers' Service.[181]

The results of the business consultants' educational efforts on farm management should not be overestimated. They should primarily be merited for trying to really develop an economically educated group of teachers that would be able to diffuse significant information on crisis measures to a large part of rural society. This was highly necessary, because these measures could have a great impact on ones farm. Therefore, farmers profited from the more than 350 agricultural teachers that followed the course taught by the business consultants, effectively expanding the knowledge infrastructure for the diffusion of economic

[177] ZA, 18.1, RLC, inventory number 223, Bedrijfsconsulent voor Zeeland. Verslag over de maand september 1935' Verslag over de maand december 1935.
[178] ZA, 18.1, RLC, inventory number 223, Bedrijfsconsulent voor Zeeland. Verslag over de maand maart 1936.
[179] Ibid.
[180] NA, 2.11.08.02, Landbouw/Landbouw-Econ. Aang., inventory number 37, Brief aan de Inspecteur van den Landbouw door Bedrijfsconsulent voor Gelderland en Utrecht betreffende overzicht werkzaamheden, 30-07-1936.
[181] ZA, 18.1, RLC, inventory number 223, Bedrijfsconsulent voor Zeeland. Verslag over de maand november 1936; Verslag over de maand januari 1937.

knowledge.[182] Nevertheless, in 1944 in the agricultural service's periodical *Mededeelingen voor den Landbouwvoorlichtingsdienst*, a member of the extension service H.J.S. Wienk would strongly criticise the course. He argued the pre-education of the teachers had been one-sided and purely technical. The subject material of the economic course was too extensive and difficult for the teachers to comprehend. Therefore, the economic courses weren't able to fully compensate for the lack of economic knowledge among teachers.[183] Once again, the extension service had tried, but failed in the process.

One major issue with economic extension was still its lack of a solid scientific base. Farmers rarely kept their accounts and agricultural accounting bureaus weren't very eager to share their information with the government or the extension services. This changed in 1939 when the government urged the KNLC to initiate the establishment of an organisation that would collect and investigate agricultural economic information and to advise on issues as price-wage ratios and export. Most importantly it needed to provide cost price calculations that would serve as a scientific base for farm management extension. On the 1st of December 1940, the *Landbouw Economisch Instituut* (LEI) or the Agricultural Economic Institute was founded.[184]

During the war the LEI collected yearly accounts of over 500 farm businesses to investigate costs per produced unit and reported this in yearly cost price calculations. Koppejan believed that the number of farms providing data needed to grow in the coming years. He argued that more available data in certain districts would advance farmer's mentality to further discuss farm managerial issues with consultants and that mutual distrust between the farmers and the extension service could be overcome by gradually correcting managerial flaws that would eventually lead to higher net returns.[185] Furthermore, Maliepaard believed it was essential that scientific agricultural economic research, such as conducted by the LEI, be expanded after the war. Maliepaard emphasized this were to be promoted by the young generation of farmers.[186]

[182] NA, 2.11.08.02, Landbouw/Landbouw-Econ. Aang., inventory number 37, Onderafdeeling II.
[183] H.J.S. Wienk, 'Economische voorlichting in den landbouw', *Mededeelingen voor den Landbouwvoorlichtingsdienst*. Juli (Wageningen 1944) 432.
[184] D.A. Piers, *Wisselend Getij. Geschiedenis van het Koninklijk Nederlands Landbouw-Comité over de periode negentienhonderd vierendertig tot en met negentienhonderd negenvijftig* (Meppel 1959) 119-120.
[185] Koppejan, 'Doel en werkwijze der economische bedrijfsvoorlichting in den landbouw', 390.
[186] Maliepaard, 'Bedrijfsanalyse in den landbouw', 37.

A hybrid form of extension

Ironically, the structural effect of the business consultants was demonstrated when the service was dissolved. After two years, the service was merged with the Agricultural Extension Service, effectively ending the process of trial and error. On the first of April 1937, the function of business consultant was no longer existent and the agricultural consultant was expected to fulfil both roles in the future.[187] The agricultural consultants had been against the appointment of business consultants since the beginning. They believed the agricultural consultants should be responsible for the diffusion of both technological and economic extension. According to Zuurbier, this attitude resulted in little cooperation between the agricultural and business consultants.[188] Wienk, who described a similar dynamic, saying that the separation of both forms of extension wasn't efficient and that both parties were in each other's way, substantiates this view.[189] As a member of the extension service, Wienk had been close to the fire. Furthermore, Zuurbier argued that there was still barely a demand for economic extension and that it lacked a solid scientific base.[190] This statement stems from his comparison with the extension service during the second half of the twentieth century and tends to overlook the significance of the development of financial and economic extension during the 1930s.

The business consultants proved to be part of a process of trial and error resulting in the adjustment of the institution of agricultural consultants to make it economically efficient again. The end of the business consultants did not mean the end of economic extension; on the contrary, it seemed to have solidified the improvement of financial and economic literacy as part of agricultural extension. In 1944, Wienk described being witness to a changed attitude among agricultural consultants. Wienk stated that technique had been made inferior to economic issues in the past years. Not that technological innovation was of less importance than previously, but technological extension was put in 'its right place.'[191] Wienk described the creation of a comprehensive and hybrid form of extension, which incorporated both technological and economic extension. This demonstrates that the government believed increasing financial and economic literacy was a prerequisite for economic growth and a necessary skill to ensure continued economic efficiency of the agricultural sector. This was

[187] ZA, 18.1, RLC, inventory number 223, Mededeling 25 maart 1937. De Minister van Landbouw en Visscherij, 25-03-1937.
[188] Zuurbier, *Landbouwvoorlichtingsdienst*, 42.
[189] Wienk, 'Economische voorlichting in den landbouw', 432.
[190] Zuurbier, *Landbouwvoorlichtingsdienst*, note 121, 157.
[191] Wienk, 'Economische voorlichting in den landbouw', 430-31.

supported by the expansion of the Agricultural Extension Service's staff from 136 people in 1939 to 291 in 1944.[192]

The transition to this hybrid form of extension is well described by Koppejan in the *Mededeelingen van de Rijkslandbouwvoorlichtingsdienst* in 1944. According to Koppejan, economic extension was intended to maximize net returns. This could be realized by accepting extension on rationalisation and efficiency of farms. Koppejan argued this extension would constantly be fitted to economic circumstances to ensure its relevance and to prevent a farmer from being 'right today, wrong tomorrow.'[193] Koppejan emphasized that rationalisation was not an autonomic process, but could only be achieved by using scientific and technological means. 'Therefore, the connection between economic and scientific technological extension needs to be very close. (…) Because, under normal circumstances, efforts to raise yields by technological improvements are only affordable if they are economically responsible.'[194]

The demand for economic extension might have been little according to Zuurbier, but its development into a structural part of agricultural extension demonstrates the government's belief that increasing financial and economic literacy was a prerequisite for future economic growth. Zuurbier's comment might have proven right in 1937, but a few years later, subjects as farm rationalisation and farm management were at the forefront of agricultural extension. The extension services reacted attentively to changing economic circumstances that demanded business-like decisions from farmers that transcended technological advice on productivity growth. It seems supply has preceded demand in terms of economic extension. The design of the extension was constantly renegotiated and through a process of trial and error resulted in a hybrid form of extension that symbolized the development of the agricultural sector during the first half of the twentieth century. The farm became a business, which demanded both technological and financial decision-making. Nevertheless, similar to agricultural education, it was mostly big farmers that benefitted from the financial and economic extension.

[192] Zuurbier, *Landbouwvoorlichtingsdienst*, 47-48.
[193] Koppejan, 'Doel en werkwijze der economische bedrijfsvoorlichting in den landbouw', 385-86.
[194] Ibid., 394.

Agricultural Accounting Bureaus

The development of agricultural education and extension services has demonstrated that interventions to increase financial and economic literacy among farmers were a constant in modernising Dutch agriculture. However, it also displayed that these interventions developed rather late in the first half of the twentieth century and reached a limited group of farmers who were able to get an education or came into contact with the extension services. Agricultural bookkeeping proved to be a recurring theme in these interventions. It was a consistent part of the educational curriculum and the extension service's instrument to enhance farm management skills and spark rationalisation. Nevertheless, agricultural bookkeeping was a little used practice among Dutch farmers and the agricultural sector showed little interest in systematically implementing it.

Yet, there was an exception, the agricultural accounting bureaus. Tax reforms obligated farmers to report their business results to the tax authority, which incited farmers to create an institution that could support farmers with their bookkeeping and tax returns. Despite the fact that farmers effectively outsourced their bookkeeping to these bureaus, I emphasize the guidance of the bureaus and the work the members were tasked with increased their financial and economic literacy and had a sustained effect on their financial behaviour. Fixing clear guidelines for agricultural bookkeeping and presenting these in a simple manner enhanced this effect. Similar to agricultural education and extension, the reach of these bureaus was rather limited. Its positive effect on financial behaviour was limited to members of the bureaus, which consisted primarily of big farmers who could afford a membership and financially benefitted from the bureaus' support.

First, it is essential to understand the farmer's mentality towards bookkeeping during the first half of the twentieth century. This subject was part of the discussion at the Dutch Agricultural Congress in 1910, where speaker C.F. Timmers questioned, 'Is bookkeeping necessary for a farmer, if so, how come so little farmers use it?.'[195] The question itself demonstrates that bookkeeping wasn't a widespread practice in 1910. Timmers stated that what farmers perceived as bookkeeping consisted of checking the cash register and their supplies at the end of the year and comparing these to the result of the previous year. This way the farmer could not discern if specific units had a deficit, which was necessary for a farmer to prevent future losses. According to Timmers, this mentality was partly due to lack

[195] Verslag van het Landhuishoudkundig Congres, 1910.

of educated farmers and the fact that a father could not educate his son, because he lacked the skill as well. Therefore, Timmers believed expanding education on bookkeeping could be part of the solution.[196]

However, historian IJnte Botke has argued that despite increased education and the use of the simpler method of single-entry bookkeeping, farmers simply did not want to do the administrative work and did not see the use in bookkeeping. If they took the time to administrate, they often used a self-designed simplified method that was less time-consuming and they believed to be just as efficient. A famous example of this mentality is Herman Derk Louwes, who was appointed president of the Farmer's society of Groningen in 1929. Despite being well educated and serving as an example for the rest of the farmer's community, Louwes kept a simple "week-book" for his financial administration and a notebook to write down the day-to-day activities on the farm. He did not work these out in proper accounts.[197] By suggesting bookkeeping hardly influenced farm practices, because it was not practiced in the exact way it was taught, Botke misses a crucial point. The fact that these farmer's administrate in the first place is part of the development towards increased financial and economic literacy. Furthermore, with the expansion of agricultural education in the 1920s, the number of farmer's that came into contact with bookkeeping became significantly higher. In the future, this would provide fathers with the knowledge to educate their sons on bookkeeping or at least on a simple financial administration of the farm.

Despite the consistent lack of interest in agricultural bookkeeping, there were some agricultural organisations that attempted to improve farmer's administration practices. The *Inlichtingenbureau voor Chilisalpeter*, or Intelligence Bureau for Chile saltpetre (IvC), provided everyone who visited their office in Den Haag, Amersfoort, Nijmegen or Hengelo, with the opportunity to receive the *Notitieboekje voor den Nederlandschen Landbouwer*, a notebook for farmers. These books were published annually since 1904 and were free of charge. Besides promoting the use of cheap Chile saltpetre to its audience, the book consisted of all sorts of information on for instance weights and measurements or fertilization graphs. Furthermore, the book included a section where the farmer could note the day-to-day income and expenses of the farm.[198] However, there were no clear guidelines on how to administrate, suggesting that farmers used it the way they seemed fit and did not learn from the use of the book.

[196] Verslag van het Landhuishoudkundig Congres, 1910.
[197] IJ. Botke, *Boer en Heer: 'De Groninger Boer', 1760-1960* (Assen 2002) 493.
[198] Inlichtingenbureau voor Chilisalpeter, *Notitieboekje voor den Nederlandschen Landbouwer*.

This changed with the publication of the *Zakboekje ter bijhouding van het kasboek van den Nederlandschen landbouwer*, or the pocket book for administration of the ledger, which was annually published by the IvC since 1928. This included a short description of how to administer, which was supported by a few example pages that were already filled in for the user.[199] The IvC believed that this would allow the farmer to keep a simple account of his farm that would provide him with trustworthy figures of his revenue and expenses.[200] The "learn by example" approach of the pocket book will probably have been more effective in increasing financial literacy and changing financial behaviour in the form of appropriate administration and simple bookkeeping. Effectively, it would have improved the use of a uniform practice of bookkeeping, which according to the organisation of young farmers of the NCB, was essential to ensure farmers were appraised in a consistent manner.[201]

During the first half of the 1920s, *Boekhoudbureau's* or Accounting Bureaus were established throughout the Netherlands. These were founded by the provincial Farmer's unions and societies, which made its paid services available to members of the founding organisation. To investigate the ability of these institutions to mobilise farmer's to do their bookkeeping, this chapter will use Brabant as a case study. Brabant provides a good case study, as it housed two Accounting Bureaus, one established by the Farmer's Union NCB and one by the Farmer's Society of Brabant (NMBL). The key differences between these two organisations were their ideological background, their leadership and number and social background of its members. The NCB was a catholic Farmer's union, lead by farmers and clerics with a large amount of members, whose majority consisted of smaller uneducated farmers. [202] The NBML on the other hand was a smaller and liberal organisation, which was lead by businessmen and to a lesser extent by farmers. Its members mostly consisted of bigger farmers. [203]

The main reason for the establishment of accounting bureaus was the reform of the income tax in the Netherlands in 1914.[204] Dutch Minister of Finance, N.G. Pierson had introduced the income tax in 1891 and installed the so-called "split" income tax. Taxation was split into two separate taxations, one on wealth and one on income acquired through business

[199] Inlichtingenbureau voor Chilisalpeter, *Zakboekje ter bijhouding van het kasboek van den Nederlandschen Landbouwer,* ed. 2 (1929).
[200] Inlichtingenbureau voor Chilisalpeter, *Notitieboekje voor den Nederlandschen Landbouwer* (1925).
[201] 'De Ontwikkeling van het Landbouwboekhouden', *Jaarboekje van den R.K. Jongen Boerenstand* (1931).
[202] T. Duffhues, *Voor een betere toekomst,* 48-55.
[203] Bieleman, *Boeren in Nederland,* 306.
[204] J. Baert, 'De invloed van het onderwijs en van de wetenschap op de landbouw', in: Z.W. Sneller (ed.), *Geschiedenis van de Nederlandse Landbouw 1795-1940* (Groningen 1951) 231.

and profession.[205] The latter scarcely applied to farms, which were partly exempted because Pierson believed there was no appropriate way to determine exactly how many income farmers acquired through their business and profession. The complexity of the agricultural business made it difficult for farmers to precisely calculate their costs per produced unit and net profits, which was why most of them didn't bother to waste their time on these calculations at all. Pierson knew that the majority of farms lacked any sort of detailed accounting and therefore decided it was better to exempt the farms from taxation, than to tax them on an estimate of their profits. As a result, taxation was only imposed on a farmer's capital input and not on its net profits.[206]

This changed in 1914 when Minister of Finance M.W.F. Treub decided to revise Pierson's "split" income tax and unified both taxes into one general income tax.[207] The tax reform resulted in the loss of tax exemptions the farmers had enjoyed until then. Only income below *ƒ*650.- remained exempt from taxation, everything above was taxed in a progressive manner.[208] To assess the amount of income taxation that needed to be paid, the tax authority used the so-called *fictief bronnenstelsel* or "source-fiction-system". This system appraised taxes based on the idea that sources of income at the beginning of the fiscal year would stay stable for the entire year. This meant the appraisal didn't include any added or lost sources of income. On top of that people had to divide assets in an old and new category, of which the latter represented assets that hadn't been present during the entire fiscal year. The old assets were estimated by the income they had generated in earlier years and the new assets were estimated by their expected yearly income. Not only was this system too complicated for most people to comprehend, it was also highly sensitive for fraud. Only the assets present at the beginning of the fiscal year were taxed, which meant a lot of people removed assets from their balance sheet before they were appraised for their tax return.[209]

Tax appraisal under the reformed law was based on a farm's profit over the previous fiscal year, which meant that bookkeeping suddenly became highly significant to especially big farmers. Big farms were often complex businesses, which made it impossible to correctly appraise the farm without proper accounting. This would have been easier for smaller farms, which had fewer assets that needed to be appraised. As Pierson had predicted, most farmers didn't keep these kinds of accounts and lacked the knowledge to do so. This is well portrayed

[205] C. Smit, *Omwille der Billijkheid. De strijd over de invoering van de inkomstenbelasting in Nederland* (Amsterdam 2002) 261-265.
[206] Baert, 'De invloed van het onderwijs en van de wetenschap op de landbouw', 231.
[207] Smit, *Omwille der Billijkheid*, 268.
[208] Wet op de Inkomstenbelasting 1914.
[209] *Geschiedenis van het Accountants- en Boekhoudadviesbureau van de NCB, 1924-1974* (Tilburg 1974), 27-28.

by a striking example of a farmer who filled in his tax return form by only mentioning he had 14 children and adding the comment that 'I did the best I could'.[210] Still, the tax authority needed to appraise these farms and without proper accounting the appraisal would be based on estimates. Tax officials would visit a farm and draft an inventory based on global profit calculations norms, which were provided by the tax authority. These norms consisted of a dataset on average profit per cow, chicken, one hectare of potatoes, one hectare of corn, etc. With this dataset, tax officials estimated a farmer's yearly profit, but more than often they were not very accurate. This was partly because the norms didn't account for the location of the farm, quality of the soil, sort of livestock, etc.[211]

Apparently this system was adequate for small farmers who were mostly exempt from taxation because the majority of their income was below the exemption limit. Furthermore, they had fewer assets than big farmers and therefore less miscalculation by estimates could be made. The appraisal of a big farm with a large number of assets was more vulnerable. Assuming all estimates were at least a little higher or lower than the actual income, farmers with more assets suffered from more wrong appraisals, which could lead to a large number of miscalculations per asset and consequently a large miscalculation of the total income. These miscalculations inspired farmers to establish accounting bureaus, set up to help farmers with their accounts.[212] The first was founded in Friesland in 1918 with 127 members, which number increased to 782 members in 1925. Although they were called members of the accounting bureaus, they were actually customers of the bureaus.[213]

The accounting bureaus of Brabant

During the first years of the 1920s the NCB had noticed there was a growing demand within its organisation for expert support with bookkeeping and the fiscal authorities. In their annual report of 1923 the NCB reported that there had been a stark growth in requests of advice on agricultural bookkeeping and income taxation. At their head office in Tilburg, over 566 people had received oral advice on these matters. This growing demand resulted in the establishment of the Accounting Bureau of the NCB on the 26th of March 1924. The new institution came under the supervision of an executive committee lead by P.J. van Haaren and

[210] *Geschiedenis van het Accountants- en Boekhoudadviesbureau van de NCB*, 30.
[211] Ibid., 30.
[212] Baert, 'De invloed van het onderwijs en van de wetenschap op de landbouw', 231.
[213] Baert, 'De invloed van het onderwijs en van de wetenschap op de landbouw', 231 ; *Noordbrabantsch Landbouwblad*, woensdag 12 augustus 1925.

C. v.d. Ven, secretary and treasurer of the NCB.[214] The Accounting Bureau had three goals. First it wanted to support its members by keeping their accounts, doing their tax return and issue eventual claims for tax repayment. Second it wanted to organise lectures at the departments of the NCB to educate farmers on single-entry bookkeeping, so they could practice it themselves. Third, it wanted to provide advice on all matters concerning accounting, tax return and tax claims.

The Accounting Bureau was a fast-growing organisation, starting with 30 members in 1925 and growing to 1054 in 1935 and 1365 in 1940.[215] This amounted to almost four percent of the total amount of members of the NCB. Presumably most of the paying members consisted of large or middle-large farmers.[216] The Accounting Bureau also provided advice on the tax return and support with tax claims to a growing number of NCB members who did not pay for the services of the Accounting Bureau. In 1940 alone, the bureau provided up to 1745 advices to this group of people. The bureau had one head office in Tilburg. Expansion to more local offices would only begin after the Second World War.[217]

The NBML established its own Accounting Bureau in Bergen op Zoom during the early 1920s. After merging with the already existing Accounting Bureau "*Onderling Belang*", residing in the municipality of Fijnaart, they successfully centralised the effort to provide accounting services to the members of the NBML.[218] The Accounting Bureau of the NBML had similar goals as the NCB's. It wanted to promote the importance of agricultural bookkeeping and provide its members with instructions, models and reports to record their company's finances. The bureau kept its members accounts and helped them with their tax return and eventual claims and advised on any other fiscal or accounting matter.[219] Archival sources suggets that the Accounting Bureau of the NBML did not provide personal advice to non-members. The bureau started with 24 members in 1923 and grew to 78 in less than a year. After that the growth slowed down to 164 members in 1935 and 172 members in 1939.[220] Thus, the absolute number of members of the Accounting Bureau of the NCB was much higher than for the NBML.

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[214] *Geschiedenis van het Accountants- en Boekhoudadviesbureau van de NCB*, 3-6.
[215] Ibid., 7.
[216] Duffhues, *Voor een betere toekomst*, 96, 403.
[217] *Geschiedenis van het Accountants- en Boekhoudadviesbureau van de NCB,* 7,13.
[218] Brabants Historisch Informatie Centrum (hereafter:BHIC), 213, Noordbrabantse Maatschappij van Landbouw 1853-1999 (hereafter:NMBL) inventory number 119, Bericht aan de besturen der Afdeelingen van de NMBL, 19 maart 1924.
[219] BHIC, 213, NBML inventory number 119, Statuten van de Vereeniging voor Landbouwboekhouding "Onderling Belang".
[220] BHIC 213 NBML inventory number 6, Jaarverslagen van het boekhoudbureau van de NMBL ; inventory number 119, Verslag van de werkzaamheden van het bureau der landbouwboekhouding,.

When comparing the number of members of the accounting bureaus to the total members of the founding organisations, it can be discerned that this number was much higher for the NBML. This was around fifteen percent in 1939.[221] This discrepancy might be explained by the nature of the members of both organisations. The NCB was an organisation that attracted farmers from every social standing, while the provincial Farmer's societies mostly attracted big farmers, because of its liberal and slightly elitist character. This was one of the reasons the Farmer's societies lost a significant amount of members to the new Farmer's unions like the NCB. Between 1900 and 1940 the number of members of the NBML had decreased from 3230 to 1105, while the number of members of the NCB had grown from 12275 to 32637 over the same period.[222] In 1936 approximately 70% of the NCB members owned a farm smaller than 7 ha, around 25% owned a farm of a size between 8 and 15 ha and only 5% owned more than 15 ha. Three-quarters of its members lived on the sandy soil districts of Brabant, which was cultivated by a large amount of small mixed farms.[223]

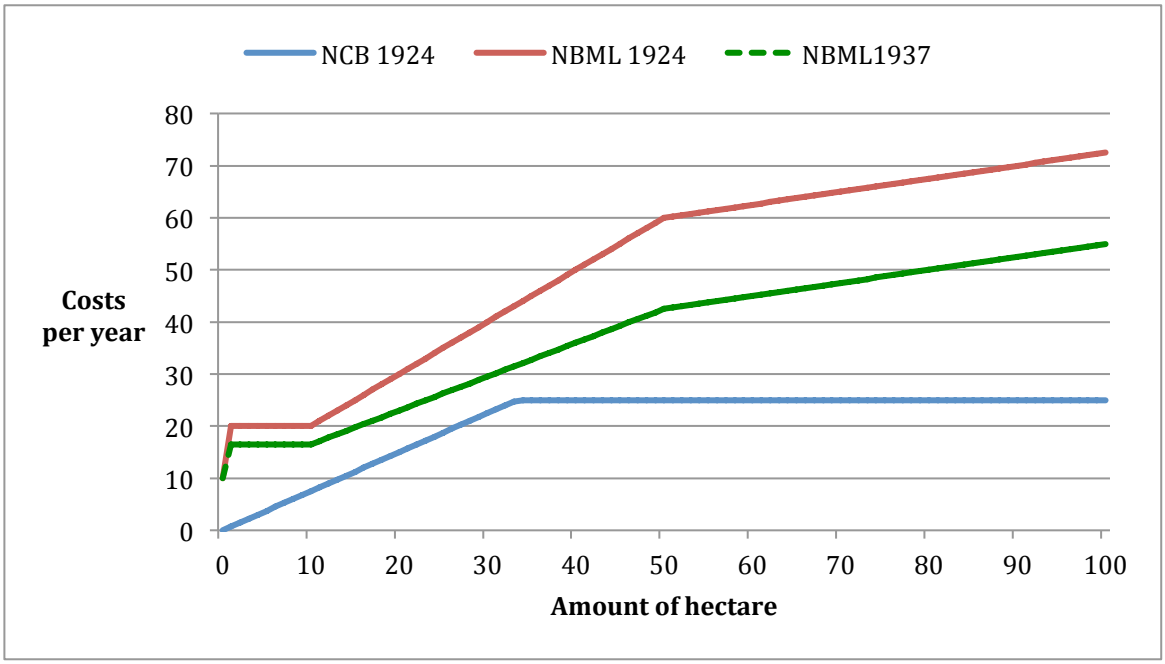
Members of the NBML were often big farmers and therefore had the means and the motivation to become a member of the Accounting Bureau, while most members of the NCB did not. Although numbers on farm size for the members of the NBML are lacking, a quick look at its list of members and departments shows a different social stratification than the NCB. Most of these departments were situated in Western Brabant, where farmers cultivated a marine clay soil, which was more suitable for arable farming and therefore bigger farms were established here.[224] It is also interesting to mention that the departments that left the NBML or were dissolved between 1900 and 1940 were mostly located in sandy soil districts.[225] These departments were lost to the more inclusive NCB.

The costs of using the services of the accounting bureaus are demonstrated in graph 1. These also highly differed between the NCB and the NBML. For the Accounting Bureau of the NCB one would pay *ƒ*0,75 per ha with a maximum of *ƒ*25.- in 1924.[226] Membership of the Accounting Bureau of the NBML was much more expensive. In 1924, a member would have to pay an annual fee of *ƒ*10.- and on top of that another *ƒ*1.- per ha with a minimum of 10 and a maximum of 50 ha. For every ha over 50, a member would pay *ƒ*0,25 per ha.[227] Although the costs per ha was lowered over the years to *ƒ*0,75 and eventually to *ƒ*0,65 in 1937, it

[221] P.J. van Loon, *Honderd jaren Maatschappij van Landbouw in Noord-Brabant 1851-1951* (Amsterdam 1951) 83.
[222] Duffhues, *Voor een betere toekomst*, 48.
[223] Ibid., 132.
[224] Van Loon, *Honderd jaren Maatschappij van Landbouw in Noord-Brabant,* 64.
[225] Ibid., 52, 64.
[226] *Geschiedenis van het Accountants- en Boekhoudadviesbureau van de NCB*, 6.
[227] *Noordbrabantsch landbouwblad*, woensdag 27 februari 1924

demonstrates that being a member of an accounting bureau was an expensive undertaking, especially for members of the NBML. The minimum of *ƒ*20,- for a membership at the NBML's Accounting Bureau, would not have attracted small farmers. However, the services of the Accounting Bureau of the NCB seemed available to both small and large businesses, but still mainly attracted big farmers into joining.

Graph 1: Membership costs of the accounting bureaus per hectare



What did the members of both bureaus buy for their yearly contributions? First of all the bureau would make up their accounts, with the help of the farmer. At the NCB, farmers used the book *"Landbouwboekhouden en Inkomstenbelasting"* written by its Accounting Bureau's director, P.J. van Haaren and a notebook for the day-to-day administration of income and expenses.[228] In the book by Van Haaren, the farmer would record his revenue both in money as in kind, and his expenses in money and in household services at the expense of the farm, like a maid or clothes for the children. The book also included a farm inventory, with on the one hand the farms assets: buildings, land, animals, vehicles, large agricultural equipment, tools, goods in stock, crops on the field and debtors and on the other hand the farm's liabilities: outstanding debt, unpaid supplies and unpaid wages. Assets would be appraised against their utility value, unless a farmer was planning to sell it, than it would be

[228] *Geschiedenis van het Accountants- en Boekhoudadviesbureau van de NCB*, 17-18.

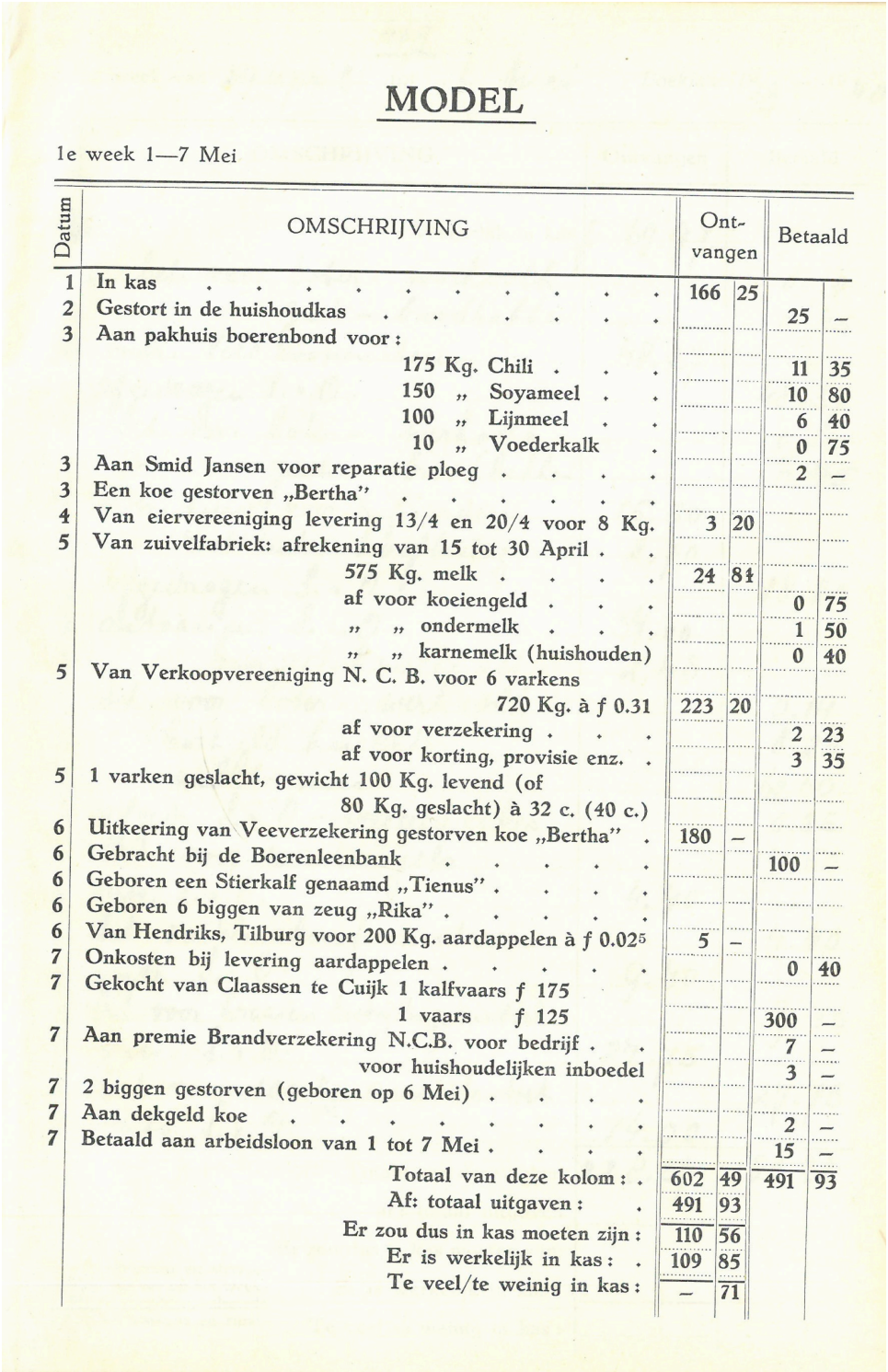
appraised at commercial value. In the end, farm profits were calculated by decreasing the revenue with the expenses and deduct this number with the decrease of farm capital as a result of comparing the assets and liabilities on the farm inventory. At the end of every fiscal year, the Accounting Bureau would provide its members with their own overview of their farm's accounts.[229]

In the 1930s the Accounting Bureau of the NCB provided its members with a new accounting book. In the introduction of the book, farmers were advised not to combine the farm's accounts with the household's accounts. Also, farmers were expected to record the names and places of residence of debtors and the death and birth of livestock. They were also advised to check their cash register on a weekly basis to ensure the actual cash in register corresponded with the accounts. If it didn't, they had to correct the mistake themselves, if necessary with help of the bureau. All of this was needed to ensure there would be no "inconvenient difficulties" with the tax authorities.[230]

The organisation of young farmers of the NCB underlined the 'significant didactic value' of farmers doing their own accounting.[231] Both books included example pages, as shown by illustration 1. These made it easier for farmers to properly keep their accounts. These pages might be the most visible aspect of the accounting bureaus' effort to increase financial and economic literacy. By adhering to the form of bookkeeping as shown in the example, farmers were educated to do their administration in a uniform and appropriate way. Although the effect of these examples is difficult to measure, the examined filled in books show a similar picture. The farmers neatly followed the instructions of the books and an improvement of their skills could be discerned as the books were more accurately filled in over the years. This is a great example of the didactic value of these books.[232]

[229] P.J. van Haaren, *Landbouwboekhouden en Inkomstenbelasting* (Tilburg 1934).
[230] BHIC, 761, F.J.M. Smits van Oijen, privé, 1895-1984, inventory number 621, Doorschrijfkasboek Boekhoudbureau NCB, van landgoed De Heihoef, 1939-1940.
[231] 'De Ontwikkeling van het Landbouwboekhouden', *Jaarboekje van den R.K. Jongen Boerenstand* (1931), 17.
[232] This consists of the books by the IvC and the NCB, which were submitted to the *Kasboekje van Nederland* project.

Illustration 1: Example-page of Accounting Book by the NCB.[233]



MODEL

1e week 1—7 Mei

Datum	OMSCHRIJVING	Ontvangen		Betaald	
1	In kas	166	25		
2	Gestort in de huishoudkas			25	–
3	Aan pakhuis boerenbond voor:				
	175 Kg. Chili			11	35
	150 „ Soyameel			10	80
	100 „ Lijnmeel			6	40
	10 „ Voederkalk			0	75
3	Aan Smid Jansen voor reparatie ploeg			2	–
3	Een koe gestorven „Bertha"				
4	Van eiervereeniging levering 13/4 en 20/4 voor 8 Kg.	3	20		
5	Van zuivelfabriek: afrekening van 15 tot 30 April				
	575 Kg. melk	24	81		
	af voor koeiengeld			0	75
	„ „ ondermelk			1	50
	„ „ karnemelk (huishouden)			0	40
5	Van Verkoopvereeniging N. C. B. voor 6 varkens				
	720 Kg. à f 0.31	223	20		
	af voor verzekering			2	23
	af voor korting, provisie enz.			3	35
5	1 varken geslacht, gewicht 100 Kg. levend (of				
	80 Kg. geslacht) à 32 c. (40 c.)				
6	Uitkeering van Veeverzekering gestorven koe „Bertha"	180	–		
6	Gebracht bij de Boerenleenbank			100	–
6	Geboren een Stierkalf genaamd „Tienus"				
6	Geboren 6 biggen van zeug „Rika"				
6	Van Hendriks, Tilburg voor 200 Kg. aardappelen à f 0.02⅝	5	–		
7	Onkosten bij levering aardappelen			0	40
7	Gekocht van Claassen te Cuijk 1 kalfvaars f 175				
	1 vaars f 125			300	–
7	Aan premie Brandverzekering N.C.B. voor bedrijf			7	–
	voor huishoudelijken inboedel			3	–
7	2 biggen gestorven (geboren op 6 Mei)				
7	Aan dekgeld koe			2	–
7	Betaald aan arbeidsloon van 1 tot 7 Mei			15	–
	Totaal van deze kolom:	602	49	491	93
	Af: totaal uitgaven:	491	93		
	Er zou dus in kas moeten zijn:	110	56		
	Er is werkelijk in kas:	109	85		
	Te veel/te weinig in kas:	–	71		

[233] BHIC, 761, F.J.M. Smits van Oijen, privé, 1895-1984, inventory number 621, Doorschrijfkasboek Boekhoudbureau NCB, van landgoed De Heihoef, 1939-1940.

At the Accounting Bureau of the NBML the practice was quite similar. The NBML provided its members with their own model pocket book accompanied by 30 envelopes to send in their administration. The first year this book would cost *ƒ*0,65, but the subsequent years it would be provided free of charge. The book consisted of two inventories, of which one would be filled in by the farmer and sent to the Bureau. The rest of the year the farmer would record its income and expenses on a weekly basis. Then he would copy its account for that week onto another page and send it to the Bureau. The farmer would do this every two weeks, sending in two weeks of administration. At the end of the fiscal year, the farmer would receive his yearly accounts from the Bureau.[234] The Bureau also informed members of the NBML on the appropriate way to fill in their inventories through a set of articles in the NBML's weekly newspaper *Landbouwblad voor Zeeland en Noord-Brabant*.[235] These informative articles along with articles urging farmers to become a member of the Accounting Bureau would always appear around March and April, which is no coincidence, considering the fact the fiscal year ended on the first of May.

An examination of the NBML's annual reports has demonstrated that the accounting bureaus were quite effective in successfully claiming tax repayments for their members. In the fiscal year 1936/37 the NBML reclaimed an amount of *ƒ*3150,56 from the tax administration, which was approximately *ƒ*20.- per member.[236] This proves that farmers were right to challenge the source-fiction system of tax appraisal and that agricultural bookkeeping was a useful practice for big farmers. The changed financial behaviour of the members literally paid out. This was the result of the effort of the farmer to administer his business in the correct way. Only then was it possible to successfully challenge the tax authority on its appraisal. Van Haaren, who claimed it was no wonder so many claims for tax repayment were denied as long as the majority of farmers didn't take the time to accordingly keep their accounts, substantiates this.[237] Unfortunately the archives of the Accounting Bureau of the NCB were destroyed during the Second World War and therefore only numbers on the results of the Accounting-bureau of the NBML are available.

The unwillingness of small farmers to keep their accounts and the interest of the Dutch government in exactly these accounts moved parliament to employ the accounting bureaus. During the economic crisis of the 1930s the Accounting Bureau of the NCB was asked to do

[234] *Noordbabantsch landbouwblad*, woensdag 23 april 1924.
[235] *Landbouwblad voor Zeeland en Noord-Brabant*, zaterdag 22 maart 1930 ; *Landbouwblad voor Zeeland en Noord-Brabant*, zaterdag 29 maart 1930.
[236] BHIC, 213, NMBL, inventory number 6, Jaarverslagen van de NBML 1938-1939.
[237] Haaren, *Landbouwboekhouden en Inkomstenbelasting*, voorwoord.

the accounting of 50 farms smaller than 5 ha to provide the government with more financial data on these small farmers. The bureau received a subsidy of *f*500.- for this task. In 1933 the subsidy was changed to *f*9.- per farm.[238] From the 1st of May 1936, both the accounting bureaus of the NCB and the NBML were asked to keep cost-price accounts for type-businesses.[239] These accounts calculated the cost price for every product and the profit made, so the farmer could see the costs per produced unit. If the accounts showed an anomaly, the agricultural consultant would confront the farmer of this type-business with the numbers and investigate why a certain product had been so expensive to produce. This knowledge could be shared with other farms. However, farmers weren't eager on providing the large amount of data needed for these kinds of accounts, which meant that only a few of these type-business accounts were still kept in 1940.[240]

In conclusion, the accounting bureaus were established to battle economic inefficiency. Tax reforms provided the incentive for agricultural organisations to institutionalise bookkeeping and develop a uniform practice of single-entry bookkeeping. Suggesting these bureaus did not increase financial and economic literacy because bookkeeping was outsourced to them would be jumping to conclusions. The work that needed to be done by the farmer was quite extensive and he learned by example, which simplified the practice and improved a farmer's knowledge on appropriate bookkeeping. Without the help of the accounting bureaus it is very doubtful if farmers would have learned to do their bookkeeping in a proper manner. During the process, a farmer got to know his business better than before. The yearly accounts they received from the bureaus provided them with valuable information on their business. However, both the NCB and the NBML weren't able to influence a large number of farmers. This was mainly because of two reasons. First because of the membership costs of the accounting bureaus, which were quite high. Second, because big farmers benefitted more from a proper tax appraisal than small farmers whose margins were smaller to begin with. This suggests the demand for bookkeeping skills was mostly coming from big farmers and small farmers hardly profited from the accounting bureaus.

[238] *Geschiedenis van het Accountants- en Boekhoudadviesbureau van de NCB*, 20-21.
[239] *Geschiedenis van het Accountants- en Boekhoudadviesbureau van de NCB*, 20-21 ; BHIC, 213, NMBL, inventory number 6, Jaarverslagen van de NBML, 1938-1939.
[240] *Geschiedenis van het Accountants- en Boekhoudadviesbureau van de NCB*, 21.

Dienst Kleine Boerenbedrijven

American historian Stephen P. Walker has demonstrated the rehabilitative effort by the Farm Security Administration to increase financial and economic literacy among American farmers who were impoverished by the Great Depression. The FSA was able to accomplish this through supervised credit, which could only be received if a farmer adhered to the FSA's instructions, most prominently the demand that farmers do their bookkeeping. Bookkeeping could alleviate the farmers and was seen as an emancipatory instrument. This supervision reached into the domain of the farm household, where farmwomen were encouraged to improve their standard of living through careful budgeting, self-sufficiency, bartering, and supplemental income.[241] Financial education was utilised to protect a weak part of the American agricultural sector.

The Great Depression impoverished a significant segment of Dutch farmers as well, small farmers in particular. These farmers formed the backbone of the KNBTB and were therefore of great importance to this organisation, stating in 1934:

> 'People can now be ice-cold and say that what can no longer exist economically should disappear and that these small self-employed farmers, when they can no longer maintain themselves, they should drop a spot on the social ladder, but then people are forgetting two things. First, society especially cannot miss this large group of small self-employed farmers, because they consist of religious and moral superior people and because of her social significance, standing between capitalists and proletarians. Second, that there is no other employment for this large group.'[242]

Until the Great Depression small farmers had scarcely came into contact with financial and economic education or extension. They had always been able to adjust their business to changing economic circumstances and opportunities and felt no need for such educative efforts. This chapter will investigate the development of interventions to increase financial and economic literacy among small farmers in an effort to alleviate them from poverty. This was institutionalised in the *Dienst Kleine Boerenbedrijven* (DKB) or the Small Farmers Service, a crisis organisation similar to the FSA, established by the Dutch government to support small farmers through extension and direct interventions in farm management.[243] I will argue that this effort was instigated both by religious and economic incentives as is

[241] Walker, 'Accounting and rural rehabilitation', 213-214.
[242] Smits, *Boeren met beleid*, 110.
[243] C. Stevens and Th. J. Platenburg, *Hulpverleening aan kleine grondgebruikers* (Alphen aan den Rijn 1938).

demonstrated in the quote, but was not necessarily economically efficient. Furthermore, it is questionable if the top-down approach of financial and economic extension utilised by the DKB was successful, as a similar approach by the business consultants had not been. This substantiates the view that interventions in financial and economic education or extension primarily benefitted the minority of big farmers, while direct interventions to increase financial and economic literacy among farmers served to protect the bottom of the farmer's class from impoverishment but did not have a lasting effect on proper financial behaviour.

The small farmer

Small farmers had been able to benefit from the process of de-prolerization as described by Van Zanden, but also enjoyed excellent social standing within Dutch agriculture. A State Commission investigating Dutch agriculture discussed the plight of the small farmers in 1906. The Commission's recommendation would influence the government's stance towards small farmers for the first half of the twentieth century. The Commission believed that the small farmer was highly emancipatory, that he was the prime example of a wageworker turned into entrepreneur, who would further develop into a successful big farmer. Small farmers were the embodiment of the opportunities agriculture provided. Therefore, in the eyes of the Commission, preserving the small farmers would reduce the number of people leaving the countryside to settle in the cities, but provide the incentive for more people to try their luck in farming. Furthermore, the Commission believed small farmers would be great at accumulating capital because of their sobriety and thrift. Therefore, the Commission recommended the government to remove any obstacles that could hinder small farmers to grow into their true potential.[244]

During the first thirty years of the twentieth century, Dutch agriculture had flourished and a vast amount of new land was cultivated, opening up opportunities for more people to own a piece of land. This resulted in a rapid growth of the amount of small farmers in the Netherlands until the 1930s. Table 2 shows the number of landowners in the Netherlands reached its peak during the 1930s, at which point the small farmers amounted up to 70% of all landowners.[245] The majority of small farms could be found in Gelderland (24%), Noord-

[244] A.C. Beekman,' De Kleine Boeren in Nederland', *Het Gemeenebest. Maandblad voor het Nederlands Volksgeheel en tot Bevordering van de* Volksgemeenschap 2 (1939-1940), 52.
[245] H. de Vries, 'Overheidszorg voor de kleine boer in Nederland 1880-1940: positieve discriminatie?', in: H. Diederiks and C. Quispel (eds.), *Onderscheid en minderheid. Sociaal-historische opstellen over discriminatie en vooroordeel* (Hilversum 1987) 178.

Brabant (19%) Limburg (13%) and Overijssel (12%), which consisted predominantly of sandy districts.[246]

Table 2: The amount of Dutch landowners and the percentage of small landowners, 1881-1945.[247]

	Total	1-5 ha	5-10 ha	Number of small landowners (%)
1881	137,010	59,600	28,800	64,5
1890	166,304	76,900	33,900	66,6
1900	171,639	81,600	34,600	67,6
1910	209,191	109,600	41,400	71,9
1921	221,649	112,600	48,900	72,8
1930	234,640	110,600	55,000	70,7
1938	236,640	106,000	54,100	67,5
1945	231,387	103,400	55,900	68,7

According to historian Hille de Vries, the increased amount of small landowners was a peculiar phenomenon. It occurred during what De Vries calls the "take-off" of Dutch industrialisation. When the amount of workers in agriculture was decreasing, the number of small landowners was actually increasing. This led to a decrease of labour productivity. Instead of flocking to the cities to find work, many decided to start cultivating their own piece of land.[248] However, the one-sided dependence on markets abroad and the actual vulnerability of small farmers was increasingly causing problems. The First World War had been the first sign on the wall, but when Britain closed its borders to fresh pork in 1926, farmers had to adjust their businesses again to fattening pigs for bacon. According to Bieleman this created considerable difficulties.[249] Because of the low labour productivity and their market vulnerability, the increase of small farmers was seen as a problematic development, which became known as the "smallholders' problem.[250] The number of small landowners would not start decreasing until after the Second World War. According to De Vries this "time-lag" can be explained by the preferential treatment of agriculture by the Dutch government during these years.[251] This treatment included the intensified extension efforts and financial support of small farmers during the economic crisis of the 1930s.

Initially, small farmers benefitted from the economic crisis of the 1930s and there was no need to adjust their farms by the principles of financial and economic extension. As prices

[246] Stevens, *Hulpverleening aan kleine grondgebruikers*, 1.
[247] De Vries, 'Overheidszorg voor de kleine boer in Nederland', 177.
[248] Ibid., 178.
[249] Bieleman, 'Dutch agriculture', 35.
[250] Bieleman, *Boeren in Nederland*, 293.
[251] De Vries, 'Overheidszorg voor de kleine boer in Nederland',178 ; Bieleman, *Boeren in Nederland*, 293.

of arable crops plummeted, the small farmers were able to buy cheap fodder for their cattle, essentially lowering their production costs. However, the crisis measures implemented by the Dutch government in the 1930s seriously affected small farmers. The restrictions on numbers of livestock and the artificially high prices of fodder limited the opportunity for farmers to intensify their production to increase their income. Furthermore, possibilities of increasing income by working at bigger farms or factories were limited because of increased mechanization and the effects of the economic crisis on big farms, which were producing at a lower intensity, needing fewer personnel. Lacking sufficient financial reserves, many small farmers weren't able to uphold the costs for managing their farm.[252] This suggests that the crisis measures further restricted small farmers to adjust to changing markets, which they had been able to do so successfully. Small farmers had to compete on markets abroad, but their products were no longer competitive as long as the Dutch market was disturbed by artificial prices and productivity restrictions, which increased their cost price to disproportionate heights.

The catholic Farmer's unions were particularly invested in the situation of the small farmers, which was no coincidence as the majority of the KNBTB members consisted of small farmers.[253] The KNBTB had made a case for direct financial aid to small farmers within the 3CLO talks, but the CBTB and the KNLC, which represented a majority of big farmers, were against direct aid and argued that impoverished farmers who needed help should receive this from the Ministry of Social Affairs.[254] This stance by the other organisations effectively prevented concerted action by the agricultural organisations to preserve the existence of small farmers, which was astonishing to the KNBTB. In 1934, more than 110,000 farms with a size between 1 and 5 ha existed in the Netherlands. The KNBTB calculated that this concerned a group of over a million people of which the government could not afford a collapse.[255]

The impasse between the 3CLO's was broken by the appointment of L.N. Deckers as Minister of Agriculture in 1936. Deckers was a former secretary of the KNBTB and therefore provided the KNBTB with the opportunity to directly influence government policy towards small farmers.[256] This resulted in the establishment of the DKB on the 27th of July in 1936 by

[252] De Vries, 'Overheidszorg voor de kleine boer in Nederland', 183-184.
[253] Smits, *Boeren met beleid*, 74.
[254] Duffheus, *Voor een betere toekomst,* 109.
[255] P.M.M. Klep, 'De Nederlandse katholieke boerenbonden en de agrarische gezinsproblematiek', in: T. Clemens (eds.), *Moeizame moderniteit. Katholieke cultuur in transitie. Opstellen voor Jan Roes (1939-2003)*(Nijmegen 2005), 319.
[256] Klep, 'De Nederlandse katholieke boerenbonden', 320.

Deckers.[257] A discussion on the support to small farmers at the Dutch Agricultural Congress shows the discord within the agricultural sector on this matter. Agricultural consultant P.A. van den Ban suggested that those who can do it best should exploit the land and therefore bigger successful farmers should be able to acquire land from the small farmers and cultivate it. However, many believe this to be too harsh. They believe small farmers need to be kept working because of the crisis and they believe that is has not been proven that under normal economic circumstances the small farmer experiences more difficulty than big farmers.[258]

This demonstrates the belief that the small farming profession could be preserved by proper extension and that small farmers only needed to catch up on their education. If successful this would lead to the preservation of the small farmers profession. However, modernisation had already caught up with the small farmers. The small farming profession had been problematic since the 1920s, which was further magnified by the economic crisis. This can best be discerned by the rapid decrease of small farmers, during the 1930s, but more prominently after the Second World War, when increased mechanization turned family farming into agri-business.[259]

Designing extension

The DKB shows resemblance to the Farm Security Administration in the US. The organisations were employed by the government to prevent further impoverishment of rural society, specifically small farmers in the case of the DKB. The main instrument utilized by the FSA to prevent this, was the Standard Rural Rehabilitation Loan, which was a form of supervised credit for farmers to be used for the purchase of tools, machinery, livestock, feed, seed, fertilizer and also to repair buildings and meet household needs. Many farmers weren't able to receive credit from commercial lenders to invest in the preservation of their farm; therefore the FSA filled that void. In return for this credit, farmers were obliged to do their bookkeeping, to ensure government funds wasn't rationally spent, but also because of the emancipatory value of accounting. Besides financial aid, the FSA tried to rehabilitate farmers to become financially independent and improve their standard of living. This included the household, which was an integral part of the farming business.[260]

The DKB chose a different approach. To determine how the small farmers could best be supported, the DKB implemented a research in 1936. This had shown that one of the main

[257] Stevens, *Hulpverleening aan kleine grondgebruikers*, 14.
[258] Verslag van het Landhuishoudkundig Congres, 1936, 55-56.
[259] Bieleman, 'Boeren werd *agri-business* – een synthese', 227-229.
[260] Walker, 'Accounting and rural rehabilitation', 213-216.

causes of poor business results was the fact that most of the farms weren't properly economically managed, meaning they weren't rationalised and cost efficient. Furthermore, the research showed that in most cases, with a small amount of money these small farms could re-design their business-model to increase their future return.[261] This research determined the future methods the DKB would employ to support small farmers.

Distributing supervised credit could provide funds for a necessary investment, but there already existed enough opportunities to receive credit at relatively low rates for farmers through the cooperative agricultural banks.[262] However, they were hardly used for short-term credit and mainly served as savings banks during the first decades of the twentieth century.[263] Therefore, the DKB wanted to improve the technological and economic functioning of these farms, primarily through individual business extension.[264] With the instructions of experts, small farmers could rationalise their farm management to become profitable again.[265]

In 1937 the Commission of Advice of the DKB published its *Rapport over den social-economischen toestand der kleine boerenbedrijven in Nederland gevolgd door voorstellen ter verbetering van den bestaanden toestand*, a report on the economic situation of small farmers in the Netherlands. For this report, the commission collected financial information on 463 small farms spread around the Netherlands.[266] The report showed the average business income of a small farm of an average size of 3,66 ha consisted of *ƒ*88,24 a year, provided that a farmer lived rent-free and provided vegetables for his own consumption. The commission believed the economic situation among small farmers was in a state of emergency and suggested the Dutch government take extensive measures to ensure their survival.[267]

The report suggested supporting small farmers by employing them on their own farms with financial aid of the government, which could also be received in kind. In addition, farmers would be supported with extension and rationalisation of the business. This would keep farmers out of relief work and preserve them for rural society. The commission believed that a small farmer with a farm-size of approximately 5 ha needed to be able to earn a living for his family and be employed with work on his farm the entire year. If this wasn't the case,

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[261] Commissie van Advies Dienst Kleine Boerenbedrijven, *Rapport over den sociaal-economischen toestand der kleine boerenbedrijven in Nederland gevolgd door voordstellen ter verbetering van den bestaanden toestand* (Den Haag 1937) 21.
[262] Van Zanden, *Nederland 1780-1914.*
[263] Jonker, 'Welbegrepen eigenbelang'.
[264] Piers, *Wisselend Getij,* 111-112.
[265] Commisie van Advies, *Rapport*, 21.
[266] Ibid.
[267] Piers, *Wisselend Getij,* 112-113.

the commission believed this was not because of its size, but because of other factors. Therefore, the DKB directed its support towards farmers with less than 5 ha of land.[268]

The Commission believed that 'with expert extension on agricultural technique; agricultural economy; self-sufficiency and the spending of their income' the small farms could be adjusted to fit the changed economical crisis circumstances and become profitable enough to provide in the farmer's livelihood.[269] Some small farmers would receive funds to finance structural changes to the farm that were necessary for further rationalisation. The poorest half of the small farmers would receive funds from the Ministry of Social Affairs, while the wealthiest half would receive their funds from the Ministry of Economic Affairs.[270] Essentially this meant the poorest landowners were part of social welfare and merely received financial support, while those supported by Economic Affairs received the majority of the support in kind and were expected to become economically viable again.

Since 1937 farmers could apply for support from the DKB at the administration office in their municipality.[271] It is important to note that small farmers who received support from the DKB were forced to follow any instructions they received from the consultants on how to economically manage their farm. This is very similar to the FSA's supervision in the US, where the use of public funds to uphold farmers was severely supervised to ensure the money was put to good use. After registering with the DKB, an assistant consultant would visit the farm and assess the situation. When needed he would instruct the farmer to do specific chores or change the economic management of his business on several aspects. Both the assistant as a local official would check if the farmer indeed followed the instructions.[272] Farmers were even obligated to take a temporary job outside the farm when there wasn't enough work to be done on their own farm. If they didn't do so, they would lose their funding.[273]

Tables 3 and 4 show the number of applicants with the DKB and the number of those receiving support. Group B was the group of small farmers that received support both financially as in kind, while group C only received support in kind. These were the groups that were expected to become economically viable again with minimal financial aid. As expected, these numbers show the number of applicants was highest in the sandy-soil districts and the provinces with the largest amount of small farmers. Table 5 shows the percentage of small farmers receiving support in every province relative to the total amount of small farmers

[268] Commissie van Advies, *Rapport*, 51-54.
[269] Ibid., 101.
[270] Ibid., 93-103.
[271] ZA, 18.1, RLC, inventory number 223, Notulen der vergadering der Bedrijfsconsulenten, 10 augustus 1936.
[272] Ibid.
[273] Commissie van Advies, *Rapport*, 118.

in these provinces. These numbers show that in the sandy-soil districts, the amount of small farmers receiving support was quite substantial. This means that a substantial amount of small farmers received extension by agricultural consultants and their assistants.

Table 3: Number of farmers employed on their own farm by the DKB in July 1938.[274]

Province	B-Group	C-Group	Total farmers employed	Denied applicants
Groningen	649	132	781	189
Friesland	2,074	731	2,805	949
Drenthe	1,574	392	1,966	439
Overijssel	2,433	896	3,329	1,058
Gelderland	5,013	1,866	6,879	2,437
Utrecht	84	44	128	57
Noord-Holland	443	192	635	274
Zuid-Holland	267	142	409	210
Zeeland	207	134	341	191
Noord-Brabant	2,839	1,692	4,531	1,596
Limburg	2,018	824	2,842	1,354
The Netherlands	17,601	7,045	24,646	8,754

The B-Group received support from the DKB both financially as in kind, the C-Group solely received support in kind.

Table 4: Number of farmers employed on their own farms by the DKB, 1938-1940.[275]

	B-Group	C-Group	Total
1938	17,601	7,045	24,646
1939	16,534	8,127	24,661
1940	13,792	6,738	20,530

The decrease in employed farmers in 1940 was caused partly by the Dutch mobilisation for the Second World War.[276]

[274] Stevens, *Hulpverleening aan kleine grondgebruikers*, 41-43.
[275] Th. Platenburg, 'Kleine Boeren in Nederland', *Verkenningen* nr. 9 (Hilversum 1942) 59.
[276] Platenburg, 'Kleine Boeren in Nederland', 59.

Table 5: The percentage of small farmers receiving aid from the DKB per province in July 1938.[277]

	Percentage of small farmers	Percentage of small farmers receiving aid from DKB
Gelderland	24	27,98
Noord-Brabant	19	18,43
Limburg	13	11,56
Overijssel	12	13,53
Friesland	9	11,41
Drenthe	6	8
Zeeland	5	1,15
Zuid-Holland	4	1,66
Groningen	3	3,18
Noord-Holland	3	2,58
Utrecht	2	0,52
Netherlands	100	100

These numbers could be used to substantiate the view that the DKB was quite successful in increasing financial and economic literacy. After all, more than 20,000 farmers came into contact with the extension. However, it is very uncertain the approach of the DKB made the farms financially healthy again. In my view the DKB provided the small farmers a Band-Aid to shortly stop the bleeding and artificially lower the unemployment numbers. The fact that so many could be reached was caused both by the financial need of farmers, which incited them to register with the DKB as by the extensive network the agricultural organisations possessed, which made it easier to reach out to the group of small farmers. Nevertheless, the indirect effect of financial and economic education as a constant in modernising agriculture is demonstrated in the form of extension by the DKB, which was focused on managing the farm as a business.

The actual economic extension was top-down or vertical in the words of the extension services. The assistant was expected to visit the farmer approximately every 1,5 month to give individual economic extension, after which the farmer was expected to adjust the farm accordingly.[278] For instance, farmers were requested to adjust their crops to improve self-sufficiency. Small farmers normally produced several specific products and would sell these, using the money to buy food. Because the prices for their products were so low, small farmers had little income to spend on food. Therefore, the DKB suggested farmers to diversify their crops to increase self-sufficiency, effectively lowering their dependability on buying food, but

[277] Stevens, *Hulpverleening aan kleine grondgebruikers*, 44.
[278] ZA, 18.1, RLC, inventory number 223, Notulen der vergadering der Bedrijfsconsulenten, 10 augustus 1936.

instead producing it themselves.[279] This was a substantial adjustment for small farmers who had always focused on producing for the market. Instead, the DKB suggested they become more autarkic units, because this was financially viable. This demonstrates the DKB's desire to prevent the creation of an army of unemployed farmers instead of creating financially competitive businesses. The financial and economic extension was aimed at protecting them from impoverishment.

The DKB also collected financial information from a number of small farms to compare their accounts and find out where small farmers were experiencing the most difficulties in economic management. Because farmers could hardly be motivated to keep their accounts, the DKB had to collect the financial information themselves, just like they had done for the "type-companies".[280] By gaining knowledge on comparable businesses, the DKB tried to transition its form of extension from a vertical to a horizontal one, comparable to the approach by the business consultants and the business study groups. By showing how their colleagues were doing, farmers might be more inclined to see the value of certain changes.

This horizontal approach was institutionalised in the establishment of one hundred so-called model-businesses, which were managed by one hundred newly appointed assistant business consultants. These were quite similar to businesses that were founded in 1923 in Montana in the US, where tenants were taught to apply proven methods of efficient farm management, which enabled them to buy the farm after a while. More importantly, these farms had the purpose to be demonstration grounds for other farmers to convince them on the merit of applying new methods.[281] However, I have found no direct connection between these initiatives, but it is possible this form of agricultural extension was internationally known.

The model-businesses were to demonstrate farmers how a small farm could become profitable with relatively few means, by sufficient technical and economical management under the auspices of intensive extension by the assistant business consultants. If the small farmer re-modelled his farm economically, it would provide sufficient funds to provide a livelihood for his family.[282] According to A.W.G. Koppejan of the Agricultural Extension Service, the horizontal extension of the model-business accomplished two things. First, it did not damage the farmer's self-esteem the way vertical extension could. The farmer could compare the model-business to his own and would be persuaded by what was demonstrated

[279] Commissie van Advies Dienst Kleine Boerenbedrijven, 'Een jaar kleine boerenhulp en enkele andere onderwerpen', *Rapport,* no. 2 ('s-Gravenhage 1938) 26-33.
[280] Platenburg, 'Kleine Boeren in Nederland', 66-67.
[281] Rasmussen, *Taking the university to the people*, 84-85.
[282] Platenburg, 'Kleine Boeren in Nederland', 9, 65-66.

and not by what someone else told him to do. This would be especially effective with small farmers who were highly uneducated and generally cared little for extension. Second, this would create a useful interaction between farmers and extension services, which in the future could persuade a farmer to mobilise in business study groups or ask for more extension.[283]

To convince small farmers of the valuable work of the DKB and to persuade them into adjusting their own farms, the DKB organised excursions to the model-businesses. There are few reports of these visits, but one example, reported in a newspaper article, was an excursion in Dalfsen in 1940, which was visited by a group of local small farmers. During the excursion, the assistant talked about the most economically possible way to manage a farm. The assistant talked for instance about modern grassland exploitation, which allowed the farmer to evenly distribute the workload throughout the year. Furthermore, his cows had fresh grass at their disposal for the entire year, which resulted in more milk and more revenue. Subsequently, the land was intensively grazed and therefore more manure lay on the fields. After grazing, the manure would be spread, which improved fertility of the soil and as a result increased productivity. The rising net returns per hectare would allow a farmer to refrain from renting extra land to increase his productivity and therefore save a lot of money.[284] According to Th. Platenburg, Secretary of the Commission of Advice of the DKB, the model-businesses were not merely visited during organized excursions, but enjoyed a constant stream of visitors. Even big farmers visited the model-businesses to see the results of the new methods used by the assistants, which they could use on their big farms as well.[285] This demonstrates that these model-businesses were quite successful in reaching small farmers and provided a structural form of extension.[286]

The example from Dalfsen demonstrates the form of extension the DKB aspired. Not merely increase productivity, but lower costs and increased revenue by efficient use of the land. Adjustments to the farm should be economically appropriate in the sense that they increase the net return, but not necessarily through the increase of the total revenue. Instead of direct supervision, the model-businesses entailed a "learn by example" approach of economic extension, which allowed a farmer to compare and, with the help of the assistant, come to his own conclusions about his farm management. However, it is unclear how much the voluntary

[283] Koppejan, 'Doel en werkwijze der economische bedrijfsvoorlichting in den landbouw', 391-92
[284] 'Dalfsen, Een leerzame excursie voor kleine boeren', *Provinciale Overijsselsche en Zwolsche Courant*, 23-07-1940
[285] Platenburg, 'Kleine Boeren in Nederland', 9, 65-66.
[286] De Vries, 'Overheidszorg voor de kleine boer in Nederland', 184.

character of the model-businesses actually affected proper farm management and proper financial and economic behaviour.

The DKB and the FSA had similar motives, to ensure the preservation of the farmers who were impoverished by the economic depression. However, their approach highly differed. Both the DKB and the FSA offered funds to their applicants and in return they supervised how these funds were utilised. Applicants of the DKB were forced to follow the instructions of the agricultural consultant, which might have increased their financial and economic literacy, but because of the vertical approach is doubtful to have had any lasting effect on financial behaviour. Farmers were obliged to follow instructions even if this meant becoming self-sufficient and less dependent on the market. Restraining unemployment was more important to the DKB than creating financially competitive farms. The FSA on the other hand invested in the future welfare of the farmers by allowing them to grow into competitive units.

The horizontal approach of the model-businesses would have been more successful, because it demanded the farmer to compare and analyse his own business. This is similar to the FSA's precondition of bookkeeping to receive credit. This allowed the farmer to get insight into his own business and analyse what changes should be made. This structurally increased financial literacy. Would this approach have worked in the Netherlands? This is not very likely. First, because there was sufficient supply of credit for farmers at relatively low rates in the Netherlands and the government could not use that as an instrument to supervise farming practices. Second, because there was no widespread tradition of bookkeeping in Dutch agriculture.

Home economics

Rural rehabilitation in the US encompassed both the farmer and the housewife, which reflected the assumption that the family farm functioned as an integrated space of production and consumption. The housewife would be responsible for domestic accounting and management and was supervised by a home supervisor, which aided her in making a detailed budget of the food and fuel requirements of the household and whether each item would be bought or produced on the farm. Much emphasis was placed on maximizing the amount of food, which was cultivated and preserved for consumption at home. Further assessments were

made whether the family was properly housed and had provided sufficiently for household equipment, furnishings, clothing and medical care.[287]

Initially the DKB focused solely on the farmer, but shortly after its establishment expanded its efforts with extension to the housewife as well. This stemmed from the acknowledgement that the housewife was in indispensible part of the small farmer's business. After visiting a few small farmers' households in 1938, the agricultural consultant of Zeeland described: 'it became very clear to me, that business and household were very closely connected with each other.'[288] In fact, the farmer's wife was responsible for spending the majority of the household income.[289] However, a government-funded research into the small farmers household demonstrated that the small farmers' wives didn't manage the household budget well. They were saving on healthy nutrition, hygiene and clothes while they could improve their living standards by spending the money in a different way. The problem was that these women were mostly uneducated and valued their work on the farm as more important than their role in the household, which was therefore often neglected.[290] Similar to the US, increasing financial and economic literacy was utilised as an emancipatory instrument for these farmwomen.

In 1935 the *Stichting voor Huishoudelijke Voorlichting ten Plattelande* (SHVP) was established. This organization was funded by the government and supported by the 3CLO's. Therefore, the new organization could use the local networks of the large organizations to reach a large amount of women, just as the DKB had been able to do. The SHVP facilitated extension on household subjects to farmer's wives by organising courses throughout the country. These courses could be followed free of charge to ensure nobody would be discouraged to come. These courses consisted of cooking classes focused on healthy and inexpensive cooking, for example by preparing food that could be cultivated on the women's farms. There were also classes on low-cost washing and sowing, mainly to show how "new" clothes could be manufactured from used clothes.[291] Although these subjects were mainly practical, they served an economic purpose, namely educating these women to improve their living situation by efficiently spending their household money. Furthermore, the teachers provided a source of information for the women on various subjects concerning the

[287] Walker, 'Accounting and rural rehabilitation', 214-16.
[288] ZA, 18.1, RLC, inventory number 213, Algemene indruk betreffende de huishoudelijke omstandigheden op het kleine landbouwbedrijf in de provincie Zeeland, 26-03-1938.
[289] Beekman,' De Kleine Boeren in Nederland', 55-56.
[290] Platenburg, 'Kleine Boeren in Nederland', 71-72 / *25 jaar Stichting voor Huishoudelijke voorlichting ten plattelande* ('s Gravenhage 1960) 7-8.
[291] *25 jaar Stichting voor Huishoudelijke voorlichting ten plattelande* ('s Gravenhage 1960) 11-16.

household.[292] Therefore, the courses comprised both collective as individual extension and there was enough attention for everyone's unique household situation and troubles. Table 6 shows that these courses reached around 20,000 women every year during the first three years.

Table 6: Number of courses organised by the SHVP and the number of participants, 1937-1944.[293]

	Number of courses	Number of total participants
1937	1,081	20,941
1938	1,042	19,007
1939	1,332	21,600
1941	2,164	36,272
1944	1,115	16,455

In 1937 the SHVP initiated a budget research of small farmer's households. This was very similar to the research of the CBS and demonstrated that financial administration within the rural household was primarily lacking. Similar to the DKB's research into small farmers businesses, the SHVP wanted to investigate the bottlenecks in household management. This would allow them to design extension in such a way, that it could emancipate small farmers as a whole. To investigate this, the SHVP kept the accounts of 73 small farmer's households. The farmer's wife was expected to write down how they spent their money every week. The wives received financial crisis support from the government on a weekly basis. On the day they received the support they would start writing down their expenses in the so-called budget-book. They would also describe the different sorts of food they bought and how many. At the end of the week a teacher of the SHVP would pick up the account.[294]

R.P. van Wageningen-Drewes illustrated the importance of the housewife to comprehend household economics at the Dutch Agricultural Congress in 1938. She stated that women needed to take control of their finances, instead of letting their husband find a solution to problems. She believed that as the centre of the household, the housewife needed to be economical and ensure her expenses to be of the greatest use to the household. After all,

[292] M. van der Burg, 'Landbouwhuishoudleraressen van dorp tot dorp 1909-1940', in: F. Backerra (eds.), *Vrouwen van het land. Anderhalve eeuw plattelandsvrouwen in* Nederland (Zutphen 1989) 141-142.
[293] *25 jaar Stichting voor Huishoudelijke Voorlichting ten Plattelande*, 25-26, 33-34.
[294] Atria Kennisinstituut voor Emancipatie en Vrouwengeschiedenis (hereafter: Atria), Stichting Huishoudelijke Voorlichting ten Plattelande (hereafter: SHVP) inventory A9, Contactbrief voor de leerkrachten van de Stichting voor huishoudelijke voorlichting ten plattelande, 15 april 1937.

statistics showed that over 70% of the total income would go through the hands of the housewife.[295]

However, the budget research of the SHVP showed that most of the households weren't able to make ends meet with the support of the government. Consequently, many households weren't able to repair basic needs as clothing, a bed or a mattress.[296] According to one of the teachers, 'most families were very economical and truly tried to create a minimal amount of debt or none at all.'[297] The research concluded that to ensure the correct spending of available funds and to improve self-sufficiency at small farm households, frequent extension to these families was necessary.[298] The SHVP believed that with the right amount of extension, correct spending of household money would be increased, which in turn increased the standard of living and work emancipatory. However, the reach of the SHVP was limited to those who followed their courses.

Since its establishment, the SHVP had worked closely with the DKB. In 1938 this collaboration was formalised when the DKB requested the SHVP to appoint eleven *landbouwhuishoudkundigen* (agricultural household advisers) one for each province, to work for the DKB and concern themselves with the households of small farmers who were receiving support from the DKB. The advisers were to consult the agricultural advisers on the necessity of administering support to individual households, both financially and in kind. The household advisers made house calls where they would discuss the household situation with the wife and propose changes to the management of the household in a more economically efficient way. For instance, this could concern improving self-sufficiency or cheap diversified cooking. Furthermore, the advisers were responsible for running an economically managed household on the model-businesses.[299]

Similar to the farmers, their wives were taken to the model-businesses to see how a household could be managed efficiently with little income. The advisers would also teach courses on a variety of subjects, which were all aimed at improving the living situation of the small farmers families by spending their income in way it would improve their standard of living. These courses focused on rehabilitation by improving nutrition, hygiene and clothing, which could be achieved mostly by re-assessing what a farmer's wife needed to buy and what

[295] Verslag van het Landhuishoudkundig Congres, 1938.
[296] Atria, SHVP, inventory A9, Contactbrief voor de leerkrachten van de Stichting voor huishoudelijke voorlichting ten plattelande 1 april 1937.
[297] Ibid.
[298] *25 jaar Stichting voor Huishoudelijke voorlichting ten plattelande*, 24-25.
[299] *25 jaar Stichting voor Huishoudelijke voorlichting ten plattelande*, 24-25; Van der Burg, 'Landbouwhuishoudleraressen van dorp tot dorp', 143.

she could produce herself. Various foods could be produced on the farm, while recycling old clothes and re-making them with minimal financial investment could result in proper clothing.[300]

The reports of the household advisers give some insight in the activities they organised to educate women on how to economically manage their household. They organised afternoon meetings where they would speak with the women on a variety of subjects: self-sufficiency, economical cooking, lower costs on washing and detergent, renewing old clothes and knitting strong new clothes. However, making house calls remained the most important task of the advisers. The reports mention several families who with the help of the advisers were able to receive extra money from private funds, because one of their children was handicapped. These families had no knowledge of the existence and availability of these funds before the advisers came to their home and informed them about this.[301] This demonstrates the use of financial and economic literacy to emancipate these households. Housewives were informed on the possibilities of extra funding to supplement their otherwise insufficient budget. Lower income did not necessarily mean a lower standard of living, but it did mean the wife had to rationalise the household properly to ensure the continuity of nutritious food, personal hygiene and clothing. Her responsibility over household finances was growing.

Agricultural historian Margreet van der Burg has argued the advisers were important contact persons for the small farmer's wives.[302] However, I believe their impact should not be overestimated. There were eleven advisers and over 20,000 small farming families that applied for the help of the DKB. This meant that it was a mere impossible task to reach all of these families, let alone provide them with the amount of extension the SHVP believed was necessary to emancipate these women. This is actually substantiated by Van den Burg, who argues that in reality it was often difficult to convince the women of a different way to manage their household. Many of them still believed that what they had learned from their mother was the right way to do things. The women were not very keen on trying new things, especially if these called for more expenses. Nevertheless, Van der Burg emphasizes the advisers had good insight in households' situation and the way the economic crisis affected

[300] *25 jaar Stichting voor Huishoudelijke voorlichting ten plattelande*, 24-25; Van der Burg, 'Landbouwhuishoudleraressen van dorp tot dorp', 143.
[301] ZA, 18.1, RLC, inventory number 238. Kort overzicht uit de maandrapporten van de landbouwhuishoudkundigen (juni 1939); Ibid. (augustus 1939); Ibid. (september 1939)
[302] Van der Burg, 'Landbouwhuishoudleraressen van dorp tot dorp', 144.

their livelihood. This information was of great importance for modelling extension in the most effective way for every individual subject.[303]

Concluding, the development of the DKB and the SHVP demonstrate that financial and economic education was utilised to protect the bottom of the farmers' class of impoverishment. Its methods were to create largely self-sufficient units that would prevent the creation of an army of unemployed. Therefore, economic extension was not based on making small farms competitive businesses, which had been the goal of financial education, extension and the accounting bureaus of which big farmers benefitted. Nevertheless, the DKB and the SHVP were able to benefit from the infrastructure that was created during the first half of the twentieth century by the farmers' organisations and the educational and extension institutions. Thus, making it possible to react quite extensively to the troubles of small farmers. The actual effect of the extension is highly doubtful, especially the top-down approach of employing farmers on their own farm. Letting farmers come to their own decisions through the model-businesses might have worked better, as we have seen with the Agricultural Extension Service. Nevertheless, the development of the DKB and the SHVP once again demonstrate the constant effort to improve financial and economic literacy among farmers during the first half of the twentieth century. The fact that the DKB and the SHVP used a method of financial and economic extension shows that this had developed into an integral part of the agricultural sectors modernisation process.

[303] Van der Burg, 'Landbouwhuishoudleraressen van dorp tot dorp', 144-147.

Conclusion

Efforts to increase financial and economic literacy among Dutch farmers were a constant factor of modernising Dutch agriculture during the first half of the twentieth century. The reconstruction of financial and economic education and extension to farmers has demonstrated that changing economic circumstances demanded a new approach to the farming business. Although increased financial and economic literacy did not determine agricultural modernisation, it did have a long-term indirect effect on Dutch agriculture.

The information supply on financial and economic subjects was growing since the end of the nineteenth century, first and foremost at the agricultural schools. Farmers were increasingly supposed to manage their farm as a business, which resulted in the development of financial and economic courses. From an increasingly younger age, farmers came into contact with courses and materials on business economics and agricultural bookkeeping, supplemented with arithmetic courses that were designed to imitate real-life situations. Furthermore, schools were constantly adapting their extra-curricular activities to provide rural society with relevant financial and economic information when necessary.

Financial and economic education became increasingly rooted in Dutch agriculture, which was best visible in the creation of the business consultants, the DKB and the SHVP. Financial and economic extension was utilised as a response to the changing economic circumstances of the Great Depression. Effectively, the state directly interfered in the financial sphere of the farm and the household. The idea was to directly influence financial behaviour and help farmers make adequate decisions concerning cost-reduction. Through a process of trial and error, this developed into a hybrid form of extension that included both technological as financial and economic extension, essentially solidifying the idea that a profitable farm should be managed in an economically efficient way, which demanded a certain amount of financial and economic knowledge from its farmers. In the case of the DKB and the SHVP, the government even regulated the farming business to protect small farmers from impoverishment. The existing infrastructure of other organisations allowed the financial and economic extension to unfold rather quickly within rural society.

When tax reforms demanded extensive knowledge on financial administration, the farmers demonstrated to be very capable in creating their own institutions to enhance their knowledge of agricultural bookkeeping. This resulted in the spread of pre-pressed accounting books and the possibility to receive advice on taxation matters. The accounting bureaus wrote up the accounts, but the farmer was expected to correctly administer his entire business year

round. Not only did this improve his financial skills, it also allowed him to get a better insight into his own business and help him make deliberate decisions. Pre-pressed exemplary pages in the accounting books seem to have had a positive effect on the didactic value of doing ones accounting. Furthermore, it literally earned the farmer money, as the accounting bureaus were quite successful in reclaiming tax money.

Two major discrepancies can be discerned from an analysis of the development of financial and economic education and extension to Dutch farmers. First, financial and economic education mainly served the minority of big farmers, who were able to educate themselves through the educational system, the extension services, study business groups and the accounting bureaus. Their business profited by becoming more competitive, lowering costs, improved financial administration and general knowledge on business economics. The small farmers did not enjoy such benefits. Financial and economic education or extension was mainly outside their reach and when it was forced upon them through the DKB and SHVP it was mainly utilised to turn their farms into highly autarkic units at the expense of their adaptive capability to changing markets and competitiveness.

Another discrepancy existed between what farmers believed to be necessary and what the government or agricultural organisations believed to be necessary. In terms of financial and economic education and extension, supply preceded demand, except in the case of the accounting bureaus. Technological advancement had increased productivity of both big and small farmers and for a long time, increased productivity resulted in increased net-returns. However, falling prices demanded farmers to start managing their farm as a business unit and focus on cost reduction instead of productivity growth. The education and extension institutions noticed this before farmers themselves were demanding these adaptations. This was also the reason financial and economic education and extension remained quite small until the Great Depression. Farmers believed they did not need it.

Therefore, it is very doubtful how much effect financial and economic education had on Dutch farmers during the first half of the twentieth century. First of all it did not reach a large public. Furthermore, it had a diverse effect on those it did reach. Especially the top-down or vertical approach of the extension services seems to have been unsuccessful in permanently changing financial behaviour. The horizontal approach was probably better in improving financial decision making among farmers, because they learned from each other and were not told what to do. The most effective was the accounting bureaus “learn-by-example” approach, where farmers directly followed instructions of the accounting bureaus

and from the books. However, farmers paid for these services and therefore would have been more inclined to follow these instructions.

Were these interventions successful? When looking at increased financial literacy I would say they were rather unsuccessful. Interventions like the DKB and SHVP were incidental and probably had little lasting effect. The exception would be the accounting bureaus that effectively changed financial behaviour. However, financial and economic education and extension was still in its infancy. Looking at the indirect effects I would say it was indeed successful. It established an infrastructure on which financial and economic education could further build on during the second half of the twentieth century and fostered a mentality change that increasingly perceived the farm as a business. Therefore, I would like to challenge the belief of Jan Bieleman that farming became agri-business in the second half of the twentieth century. In terms of financial and economic education and extension, it had already developed into agri-business well before the Second World War.

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