

White Paper Innovative Food Sector Groningen

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Introduction

Wide, waving fields of wheat, endless acres of potatoes, strong and stately farms, a lively trade and a powerful food industry: the character of Groningen is traditionally defined by our food. What we eat, where we work, what our environment looks like: for centuries, nutrition has played a decisive role in our lives and food has been the strength and character of Groningen. Monumental buildings in the city and surrounding lands are a daily reminder of this.

Lost Strength

Over the past few decades we seem to have lost much of the strength of food. At the start of the twenty-first century, it seems to be a negative factor at best. Although the productivity of agriculture in Groningen is large and the products are good and cheap, these qualities also have a downside that is becoming increasingly evident. On average, we have unhealthy diets and we eat too much, we have not found enough alternatives for work in the agricultural sector, the countryside is emptying, and the diversity of the landscape is at risk of being lost due to expansion.

Reversible

Some of these developments are – although far advanced – not irreversible. An effective approach, fuelled by an integrated view on food and the economy, offers perspective on a new, positive contribution to nutrition and health, the economy, society and the landscape.

Connections for Responsibility

This way, we see a clear connection between seemingly unrelated problems. When these connections become visible, a perspective emerges to address these problems coherently. Realising the influence on – and responsibility for – food once more in the broadest sense of the word can contribute to greater innovation, to the development of new products and processes, to social sustainability, new and different forms of employment and cohesion, environmental sustainability, maintaining the quality of the landscape and biodiversity, to individual well-being, and to different nutrition that makes a positive contribution to health.

Related Developments

The aim is to reverse several negative, related developments: the increasing dependence on the global food economy, limited or unilateral innovation in the food sector, the loss of regional employment, the growing pressure on the landscape and biodiversity, and the progressive negative influence of harmful food on our health.

Integrated View

Based on the most current scientific insights, this white paper comes to an integrated view and translates this into concrete policy proposals and innovative tools.

Reframe Movement

The immediate cause for this white paper is the Interreg project Reframe. The municipality of Groningen is leading this project. The aim is to restore cohesion in the regional food economy and thereby increasing the innovative strength in the Netherlands, Belgium, Denmark, Germany and Sweden. The starting point is that regional food chains – from producer to consumer – can contribute to a sustainable economy and regional employment.

Innovation Through Cooperation

Within the Reframe programme, we see that the desired cohesion and innovation strength are primarily created by developing and strengthening the regional chain cooperation. The aim is to realise this cooperation and these chains. Reframe primarily focuses on the connection between regional products and consumers.

Here we have experienced that shorter food chains call for different, often new forms of cooperation, for different connections and support and for specialisation. Encouraged by Reframe, entrepreneurs are working on concrete examples of shorter chains. For example, Marne Mosterd is getting part of its mustard seeds from the region again instead of from the Ukraine, which is bringing a lost crop back to Groningen. Various potato farmers are looking into ways in which processing – peeling, cutting, etc. – of potatoes for consumption can take place in Groningen once more. Together with producers, a large catering wholesaler is investigating the possibility of setting up a foodhub, in which existing transport operations are used more efficiently and producers have better access to the urban market.

Small Initiatives Explore Opportunities

The Reframe programme does not only stimulate the aforementioned initiatives. Reframe also supports the urban Ketentafel Voedsel (Food chain network community), where numerous initiatives and parties from the food sector come together. This way Reframe and the Ketentafel facilitate new collaborations.

The Ketentafel displays the amount of existing larger and smaller initiatives in food innovation. This not only shows the quantity, but the power of those initiatives as well. They explore opportunities, realise innovations and rouse consumers' interest for different products and habits. Simultaneously, by taking the lead, these initiatives also reveal challenges and obstacles.

Innovation and change towards a stronger regional food sector require more knowledge than is often present among the entrepreneurs or initiators involved. That knowledge varies from insight into supply, knowledge of cultivation techniques, processing methods or logistics systems to – in the case of more socially oriented initiatives – knowledge of business models. At the same time, many of these parties will benefit from more contacts, from clearer access to (existing) investment opportunities and from launching customers.

As the drivers of a stronger regional food sector, the city and province of Groningen can organise access to knowledge, networks, investment opportunities and launching customers (or join as a launching customer). That way they can remove obstacles for healthy economic development towards an innovative and sustainable food economy.

Social Need

While parties in the region of Groningen are working on Reframe, the social need for different monitoring and a better insight into food increases as well. The recent fipronil crisis (eggs) renews the visibility of the scale and the nature of the food industry. Additionally, this crisis has also raised questions in the public debate about whether the current structure of these chains (including supervision) is the most logical and most responsible form.¹

At the same time, food is becoming an increasingly popular theme in the general debate on sustainability and in the focus on public health. In order to realise its own urban ambitions and the international ambitions of the Paris Agreement, the (regional) food economy will also have to change. To reduce health disparities and to combat diseases such as obesity, attention to nutrition is essential.

¹ The need to connect food production and consumption is recognised more and more. See also the opinion piece by Jan Douwe van der Ploeg: <https://www.foodlog.nl/artikel/de-wereld-zit-niet-meer-op-nederlandse-landbouwkennis-te-wachten/>.

Food Connects

We can look at food from two perspectives. Firstly, from the perspective of the individual and the influence of food on their health and well-being and, from a broader point of view, the role food plays in finding their place in society and the economy. We can also look at food from the broader perspective of the economy, society and the environment. In that case we mainly see the role of food in innovation and employment, the role of food as an essential function within landscape and ecosystems and, lastly, as a cohesive element in society. In society, food does not only play an important role in meetings, at home and in the catering industry, but it also defines our identity in our food culture. This white paper explores both the perspective of the individual as well as that of the economy, society and the environment.

The Individual's Perspective: Health

Of course, food is an essential fuel for the human body. But food is much more than that. It is a source for living pleasure, a building block for coexistence, and it can also be an ingredient for economic participation. In all these factors, food also influences our health.

Quality of Life

The quality and quantity of what we eat and drink determines how we feel, the chance of disease and the speed of recovery. Additionally, experience is an important part of how we perceive this quality.² On the one hand, at the high end of the market, this leads to an ever-growing number of specialty shops, special eateries, restaurants and other food establishments, plus initiatives such as farmers' markets and specialised festivals. On the other hand, mainly at the low end of the market, this leads to the perverse but seemingly inevitable incentive to sell as much unhealthy food as possible at the lowest possible price. Although healthy food is not necessarily more expensive.

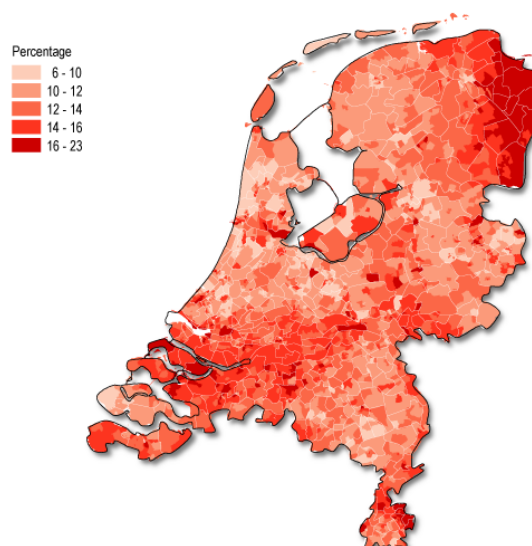


Figure 1 Obesity per district (source: <https://www.volksgezondheidenzorg.info/onderwerp/overgewicht/regionaal-internationaal/regionaal#lnodeobesitas-wijk>)

The most noticeable health effect of a one-sided diet is obesity. Obesity occurs among all population groups, but relatively most frequently among groups with a relatively low education level and in areas with a relatively low socio-economic status. It is important to prevent stigmatisation of groups or individuals, but it is also essential to work on a targeted

² See also: Michiel Korthals, *Goed eten. Filosofie van voeding en landbouw* (Nijmegen 2018).

approach. Unfortunately, so far there are not enough successful examples to entice large groups to switch to healthier food.³

The Challenge of the Price

When zooming out, on the one hand we see the opportunities to initiate and strengthen a development with the aforementioned specialty food establishments and specialised retail that provides more, better, and in many cases regionally produced food. For this development to be really effective, the price will eventually also have to drop. After all, on the other hand – especially at the low end of the market – price is a determining factor for what people buy and prepare themselves and for which food is offered in semi-public facilities. Incidentally, this does not only require lower prices for better food, but different knowledge and – within institutions – updated processes as well. And that, of course, requires guarantees that regionally produced food is actually better and healthier.

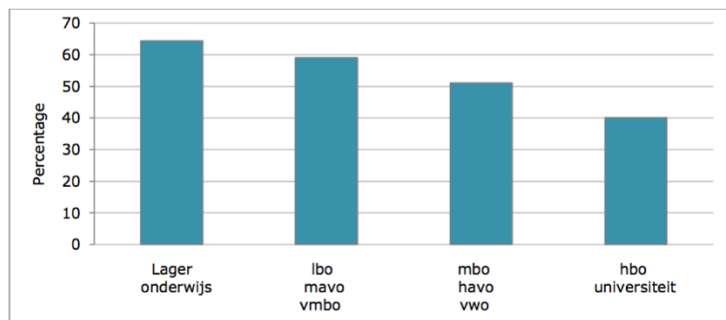


Figure 2 Obesity by education level in adults of 25 and older in 2012 (WRR, *Naar een voedselbeleid*, 2014)

The Economic and Social Perspective: Innovation and Employment

Naturally, the individual and social perspective come together in health. Illness, the absence of health, is first and foremost a negative individual experience, but the subsequent costs are also a social issue. Food is not only important for the health and well-being of the inhabitants of Groningen, but also for the province's economy. In 2016, 2,630 companies were active in agriculture, livestock farming and fishing. This is a sharp decline compared to several years earlier, because in 2011, 3,277 companies were active.⁴ The number of companies active in the food industry is much lower. The overall interest of agriculture and industry (including non-food industry) is high in the province of Groningen, especially in comparison to the rest of the Netherlands.

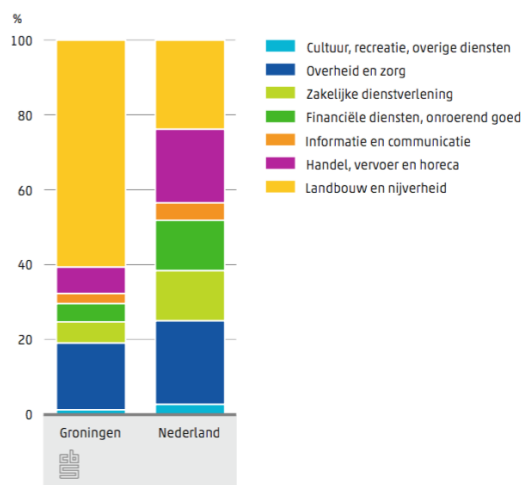


Figure 3 Added value basic prices 2013 (CBS)

³ See also: Christina A. Roberto, et al., 'Patchy progress on obesity prevention: emerging examples, entrenched barriers, and new thinking' The Lancet, Volume 385, Issue 9985, 2400 – 2409.

⁴ CBS.

Focus on Production

Although the specific figures for Groningen are still lacking, the focus in the food chain seems to be on production and less on processing. Companies from Groningen seem to play a much smaller role in the currently defining links of the food chain, also when it comes to value creation.

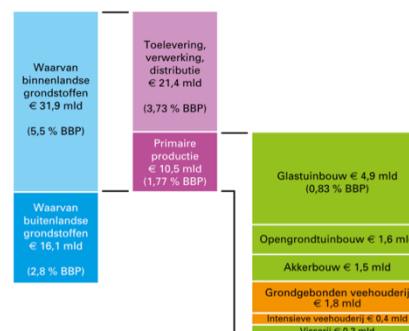
Market failure

The food economy of Groningen is not a level playing field. The position of food-producing companies from Groningen is weak compared to the processing industry elsewhere in the Netherlands and in the global distributive trade. The opportunities available for forming new coalitions are insufficiently exploited because regional parties do not know each other well enough. A case in point is that more and more parties, including major commercial players, are approaching Reframe with the request for names of producers of authentic regional products. Market demand is present and growing, but it is also difficult for major players to meet this demand due to the lack of insight into existing and potential suppliers of regional products. On the other hand, (potential) producers of these products have little insight into this demand and/or how they could meet that demand.

Removing market failure

The economic contribution of food can grow by removing this market failure, by making demand and supply more visible and, where necessary, by stimulating small to medium-sized enterprises (SMEs) to innovate in such a way that they can respond to this demand. This can also be expected to lead to positive effects on employment. In addition, the cooperation with education and research institutions can offer special opportunities.

Totale omvang agrosector € 48 mld in 2015



Bron: Weer, 2017

Figure 4 Added value agricultural sector (RLI, Duurzaam en Gezond. Samen naar een houdbaar voedsel systeem 2018)

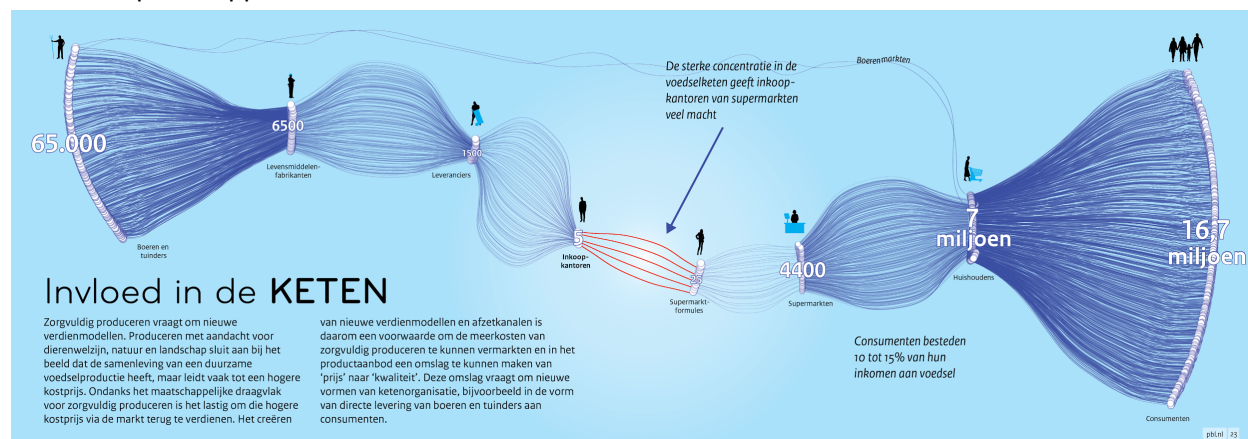


Image 1 Source: Planbureau voor de Leefomgeving

Wider perspective

If we zoom out and view the situation in Groningen from a wider, historical perspective, then we see that the food sector has been heavily industrialised in recent years. This industrialisation has contributed to the affordability, safety and availability of food. Whereas an average household used to spend 50% of their income on food, this has now been reduced to 10%.⁵ Simultaneously, there has also been an unprecedented concentration of power in food chains. Local grocers have grown into enormous multinational supermarket chains with hundreds of shops in the Netherlands alone, and the food processing industry is also dominated by a small number of major players.⁶

Little Influence

The scale and sphere of influence of the farming industry is lagging far behind. In that light, it is not surprising that the major food processors and supermarkets are appropriating an increasingly large share of the added value that is created within food chains. This has led to enormous pressure on the prices for farmers.⁷

Industrialisation

The industrialisation of – and economies of scale within – food chains is mainly driven by economic principles of cost reduction and profit maximisation. From a social perspective, however, farming traditionally played a greater role than merely an economic one. Inseparable from the landscape and social environment, farmers have also always played a role in determining landscape and environment. Farming has been an important source of local employment for a long time.

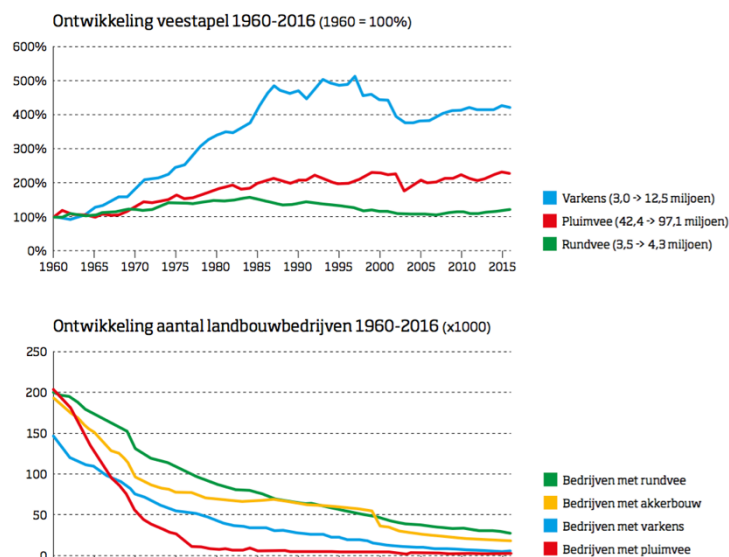


Figure 5 Development livestock and number of farms in the Netherlands (Source: Natuur & Milieu Nederland, Voedselvisie. Naar een gezond en duurzaam ecosysteem)

Finding Space for Innovation

In the current interplay of forces, many farmers are experiencing very little space to do more than keep their head above water.⁸ Their food products are traded on the global market and, partly due to

⁵ The Nibud (National Institute for Family Finance Information) gives the following example: A family consists of a father and mother (both under the age of 50), a child of 7 and a child of 12 years old. Every day this family spends the following on food: 4.54 + 4.08 + 2.27 + 3.70 = 14.59 euros (<https://www.nibud.nl/consumenten/wat-geeft-u-uit-aan-voeding/>).

⁶ The Council for the Environment and Infrastructure (RLI) lists 65,000 farmers and horticulturists, 6,500 processors and 1,500 suppliers whose products find their way to 16.5 million consumers through 5 purchasing organisations at 25 supermarket formats. RLI, Duurzaam en Gezond. Samen naar een houdbaar voedsel systeem 2018, p 40.

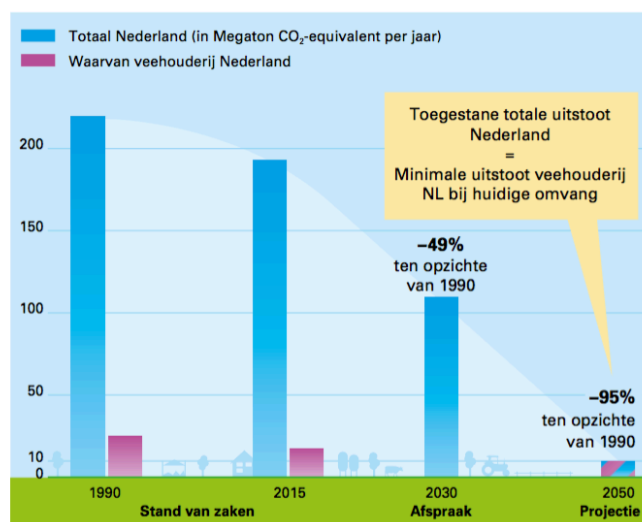
⁷ W. Baltussen, et al., *Positie primaire producent in de keten; Samenwerking en prijsvorming*. Wageningen 2018, Wageningen Economic Research.

⁸ See also the research into the position of the farmer by newspaper Trouw: <https://destaatvandeboer.trouw.nl/>.

powerful intermediary parties, still generate low returns. In turn, the intermediary parties are too far away from the region to be able to or to feel the need to make an effective contribution. Of course, there are farmers who see other possibilities. In Groningen this has led to multi-functional combinations with healthcare, tourism and education, and to new forms of production. However, the economic impact of this still seems limited. Additionally, many initiatives of a social and ecological nature are highly dependent on subsidies. For actual change it is necessary to go beyond these subsidy-dependent projects, and we must build economically viable solutions. Examples elsewhere in the Netherlands show that much more is possible than what is currently happening in Groningen.

Environment, Landscape and Climate

The fact that farmers determine the landscape and the environment does not mean their contribution is always positive. The demands of the environment and the market did not and still do not always correspond, especially not in the short term. On the one hand, farms are often responsible for pollution of air and water and for a decline in biodiversity. On the other hand, farms also play a significant role in nature conservation, in the appearance of the landscape, and they – also out of self-interest – counteract soil decay and deterioration. In the long term, the positive contribution to the environment, ecology and landscape will become increasingly important, also for the continuity of the farms themselves.



Bron: Emissieregistratie (2017), Schoots et al. (2017)

Figure 6 Greenhouse gas reduction targets for the Netherlands up to 2050, the emissions from livestock farming achieved in 2015 and the expected emissions in 2050 at current livestock numbers and available technologies. (Source: RLI, Duurzaam en Gezond. Samen naar een houdbaar voedsel systeem 2018, p 7)

Food production and the Paris Agreement

The emission of greenhouse gases differs between different types of agriculture. Livestock farming emits the most greenhouse gases and currently causes 10% of the total greenhouse gas emissions. The Paris Agreement requires the Netherlands to reduce greenhouse gas emissions by 2050 to a level that is 95% lower than that of 1995. About this, The Council for the Environment and Infrastructure writes: 'If all the currently known technical measures were taken to reduce these emissions, in 2050 agricultural CO₂ emissions would take up the total amount of the Netherlands' permitted greenhouse gas emissions at that time.'⁹ That is why in 2050 our menu will have to contain fewer animal products, such as meat, dairy and eggs, and the production space for livestock farming will be smaller.

Additionally, the Council for the Environment and Infrastructure recommends working on a coalition of producers and consumers. 'The inescapable need to adapt our food system

provides an excellent opportunity to unite farmers, the food processing industry, the retail sector and consumers in a unique coalition for sustainable and healthy food'.¹⁰ As part of the Reframe project, the municipality of Groningen is already working on a coalition of those players to jointly develop regional solutions and innovations. Partly based on this white paper, a next step can be taken in this regard.

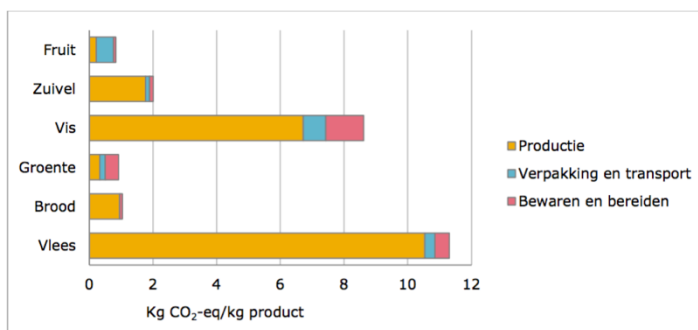


Figure 7 Median greenhouse gas emissions per kg of food throughout the entire life cycle. (WRR, Naar een voedselbeleid, 2014)

Diet Adjustment

Averagely, the Dutch diet leads to an emission of an average of 3 to 5 kg of greenhouse gas per day, measured in CO₂ equivalents. Meat and dairy cause 40% of this emission. Adjusting the diet can lead to a substantial reduction. Eliminating meat and dairy products from your diet could reduce its greenhouse gas emissions by up to 55%. However, the RIVM (Netherlands National

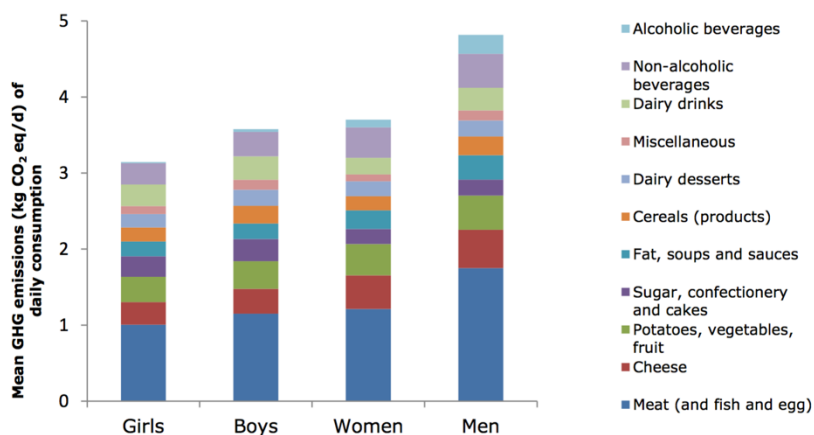


Figure 8 Mean daily greenhouse gas emissions (in kg CO₂ equivalents) per diet for girls and boys (7-18 years old) and women and men (19-69 years old). (Source: RIVM)

⁹ RLI, Duurzaam en Gezond. Samen naar een houdbaar voedsel systeem 2018, p 7.

¹⁰ RLI, Duurzaam en Gezond. Samen naar een houdbaar voedsel systeem 2018, p 8.

Institute for Public Health and the Environment) notes that stopping the consumption of meat and dairy does not seem to be the most optimal solution from an environmental point of view. With every change, therefore, it is advisable to look at the impact of the new diet, not only on the environment but also on health. At the same time, another production method can make a (limited) contribution to lower greenhouse gas emissions. Extensive livestock farming appears to cause lower emissions than intensive livestock farming.¹¹ In addition to a change in diet, eating less, that is, only consuming what you need, could already result in 10% less greenhouse gas emissions from your diet.¹² Interestingly, the greenhouse gas emissions from diets hardly differ between groups with a different socio-economic status. Although groups with a higher socio-economic status consume less meat on average, they consume more vegetables, fruit, fruit juice and fish, also resulting in greenhouse gas emissions.¹³

Climate and Health

A different diet is not only desirable from a climate perspective. A different diet, fewer animal products and more vegetable proteins can also provide health benefits. From both perspectives, RIVM advises consumers to eat fewer animal and more vegetable products and to eat less on average. In addition, consumers can contribute to the climate by wasting less food and by using more seasonal products. Simultaneously, RIVM advises governments to take tax measures, to support cooperation in the food chain, to make more knowledge available to consumers and to purchase more sustainable food themselves. These final three recommendations can also be followed by local and regional authorities.¹⁴ As part of the Reframe project, the municipality of Groningen has already started stimulating cooperation in the food chain, increasing the knowledge of consumers about the origin of their food and has started purchasing in a more regional manner. In view of the urgency of the climate targets, a next step can be taken based on this white paper.

¹¹ RIVM, *The environmental sustainability of the Dutch Diet* (2017) 37.

¹² RIVM, *The environmental sustainability of the Dutch Diet* (2017) 59.

¹³ RIVM, *The environmental sustainability of the Dutch Diet* (2017) 55.

¹⁴ RIVM, *The environmental sustainability of the Dutch Diet* (2017) 77.

Realising Opportunities

If we look at the contribution of regional food to the economy, society and the environment in the northern Netherlands from different perspectives, we see the opportunities as well as the interdependence of the economy, society and the environment. Food can play a central, positive role in individual quality of life, social cohesion, the economy and employment once more, and at the same time it can contribute to the preservation of climate and landscape. Additionally, these contributions are intertwined; they all demand innovation, and they can be accelerated and strengthened by targeted interventions.

Essential Role for Entrepreneurs

Realising this vision is only possible if entrepreneurs in the region start to take a more significant position in the food chain. Local entrepreneurs should be able to anticipate the exact needs of regional customers, be it catering, restaurants or consumers. In that interplay they have the opportunity to innovate and to develop new products, services and processes. Moreover, regional society is demanding this.

The regional product capacity is ultimately much larger than the maximum regional demand. However, the innovation that results from the more direct relationship between regional supply and demand can also strengthen the position on the global market and make it more distinctive. As these entrepreneurs also depend on the region in which they operate, the strengthened economic position of these entrepreneurs will also lead to social and ecological value.

Different Optimum

The basis for the outlined development of the food sector is that the current structure of the food chain is also not the only optimum from an economic point of view. A different structure is conceivable and possible. However, this different structure does require a certain scale in the volume of regional products and regional processing. The price is related to this, both as a condition as well as a result. On the one hand, these prices must be reasonable for producers, processors and regional vendors, and on the other hand, they have to be accessible to such a portion of consumers in the region that the necessary scale can also be achieved. Incidentally, product differentiation may also be necessary to create a decent volume.

Shared Responsibility

In our vision, realising the new structure and working on a different optimum is the responsibility of all parties. That starts with conscious consumers who demand good, authentic and responsible regional food. This naturally also requires large-scale consumers to look at the economy, society and the environment when purchasing food. And that requires research and educational institutions that make knowledge accessible and share it, and that contribute to (research into and the testing of) concrete innovations.

Role of Governments

However, without the stimulating and facilitating role of the local and regional governments, it does not seem possible to realise that transition in the short term. The role of local and regional authorities must focus on enabling change, making knowledge available, organising coalitions and facilitating the necessary investments. The understanding that the efforts of local and regional governments are investments as well, of which not all investments will yield the same return, is essential. To realise the transition, it is also necessary to invest in small-scale initiatives that show much potential, but that do not yet guarantee results. Subsidising products themselves will not contribute to transition. Sparingly applied guarantees, however, can contribute. It goes without saying that governments and related (semi)public institutions can also play an important role as a purchasing party to stimulate the transition, in particular as a launching customer.¹⁵

Instruments for Change

Local and regional governments can promote a more central, positive role for food in individual quality of life, social cohesion, economy and employment, and contribute to the preservation of climate and landscape at the same time. In the first place, this requires an integrated, coherent approach by these governments themselves. Secondly, it requires the stimulation of innovations by entrepreneurs and initiators. Thirdly, it requires the development of an explicit regional demand from as many sectors in society as possible. Finally, the result is a shared regional food agenda: a regional food deal between governments, entrepreneurs, consumers and public institutions.

Integrated, Coherent Approach

The positive contributions of food to individual quality of life and social cohesion, to the economy and employment, to preservation of climate and landscape; all these contributions are intertwined and can reinforce each other. Policies exist for all of these goals, but these are not integrated. Moreover, a positive contribution to the economy seems necessary in order to be able to contribute to society and the environment in the long term. Conversely, it is also the question whether a long-term positive contribution to the economy is possible without a positive effect on society and the environment.

Public healthcare strives for healthy food and a balanced diet. Social policy strives for greater social cohesion, participation and informal care, and often uses food as an instrument for that. Economic policy aims at innovation. Labour market policy strives for current and future employment, including in the food sector, and for cooperation between research, education and business. Environmental policy aims at preserving the landscape, reducing greenhouse gas emissions, etc.

¹⁵ David Barling et al., *Revaluing Public Sector Food Procurement in Europe. An Action Plan for Sustainability*.

The outlined coherence of goals and the sector is often still lacking in government policy. As a result, governments are missing opportunities, including opportunities to encourage entrepreneurs and other initiators to use their innovations to contribute to finding a new optimum of economy, society and the environment.

Recommendations

1. Gradually realise coherence in the nutrition-related objectives from the various policy areas.
2. Based on these objectives, develop a clear, integrated and appealing food agenda.
3. Use this agenda to connect as many other parties to these objectives as possible.
4. Use this agenda as a transparent assessment tool for requests for support for innovations and initiatives.

Encouraging Innovations

Entrepreneurs and initiators play an essential role in achieving innovation and change towards a stronger regional food sector. A growing number of entrepreneurs is seeing the opportunities and the need for change. These entrepreneurs, as well as social initiators, have the ambition and energy to realise that change. However, this change requires more knowledge than is often present among those directly involved. That knowledge varies from insight into supply, knowledge of cultivation techniques, processing methods or logistics systems to – in the case of more socially oriented initiatives – knowledge of business models. At the same time, many of these parties will benefit from a larger network, clearer access to (existing) investment opportunities and exchanges with launching customers.

The following five tracks are already visible in the field:

1. Process innovation: the different organisation of processes between companies and bringing the processes (back) to Groningen are important innovations. Concrete examples that are currently being explored – also stimulated by Reframe – are:
 - a. Foodhub system: the potential supply of regional products is currently experiencing difficulties in finding the potential demand for these products. Logistics and sales channels are essential challenges in this area. Inspired by a Reframe example in western Sweden, students of the University of Groningen, together with regional entrepreneurs, are designing and researching how to set up a Foodhub where supply and demand meet, and logistics will be taken care of. The Foodhub is a network in which regional products are transported (cost-)efficiently to an urban market or wholesaler by using existing logistics and facilities. As a distinctive part of the regular supply, they can also be delivered effectively to urban and regional customers.
 - b. Processing in the region: only a part of the regional products can find its way to the regional demand without processing. Many products require a kind of processing (washing, peeling, cutting, repackaging, precooking). This seems to be possible on a larger scale in the region, with room for participation jobs. This perspective is currently

being investigated further by the Municipality of Groningen, the Province of Groningen, University of Groningen and several entrepreneurs.

2. Product innovations: insight into regional demand also leads to relevant product innovations. Appealing examples are:
 - a. Marne Mosterd, who want to get their basic raw materials from the region again and are investing in this together with farmers.
 - b. Bax Bier, who want to get malt from the region and are currently investigating how to set up a malting plant with farmers.
3. Combined innovation of products and processes. An appealing example is:
 - a. The cooperating farms of the Graanrepubliek, which are working together on crop innovation and which are innovating both the cultivation as well as the sales channels.
4. Marketing:
 - a. To make the innovative products even more visible and attractive on the regional market, a joint marketing effort is desirable.
5. Training and education:
 - a. Do we now have the right training and education tools to stimulate entrepreneurs in the food industry to optimally innovate and build regional food chains.

The City and Province of Groningen

As drivers of a stronger regional food sector, the city and province of Groningen can stimulate the aforementioned change and innovation tracks. They can do this by organising access to knowledge, networks, investment opportunities and launching customers. That way they can remove obstacles for healthy economic development towards an innovative and sustainable food economy.

The access to knowledge can be organised with a voucher arrangement. A voucher provides financial resources for the use of knowledge or expertise, for example from research institutions. The innovations of entrepreneurs who want to use such a voucher must touch upon various objectives for the economy, society and environment with their innovation. The entrepreneurs must also make investments themselves and must demonstrate that they are able to use the knowledge to realise the desired innovation.

The municipality of Groningen is already organising access to networks via the officials involved in Reframe and via the Ketentafel Voedsel. That access can be increased by specifically organising a food broker who connects players both inside and outside the government.

Access to existing public investment tools can be increased first and foremost by making these possibilities more widely known and by streamlining and simplifying application procedures where possible. Additional investment opportunities can be created in the shape of a microcredit arrangement. The assessment criteria for this can be largely the same as for the aforementioned voucher arrangement.

The municipality of Groningen is already acting as a launching customer by explicitly requesting a growing number of regional products with the purchase of municipal catering. This positive experience can be shared more emphatically with other public organisations. At the same time, the extent to which internal process innovation at the municipality and other public organisations can lead to more demand for regional products deserves further investigation.

From the social objective, it is also desirable that long-term care and protected living institutions have the largest possible access to authentic, regionally produced food at an affordable price. This also requires adjustment of the internal organisation of these institutions. The municipality can support this adjustment by making knowledge available here as well by means of a voucher arrangement.

Recommendations

1. Set up a voucher arrangement that gives entrepreneurs and initiators access to knowledge.
2. Appoint a municipal food broker who connects players both inside and outside the government.
3. Increase the awareness of existing public investment tools. Simplify the application procedure where possible. Create new investment tools in the shape of microcredits.
4. Encourage public organisations to act as launching customers.
5. Support institutions for long-term care and protected living in adjusting their internal organisation with knowledge vouchers, so they can also make more use of authentic, regionally produced food.

An Explicit Regional Demand

Aware consumers are essential for a strong, innovative and sustainable regional food economy. The number of consumers who are making more and more conscious choices about food and look at its origin and environmental impact is already growing. Of course, many factors play a role in these choices. Price, flavour and habit are at least as important as origin, health effect and environmental impact. The municipality can inform the consumer through information campaigns, events and demonstrations, thus helping them to make conscious choices.

Concurrently, the municipality can provide producers with more insight into the considerations of consumers, not only in terms of origin, health effect and environmental impact, but also in terms of price, flavour and habit. After all, innovations are only successful if they are also purchased by consumers.

Thanks to its growing understanding of the wishes of consumers, the ambitions of entrepreneurs and the long-term opportunities for the economy, society and environment, the municipality can also identify new opportunities for product innovations and point these out to parties. An example: consumers are asking for plant-based alternatives to dairy for various reasons, entrepreneurs are looking for opportunities for innovations and, as a government, the municipality is looking for ways to

reduce greenhouse gas emissions. In that perspective, the question arises as to whether responsible production of vegetable dairy is technically and economically possible and viable, and if so, to what extent entrepreneurs would like to take up that challenge.

Recommendations

1. Inform consumers with campaigns, events and demonstrations about how they can make conscious food choices.
2. Stimulate producers to become aware of the considerations of consumers.
3. Identify opportunities for product innovations and inform parties of this.

Regional Food Deal

Finally, the integrated approach, stimulating innovations and strengthening the regional demand can take shape in a Regional Food Deal between governments, entrepreneurs, consumers and public institutions. With this Regional Food Deal, the parties underline their commitment to the shared food agenda and to its positive contribution to the economy, society and the environment. And with that Regional Food Deal, Groningen is encouraging other cities and regions to follow suit. Imitation by others increases the impact of implemented changes on the environment. Imitation encourages Groningen to continue to innovate, and it creates the supra-regional environment in which this change remains sustainable.

Recommendations

1. Confirm the commitment of governments, entrepreneurs, consumers and public institutions to a shared food agenda with a Regional Food Deal.

Conceptual Framework

Food Chain

By food chain we mean all links from producer to consumer. From the consumer's perspective – the end user who eats a meal – the chain is as follows. In many cases, consumers partially prepare the meal themselves with products they purchased from the supermarket in the area. In turn, that particular supermarket or other retailers are often part of a larger group and/or purchasing association. This group purchases its products centrally from a wholesaler or supplier or directly from large food manufacturers. In many cases, these parties are also responsible for part of the processing of the food, either directly or by organising this process. The ingredients for this are obtained – usually via intermediaries – from agricultural companies in agriculture and horticulture. These agricultural and horticultural companies obtain their raw materials – such as seeds, fertilisers, young cattle, etc. – and equipment from other suppliers, who also often operate on a global scale.

Chain Supervision

All steps of the food chain are subject to supervision, partly organised by the sector itself, partly by the national government. The structure of the chain and of the supervision are communicating vessels. In many respects, a different structure of the chain requires a different arrangement for supervision and vice versa. That means two things. Firstly, innovation in the chain is only possible if supervision and regulation possibilities are also investigated. Secondly, (disruptive) innovation is only possible if the public interests that safeguard government supervision are also considered and are (re)organised.

What Is Short?

Short food chains aim to create more added value in areas where food is cultivated. This extra added value should lead to an enrichment of the community in the broadest sense of the word. This may concern socio-economic goals, such as a more reasonable disposable income, more employment and better health, or socio-economic objectives, such as climate change mitigation and landscape conservation.¹⁶

Differences Between Chains

Not all food chains are equal. Firstly, there are big differences between the different types of food. One is more or less ready for consumption after cultivation, while the other can only end up on the consumer's plate via one or more process steps. Nor can every type of food be grown equally efficiently anywhere in the world. Additionally, different food chains have been set up for different end users. There are business-to-business food chains, but also business-to-consumer and consumer-to-consumer chains. Each of these chains can be shortened, but the changes and outcomes will vary greatly. To

¹⁶ F. Galli, G. Brunori (eds.) (2013) Short Food Supply Chains as drivers of sustainable development. Evidence Document. Document developed in the framework of the FP7 project FOODLINKS (GA No. 265287). Laboratorio di studi rurali Sismondi, ISBN 978-88-90896-01-9.

conclude, short chains are shorter than their global counterparts, but 'short' can indicate different kinds of distance: geographical distance, temporal distance, social distance and political distance.

Regional Products Are a Small Part

A short food chain is therefore not synonymous with regional products, although the traditional local products are of course an example of a short food chain. But relevant short chains produce much more than just local products. The potential scale of short food chains, however, becomes much clearer from various experiments. Precisely because the short food chain is such a broad and multi-interpretable concept, it is important to have a clear conceptual framework in discussions about short chains. What type of food is it? How is the current chain set up? In what way do we want to shorten that chain and why?

Innovative Strength

The development of food and in particular of the agriculture and food industry is driven by innovation. Of course, inventions and new techniques are important, but they only have real effect when they are combined into new methods and processes throughout the chain. New products are only successful if the consumer recognises that these products are an answer to their question. Other processes are only successful when they lead to increased value creation and better returns in the chain. That is why the current challenge is to promote product innovation and to (co-)organise process innovation, so the potential of food is better utilised.

Risks Are Necessary for Innovation

Innovation means taking (major) risks. Within food innovation, the matter is so complex that the yields are often elsewhere instead of with the person bearing the risk. An entrepreneur or a farmer primarily has an interest in an economic advantage. The advantage for the environment, soil quality and employment often do not lie directly with them. A listed supermarket wants to sell and has no direct interest in a healthy population. To change this, on the one hand it is necessary that companies willing to take the risk are partially covered for this risk. Obviously, without reducing the risk completely. It is precisely the unknown, the risk that a project fails or leads to a different outcome, which leads to the highest (learning) revenues. On the other hand, it is also necessary to prevent free-rider behaviour, as well as preventing, for example, improper use of regional labels as much as possible.

Examples of How Things Can Be Done Differently

Historical: Geert Reijnders in the Noordpolder

In the period of the cattle plague in the early nineteenth century, Geert Reinders was the first person who dared to test the vaccination of cattle. Many people have benefited from his 'courage' in initiative. If he had not done that, what would have happened with the agricultural industry in Groningen?

Experiments: Hop Project by Landgoud

Landgoud in northern Groningen has invested in an experiment with hop production at the Wadden dike. Currently, this is still an experiment of a single entrepreneur, but if it becomes a success, many entrepreneurs can share in the results and salty hops may become commonplace. The challenge is that innovations often also benefit competitors and colleagues. The paradox is that, despite this broad revenue, the costs of this innovation often come down to one individual entrepreneur and that they only have limited opportunities to recoup these costs. This way, part of the innovative potential of the food sector remains underused. This can be overcome with a more broadly organised Research and Development Policy and appropriate government tools which stimulate this type of research and development.