TOWARDS ADDED VALUE(S) THROUGH COLLABORATION IN THE SUPPLY CHAIN

Report commissioned by the Dutch Society for the Protection of Animals

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Date
15-03-2023

Summary

This report describes tools and recommendations that can be implemented to help improve the revenue model of farmers and create scope for investments aimed at enhancing sustainability, including further increasing levels of animal welfare. These tools include stable pricing systems, adjustments to accommodate expected changes in feed prices, and aligning compensation for additional costs with the investment pattern of farms. The prospects for collaboration in farmer-producer groups have also been outlined, and the eventual role of the Dutch Society for the Protection of Animals in whether or not *Fair Trade* criteria are included in the provisions of the Better Life label scheme.

The current market for meat and eggs is characterised by weekly trading mechanisms that anticipate expected price changes. This causes the supply chain to function like a poorly-oiled machine and is also the reason for so-called failure costs. These are costs that could have been avoided by a properly coordinated supply chain structure. This is especially relevant as information on production (conditions) in the food supply chain is not equally shared over supply, production, processing and marketing. This facilitates opportunism and the potential to invisibly deflect costs on to others, with all the inherent consequences for mutual trust in the chain.
The first steps towards creating transparency and stable pricing systems have already been taken in a number of chains by linking the upstream (farmers) and the downstream (retailers) components. These concern systems that are based on stable prices and not on fair prices. As framing effects in the purchase decision exert a strong influence on how fairness is judged, it is impossible to apply the concept of 'fair prices' in food chains in a way that leads to uniform and consistent application when prices change.

A stable pricing system necessitates the establishment of a reference price for the primary link which is used by the other market parties as a benchmark. The items included in the benchmark are determined based on publicly available data sources that provide index figures: for the Netherlands these are KWIN, Agrimatie, Matif Paris, Kengetallenspiegel, Bouwkostenindex etc. To have value as a benchmark, the various cost items must be a good reflection of the actual situation in practice. The production conditions and associated operational management (including labour input) must also be specified in detail. There is nothing to be gained by creating a generally applicable, stable list of prices. Each concept involves slightly different criteria, which means variations repeatedly occur in the listings.

A pricing system based on annual figures only takes fluctuations in feed prices into account to a limited extent. As feed costs represent a significant proportion of the total costs, the stable pricing system determines the expected price of feed for the months ahead based on analysis of price developments in the market and the expected price development of raw materials in the futures market. The expected feed prices are calculated by establishing which periods in the future the prices concern, the publication dates of prices during the year, which futures market is used as a reference, the raw materials used as feed ingredients, and which factors determine the relationship between raw material prices and feed prices.

Participants in sustainability labels within the same supply chains currently often receive the same compensation and/or price. Granting an average premium is not appropriate in all cases. Not all farms will invest at the same time in measures aimed at enhancing animal welfare such as a free-farrowing pens in pig farming and covered outdoor runs on poultry farms. The duration of a purchase contract may also differ, which means farms are tied to a certain fee or price for a longer or shorter period of time. To encourage livestock farmers to bring forward their investment plans,

the pricing system should reimburse higher costs resulting from additional investments in sustainability, based on the period the investment was made in.

	Benefits	Limitations
Stable pricing system	• Fixed predetermined price • Greater security • Greater transparency • Strategic collaboration possible • Scope for investment in additional value(s)	• Less flexibility • Still under development • Risk of disruption from free market
Feed price adjustment	• Buffering price of most important raw material	• Less accuracy with trend line breaks
Differentiation additional costs	• Stimulates investments in sustainability	• Less clarity for consumers

Stable pricing systems with a positive point for sustainability offer opportunities for better animal welfare and for the revenue model of farmers who operate in fixed supply chains. Although some consumers are willing to pay more for products with differentiation, the dominant factor remains the affordability of food. However, possibilities do exist within certain boundaries. Firstly, because there are more opportunities for optimisation within fixed chains. Secondly, because substantial compensation for investing in additional sustainability measures only necessitates a limited increase in the sales price. Stated in concrete terms, compensating for an additional investment of €250,000 corresponds to a 4% higher sales price.
Alliances between livestock farmers offer added value for the participants as well as for the other parties in the chain. Collaboration creates a direct point of contact for the marketing organisation which is otherwise difficult to achieve when working with several individual farmers. Chain collaboration intensifies the relationship between the producer and retail/food service. Building trust is the key to success: moving the supplier – customer relationship forward to establish a partnership in the chain. This will also facilitate sharing and exchanging information and provides leads to develop differentiating chain concepts together.
Product innovation can also be discussed and producers become less 'interchangeable'. However, the various intermediate links in the chain between the producer and the consumer make it more difficult for pig and poultry producers to control the quality of the end product. Cooperation with the aim of achieving product differentiation is more likely to result in a sense of satisfaction and accomplishment among participants.
No role will be assigned to the Dutch Society for the Protection of Animals to include *fair trade* in the Better Life label criteria. A contribution is made to social interests if NGOs look beyond their own single issue when weighting individual sustainability issues. Extending the scope of label to include nature, the environment, and the climate can reinforce the quality label. Regardless of whether the influence of the Dutch Society for the Protection of Animals on price forming is a desirable situation, the question is whether this is feasible.
Broadening the sustainability criteria to scopes other than animal welfare necessitates significant investments in expertise and enforcement capacity, which is far removed from the key values of the SPA.

Stable pricing systems require interacting with each other in a different way. The weekly publication of the prices is firmly anchored in the routine of farmers. Just a marginal difference in price makes a real contribution to whether a producer barely gets by or has a good income. Fixed forms of collaboration limit flexibility, but offer greater opportunities for optimisation. Transitioning from best practices (achieving the best possible results in the current trading market) to next practices (with stable pricing systems) is complex, however. Therefore, parties wishing to make a fundamental contribution to a better revenue model for farmers with more capacity to invest in animal welfare must focus on facilitating the transition from *best* practices to *next practice*.

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1 Foreword by the Dutch Society for the Protection of Animals

In our role as the Dutch Society for the Protection of Animals (SPA), we are constantly searching for ways to improve and enhance welfare in areas we consider it to be necessary and where we see opportunities. A situation we often face in animal husbandry is that the majority of farmers are willing to invest in animal welfare, but often lack the financial resources to enable this. We want to examine what the options are from the animal's perspective. The focus of our mission, knowledge and expertise is on further improving levels of animal welfare. However, we are conscious of the financial position of farmers and are aware that we must take the impact of higher animal welfare requirements on that position into account. The SPA always commissions independent experts to calculate the effect of the additional costs of new Better Life criteria. We discuss the impact with farmers, processors, supermarkets and food service and ask processors and the final customers to reimburse the farmers for the additional costs.

In recent years, the SPA has also investigated the revenue models of the farming community in more depth and examined how this can be strengthened. The focal point from our perspective is, of course, on creating financial scope for (even) better animal welfare.
We therefore commissioned Connecting Agri & Food to analyse and identify the financial position of the pork and egg production chain, and propose ways of working on a stable pricing system in these production chains that aims to compensate farmers for their additional investments. This will create more manoeuvrability to add extra distinctive value, including even higher levels of animal welfare. Their study revealed a number of opportunities that have not been fully utilised yet.

We then asked Connecting Agri & Food to perform further research and describe a few potential tools, their scope for application, any existing examples to illustrate this and their advantages and disadvantages. This report contains the result of the follow-up study.
It is explicitly not the intention of the SPA to take these issues forward itself. Our aim is to offer others the tools and encouragement to act on the information.

In addition to this report by Connecting Agri & Food, the SPA - in partnership with the Dutch Society for Nature Conservation and the Society for the Protection of Birds, Netherlands - mandated a group of researchers from Wageningen University & Research to detail the implications of the new European Common Agricultural Policy. The amendments to the common organisation of the markets in agricultural products provide more scope for parties in the agricultural chain to conclude agreements on sustainability targets and the associated compensation.

The strength of forming alliances and collaborating in fixed chains is a clear common denominator revealed by all the results of the study. Closer cooperation, communication and transparency will forge greater mutual trust between the links in the supply chain. This opens up possibilities to make joint agreements on the next steps to be taken in terms of animal welfare, including agreements on compensation for the additional costs. The SPA is positive and confident that growing numbers of livestock farmers will collaborate in these fixed chains, and hopes this trend will continue and gain more traction. So that ultimately more livestock farmers can generate a good, stable income, and invest in animal welfare and other social issues with greater business confidence.

Bert van den Berg, senior policy officer for Farm Animals at the Dutch Society for the Protection of Animals

2 Introduction

For many years, fluctuating prices have been accepted as standard in the majority of agricultural sectors. It is questionable as to whether this has led to a better market mechanism but it has undoubtedly contributed to affordable food. However, not all the costs involved in food production are listed on the supermarket receipt. There is an increasing sense of urgency to address these so-called negative externalities. This has also prompted chain parties to sharpen their focus on the production conditions on farms. NGOs call these parties to account regarding their role in production. At the same time, farmers need greater security safeguards to make the necessary investments. Taken as a whole, we notice that chain parties are becoming increasingly aware that adding value(s) can only be done by agreeing certain aspects mutually.[1]
As far as the revenue model is concerned, the consensus is that farmers are entitled to a reasonable income. But we also believe that food should remain affordable. However, this consensus ends when the farm-gate price and the consumer price are detailed in concrete terms. Price fairness judgments are influenced by the perspective they are perceived from and how the options are presented. For example, the current price acts as a reference for assessing the fairness of price adjustments, but not necessarily as a benchmark to judge the fairness of the price for another supplier. There will also be less resistance to abandoning discounts than to equal price increases. People also are quicker to judge as unfair an action that benefits another company rather than an action taken by that other company to mitigate a loss. Similarly, consumers are more likely to find the partial passing on of costs by companies acceptable, as this is considered as an advantage compared with the previous situation.[2]

Examples of disagreement over what fairness is

I. *An employer pays an hourly wage of €30. Unemployment figures are rising in the region. Other employers hire labour for €28 an hour. The first employer also decides to reduce the wage to €28 an hour. 83% of the respondents questioned consider this unfair, and 17% consider it acceptable. An employee then leaves the company. The employer hires a new employee for €28 an hour. 73% of the respondents questioned consider this acceptable practice by the employer, and 27% consider it unfair.*
An employer has a decorating company with two employees who are both paid €30 an hour. The employer decides to stop the decorating company and start a business in a sector where the hourly wages are €28. The employer reduces the hourly wage of the employees to €28. 63% of the respondents questioned consider this acceptable , and 37% consider it unfair. In this example 63% consider the wage reduction acceptable, whereas in the first example 83% considered this unfair.

II. *Customers judge fairness based on the impact it has on themselves and the consequences for the company. The majority accept that a company gets to keep half of the benefit delivered by cost savings (production costs fall by €40, the sales price by €20). However, if the cost advantage is half the amount, and the company gets to keep the entire benefit of €20 delivered by the savings, resulting in the same net effect for the customer, the level of acceptance decreases. There is no unequivocal duty to share profits with customers, but at the same time, customers judge a price adjustment in the framework of changing costs for the company.*

As fairness judgments are heavily influenced by framing effects in the purchasing decision, applying the concept of a 'fair price' in food supply chains in a way that results in uniform and consistent application of price changes in all situations and for most products it is not possible. This is also compounded by the fact that information on production (conditions) at the supply, production,

[1] See for example: https://www.pigbusiness.nl/artikel/383971-albert-heijn-wil-productieketen-varkensvlees-verder-verduurzamen-en-transparant-maken/ and https://www.connectingagriandfood.nl/2022/10/30/wat-opdrachtgevers-over-ons-zeggen/.

[2] Kahneman, D., J.L. Knetsch, and R. Thaler (1986) Fairness as a constraint on profit seeking: entitlements in the market. American Economic review (p.728-741).

processing and marketing links in the food supply chain is fragmented and unevenly distributed. This facilitates opportunism and unfairness and the potential to (invisibly) deflect costs on to others, with all the inherent consequences for mutual trust among producers, processors, marketing and sales organisations and consumers. Establishing a constructive dialogue between the various links in the chain, combined with transparency regarding the actual costs (changes), would offer a solution with greater prospects of curbing hidden price deflection on to other chain links and provide incentives to embed fairness in pricing systems.

In recent years, the Dutch Society for the Protection of Animals has tasked Connecting Agri & Food with performing research into profit margin distribution in the pork and egg production chains and how better cooperation in these chains can deliver a more valued-added product. This higher value can then be utilised to increase sustainability, including animal welfare measures, and to provide farmers with a fairer and more stable income. A price tool has been developed based on a reference price combined with an adjustment for the anticipated changes in feed prices. The task for Connecting Agri & Food was to investigate and detail the following:

1. Separate pricing system for Better Life label products
2. Agreements on fluctuating feed prices
3. Differentiation in compensation for additional costs
4. Collaboration in farmer-producer alliances

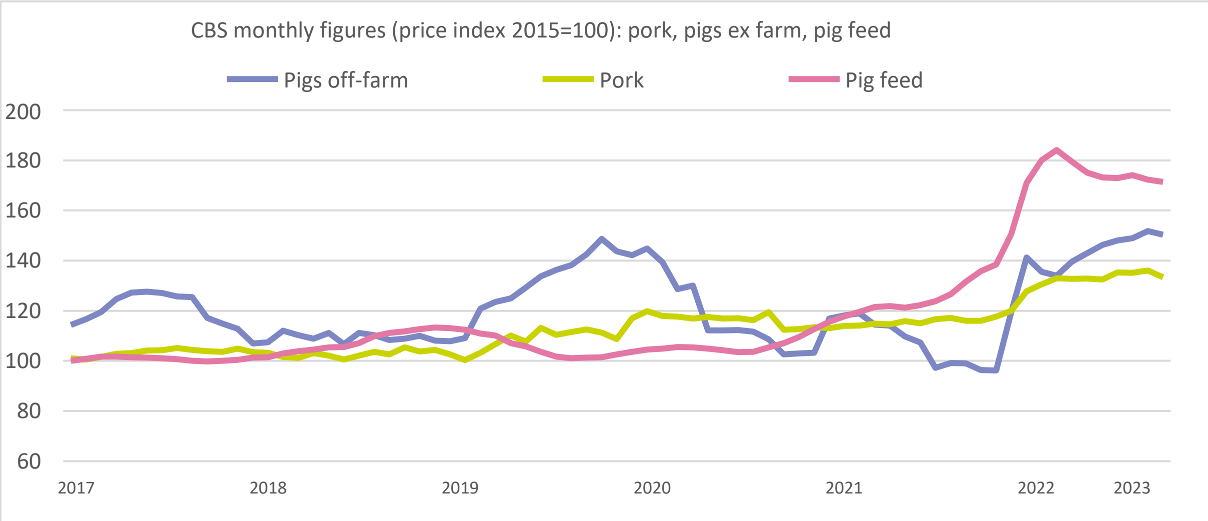
The mandate also included considering whether or not to include *Fair Trade* criteria in the Better Life label scheme.

This report elaborates on the aspects above in more detail, and takes into account the possibilities, opportunities and risks. The purpose is to formulate tools and recommendations that can be implemented to help improve the revenue model of farmers and create greater scope for investments aimed at enhancing sustainability, including increasing the levels of animal welfare.

3 Description of the current chain situation

Many market prices for the livestock farming sector are published weekly. If demand exceeds supply, prices increase and vice versa. The figure below shows the pattern of the monthly consumer prices for pork, the prices of pigs delivered ex-farm to the abattoir, and the prices of pig feed. Until 2022, the prices of pig feed and pork showed a more stable pattern compared with the prices of slaughter pigs. However, partly as a result of the conflict in Ukraine, the price of pig feed showed a rapid and sharp spike. The futures market prices of raw materials for feed are now showing a downward trend.

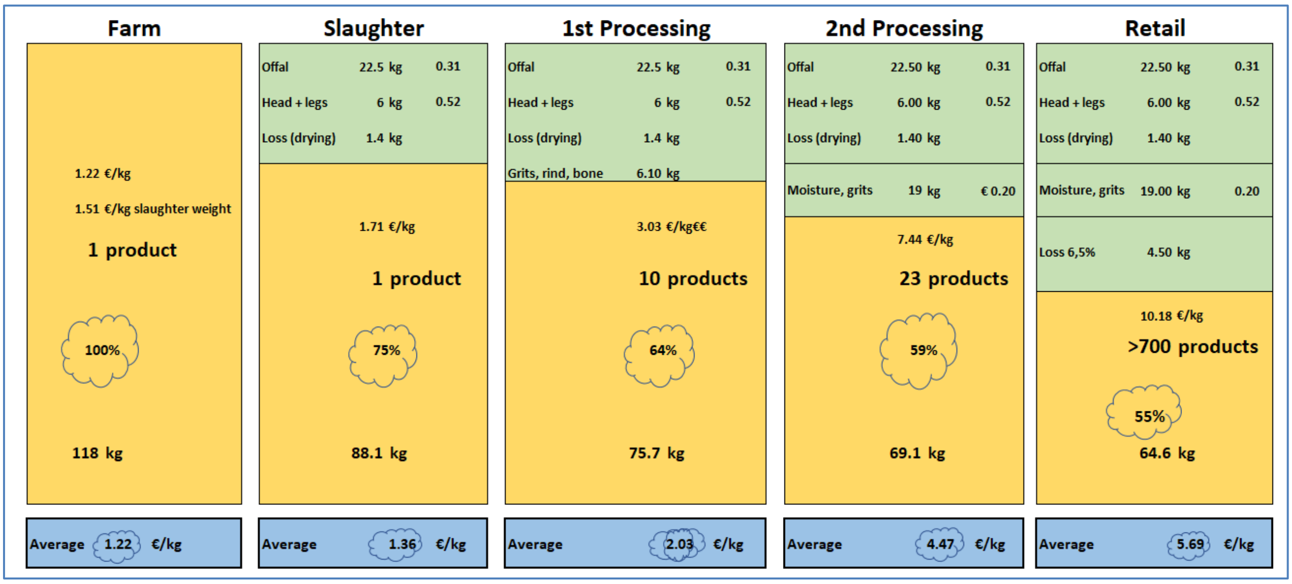
Prices of pork, prices of pigs ex-farm, and prices of pig feed



Price fluctuations can also occur within a given month. This is also the working of market mechanisms to an important extent: the anticipation of expected price changes. That is an important cause of so-called failure costs. These are costs that could have been avoided by a properly coordinated supply chain structure. With price increases, a significant number of trailers carrying fewer pigs arrive at the abattoir than previously planned. This triggers a sudden increase in underutilisation of capacity elsewhere in the chain, causing the cancellation of transactions. In addition, a lower workload can result in employees being sent home for half or full days. This situation occurs five times a year, interferes with cooperation and therefore limits the possibilities for adding value. The supply chain functions like a poorly-oiled machine.
Fluctuating prices and a mismatched demand/supply also complicate planning investments in sustainability as they involve a risk factor
which leads to tough measures being taken, placing potential constraints on investments in sustainability and animal welfare.

The figure below - based on figures from 2018 - shows from left to right how a pig carcass is processed in multiple steps to ultimately create hundreds of products. The higher the proportion of the carcass ultimately sold in a retail outlet or out-of-home market, the higher the average price per kg of carcass (marked blue). As the cost of additional sustainability characteristics can only be allocated between products sold in a retail outlet or OOH, how the chain is organised plays a key role in the potential to achieve greater sustainability via the market. Optimising this complex process is more successful in chains with stable supply relationships. Here so-called failure costs can be reduced by diluting the extra costs over a larger proportion of the carcass that is ultimately sold in a retail outlet or OOH. On balance, the added value is more, because the loss has been reduced. This implies that it can ultimately be profitable for marketing organisations to pay a slightly higher price ex-farm in stable supply chains.

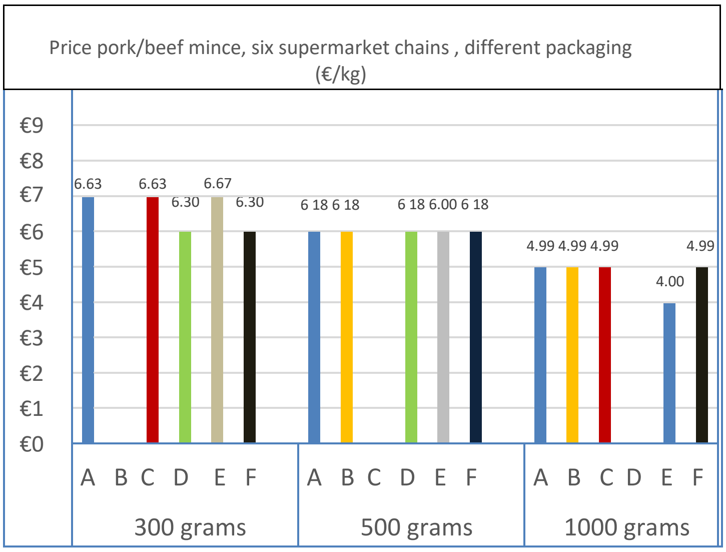
Components of the pork chain in 2018

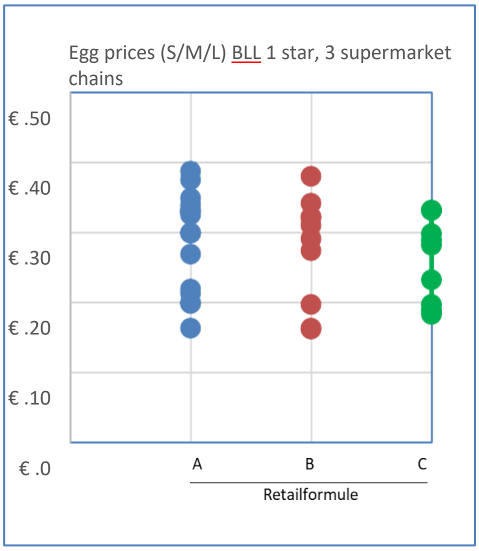


4 Economic instruments

In various sectors there is an on-going dialogue concerning alternative and more stable pricing systems with forms of compensation that enable individual farmers to earn a reasonable income. These are vertical agreements concluded between chain parties, and not horizontal agreements on the ex-farm price.

The majority of consumers have no idea of the prices paid out to farmers for their products. They also often have limited knowledge about the absolute price levels of most products in the supermarket, except for bread and how much a litre of semi-skimmed milk costs, for example. The retail price is not the only decisive factor in consumer decision-making, factors such as convenience and taste also play a role. In recent years, the group of consumers who care about animal welfare has grown.





The graph on the left shows the prices of mixed pork/beef mince in six supermarket chains in mid-September 2021. The prices of the various packaging units (in weight) have been converted into the prices per kilo. This illustrates how close the price parity is. Supermarkets closely monitor each other's price movement strategies and - as concerns the price point - attempt to toe the line in their competition for market share. Various products fluctuate in price over the course of the weeks. This entails significant transaction costs[3] , and also limits the possibilities to add value and squeeze failure costs. This necessitates more stable vertical chain relationships, as this is the only structure that facilitates concluding long term agreements. This conformity in pricing is also illustrated by the prices in February 2023. The four supermarkets that priced mince at €6.18 for 500 grams in September 2021, have all raised the price to €7.98.
The other graph shows the prices of Better Life 1 star eggs at three supermarket chains. The wide variation between the different egg prices is clear. Most consumers know roughly how much eggs cost. But if eggs are positioned in a higher segment, for example free range or organic, consumers quickly become confused and no longer know the price. So there is certainly some scope for variation in retail prices, albeit within limits. Consumers are of course more willing to

3 When purchasing a product, the costs include transaction costs, such as bargaining costs, contract costs and enforcement costs in addition to the price.

pay a higher premium for a product if it is truly distinctive and stands out. Price is then a less significant factor, especially for the consumer group with a higher disposable income.

4.1 System of pricing of added value products

The market share in the Dutch supermarkets of Better Life pork, eggs and as of 2023 chicken, is so large that there will be increasing numbers of separate pricing systems for Better Life products and other concepts. These pricing systems will be developed within the pork, chicken and egg production chains by the chain partners (farmer, processor and marketing organisation) in cooperation with independent parties such as accountants, Connecting Agri & Food, DLV Advice and Wageningen University & Research. These pricing systems can incorporate a premium paid to the farmer for the additional costs and added value resulting from producing in compliance with the Better Life label criteria. A decisive factor is that the pricing system places restraints on passing on costs to other links in the chain.
Mechanisms whereby the costs of changes in behaviour that has not been agreed and are difficult to monitor are passed on to others in the chain are particularly common in the case of information asymmetry: a condition wherein one party in a relationship has greater or better information than another. Any opportunities for additional investments should be used for improvements and other investments in sustainability. Only then can a successful solution be said to exist. This can be accomplished by greater collaboration in the chain, with any additional costs actually being compensated for. Since we include those costs in the pricing system, and as the decision what to include in the model is a joint one, the pricing system safeguards that perverse incentives are limited. Stable pricing can also be decoupled to some degree from excessive fluctuations on the world market, for example by issuing price listings for a longer period. If this trend continues, these pricing systems will make it easier to make non-statutory investments in sustainability in agricultural markets. This will serve the interests of farmers and producers in concepts and in the Better Life label.

4.1.1 Stable pricing system

The system is based on the assumption of a long-term benchmark and not on the actual or expected cost prices for the individual participants in the chain concept. As an integral part of strategic chain collaboration, the model offers the possibility to incorporate distinctive characteristics of the production process in the price, such as providing more space per animal or using slower growing breeds. A distinguishing feature of the participants is a focus that goes beyond pure cost reduction: this assumes that more attention is devoted to better care and higher animal welfare. For example, farmers who want to leave their houses empty for a few days longer to allow more effective disinfecting, or who want to set up fewer animals, can actually do so if this is incorporated in the pricing system, and consequently in their generated income. When developing the pricing systems, it is vital that the reference price represents a certain value for market parties so they can apply it as a benchmark. Each item included in the benchmark is determined using a certain data source for index figures: for the Netherlands these are KWIN, Agrimatie, Kengetallenspiegel, Matif Paris, Bouwkostenindex etc. To have value as a benchmark, the various cost items must be a good reflection of the actual situation in practice. The production conditions and associated operational management (including labour input) must also be specified in detail. How business risks are quantified will also be established (for example, insurance premiums as a basis for compensating the risk entailed by an obligation to keep poultry indoors and away from other birds). These steps are crucial to build confidence in the tool. The tool must gain stature to be used as a reference. The reference price is based on the average quality across all farms. This will enable individual farms that offer higher quality to receive a higher price than the reference price, while supporting the importance of their own entrepreneurship. This is important to gain widespread support among livestock farmers. The moment of joining and leaving the collaboration will be given a lot of attention in practice. Additional ‘values’ that are added, such as higher welfare criteria for the animals, will be discounted in the price using an ‘extra value(s) premium’. Whether additional values are assigned to the production conditions can be determined annually. These are then included in the ‘extra value(s) premium’. Whether additional requirements are assigned to the production conditions can be determined annually. These are then included in the model. The chain partners must jointly decide which parties are involved in determining the components.

Advantages of a stable pricing system

- Security for farmers and banks, and transparency towards retailers and food service;
- Producers receive a fixed, predetermined price irrespective of free market mechanisms;
- Skill and dedication of farmer determines profitability;
- Banks have more security when farmers apply for loans. Increased willingness of banks to supply credit.
- Interest among retailers and food service. They view the current system as often lacking in transparency. This results in a reluctance to conclude long-term agreements. A transparent pricing system with fixed prices eliminates this uncertainty;
- Opportunities for strategic cooperation are increasing, and in association utilising the benefits of harmonisation;
- Financial flexibility is created to make additional investments that satisfy the wishes of retailers, food service and society.

Disadvantages of a stable pricing system

- Some farmers are unwilling to commit due to concerns about a loss of income caused by high prices on the free market. As well as benefitting from market peaks, you also have to accept market troughs;
- As these systems are still new, all the details are still to be finalised. One aspect still to be discussed is agreement on which conditions determine any interim changes to the system.
- There may be parties in the chain with no interest in increasing chain transparency and who benefit from maintaining the status quo of information asymmetry between chain parties.

4.1.2 Economic sensitivity analysis

When discussing concepts such as fair price, it is important to clarify the precise meaning of this concept. What a fair price entails can be imagined reasonably well. However these terms have to be quantified if they are to be applied to Dutch livestock farming chains. One of the value components of fair price may be that farmers should be able to generate a ‘reasonable’ income' to reduce the risk of price deflection mechanisms. In this case, it is an income comparable to that earned in professions outside the agricultural sector. This is called pay parity. A 'reasonable' income appears to be a better concept than a fair price, as in our opinion it is not possible to define and apply a fair price in an unequivocal way.

Ex-farm prices, the farmer's income and the scope for investments in sustainability are interrelated. Over the period 2001 - 2021 the average annual income of pig farmers was almost €60,000. Broiler farmers earned €70,000 and layer farmers earned just more than €60,000. To generate an income of €100,000 for labour and business risk, the prices achieved for the product would have to increase by 3 to 5%. A 1 to 3% increase would enable an income of €80,000 to be feasible. An increase in the ex-farm price of 4% corresponds to a €0.061 higher price per kg of pork, a €0.038 higher price per kg of chicken and a €0.274 higher price per 100 free-range eggs (white). In this way, a €35,000 higher income corresponds to an additional investment scope of around €250,000 (depreciation over 10 years).

Increase in prices corresponding to €250,000 additional scope to investment

Prices	Kg of chicken	100 free range eggs (white)	Kg of pork
Price 4% higher	**€0.038**	**€0.274**	**€0.061**

4.1.3 Separate listing?

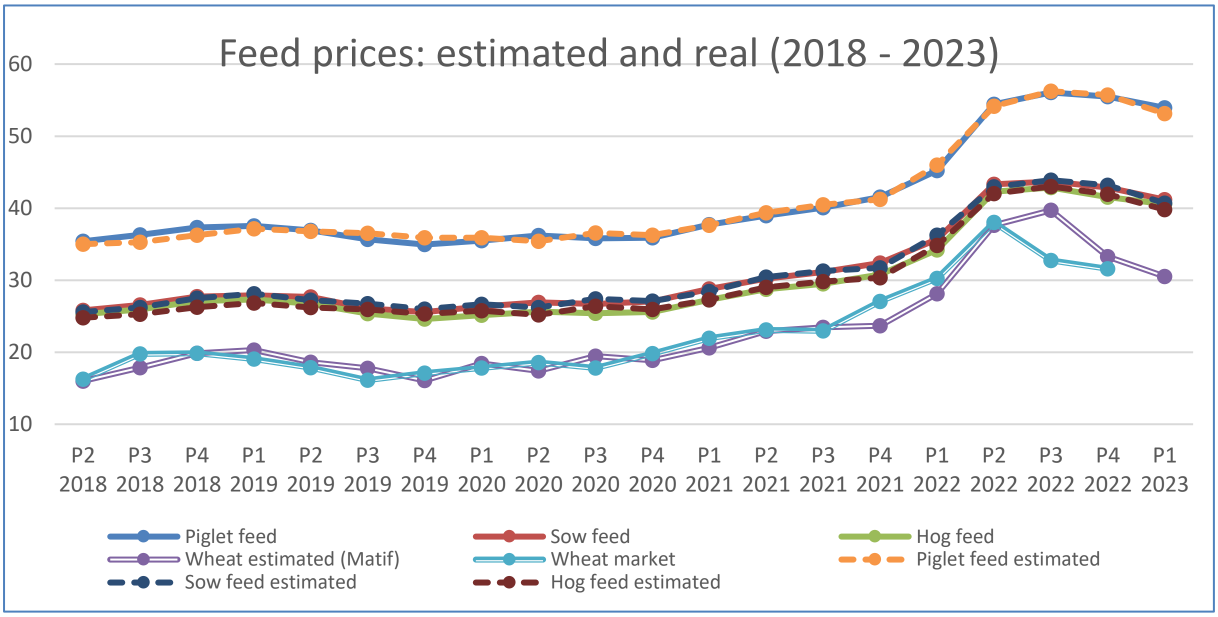
The first stable pricing systems within chain concepts have already been established in livestock farming. The separate components are described above and are based on publicly available data that is updated annually. However, as each chain concept has a different interpretation, there is no sound basis to establish a separate, generally applicable stable listing or prices. Firstly, each chain concept places other requirements on the production conditions, which means that any listing contains variations. Secondly, agreement would need to be reached in the individual chain concepts regarding the varying conditions under which modifications to the system take place, and which components are excluded from the system.

4.2 Adjustment for fluctuating feed prices

Given that feed costs represent such a large proportion of production costs, it would be a good situation for poultry and pig farmers - including in stable chains - if the biggest fluctuations in feed prices on the world market could be averaged and levelled off. This would mean concluding price agreements in the chain that freeze the expected feed prices for the long-term (e.g. quarterly), based on authoritative and reliable stock market listings.
To facilitate making agreements on compensation for feed costs, a transparent calculation model must be established using publicly available data, namely the Matif Paris listing and the figures of the agri and food portal www.agrimatie.nl. This model should include the prices of feed for piglets, sows, finishers, layers and broilers. A structure for a calculation model has been developed by Connecting Agri & Food. This will ensure consistent determination of the feed prices for the period ahead. That model contains:

- The future periods the price concerns,
- The annual publication dates of prices,
- Which futures market was used as a reference,
- Which raw materials are included as feed ingredients;
- The best way to update the model parameters.

The expected feed price for the coming months will be determined quarterly based on analysis of market developments up to that point and the anticipated developments on the raw material market. This calculation will result in the expected prices for feed for pigs, broilers and laying hens. On the futures market, the last trading days for *settlement prices* are between the 9th and 13th of March, May, September and December. The price of feed for piglets, sows, finishers, laying hens and broilers is determined immediately after the last trading day in these months. The prices concern four periods in a calendar year for periods in the future of three, two, four and three months. This feed price prediction by Connecting Agri & Food is applied to calculate the amount of compensation for the costs of feed in stable pricing. It has been developed for pork, chicken and eggs. Chain partners use this system because it is a transparent calculation model based on figures derived from publicly available data. The estimated prices for pig and poultry feed are calculated based on a regression formula used to estimate the extent of correlation between the expected price of wheat on the futures market and the actual price of feed www.agrimatie.nl over a series of several years. The degree of correlation or variance between the expected and actual price is expressed as the statistical measure R-squared (R2). The figure for pig and poultry feed has been 99% over the last five years. This extent of correlation continues to apply as long as there are no market disruptions[4] . In addition, rapid and recent decreases or increases inevitably create a delay (up to a maximum of 2-4 months) that affects the adjustment of the forecast price. However, this delay is by definition less significant than an annual reference price. Please note that no net financial benefit for the farmer is linked to the feed price adjustment compared with an annual reference price. Mitigating the impact of fluctuating feed prices on the *cash flow* is the sole purpose of the feed price adjustment. Farmers can also use this information for the purpose of risk management and making price agreements when purchasing feed from the 13th of the month preceding the forecast for the coming period.



4.3 Differentiation in compensation additional costs for modifications

The margins in livestock farming are often small. However, the market share in Dutch supermarkets of Better Life pork, eggs, and from 2023 chicken, is still growing and there are still many opportunities for growth potential in the food service segment. Participants in sustainability labels within the same supply chains currently often receive the same compensation

[4] Period three (June-September) in 2022 shows that the futures market overestimated the price of wheat. The market situation triggered by the Ukrainian conflict normalised sooner than expected at the end of period two (May-June). The expected price and actual price returned to the same level.

and/or price for the additional efforts made to comply with the label criteria. However, the investments required for modifications vary widely between individual farms so that an average amount of compensation is not always appropriate. Each farm invests at different moments in time. Not all farms will make investments at the same time in new, imminent investments in measures aimed at enhancing animal welfare such as free-farrowing pens in pig farming and covered outdoor runs on poultry farms. The duration of a purchase contract may also differ, which means farms are tied to a certain fee or price for a longer or shorter period of time. For this reason, introducing differentiation into the pricing system is desirable.

When it is time to make investments in modifications on the farm, it is important that the chain partners consider differentiating in the compensation paid out to help cover the additional costs. Compensation for the additional costs for modifications can be paid out at times that reflect the varying rhythm of investment. The time it takes apply for and be granted a permit is also of significance here. The difference between new build or renovation could also be a criterion for differentiating in the amount of compensation, as well as the duration of the purchase contract. In other words, it is important that chain partners think carefully about differentiating the payment of compensation for additional costs to account for:
(1) different moments of investment and the duration of permit application and approval;
(2) new build or renovation, and
(3) duration of the purchase contract.
Differentiating between the amounts paid as compensation for the additional costs will make it easier to accommodate these aspects. Realistic compensation should function as an incentive for farmers to make investments and not delay making these changes until the final date on which compliance with certain criteria comes into force.

To provide insight into the various differentiation options for the additional costs, choices must be made in advance to clarify this as far as possible. We have taken an example that applies to pig farming and an example for poultry farming to illustrate the system of differentiation. These examples explain which incentives motivate farmers to take action. The amount and duration of the financial incentive is also discussed. When one of the criteria becomes a statutory obligation, the compensation will then become part of the cost price when the sales price is determined.

Investment in covered outdoor run for broilers: The covered outdoor run for broilers is a good example that illustrates the relationship between the duration of a purchase contract in relation to the depreciation period of the investment. Broiler breeders cannot all switch to this system at the same moment as the time required for the application and approval process of permits varies widely. This means differentiating between the periods in which the actual investment took place. In addition, differences in the duration of the purchase contract also require attention when determining the compensation for additional costs as some farmers receive a certain premium or price for a longer or shorter period in order to be able to recoup the investment. They only receive an addition premium from the moment the outdoor run has actually been built.

Introduction of the free farrowing pen: The introduction of the free farrowing pen for sows is an example of where the time the farmer invests in either a new build or renovation has a major influence. If, for example, it becomes a statutory obligation for pig farmers to transition to free farrowing pens in 2036, they will want to incorporate this measure into the planned investment pattern of their own farms. In 2021, research was performed into the financial implications and impact of similar modifications in the pig farming sector. One of the components of the study was investments in free farrowing pens. This is a change with far reaching consequences and will affect the cost of piglets. A distinction has been made between installing free farrowing pens in an existing sow house or building a new house with these pens. If free farrowing pens ae installed in an existing house (within the existing footprint of the building) this involves reducing the number of sows. Keeping fewer sows combined with renovating the various sections means that the additional costs – depending on the specific conditions on the farm – may be up to €0.09 per kg of pork (excluding too low stocking density of finishers on closed sites). In the case of a new build, the extra costs - depending on the surface area of the free-farrowing house - are approx.€ 0.05 per kg of pork. Differentiated compensation will encourage farmers to bring forward their investment plans.

5 Collaboration in the pig and poultry production chains

5.1 Context

Stimulating alliances and collaboration between farmers in the same chain allows them to become a contact point for abattoirs and egg-packing centres and the end customers in the chain (supermarkets, butchers, hospitality trade and food service). This can achieve better strategic cooperation in the production, processing and marketing chains of pork, chicken and eggs. The benefits include a better balance between supply and demand, agreements on costs and revenue, and agreements on increasing the sustainability of livestock farming, including higher standards of animal welfare.

There are already various groups of livestock farmers who cooperate in many fields: from purchasing raw materials to negotiating with processors. Sometimes they are just a contact point for processing and marketing. These groups of producers aim to strengthen their position in the food supply chain.

Groups of entrepreneurs who work together experience benefits such as more market-oriented production, better contact with customers, and a better negotiating position. In regard to the development of mutual cooperation between livestock farmers in the same chain, this project is limited to so-called horizontal collaboration within a stable vertical chain with agreements on the production conditions on the farm. The aims include a better balance between supply and demand, agreements on costs and revenue, and agreements on increasing the sustainability of livestock farming, including higher standards of animal welfare.

Forming alliances in a group to achieve a particular goal can take the form of a cooperative which is primarily aimed at doing business together in an economic sense. Another option is an association that aims for better harmonisation in the chain, or founding a producers' organisation. National legislation is in place to grant official status to collaborative partnerships and achieve recognition as a producers' organisation.
EU Regulation (No 1308/2013) provides for the establishment and recognition of agricultural cooperatives and alliances. The Dutch Ministry of Agriculture, Nature and Food Quality (LNV) regulates the recognition of producer organisations (PO).
According to the basic scheme of the LNV, a producer organisation is a partnership of primary producers in the agricultural sector that aims to strengthening the position of these producers in the food chain. Only producers of primary agricultural products can establish a PO. Establishing a PO enables a more targeted response to market demands by concentrating the supply of the products. Better aligning sales, planning and production with demand enables further optimisation. This results in cost reduction and/or an increase in revenue leading to greater scope and flexibility to invest in, among other things, sustainability.

Article 39 of the Treaty on the Functioning of the European Union sets out five objectives for the Common Agricultural Policy:

1. Increase agricultural productivity by promoting technical progress;
2. Ensure a fair standard of living for farmers;
3. Stabilise markets;
4. Assure the availability of supplies;
5. Ensure that supplies reach consumers at reasonable prices.

In order to collaborate in agriculture, the agreements made must comply with the five objectives stated above or not jeopardise them in any way. Agreements may be made on joint production planning , joint marketing and sales of production on the market and/or use of common installations. The sales price can subsequently be determined based on supply and demand and there is no exclusion of competition.

The EU COM was amended in December 2021 The amendments can be found in Article 210a. This provides that agreements may be made concerning non-statutory standards that pursue a sustainability objective, including animal welfare. Exemption from the cartel prohibition in the CMO applies if cooperation initiatives are ‘indispensable’ to achieving the higher sustainability standards. The agreements made must contribute to improvements in the environment, pesticides and antimicrobial resistance and/or animal welfare and health.

5.2 Cooperation in an alliance

Pig or poultry farmers who unite to form an alliance with the aim of strengthening their position in the food supply chain develop a common vision and create a visible front to parties in the market. As well as a vertical chain line (from producer to processor to retail and food service), a direct line is also formed between the producer and retail/food service. This also transfers information directly from the producer to the retailer. In this partnership, pig farmers, broiler farmers and laying hen farmers produce according to jointly formulated agreements to match supply and demand, agree on costs and revenues and on increasing sustainability including further improvement of animal welfare.

Added value of collaboration for various chain parties

- Retail and food service: A direct contact point for retail or food service is created with the alliance and therefore with producers, (i.e. livestock farmers). It is not as easy to achieve this in a more fragmented form of collaboration with various individual livestock farmers. By collaborating, the link between producer and retail/food service is, in fact, intensified. This facilitates the flow and sharing of information from retail/food service to farm level and vice versa. It also provides leads to develop and shape differentiating chain concepts together (co-creation).
- Processing: Collaboration also delivers benefits for abattoirs and egg packing centres, namely a single point of contact. In addition, certain aspects can be collectively discussed with abattoirs or egg packing centres, resulting in higher, more consistent quality. Abattoirs and egg packing centres also remain crucial for planning and supply, as well as for carcass valorisation.
- Producers: Producers (i.e. livestock farmers) can make agreements with retail and food service regarding public relations (open days, marketing in retail and food service magazines, in-store demos and tastings, demos in catering business and hospitality trade). Product innovation can also be discussed and producers become less 'interchangeable'.
- Supply industry: Higher than average sized orders are placed with feed suppliers and other players in the livestock farming supply industries by purchasing organisations. This boosts efficiency by reducing the number of contact hours with producers.

A cooperative of livestock farmers can also develop into a purchasing organisation if wished. This delivers efficiency gains through joint purchasing of feed, animal health requirements or animals. A common vision can also mean greater control over matters such as genetic material, feed, veterinary support and market information. In terms of marketing, a collaboration can build its own brand with a strong trading party that has sufficient cash flow and volume.

Agreements can be made on: (a) product quality, (b) planning, (c) prices and (d) support from the marketing organisation. This also means that agreements can be made on improving animal welfare and other sustainability aspects, as well as cost and revenue distribution across the different chains. It is important to involve abattoirs and/or packing centres as this is a condition for: (a) good planning and supply and
(b) carcass valorisation. Defining the precise details of how the collaboration will operate is up to the participating farmers.

Considerations for collaboration
Success depends on the motivation of the participating producers. This cooperative model gives producers a greater influence on the chain. This may be at the expense of the abattoir or egg-packing station, or it may be perceived as such. Carcass valorisation remains an important issue for this business model.
It is important to include all chain stakeholders in all meetings, not just producers, processors or marketing organisations. One question is what happens if meat or eggs can be (temporarily) purchased cheaper or sold for a higher price elsewhere?
An important point to pay attention to when initially forming an alliance is that participants who join later benefit from the efforts made previously. This implies that a relatively high level of revenue may be distributed to participants who join later yet have made fewer investments. In addition, participants will not invest if they do not stand to benefit. This may be the case with farms that cease operating because there is no successor.

5.3 Risk and success factors in forming alliances of livestock farmers

Many obstacles can stand in the way of forming alliances. In all forms of collaboration, agreements must be on details such as the organisational structure, mandate of the board and conditions under which new participants can join.
Risks include an imbalance in how individual farms develop, due to differences in the times of investment. If this factor is not addressed properly, it may disrupt the balance of mutual relationships. Critical success factors are that members share the same vision and have the same interests, are involved in the collaboration, and whether the collaboration ensures a closer connection to the market by being able to respond to customer quality requirements. The process of working towards a collaboration in whatever shape or form takes time. Collaboration also entails a mutual willingness to adapt and change. To achieve this, it is vital that all the parties are prepared to listen to each other. This process always takes time.

5.4 Advantages of collaboration summarised

Organisational
- Faster and cheaper information sharing between collaboration and customer. This eliminates the need for intermediary organisations. This also means a more direct and higher volume of knowledge sharing- at a vertical level too, more information is exchanged because the diverse links are interconnected. This boosts market intelligence and knowledge.
- Combing the offering of individuals creates a stronger joint position.
- Pricing systems act as a tool to eliminate unnecessary costs from the chain and shortens the chain.

Commercial

- Participants can create a brand name in a collaboration (however, this is difficult for animal products). Any direct communication between the cooperative or Producer Organisation with the customer gives a greater understanding of market trends. This will enable more market-oriented products to be supplied.
- Greater chain transparency.
- Stronger market power.

Financial

- Investments needed for sustainability or new marketing concepts or products can be shared.
- Access to capital and financing
- Stronger purchasing power: purchasing higher volumes collectively for a lower price.

5.5 Experiences of growers' associations and applicability in the pig and poultry sector

In the fruit and vegetable sector, there is a longer tradition and wide experience of cooperation between primary producers. The benefits are found in logistics and in financial, organisational and commercial terms.

- A growers' association can leverage more from the market than a traditional auction.
- Cooperation strengthens the position of individual members in the marketing organisation.
- Collaboration can shorten the supply chain.
- A brand name leads to higher demand for the product
- Cooperation strengthens the purchasing power of the individual members.
- Cooperative alliances are better equipped to satisfy market and social demands.
- Shorter lines of communication with more contact and feedback from the customer.
- Cooperation leads to more knowledge (sharing).
- Cooperation offers economies of scale.
- The competitiveness of the greenhouse vegetable sector has been strengthened by growers' associations.
- Market-oriented partnerships are more successful than partnerships focused on mutual cooperation.

The benefits gained in the horticultural sector by establishing growers' associations can potentially also be achieved through alliances in other sectors. However, controlling the quality of the final product, particularly in sectors where processing steps take place between production and sale, such as the pig and poultry sectors, is more difficult. Establishing an association, with the aim of achieving a differentiated product, generally leads to a greater sense of satisfaction and accomplishment among members. If alliances are formed in pig and poultry farming, the objectives must be realistic and achievable and the objective must be followed.

5.6 Concerns of farmers

Some livestock farmers are reluctant to commit to one concept, such as the Better Life label, for a longer period of time. Their concerns include:

- What happens if consumers stop buying more expensive Better Life label meat?
- Will retailers bear the risk or will the contracts be ended?

- Will new requirements be introduced at a later date that entail high investment costs?
- Is competition with low wage countries possible?
- Can we upscale and keep more animals, or have we lost the rights we didn't use?

The concerns above must be addressed within the chain. On the other hand, participation in a fixed chain offers security and certainty to farmers. Compensation for additional investments in sustainability can only be achieved in fixed vertical chain relationships, as the ROI is easily ten years or more. In an integrated chain, agreements are made on sales. There is no need to compete on price with farmers in other countries. Farmers who conclude agreements for a longer period assume that the sales price will be adjusted if they are confronted by unexpectedly high production costs outside the normal business risk. Some retailers have previously compensated farmers who supply them for the increase in feed prices.

Some farmers may not want to commit. They consider the free market mechanisms of supply and demand as a platform to exercise their business skills. However, the number of abattoirs and egg-packing centres has declined in recent years. This has limited the bargaining power of livestock farmers. In addition, growing numbers of supermarket chains work with contracted, regular producers, which means that farmers who do not operate in a chain must start producing for other customers. Spiralling costs of materials and labour are making competing on the global market increasingly difficult. Collaboration within your own link can reduce vulnerability. This is especially relevant if the cooperating parties produce for the north west European market, where animal welfare and sustainability are very much in the spotlight, and where developments are similar to those in the Netherlands.

Fixed chain relationships limit the flexibility to switch suppliers or customers, but provide more opportunities for chain optimisation. However, collaboration can be a challenging process. All parties must be able to benefit almost equally, and sharing information is only possible when there is a position of full and absolute trust between the various partners, especially when it comes to information of a financial nature. Openness and transparency are vital assets in the chain. If the development of margins in the chain is transparent and participants have the security and confidence that they will be compensated for investments in sustainability, the revenue model can be made more robust and sustainable.

6 Reflection and follow-up

6.1 *Fair Trade* criteria in the Better Life label

As self-regulation will often be insufficient in key areas such as sustainability, there is an important role to be played by quality schemes such as the Better Life label. During discussions on *fair trade* and *fair pricing* , farmers and other organisations regularly ask whether the SPA can incorporate criteria that guarantee farmers a fair remuneration for their products (similar to *Fair Trade* coffee and *Fair Trade* bananas) into the Better Life label scheme. This question may relate to the fact that the Better Life label, which now has a very strong position, has motivated chain parties to take action to improve animal welfare. The question is therefore what role the SPA should play in discussions on fair share margin distribution, *fair trade* and *fair pricing*. The opinion of Connecting Agri & Food is that there is no role for the SPA in this respect.

The strength of the quality label is found in the trust and confidence it is afforded. That confidence is founded on awareness of the objectives of the SPA, which focus on animal welfare and not on other sustainability issues that are often beyond the grasp of consumers. This implies that the Better Life label needs no further explanation to be understood. Attaching value and importance to animal welfare is based on fundamental ethical considerations. As the owner of a quality label scheme for animal welfare, making compromises with other sustainability issues, which are also often based on ethical considerations, is not self-evident. This would only be possible if the quality label was jointly owned by a number of social organisations. It is clear, however, that integrating sustainability targets does not have everyone's attention, nor does it always seem to be a main priority. Nevertheless, the discussion would certainly benefit if NGOs looked beyond their own single issue when weighting individual sustainability issues.

Extending the scope of label to include nature, the environment, and the climate can reinforce the quality label. The question is then whether a direct influence of the SPA on price formation in the chain is a desirable situation. Not all marketing organisations see a role in price formation for NGO quality label owners. A more important question is whether it would be feasible. Developing and then safeguarding fair trade criteria is complicated. Broadening the sustainability criteria to scopes other than animal welfare - namely price formation - necessitates significant investments in expertise and enforcement capacity, which is far removed from the key values of the SPA. Then there is the question of how *Fair Trade* - a system designed for farmers in developing countries - could be applied in the Netherlands. All the other issues identified in this report are expected to be more effective.

In addition, the role of the SPA as a social organisation is to promote and protect the interests of animals. It is precisely its clearly recognisable position that gives such authority to the SPA, and on which the trust and confidence in the Better Life label is based.

6.2 Limits to transparency

Transparency is critical to making food supply chains more sustainable. However, there are limits. For example, in vertical chains it will not be practically feasible for a marketing organisation to have all the relevant information on the individual livestock farms that participate in the relevant chain concept. The costs of investments made to enhance animal welfare will often be based on figures that represent an average price across several farms. On the other hand, retail and food service organisations will still be able to share information at product category level about the gross margin, which is the sales minus the cost of goods sold. However, to calculate the net margin, the costs of items including staff, energy, and IT must be assigned to the product categories. In short, complete transparency is not a realistic option.

6.3 Change is a challenge

The desired change in the relationship between the links in the chain must be gradual progress, and proceed in a way that ensures the current interests are kept in balance and equal. There is no quick fix or easy way to achieve transparency on the costs of modifications and joint efforts to counter deflection mechanisms in vertical agreements on stable pricing systems within chain concepts.
It is important to allow sufficient time for all parties to discuss the ins and outs whereby, logically, each party considers their own best interests. How is it possible to arrive at a win-win solution that benefits everyone? This requires empathy and understanding of the position everyone involved is in. Entering into a constructive dialogue fosters confidence and a mutual willingness to change. Consequently, the opportunities to achieve added value are increased. This is easier with growth, because the bigger the pie, the easier it is to share. We have already noticed that there are increasing technological advances that enable quality, products and processes to be measured. For example, determining the origin of meat at the point of sale using DNA technology provides the safeguard that the supplier has delivered in compliance with the agreements.

Achieving added value requires collaboration between chain partners. This requires transparency on the guiding principles. Without transparency, there is neither openness nor trust. In addition, two-way communication is vital
to get to know each other better and promote a mutual willingness to change. Without communication, a prejudiced idea is formed of who the ‘other’ is or appears to be: The less contact, the more black and white the judgment. The less well you know another, the more distorted the image is. The is illustrated by the image of the apple that turns out to be an orange on closer inspection.

There is also the issue that a benefit missed out on can be twice as powerful, psychologically, as a gained benefit. This makes it hard to switch to a system with stable prices. If the market price is higher, it has more power psychologically, even if you are well aware that the price applies to multiple years.

The process of reaching sustainable agreements within chain concepts is complex. It requires a fundamentally different approach to interactions with others. Making every effort to reduce costs is the dominant business logic of supply chain parties in livestock farming that has developed over many decades. The weekly publication of the prices is firmly anchored in the routine of farmers. Just a marginal difference in price makes a real contribution to whether a producer barely gets by or has a good income.
Next, a transition must be made from *best practices* to *next practices*. Focusing on the margin you can make together, instead of discussing the price, is not easy. Therefore, parties wishing to make a fundamental contribution to a better revenue model for farmers with more capacity to invest in animal welfare must focus on facilitating the transition to *next practice*s.

6.4 Next steps

In terms of including sustainability requirements in market and price concepts, livestock farming is only on the very threshold of change. Steps still need to be taken, including coping with extreme market situations. This remains a focus point. It is important to address this and discuss the intentions with each other. The problem with extreme market situations and calamities is that they are unpredictable. Sometimes a situation is resolved very quickly, sometimes not. But there will always be a solution in the end. The best way is to take a joint approach to problem solving. And make agreements when there is no urgency. For example, if the market price deviates too extremely from the cost price, the point at which one of the market players joins an alliance becomes critical.

In addition to financial incentives, farmers could be encouraged to meet the targets by helping them apply for the necessary permits and/or funding. Investments in animal welfare are often subject to permits being granted. This means that it is not just the chain parties that are faced with a challenge. The authorities also have responsibilities. Some livestock farmers also see the positive benefits of more intensive cooperation in an integrated chain with contractual agreements on purchasing, price and harmonising supply and demand. This situation eases the stress of planning.

There are also on-going developments in EU policy and regulations that make it vital for market players to take action in the field of sustainability. It is important to cite the *Corporate Sustainability Reporting Directive* adopted by the EU parliament in December 2022 in this respect.

[5] https://finance.ec.europa.eu/capital-markets-union-and-financial-markets/company-reporting-and-auditing/company-reporting/corporate-sustainability-reporting_en *"Businesses will have to show the EU what they have done to fulfil their corporate sustainable responsibility by filing an annual report. From 2025, the sustainability report will be required for companies that meet at least two of the following criteria: (1) Over 250 employees; (2) Over €40 million annual turnover; (3) More than €20 million on the balance sheet"*

Credits

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This publication was commissioned by:
The Dutch Society for the Protection of Animals
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Design and realisation
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