

Competitiveness Analysis of The Netherlands and the Dutch Dairy Cluster



Microeconomics of Competitiveness

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EXECUTIVE SUMMARY

The Netherlands is one of the richest and most productive countries in the world, with a long history of global trade and a global export leader in numerous clusters. However, growth has slowed down relative to new OECD members in recent years and the country faces several challenges: an aging population, social tensions, an export concentration in slowing mature markets, and relatively low public and private investment in research and development.

While the Netherlands has maintained very good macroeconomic conditions, it must focus on a few key areas to return to rapid growth in productivity. The nation must improve its capacity for innovation by boosting research and development spending and encouraging greater private sector investments. It must also diversify its export products and markets to include fast growing frontier markets with similar demand conditions that are less cyclically correlated to its current Western European markets. Finally, it must address social tensions related to immigration and increase immigrant employment and productivity as part of its strategy for addressing its long-run demographic challenges.

The processed foods sector has the largest export share of any sector in the Netherlands economy. Within this sector, the dairy cluster dominates and is one of the most productive and export-oriented in the world. The high level of productivity in the sector is driven by sophisticated domestic and neighborhood demand and competition, technological innovation, high regulatory standards, and a skilled workforce. However, the cluster faces competitive threats from emerging lower-cost producers like New Zealand. To maintain its export share, the Netherlands dairy cluster must specialize in the highest-quality products, increase its market share in emerging economies, and expand into new related product segments.

NETHERLANDS COUNTRY ANALYSIS

The Netherlands is a high-income European country with a history of strong economic and social performance. Despite having small geographic size (41,534 km²) and small population (16.8M people), it has long been a dominant trade and commercial player in Europe and in the world. Although it remains an important economic power, like many of its Western European neighbors, it no longer maintains a competitive growth rate and faces demographic challenges. To accelerate growth, the Netherlands must revise its economic strategy that builds on its historical core competencies of innovation and trade expansion.

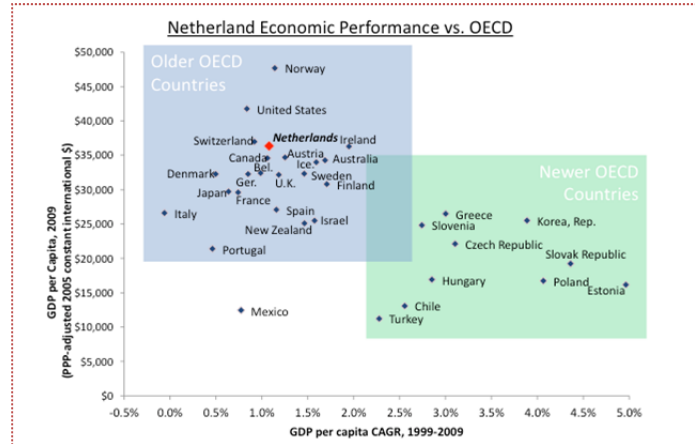
1. Overview of Dutch Economic Performance

1.1. History of Dutch Economic Competitiveness

The Netherlands is well placed to become a central trading post for Western Europe, with its 451 km coastline and networked waterways of rivers and canals. During its “Golden Era” in the 17th century, Amsterdam was one of the wealthiest countries in Western Europe, and the Netherlands established colonies and trading posts all over the world – in Asia for the spice trade and in the Americas for sugar and slaves. Despite competition from other seafaring European powers, such as Spain and Portugal, the Netherlands’ economic power grew steadily through innovation and expansion. Dutch companies introduced insurance, pension, and other financial services to support businesses and merchants. Technological and financial advancement promoted expansion of the shipping and banking sectors. The multinational Dutch East India Company developed the world’s first stock exchange in 1602 to finance its many ventures. The history of trade and economic innovation paved the way for the strong economic performance in the Netherlands in modern day.

1.2. Recent Economic Performance

With a total GDP of US\$680.4B in 2010, the Netherlands is the 22nd largest economy in the world. The country enjoys a high standard of living with a GDP per capita (US\$40,500 in 2010)



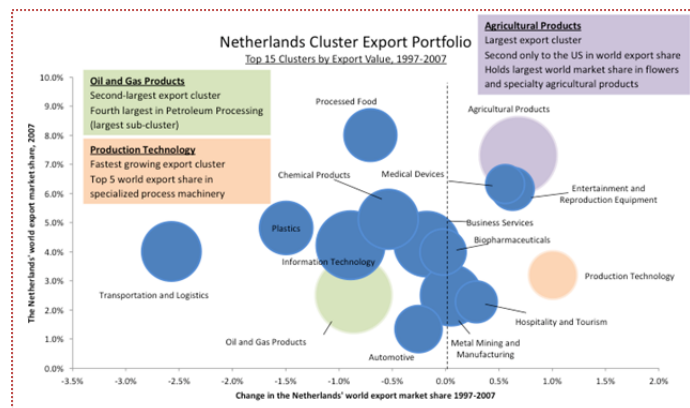
similar to that of other older OECD countries. Its GDP per capita growth trend, as well as its growth rate of 1%, from 1999-2009 is also on par with this set of comparable countries.¹

1.3. Economic Composition

The Netherlands is a highly services-oriented economy with 73% in services, 25% in industry, and 2% in agriculture. Financial services and logistics remain foundational to the services sector, although recent growth in both sectors has been slow.²

Industrial activity in the Netherlands is dominated by processing of mostly imported raw materials, primarily petroleum and chemicals. After the discovery of a natural gas field in 1959 (the economic consequence of which inspired the term “Dutch disease”), the “oil and gas products” cluster has been a large contributor to GDP and the second largest export cluster in

the Netherlands. The largest sub-cluster, petroleum processing, is the fourth largest in the world. Royal Dutch Shell, the largest petroleum refining company in the Netherlands, has operations in over



¹ CIA Factbook.

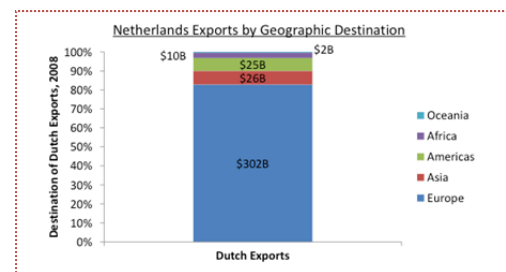
² Economist Intelligence Unit, “The Netherlands: Country Profile 2008,” 2008.

90 countries, produces around 3.1M barrels of oil equivalent per day. Production technology, which builds on Dutch competencies in processing and production, is the top growth cluster in the Netherlands. Already a top 5 exporter of specialized process machinery, the country is advancing its position in the world market in other sub-clusters as well.³

The historically important agriculture sector remains an important contributor to the Dutch economy as the country's largest export cluster. Major products include floriculture (35% of total agriculture exports), livestock and meat (26%), and dairy products (20%). The sector has a long history of technological innovation and is one of the most productive in the world. As a result, the Netherlands commands 8% of the world market share in agricultural, second only to the US, and holds the largest world market share in flowers and specialty agricultural products.

1.4. Key Economic Drivers

EXPORTS – Exports, which form 70% of the GDP, continue to drive the Dutch economy. In 2010, the Netherlands was the fifth largest exporter of goods in the world. The Dutch economy is particularly dependent on exports to Europe, with over 80% of total export shipped to EU.⁴



FDI – The Netherlands is the world's eighth-largest recipient of foreign investment, with net FDI inflows averaging 5% from 2005-2009. According to the Dutch Foreign Investment Agency, the country provides a home for approximately 8,000 foreign companies, including global multinational companies such as Cisco Systems, Microsoft, Nike, Sabic, Siemens, and Yakult. Foreign companies have made direct investments worth US\$597B and provide 15% of

³ Data from World Development Indicators and International Cluster Competitiveness Project.

⁴ Ministry of Economic Affairs, Agriculture and Innovation, "Holland Compared," 2011, <http://www.hollandtrade.com/publications/holland-compared/>

all jobs in the Netherlands.⁵

LABOR PRODUCTIVITY – The Netherlands is one of the most productive countries within the OECD, with a labor productivity rate of US\$35 of GDP per hour worked, compared to the OECD average of US\$25. Whereas the EU-27 averaged an hourly labor cost of US\$21 and a labor cost growth rate of 2%, the hourly labor cost in the Netherlands is US\$27 and grew at 4%.⁶

INNOVATION – R&D spending in the Netherlands is relatively low at 1.7% of GDP, compared with the over 2% in the US and over 3% in Japan, Korea and Finland. The low expenditure is partly driven by the larger size of commercial services, which has inherently limited R&D intensity. Also, the proportion of medium- and high-tech companies, which typically have high R&D expenditures, is relatively small in the Netherlands. Dutch patent production is also similarly low at 78 patent output per 1M population, compared to 268 in the US.

2. Determinants of Dutch Competitiveness

2.1. Endowments

LOCATION – The Netherlands' trade-oriented economy continues to be well-served by its networked waterways, strategic location in a wealthy neighborhood of innovative producers and sophisticated consumers, and access to global markets.

NATURAL RESOURCES – The Netherlands is endowed with an abundance of natural resources, including petroleum, peat, limestone, salt, sand and gravel. As the third largest producer and the second largest net exporter of natural gas in Europe after Norway, the Netherlands has 1.4T ft³ of natural gas reserves valued at over US\$166B in late 2006. 22% of the Dutch land area is arable allowing it to become 2nd largest global exporter in the agriculture products cluster.

⁵ Dutch Foreign Investment Agency.

⁶ Hourly growth rate measured between 1997 and 2005.

2.2. Macroeconomic Conditions: Macroeconomic Policies

The Netherlands has enjoyed a history of macroeconomic stability. The recent global financial crisis reduced global demand for Dutch exports and placed a strain on the economy, which shrank by 3.9% in 1999. In 2010, international trade, the largest engine of the Dutch economy, increased again, and GDP was expected to grow by 1.75%.⁷ While this demonstrates a strong ability to absorb and resolve macroeconomic shocks, it also shows the Netherlands' vulnerability to such shocks due to its trade dependency and export-led economy.

MONETARY POLICY – Since the adoption of the euro in 1999, the monetary policy of the Netherlands is under the control of the European Central Bank, which strictly focuses on inflation-targeting. Since its inception, inflation of the euro has generally remained below 3%.⁸

FISCAL POLICY – Dutch fiscal policy is in line with the EU framework of a balanced budget, which seeks to reduce public spending and lower tax and social security contributions. After the financial crisis, the government aimed to stimulate the domestic economy by accelerating infrastructure programs, offering corporate tax breaks for employers to retain workers, and expanding export credit facilities. The stimulus programs and bank bailouts, however, resulted in a government budget deficit of nearly 4.6% of GDP in 2009 and 5.6% in 2010, compared to a surplus of 0.7% of GDP in 2008.⁹ With deficit reduction a major priority, the government is seeking to balance budget through cuts in expenditure (e.g., health, social security). Labor market reforms may increase retirement age from 65 to 66 in 2020 to address rising healthcare costs. While the government will remain heavily involved in financial sector in the short run, the government will seek to divest from its equity investments in major banks.

⁷ Economist Intelligence Unit, "The Netherlands: Country Profile 2008," 2008.

⁸ European Central Bank.

⁹ Economist Intelligence Unit, "The Netherlands: Country Profile 2008," 2008.

2.3. Macroeconomic Conditions: Social Infrastructure and Political Institutions

DEMOCRATIC INSTITUTIONS AND CONSENSUS BUILDING – The Netherlands is ruled under a constitutional monarchy. The bicameral parliament system consists of the First Chamber (75 seats; members indirectly elected by 12 provincial councils to serve four-year terms) and the Second Chamber (150 seats; members elected by popular vote to serve four-year terms). Dutch democracy has been built on a history of consensus-building, with major political decisions collectively determined by the political leadership and the larger society.

IMMIGRATION – A potential threat to the unraveling of the Dutch social infrastructure is the increasing social tensions surrounding immigration. Immigration has steadily increased since the 1990s, and immigration policy has been tightened, at the margins. The immigration rate in the Netherlands is relatively low at 2.33 immigrants per 1000 population, compared to the EU rate of 3 per 1000 inhabitants.¹⁰ Dutch immigration policies are not favorable as the current unstable coalition formed among Liberals, Christian Democrats, and the populist, anti-establishment Party for Freedom (PVV), which has extreme views on immigration and Islam. However, likely politically stable due to its commitment to resolving disputes within the framework of democratic institutions.

2.4. Microeconomic Conditions: State of Cluster Development

The Netherlands enjoys a diversified cluster mix, ranging from agricultural products to chemicals to financial services. Some clusters have benefited from this diversity, such as the emergence of the processed foods cluster due to Dutch success in both agriculture and value-add processing. Across all sectors, the top-performing clusters are driven by innovation and technological advancement.

¹⁰ Eurostat.

HISTORY OF COLLABORATION – Cluster development in the Netherlands has been fostered by the collaborative nature of the private sector. For example, the leading horticulture producers formed the Dutch Horticulture Association, the first trade association for cut flowers, in 1908 to foster the growth of the cluster; throughout history, and even today, this organization has played an important role in creating opportunities and promoting innovation within the cluster.¹¹ By pooling resources to finance joint research, establish common standards, and share best practices, such institutions for collaboration (IFCs) have increased the productivity for all actors within the cluster, thus improving global competitiveness.

GOVERNMENT SUPPORT – The Dutch government has also been instrumental in providing a supportive environment for innovation. Recently, the government has sponsored innovation programs aimed at addressing economic opportunities and bottlenecks in the innovation ecosystem, particularly in R&D collaboration, trade promotion, and attraction of foreign investments. Economic actors in the relevant cluster, including large enterprises, small companies, and knowledge institutes, work collaboratively to determine innovation strategic plans. The government then deploys financial resources and provides implementation guidance to support the cluster strategy. The national-level plans are developed into regional innovation strategies and connected to EU programs, such as the Structural Funds.¹²

In the past four years, eight innovation programs have been launched in sectors such as high-tech, food and nutrition, water technology, automotive systems, maritime innovation, life sciences and health, and chemistry. More than 4000 organizations have been involved in these

¹¹ M. Porter, J. Ramirez-Vallejo, F Van Eenennaam, The Dutch flower case, 2011.

¹² Report from the Dutch Ministry of Economic Affairs

programs, among which are 2800 SMEs.¹³

2.5. Microeconomic Conditions: Sophistication of Company Operations

Dutch multinational companies span a range of industries and include 12 of the 500 highest-grossing companies in the world, including Royal Dutch Shell, which ranks second. Many of these multinationals, such as AkzoNobel, Heineken, KPN, ING, Philips, Unilever and

Company	Sector	Global 500 rank	Revenues (\$ millions)
1 Royal Dutch Shell	Energy	2	285,129
2 ING Group	Financial Services	12	163,204
3 Aegon	Insurance	103	64,506
4 Royal Ahold	Food Distribution	184	38,814
5 Rabobank	Financial Services	225	33,396
6 Royal Philips Electronics	Electronics	231	32,232
7 LyondellBasell Industries	Chemical	249	30,829
8 GasTerra	Energy	326	25,449
9 Heineken Holding	Alcohol	430	20,491
10 Akzo Nobel	Chemical	450	19,311
11 Royal KPN	Telecommunications	459	18,777
12 Randstad Holding	Business Services	494	17,235

Shell, have made substantial foreign investments in the past. Spyker Cars, which took over Saab, is a notable recent example. In 2009, investments overseas totaled in excess of US\$851B, making the Netherlands the fifth-largest foreign investor in the world.

Although the Netherlands is known for its far-reaching multinationals, 99.7% of businesses in the Netherlands are small and medium-sized enterprises (SMEs). These small companies contribute 67.3% of employment and 61.3% of value-added economic output.¹⁴ The high rate of SMEs creates opportunity for competition and innovation.

2.6. Microeconomic Conditions: Quality of National Business Environment

According to the World Economic Forum, the Netherlands has a very sophisticated business environment, ranking 5 in business sophistication, 3 in

World Economic Forum Doing Business Category	Rank
Macroeconomic Competitiveness	25
Labor Market Efficiency	23
Financial Markets	26
Business Sophistication	5
Innovation	12

¹³ The Voortgangsrapportage innovatieprogrammas 2010 Engels.pdf

¹⁴ SBA Fact Sheet, The Netherlands, Eurostat Data

http://ec.europa.eu/enterprise/policies/sme/files/craft/sme_perf_review/doc_08/spr08_fact_sheet_nl_en.pdf

technology readiness, and 8 in overall competitiveness.

CONTEXT FOR FIRM RIVALRY AND STRATEGY

The Netherlands has a long history of legal and economic institutions built on supporting economic growth and trade. Investment barriers have been very low, and both the government and private sector provide an environment conducive to technological innovation through institutions for collaboration and government investment. However, competition has been limited by historically permissive legislation on cartels and monopolies. Although much of this regulation has been revised in alignment with EU legislations, the Dutch government is still considered to be “one of the more permissible in Europe regarding M&A activity.”¹⁵ SMEs also face other challenges in entering the market. The Netherlands was ranked 71 in the World Bank’s 2011 Doing Business report for starting a business. According to those surveyed for the ranking, starting a business “required government fees three times higher than the OECD average” and it takes “longer to obtain construction licenses.”¹⁶

FACTOR CONDITIONS

The Netherlands has a highly educated population: literacy rate is 99%, 33% of had an advanced degree, and most are multilingual. The government spends 5.5% of GDP on education.¹⁷ There are 15 universities in the Netherlands, two of which are ranked among top 100 in the world. As previously noted, average labor productivity is higher than most OECD countries. However, the competitive advantage of a highly productive labor force is partly offset by its high labor cost. As the newer EU members with much lower labor cost improve their production technology and increase their labor productivity in the future, the cost

¹⁵ M. Porter , J. Ramirez-Vallejo, F Van Eenennaam, The Dutch flower case, 2011.

¹⁶ M. Porter , J. Ramirez-Vallejo, F Van Eenennaam, The Dutch flower case, 2011.

¹⁷ www.nfia.com

effectiveness of Dutch firm may diminish. At present, Dutch labor costs are comparable to that of Western European countries with similar levels of productivity, but the Netherlands does have a much faster growth in labor costs (4%), compared with the EU-27 (2%).¹⁸

The Netherlands' access to the sea, strong transport infrastructure, and rich neighbors continues to make it one of the most important European transportation hubs. The port city of Rotterdam is one of the world's major centers for crude oil imports, trading, refining, and petrochemical production. The Port of Rotterdam is the largest in Europe with an annual throughput of 430 million tons and was the busiest in the world until overtaken by Shanghai in 2004. The Amsterdam Airport Schiphol is the third largest freight and fourth largest passenger airport in Europe.

DEMAND CONDITIONS

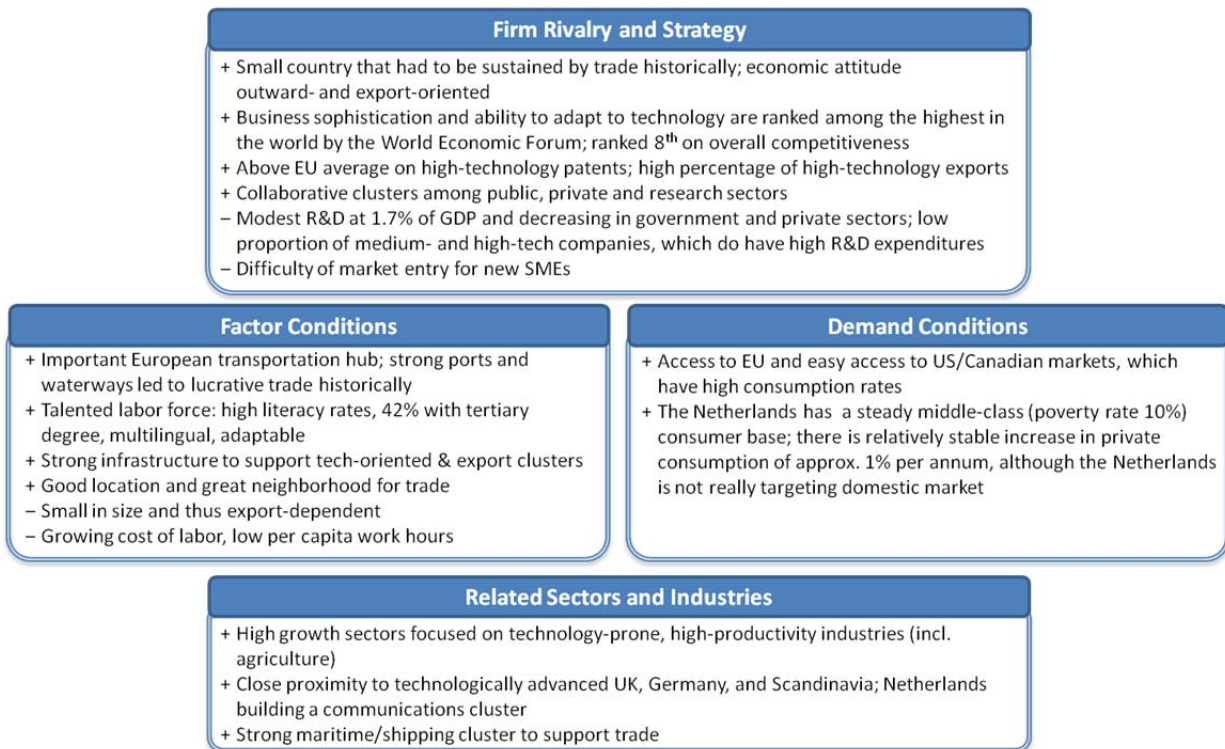
The Netherlands has favorable domestic demand conditions. Its highly educated, multilingual, well-traveled population is an ideal sophisticated consumer base for high-end, high-quality, environmentally-friendly, and innovative products. For example, the organic market is more developed in the Netherlands than in the rest of Europe. The Dutch therefore consumes many products made in the Netherlands. They are one of the largest consumers of both Dutch flowers and Dutch cheese. However, the small size of the population limits the growth of local demand.

RELATED SECTORS AND INDUSTRIES

The Netherlands cluster mix is highly interconnected and mutually supportive. The high growth of logistics, transportation, financial services, and technology-prone industries is critical

¹⁸ Source: Eurostat data, Euros used where possible and PPP national currency conversions where necessary; International Labor Organization statistics.

to trade and development of other Dutch industries and enterprises. As part of the EU and the European Monetary Union, Dutch companies have access to a sophisticated supplier base and technologies developed by advanced clusters within its neighborhood.



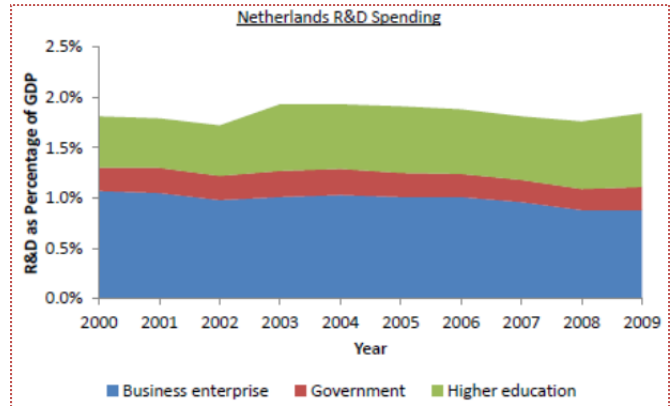
Source: EIU Report, Holland Trade (<http://www.hollandtrade.com/index.asp>)

3. Recommendations for Country Competitiveness

To remain at the forefront of an increasingly competitive global market, the Netherlands must continue to increase productivity through innovation, expand exports to frontier markets, and address the demographic challenges that may threaten its stability.

PROMOTING INNOVATION – At the Netherlands’ advanced stage of economic development, sustained levels of exceptional growth can only be attained by innovation, as demonstrated by the US and Scandinavia. However, the Netherlands has consistently committed less than 2% of its GDP on R&D over the past decade, which is much lower than that of other OECD countries. Furthermore, both public and private expenditure on R&D have also marginally decreased in

recent years, although the difference has been compensated by growth in R&D spending by research institutions.¹⁹ The number of patents per 1000 population filed is much lower than highly innovative countries like Japan, US, and Korea. To



promote innovation, the government must commit greater portion of its budget toward R&D within innovation-driven sectors, through channels similar to the current innovation programs. The government must also encourage private sector R&D by providing co-financing mechanisms, tax rebates, and other incentives. With SMEs contributing to more than half of the total GDP, they provide opportunities for innovation in new technologies and sectors. The government should thus provide more resources and opportunities for SMEs in innovation-driven clusters to enter the market and finance R&D. Large multinational companies may already have established channels for R&D, but smaller and new companies may find it more difficult to access funding. Relevant business regulations associated with SME start-ups should also be examined and revised. Lastly, government and institutions for collaborations must continue to lead coordination efforts to bring together the private sector and education institutions in the pursuit of innovation.

SEARCHING FOR NEW MARKETS – Establishing stronger trade relationships with emerging markets, such as China and India, as well as the former colonies in Africa, South America, and Southeast Asia, would help the Netherlands to weather fluctuations in demand from the European Union. The diversification of export portfolio should also include sophisticated

¹⁹ Eurostat.

markets in North America, such as the US and Canada. The expansion of trade to geographies outside of the EU would require further development of the existing logistics network including both ports and airports, as well as shift of focus to clusters that produce outputs with high value to volume ratio (e.g. for example Biopharmaceuticals, Medical Devices and Business Services). As mentioned above, this diversification would both manage risk by selling to less cyclically-correlated markets and allow the Netherlands to gain a foothold in rapidly-growing emerging economies.

ADDRESSING DEMOGRAPHIC CHANGES – As the population ages, the elderly dependency ratio (population over retirement age of workforce vs. labor pool) continues to increase in the Netherlands. This demographic change, combined with low fertility rates, requires attention to both immigration and employment/pension issues. As the ratio of native-Dutch workers to retirees declines, government and educational institutions will need to integrate unemployed and under-employed immigrants into the labor market through education and training . Government should also adjust immigration policies to attract skilled labor from abroad (EU and beyond) and promote a higher labor participation rate, particularly among the young, females, and those immediately prior to retirement in order to increase revenues for pension funds. Lastly, the government should explore alternative mechanisms to preserve pension programs including changes in the retirement age, promotion of savings accounts, and more extensive means-testing for benefits.

DUTCH DAIRY CLUSTER ANALYSIS

1. Cluster Context

The dairy industry involves the production of raw milk and its processing into goods such as consumer milk, butter, cheese, yogurt, condensed milk, dried milk (milk powder), and ice cream using processes such as chilling, pasteurization, and homogenization. The dairy cluster includes cow farms producing milk as well as all downstream organizations processing it and distributing derivative products.

1.1. Brief History

The Netherlands has a long history of dairy production, with cheese production tracing its roots back to the Middle Ages.²⁰ Dairy production originated as the primary trade of nomadic tribes arriving from Central Asia to Europe in 300 B.C. The abundant land was ideal for rearing cattle as it not only provided space for grazing but also offered rich Polder soil highly suitable for grass production. Increasing specialization in dairy production in the region resulted in massive growth in production between the 13th and 16th centuries. Cheese was an important form of dairy trade because it had a longer shelf life than milk and similar products.

Partly by luck and partly through selection of the best bull variety, this history also endowed the Netherlands with a particularly productive breed of cow – the Holstein.²¹ These were the regional cattle of the Batavians and the Frisians more than 2000 years ago and continue to be bred in the Netherlands. Holsteins are now the world's most highly productive type of cow, producing over 26000 liters of milk in their lifetime.

²⁰ <http://www.kaasmarkt.nl/content/content.asp?lang=0&menu=4&submenu=33>

²¹ <http://www.civ-viande.org/uk/ebn.ebn?pid=57&rubrik=1&item=1&page=1>

A long history of many smallholder farmers specialized in dairy production (much of the population of the Netherlands at the time) meant that when middlemen started gaining power through economies of scale there was a rapid move to form cooperatives to keep bargaining power in the hands of the farmers. This resulted in the early formation of farmer cooperative groups that persist to this day²². The cooperative structure resulted in increased specialization and investment in mechanization, moving production from farm to factory. The first dairy factories were established in 1871. The returns to scale pushed the dairy cooperatives to consolidate, and today one large cooperative controls 60% of production.

1.2. Cluster Structure and Value-Chain

The Dutch dairy cluster is composed of a large number of dairy farmers (30 000), usually gathered in large cooperatives

Exhibit 1: Dutch dairy value chain



which process the milk, transform it into different dairy products and in some cases distribute it. However most of those cooperatives do not distribute the dairy products abroad and instead sell their products to consumer packaged goods companies.

The cooperative model, strongly rooted in the Dutch Dairy history, makes dairy processing very concentrated. The major player, Friesland, is the 6th largest international player and processes 60% of Dutch milk. The rest of the production is handled by 20 other local cooperatives. In the consumer packaged goods companies sector, the Netherlands has only two

²² Koen Frenken & Gerben van der Steege, 2006.

"The evolution of the Dutch dairy industry and the rise of cooperatives: Combining transaction cost and evolutionary approaches,"
Papers in Evolutionary Economic Geography (PEEG) 0608, Utrecht University, Section of Economic Geography, revised Jul 2006.

major players: The Friesland cooperative and Unilever.

The high number of dairy farms generated fierce competition and led to an increase in the average farm size through consolidation (in Netherlands four times higher than the EU average²³) as well as to a high level of specialization (80% of the farms are specialist farms).

Given the early importance of the Dutch dairy sector and the number of families involved (it was common for every household to have a dairy cow), the government took an active role in ensuring the competitiveness of the sector. Therefore there are strong publicly-supported institutions that act as regulators and that advance research in this field. Many agencies promote the development and assurance of high quality in this cluster, such as the farmhouse dairy product certification body (KB) and regulatory agencies monitoring food safety and animal health and welfare. The Wageningen Agricultural University, an institution devoted to agricultural science, has been in place since 1876 with a specific dairy farming college in Bolsward in 1904.²⁴ Research institutes were founded shortly afterwards and are located near the university for practical field-based research. These include the DLO institutes of the Netherlands Organization for Agricultural Research, which today comprise 12 research institutes with 3200 research personnel and a budget of US\$250 million in 1995.²⁵ The private sector has also entered the research space. NIZO food research was started in 1948 by the Dutch dairy industry (a combination of private and public stakeholders). As the industry became more consolidated joint research was replaced by competitive research and the organization was privatized in 2003.²⁶ This strong support from research institutes led to significant

²³ NZO- Dutch Dairy industry – 2010 report

²⁴ <http://www.wur.nl/UK/about/history/>

²⁵ <http://www.bib.wau.nl/dlo/>

²⁶ <http://www.nizo.com/about-nizo/history/>

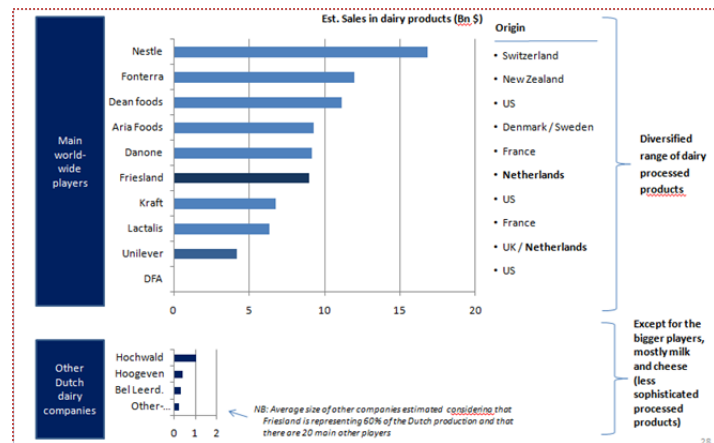
investment in R&D in the dairy industries, which fostered its productivity. Some of the techniques thus developed are now used worldwide (e.g. soil tillage, fodder production, irrigation planner, automated milking systems, etc.).

The farmer cooperatives played a very influential role in cluster development, spurring the development of many private-public collaborations that created institutions that support the cluster, such as the Dutch Dairy Board (dairy marketing board) and NIZO. This created a culture of investment and collaboration in the industry, allowing the cluster to lower labor-intensity, increase quality, and move into value added production (i.e., cheese). These Institutions for Collaboration played a key role in lobbying on both national and international dairy policies. They also created ripe conditions for other private businesses to form a strong network of supporting industries such as suppliers in feed, irrigation, and machinery to process cheese and packaging. We do not see as strong a development in consumer packaged goods companies as a result of the sector because the cooperatives themselves do much of the marketing.

The strength of related clusters, such as the agricultural product cluster, which is the Dutch largest export cluster and which is increasing its competitiveness, is key to the support of the dairy cluster. Demand from this sector further strengthens the network

of related supporting industries common to both clusters.

Exhibit 2: Dutch dairy cluster



2. Performance of the Dutch Dairy Cluster

2.1. Market share and trends

The Dutch dairy cluster is the largest contributor to Dutch food exports and has a strong worldwide market share (11%). However its relatively strong position has been deteriorating over the past 10 years, losing on

average 2% of its market share per year.

The other clusters of the Dutch food industry also have strong worldwide market share, mostly around 10%, which helps explain the development of related support industries, such as

packaging, as stated in the previous paragraph. The food products machinery sub-cluster is particularly strong in both its market share and its increasingly competitive positioning, and acts as a direct support to the dairy cluster by providing modern equipment and technology. The strength of other food sub-clusters is a competitive advantage for the Netherlands, both in comparison to new players in the dairy market such as New Zealand, where the other food sub-clusters do not have more than 1% of the world market share, and in comparison to more

developed producers like France, in which the food products machinery cluster is relatively weaker (5% worldwide market share).

The Netherlands is the third

Exhibit 3: Dutch dairy cooperatives competing against large international packaged-goods companies¹

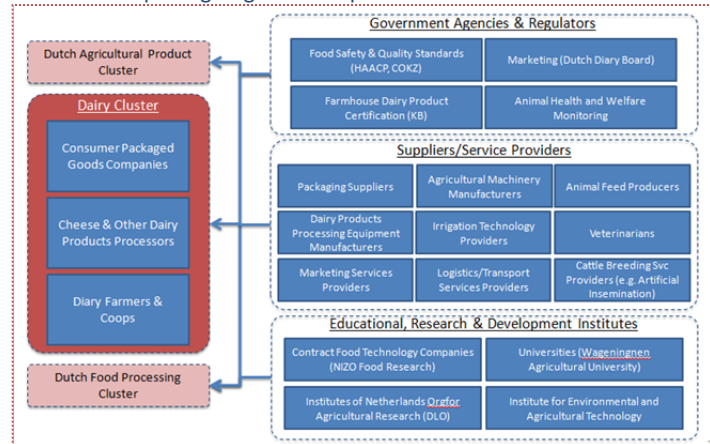
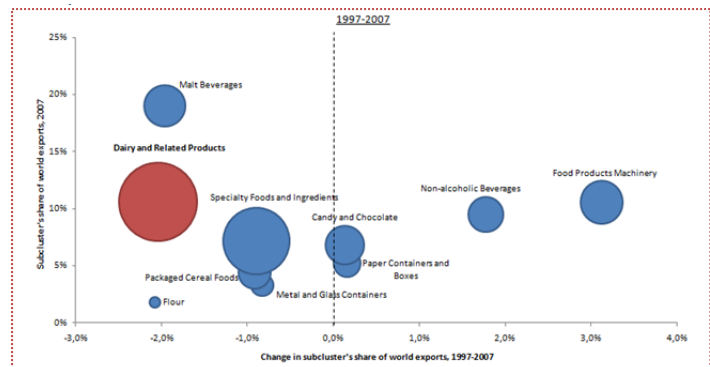


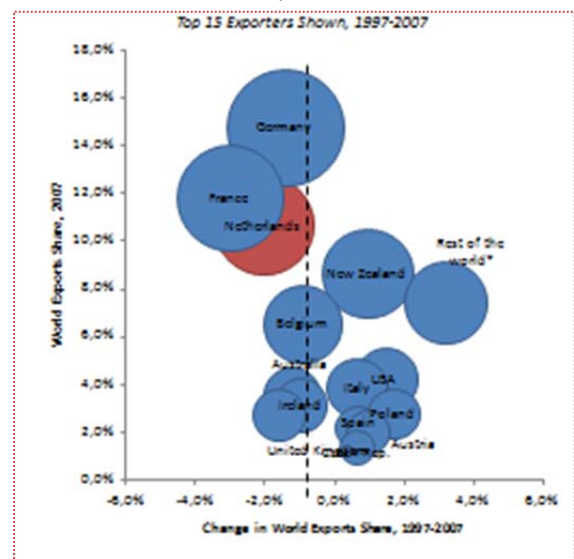
Exhibit 4. Netherlands Processed Food sub clusters market



largest dairy exporter after Germany and France, its neighbors. Those competitors are both losing ground, but there are new rising competitors, such as New Zealand, which has been increasing its market share by 1% per year over the past 10 years. If these trends continue the New Zealand dairy cluster could outgrow the Netherlands cluster in as few as seven years. Furthermore the most significant growth in demand for dairy products in the coming years is expected to be mainly fueled by Asia and Oceania (with a large part coming from China). This growth might be largely captured by New Zealand due to its geographic proximity and its current trade patterns.

The relatively high market share of the Dutch dairy cluster is overall similar across the different product segments, ranging between 9% and 12%, except for the smaller yogurt segment in which the Netherlands is lagging behind (3%). Its main competitors are Germany, France and New Zealand. The Netherlands' main competitors are more specialized, which enables them to increase their competitiveness and capture a larger share of the market. For example, New Zealand is

Exhibit 5. Netherlands Dairy cluster vs. other nations¹

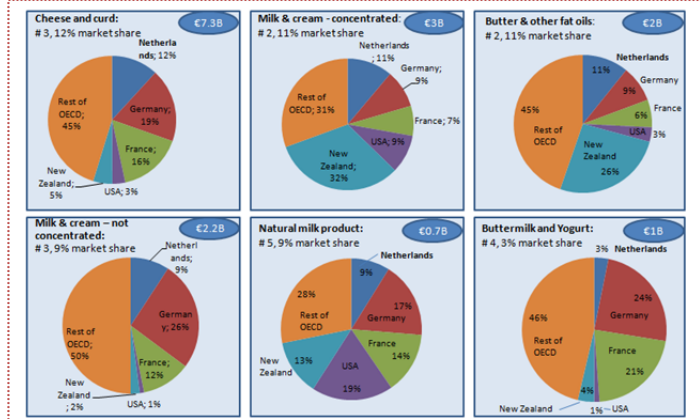


particularly strong in milk and butter which are favored by it better and cleaner grass. Germany is very competitive in cheese, non-concentrated milk, and yogurt. France is mostly specialized in yogurt and cheese.

The Dutch dairy companies should further leverage their existing competitive advantage on key products (e.g., cheese) and build export strategies to gain stronger positions on

worldwide markets. It is interesting to note that while New Zealand is exporting 95% of its dairy production²⁷, the Dutch dairy cluster is exporting 60% of its production because of its internal demand for dairy products.²⁸

Exhibit 6: Dairy products exports market share

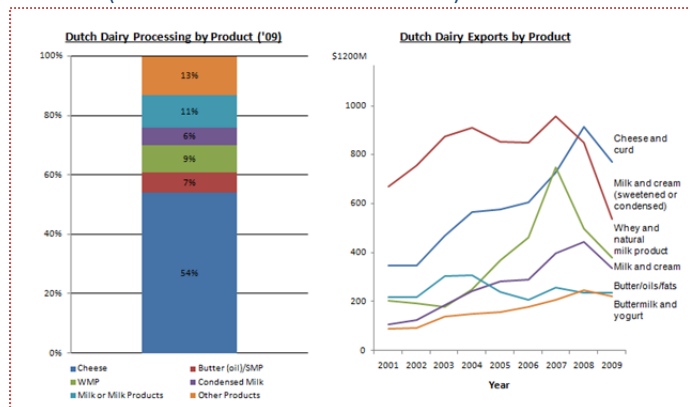


The largest single dairy product in the Netherlands is cheese, which represent 54% of the cluster’s exports. This segment has been rapidly increasing over the past 10 years. Except for butter, most products’ exports increased until 2007, after which the economic slowdown in the Netherlands’ principal export markets led to a contraction in demand. Another significant area of growth was the natural milk segment although the crisis has impacted it more than most other products. It is interesting to note that the higher added-value products (e.g. yogurt, cheese) – are more resilient than others (milk) to the crisis. This lower volatility might be an interesting factor to consider when promoting Dutch specialization.

2.2. Performance drivers

To further understand the reasons for the decrease in competitiveness of the Dutch dairy cluster relative to new competitors like New Zealand, we considered both productivity and production cost levels.

Exhibit 7: Dutch dairy products: share of production and exports evolution (Source: International Trade Center)



²⁷ AREN – The Agribusiness Research and Education network

²⁸ NZO 2010 report

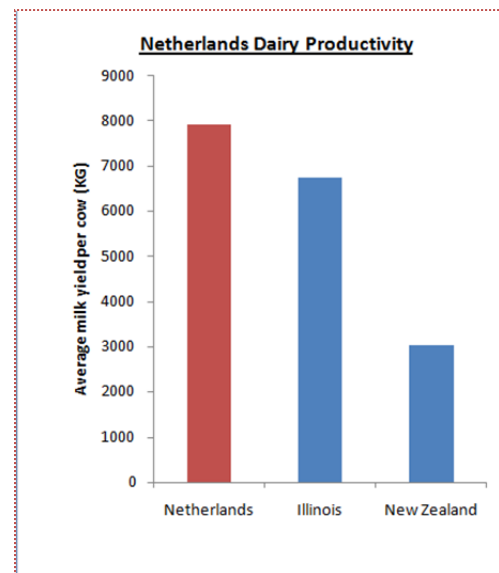
Dutch dairy productivity is much higher than the New Zealand's one. This is linked to three main reasons: the high level of R&D and the strong supporting "machinery" industries which make the Dutch farms well equipped in automation; the high level of the farm specialization, explained earlier; and the very productive breed of cow (Holstein).

It is important to note that this productivity has been achieved without any compromise on quality. Dutch dairy products have widely been recognized as very high quality products. For instance, Dutch cheese ranked 12th out of 2500 cheeses in the World Cheese Awards 2010; the Netherlands also received multiple awards for Edam and Gouda at 2010 World Championship Cheese contest. This high quality is linked both to stringent quality controls (end to end monitoring of cheese value chain) and to small-scale family operations focusing on highly qualitative specialized production.

However, despite this higher productivity, the average production cost of milk in New Zealand is about one fourth of the Dutch cost. The higher cost of production is a result of three factors. First, the aforementioned higher

environmental, health, and safety regulation quality standards build more costs into production that other competing suppliers do not have to take into account. Second, the cost of labor is higher in the Netherlands (despite a high level of mechanization). Third, there are inefficiencies as a result of subsidies; research has shown lower-than-potential productivity as a result of smaller scale production that has been supported by government.

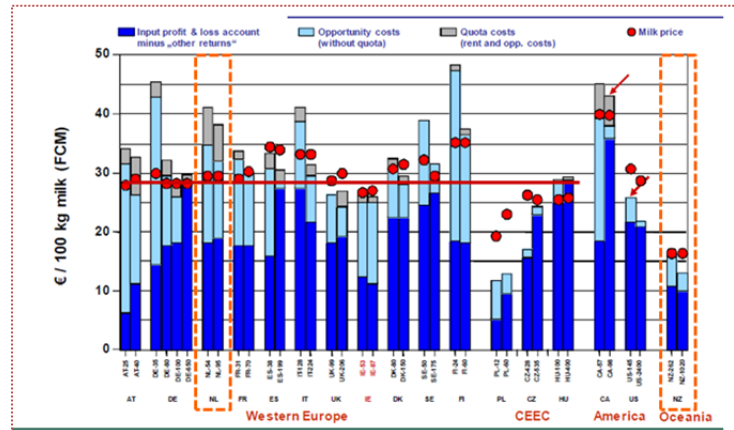
Exhibit 8: Dutch dairy productivity (Source: International Trade Center)



3. Determinants of Competitiveness of the Dutch Dairy Cluster

The performance of the dairy cluster has been supported by many different factors. As we saw earlier, the Netherlands has access to high quality business inputs: very productive cow breed coming from a long history of breeding, large space

Exhibit 9: International cost of milk production, 2004
(Source: IFCN Dairy report 2005)

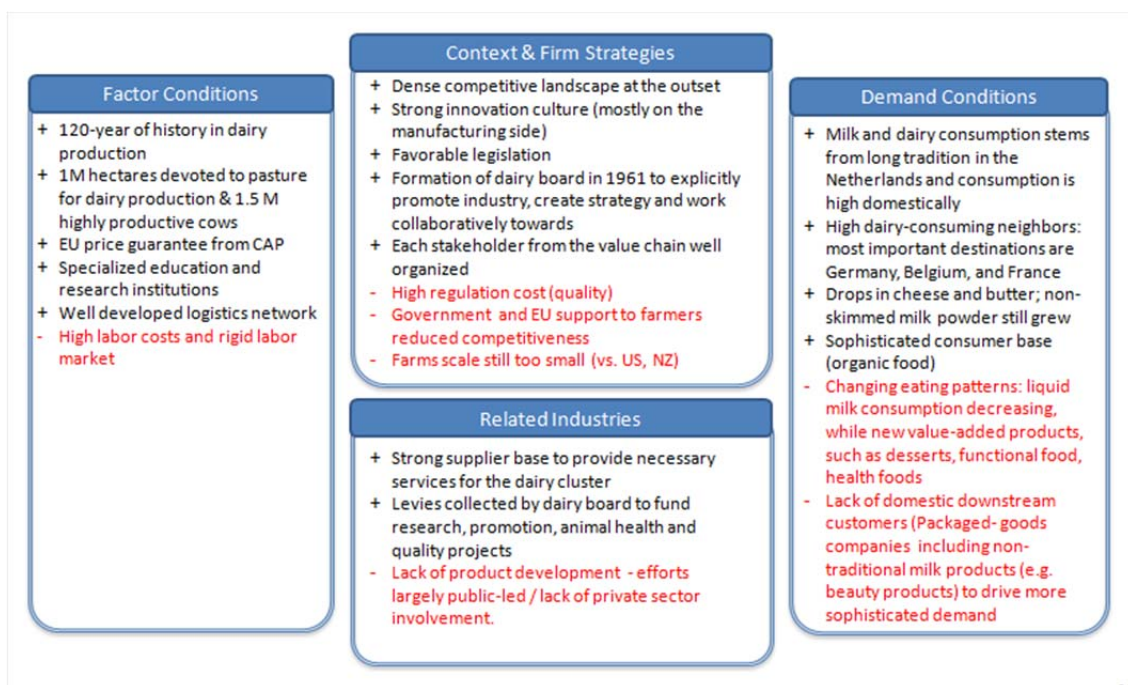


devoted to pasture, skilled workforce and research institutions, and a strong logistics network.

The strength and sophistication of local demand has also been key in the development of the Dutch Dairy cluster: Dairy consumption is part of Dutch daily life and is higher than in other European countries. The Dutch are also keen on consuming organic food and are pushing for more development of organic dairy products. The business context has also been efficient in encouraging investment and productivity. Stringent legislation, a strong innovation culture, and the organization of collaborative efforts (organized by Institutions for Collaboration such as the Dairy Board) have been pushing towards higher innovation and higher productivity. The historical presence of a large number of players in the market, as well as the trade openness to neighboring European players, has also fostered competition and competitiveness.

However a few factors are hindering Dutch dairy competitiveness: In terms of factor conditions, the high cost of the labor force and the low flexibility of the full-time labor market make the Dutch dairy products less competitive on a cost-basis. In terms of demand conditions, evolving trends in consumption patterns towards more sophisticated products will require the

industry to evolve. As the Netherlands are missing strong local players in the packaged goods industry, the dairy producers have not been used to a more sophisticated local demand generated by those client-industries. This lack of private organizations ready to invest in product development strategies has limited the development of the dairy cluster as a whole. On the Firm strategy side, the EU CAP (Common Agricultural Policy) has contributed to the protection of the dairy farmers from worldwide competition (through production quota and guaranteed prices), damaging their competitiveness. Even if the farm size is larger in the Netherlands than in the rest of Europe, average scale remains too small compared to larger pastures in the US and New Zealand, which further decreases competitiveness on a cost-basis.



3.1. The Role of Regulation

Regulation, both European and Dutch, has played a key role in the in developing the dairy cluster. First, tight standards constrained farmers, forcing them to increase productivity and quality. Second, the effect of these rules on the expectations of consumers created the

sophisticated demand conditions necessary to invest in the development of dairy.

The first Dutch standard for dairy was introduced as early as 1723. Testing centers and the quality mark were established in 1913 with explicit standards for acceptable fat content in cheese which was tested. Dairy quality is monitored by government at every step of the supply chain, from feed certification to final product inspection. This pushed farmers to produce a very high quality product. Stringent animal housing standards, environmental rules, and a lack of large pastures pushed farmers to develop more productive cows to stay competitive because they were no longer able to have large numbers of cows in crowded feedlots. This is what spurred the push for more research and innovation to increase productivity and increase value-added production in cheese.

The EU had (and still does have) stringent health and quality standards for the import of dairy prohibits imports from other cheese exporting countries, particularly in the developing world, creating a large market for Dutch dairy that meets those standards. Similarly to the Netherlands itself, there is stringent regulation in place for the health and welfare of animals in dairy production, as well as extensive environmental regulation. The rest of the world has not yet been able to consistently meet these stringent regulatory standards, creating a large captive market for Dutch cheese. Moreover through the implementation of the Common Agricultural Policy (CAP) across Europe farmers receive subsidies that allow them to continue their high cost means of production and still not be too high-priced on the world market for cheese. This limits efforts to become more competitive and creates risks for the cluster as trade barriers fall.

3.2. The Threat of De-regulation

The last round of global trade negotiations has put the EU under pressure to reform CAP,

particularly so that developing countries are not competing with subsidized agricultural products in the EU. For the dairy industry this means the abolishment of price intervention and the dairy quota by 2015, as well as a reduction in non-tariff trade barriers for other dairy exporting countries. In addition to this, as the EU expands to include more countries with lower GDP per capita, there is less subsidy money available for each existing Dutch farmer (as the money is now shared with Polish farmers, for example).

4. Recommendations

As shown previously, the cluster is not competitive on a cost-basis. Farmers will therefore be unable to compete with lower-cost dairy (particularly simpler goods such as milk and milk powder).

Given that Dutch farmers will soon not be able to compete on cost, it is in the industry's interest to migrate away from commodity dairy production and instead to focus on a differentiated strategy which focuses on where the Netherlands is most competitive. To answer question of whether primary Dutch dairy production can survive in the medium term, more detailed analyses will have to be carried out, since while low-cost competitors are entering, the Netherlands still produces a lot of the world's dairy products and demand is expanding in fast-growing developing countries such as China – potentially growing the pie for all producers.

To pursue a differentiated strategy, which is where the Netherlands has to be positioned in the long-run, the Dutch dairy industry must focus on higher value-added products. This would capitalize on existing high quality standards and processes - for example, using the smaller farmer business structure to create gourmet cheeses that are exclusive and not mass-produced. This should be led by the cooperatives and farmer businesses themselves. The

Netherlands should leverage its better animal welfare and environmental standards to sell sustainable cheese and focus on fast-growing organic markets. This should include extensive marketing campaigns espousing the “natural” and healthy qualities of Dutch cheeses – which can be conducted by the Dutch Dairy Board and the companies themselves depending on how they are differentiating their products. Dutch cheeses are not currently well-recognized (particularly outside of Europe) and so there need to be branding strategies created around these cheeses. The Dutch Dairy Board should consider the use of appellations to capitalize on Dutch origin cheeses such as Gouda (i.e., only Gouda from Gouda can be called Gouda). The Dutch certification body (KB) should work in conjunction with the board to come up with standards and qualifications for this certification.

In addition, the Netherlands should expand research from a primary focus up the value chain to include product development, for example promoting research on properties of dairy and how this can be extended beyond food products. Innovation in products such as low-fat cheeses and butters can open up new processing industries in the Netherlands. A bigger focus on downstream industries would build on the technical sophistication that the labor in dairy already has. This could include products such as milk-based beauty products, ice cream, and instant latte mixes – to name a few of the myriad of options that larger consumer packaged goods companies have an edge in today. The basic research components of this (for example how people’s bodies process dairy) should be continued through the DLO and public research institutions. NIZO and private consumer facing companies should take on the product innovation piece. The dairy board should consider incentives to attract consumer packaged goods companies to do dairy research and product testing in the Netherlands. The Institutions

for Cooperation should also play a key role in enhancing the marketing capabilities of the cooperatives, to capture more value, instead of relying on foreign consumer-goods companies or on the single large international player (Friesland).

Another avenue for growing the dairy industry where the Dutch have a strong advantage is by focusing on knowledge creation and provision. This can be done through monetizing the existing advanced dairy institutions, research and expertise to provide fee-based technical assistance to other countries or cooperatives. This could include expanding on services that are already provided (selling cattle, with breeding training and consultations on artificial insemination) to include the sale of machinery, packaging or even quality testing services. The public sector should enable the private actors already in this space to grow their businesses and take them abroad by ensuring capital and business services are available to these actors to grow. The Ministry of Economic Affairs, Agriculture and Innovation should encourage exchange programs through which Dutch dairy specialists, breeders and technology providers go abroad and through which foreign dairy farmers are brought in for training. Showing how Dutch innovation can improve the dairy business would be an effective marketing technique for technical services. As the Netherlands moves into more value-added parts of dairy production it could even consider exiting the lowest value segments altogether and sourcing milk and milk powder from countries where it is produced more cheaply.