Investigating Marketing Opportunities for Dairy Products from Dam Rearing Systems

Summary of the similarly titled report

Christine Bickelhaupt
Cynthia Verwer

LOUIS BOLK INSTITUTE

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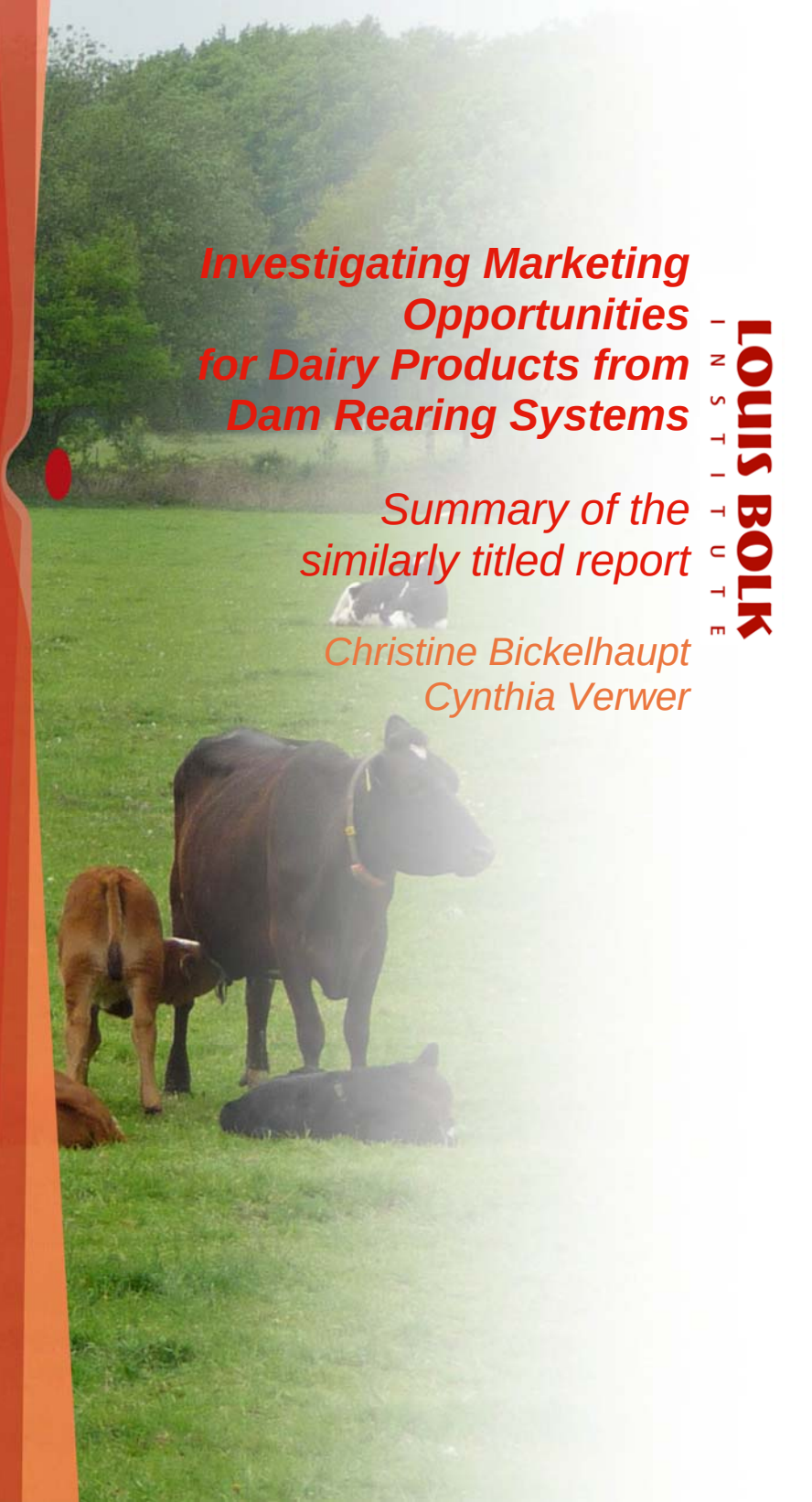

Marketing opportunities for dairy products from dam rearing systems - summary of the similarly titled report

Christine Bickelhaupt MSc , Dr. Ir. Cynthia Verwer (Louis Bolk Institute)

48 pages; Keywords: Organic dairy production, dam rearing systems, animal welfare, stakeholder analysis, marketing opportunities, added value

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Available at www.louisbolk.org/publications

contact: c.verwer@louisbolk.nl

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Contents

Summary

This publication is the summary of the report “Marketing opportunities for dairy products from dam rearing systems” by Christine Bickelhaupt MSc, Dr. Ir. Cynthia Verwer (Louis Bolk Institute), Dr. Ir. Dianne Hofenk (Wageningen University).

Organic farming systems aim not only for more sustainable farming practices than conventional ones, but also for better welfare of farm animals. Nevertheless, organic dairy cattle husbandry still shows many similarities with the conventional way of farming. These also include the fact that calves get separated from their mother as quickly as possible after birth for various reasons. Dam rearing systems were developed with the aim of better animal welfare by means of keeping the calves with their mother cows for a certain time and allow the calves to suckle their (foster)dam.
This study investigated the marketing opportunities for dairy products from Dutch farms with a dam rearing system, since the extra effort of farmers on animal welfare is not valued at the moment by other stakeholders in the supply chain. A stakeholder analysis was undertaken that comprised dairy companies, certification bodies, a dairy farmers‘ interest group, farmers operating with dam rearing systems and retailers from the organic sector. A systematic qualitative approach was used with semi-structured interviews, and an online questionnaire for retailers[1]. The data was coded for commonalities and differences in opinions, and identified per stakeholder group.
Results reveal that there is no golden standard on dam rearing, which makes it difficult to determine the financial added value of these systems and how to put them on the market. Nevertheless, the added value of dam rearing systems is found in improvements on animal welfare for both calf and cow as well as with respect to the image of the marketable products. Another surplus of the dam rearing system is the farmers‘ voluntary extra effort on top of the required minimum standards for organic farming. Dam rearing systems improve the animals‘ performance, especially concerning the calves‘ development and growth, and decrease the farmers‘ workload. However, dam rearing systems can also have some disadvantages; the risk of direct disease transmission, the separation process between calf and cow and ‘losses’ in saleable milk are current bottlenecks that need to be dealt with. Control is lost over both the cows’ performance and the calves’ milk consumption, and extra attention is required during the milking and with respect to the calves’ health and nutritional status. Apart from that, adjustments need often to be made in the stable facilities, and more expertise and long-term experience about dam rearing systems is needed.
With respect to the marketing, the small base of farmers operating with dam rearing systems does not allow for product marketing on a larger scale yet. Therefore, direct and regional marketing seem to be best suited, while children and mothers are considered to feel most attracted by products from such farming methods. Based on these results, recommendations are provided.

Keywords: Organic dairy production, dam rearing systems, animal welfare, stakeholder analysis, marketing opportunities, added value

[1] For further information on the content of the interviews and questionnaires we refer to the original report.

Samenvatting

Deze uitgave is een samenvatting van het rapport “Marketing opportunities for dairy products from dam rearing systems” door Christine Bickelhaupt MSc, Dr. Ir. Cynthia Verwer (Louis Bolk Instituut), Dr. Ir. Dianne Hofenk (Wageningen Universiteit).

De biologische veehouderij streeft naar een duurzaam productiesysteem waarin dierenwelzijn beter gewaarborgd is dan in gangbare veehouderijsystemen. Echter, voor wat betreft de melkveehouderij zijn de gangbare en biologische systemen niet zo onderscheidend van elkaar, met name op het gebied van de opfok van kalveren. Net als op gangbare bedrijven groeien de kalveren niet op bij hun moeder. Daarom heeft een groep biologische melkveehouders een opfoksysteem ontwikkeld waarbij het kalf gedurende een bepaalde periode bij de moeder kan zogen (zoogsysteem) om op deze manier beter tegemoet te komen aan het welzijn van de koe en kalf. In dit onderzoek zijn de marketing- en afzetmogelijkheden van producten van bedrijven met een zoogsysteem onderzocht, omdat de extra inzet van veehouders voor dierenwelzijn op dit moment nog niet gewaardeerd wordt door de andere belanghebbenden in de distributieketen. Een stakeholderanalyse is uitgevoerd middels interviews onder melkfabrieken, certificatie-instanties, een belangengroep voor melkveehouders, melkveehouders met het ‘kalveren bij de koe‘ systeem (zoogsysteem) en klein- / groothandelaren voor biologische producten. Een online enquête is gehouden onder klein- / groothandelaren[2]. De gegevens afkomstig uit deze stakeholderanalyse zijn gecodeerd voor overeenkomsten en verschillen en per type stakeholder geanalyseerd.
Uit de resultaten komt naar voren dat de opfok van kalveren middels een zoogsysteem nog in de kinderschoenen staat en verder ontwikkeld moet worden. Er bestaat nog geen gouden standaard. Echter, met de ervaring die er tot nu toe is, ligt de toegevoegde waarde van zoogsystemen in het verbeterde dierenwelzijn voor zowel de kalveren als voor de koeien, en in het positieve imago voor de verkoopbare producten. Een ander voordeel is de vrijwillige extra inzet van veehouders bovenop de minimum standaards voor biologische veehouderij. Zoogsystemen verbeteren het productievermogen van de dieren, vooral voor wat de ontwikkeling en groei van de kalveren betreft, en kunnen de werklast van de veehouders verlagen. Aan de andere kant zijn de directe ziekte-overdracht, het spenen van de kalveren van de koe en het ‘verlies’ van verkoopbare melk bottlenecks waarmee moet worden omgegaan. Controle over de productie van de koe en de melkconsumptie van de kalveren is moeilijk te bepalen, en er moet extra aandacht worden besteed aan het melken van de koeien en aan de gezondheids- en voedingstoestand van de kalveren. Bovendien moeten vaak veranderingen aan de stalinrichting plaatsvinden, en er is meer kennis en ervaring op lange termijn over zoogsystemen nodig. Wat de marketing betreft, maakt de beperkte hoeveelheid producten afkomstig van bedrijven met een zoogsysteem het op dit moment niet mogelijk deze producten grootschalig te verkopen. Directe en regionale marketing bieden op dit moment de beste mogelijkheden, waarbij kinderen en moeders als grootste doelgroep voor producten van zoogsystemen worden gezien. Op basis van deze resultaten worden er aanbevelingen gedaan.

Trefwoorden: Biologische melkproductie, kalveren bij de koe, zoogsysteem, dierenwelzijn, stakeholder analyse, marketingmogelijkheden, toegevoegde waarde

[2] Voor informatie over de inhoud van de vragen voor de interviews en de enquête verwijzen wij naar het originele rapport.

1 Introduction

Up to date, animal welfare for farm animals is of general societal concern, and still with a rising trend. This is reflected on the one hand by its implementation in legislation and politics, and on the other hand by (voluntary) additional standards and certification schemes for primary producers (Moynagh, 2000; Bennett et al., 2002; Roex and Miele, 2005; Napolitano et al., 2010). The world-wide acting umbrella organisation for organic farming, the International Federation of Organic Agriculture Movements (IFOAM) provides principles of health and fairness, and that animals should be kept in a manner that allows for mental and social well-being besides all physical needs (IFOAM, 2009). Nevertheless, today‘s husbandry practices of organically kept dairy cows and their offspring do not decisively differ from conventionally kept ones in many respects. One aspect thereby is the separation of the calf from the mother cow shortly after birth - for economical, managerial and health-wise reasons for instance (Ehrlich, 2003; Barth et al., 2008). In dam rearing dairy production systems on the other hand, the calves stay with their mothers for a certain time, varying between a couple of weeks up to their first 8 months, which allows for a natural development and bonding between cow and calf, that may be considered more appropriate in terms of animal welfare (Wagenaar and Langhout, 2007).

The Louis Bolk institute investigated the current state of dam rearing dairy production systems in the organic sector. From the 91 organic farmers who replied to the questionnaires, only 19 (ca.21%) keep calf and cow together after the colostrum uptake (LBI, 2011). The reasons why farmers have not adopted this system yet are diverse. 16 of the 91 farmers (46%) indicated to have insufficient control over the colostrum uptake, 12 (34%) perceived the workload too high, and 9 (26 %) indicated the potential transmission of disease between cow and calf asa reason. Apart from that, unsuitable building facilities and stress during weaning due to the cow-calf-bond were further reasons.

If dam rearing dairy production systems are considered to be more animal-friendly and in accordance with the organic farming principles both in public and by primary producers, more organic farmers might adjust their system for the benefit of dam rearing. However, these modifications need to bring certain benefits along that pay off the extra effort involved, and make it worth for the primary producers to adopt it. Therefore, dam rearing dairy production systems require more research to explore their potential but also their limitations. One aspect in this regard is whether and how dam rearing systems are supported by other relevant stakeholders. If dam rearing systems are attempted to be implemented on more organic farms, the efforts from the farmers‘ side need to find an echo - eventually also in monetary terms. Thus, this study aims to explore the opinion of relevant stakeholders towards dam rearing systems, and to derive marketing opportunities from the outcome. Thereby, the focus of this project will exclusively lie on dam rearing systems in the dairy production sector.

In order to accomplish this, the following research question was addressed:

What is the added value of dam rearing systems according to relevant stakeholders, and how can it be marketed?

2 Literature review

2.1 Animal Welfare as Credence Attribute

Consumers seek products (or services) for the benefits they deliver in order to serve their higher values (Gutman, 1982; Steenkamp, 1990; Walker and Olson, 1991). If consumers experience the benefits they were looking for, this yields in consumer satisfaction. Thereby, consumers evaluate a product by the product cues they perceive, as they infer from the cues to the actual attributes a product holds when deciding upon the product purchase. Product cues can be of internal nature such as the colour and the amount of visible fat for meat, or of external nature, such as price or country of origin for instance (Steenkamp, 1990; Veale and Quester, 2009). External cues are not physically part of the product and are thus 'externally' attached. Product attributes can be either experience or credence attributes (Steenkamp, 1990). Experience attributes are experienced through the consumption of a good, such as the taste of an apple for instance. In contrast, credence attributes cannot even be experienced through their consumption, such as for meat products the level of welfare for the animal during its life.

In this respect, the additional effort for good animal welfare in animal production systems is a credence attribute that neither is directly visible, nor can it be experienced through consumption (Eaton et al., 2005). Therefore, an external cue is needed to refer to this credence attribute to make it visible and communicable for the consumer, and allow for its notification (Steenkamp, 1990; Olynk et al., 2010). Only then the extra efforts can be supported and acknowledged, which may become visible in the purchasing intention of consumers (Lagerkvist and Hess, 2011). With respect to animal welfare, products need to be marketed in a way consumers consider it relevant in order to satisfy their intrinsic norms and values related to it (Hartmann and Ibáñez, 2006). At the same time, the way consumers (or citizens) evaluate animal welfare, and hence the values they seek in certain products, does not necessarily have to match with the actual welfare or well-being of the animals (Deemer and Lobao, 2011; Lagerkvist and Hess, 2011; Sullivan, 2013). These potential distinctions in evaluating of what is perceived as 'good' animal welfare needs to be taken into account when investigating the marketing opportunities. Apart from that, a major critical issue related to marketing animal welfare is that the (perceived) reduced individual benefits by most consumers reduces their willingness to support (and buy) such products with such credence attributes (Hartmann and Ibáñez, 2006). As a consequence, animal welfare needs to be communicated and marketed in a clear and credible way to consumers (Baker and Smyth, 2012; Sullivan, 2013).

2.2 Marketing Products with Added Value

Products of added value are considered as additional services to the core value of a product, which are "both relevant and welcomed by customers" (De Chernatony and McDonald 1998, in De Chernatony and Harris, 2000). In this respect, these products give consumers additional value where they pay extra for, up to the extent they actually perceive it valuable in the sense of "better value for money" (De Chernatony and Harris, 2000). Accordingly, different strategies may be considered when

attempting to market products with added value. Product differentiation, niche marketing, branding, research & development innovation or special advertisement and promotion are a few examples of how to market products of added value (Buhr, 2004; Cuthbert, 2008; Herath and De Silva, 2011). In this respect, the literature indicated that niche marketing, packaging, labelling and branding are of upper importance when marketing products with added value. Hence, these aspects will be examined in more detail.

Niche Marketing

Products with added value may not be sufficiently competitive on cost basis as compared to products that do not hold this specific added value (Buhr, 2004). The product holds attributes that distinguishes it from other products in the same category and aims to serve specific needs and wants (Cuthbert, 2008). Hence, micro-specialisation or so-called niche marketing comes to the fore. Niche marketing is considered as a bottom-up approach that focuses on specific needs of (a small number of) individuals, and can develop from speciality to mainstream status (Tamagnini and Tregear, 1998). In this regard, animal welfare is such an attribute of added value that offers the opportunity for niche marketing. If a latent demand is existing with a specific need, it may be served by commanding and serving exactly this niche (Tamagnini and Tregear, 1998). The niche first needs to be clearly identified in order to develop its marketing strategy and tactics. The marketing efforts hence need to be specialised and targeted on its niche in order to successfully market such products (Dalgic and Leeuw, 1994; Buhr, 2004). Therefore, a clear differentiation of the products with this added value is needed to offer specific benefits to their consumers and at the same time makes imitation difficult for actors from competitive markets (Cuthbert, 2008). Only then the special qualities of the added value can eventually be charged in a successful way by a premium price (Tamagnini and Tregear, 1998). Moreover, marketing decisions upon distribution channel, communication, customer service and price setting play an important role. The right combination of these different factors is crucial to successfully command the targeted market niche (Kotler (1991), in Tamagnini and Tregear, 1998).

Packaging

To successfully market products with added value also requires (emotional) differentiation on product - level (Kroeber-Riel, 1984). This can comprise special advertisement strategies, but also product design and packaging. Since consumers directly infer the (appearance of) packaging into sales appeal, the added value needs not only to be made visible and informative for consumers, but more important workable and emotionally appealing (Twedt, 1968). For credence attributes, the notification through packaging for instance, is the only way to draw attention and quickly signalise their (added) value in products. Thus, the added value of products from animal production systems with extra effort on animal welfare needs to be actively claimed on the packaging (Roe and Buller, 2010).

Certification and Labelling

To be more precisely on product packaging, the communication of the added value does not only need to be clearly visible and recognisable, but more important to be credible (Sullivan, 2013). This can be achieved through a certification of the relevant added value by acknowledged institutions or

organisations, which can then be indicated on the product by a label (Tamagnini and Tregear, 1998). Generally speaking, certificates can either be handed out for individual farms or groups (van der Valk; Wijnands and Sukkel, 2002). The credibility of such a certificate is assured through independently working certification systems, and can be additionally increased through the participation of relevant stakeholders in the certification process (Roe and Buller, 2010; Sullivan, 2013). Especially for credence attributes such as animal welfare, labelling or certification is decisive to communicate the added value in a credible manner towards the consumers (and other relevant stakeholders)(Olynk et al., 2010; Baker and Smyth, 2012; Sullivan, 2013).

Farms that comply with the standards from the certification body can sell their products with the corresponding label from the certifier, which often may allow for a premium price. In The Netherlands, the certification system for organic farming (SKAL) is the only one for alternative production systems that is legally approved by the government (EC, 2013b; SKAL, 2013). Nevertheless, an internationally operating certification system for biodynamic farming exists (Demeter, 2013b). Both the certification body for organic and the one for biodynamic farming have animal welfare in their agenda and thus in their standards (EC, 2013a; Demeter, 2013a), which is reflected in the standards that regulate stricter husbandry conditions as for conventional farming, such as lower stocking rates, a higher share of roughage in the feed ration or (longer) outdoor access (EC, 2007; SKAL, 2013).
In the specific case of (only) animal welfare no extra governmental approved certification system exists, so that a distinct and clearly positioned certificate and label may become even more important (Eaton et al., 2005). Nevertheless, the Dutch animal protection organisation De Dierenbescherming certifies products of animal origin from husbandry conditions that meet specific standards with respect to animal welfare (van Wijk-Jansen et al., 2009). On each product category, three different levels can be achieved (1, 2 or 3 stars), and the certification is currently available for eggs and meat from pigs, cattle, chicken and rabbits (Dierenbescherming, 2013). Up to now, it seems that consumers perceive the Beter Leven label as credible, but have difficulties to get the message of the actual added value behind it (van Wijk-Jansen et al., 2009).

Branding

As stated previously, product differentiation is important to market products with added values. Besides certification and labelling, branding is an often underestimated factor in product marketing for products of organic production systems or with additional animal welfare standards. Branding is in this respect certainly an important tool to convey the invisible qualities to the consumer (Roe and Buller, 2010; Dentoni et al., 2011; Herath and De Silva, 2011). The product brand is another (decisive) measure to position and differentiate the product from competitors (Buhr, 2004), and makes the product and its ascribed quality attributes recognisable for consumers (Kroeber-Riel, 1984). Thereby, product branding is substantial with respect to behavioural conditioning, and is optimally supported by pictures (Kroeber-Riel, 1984). This in turn allows for the recognition of the brand and eventually to the purchase of the product. Successful marketing hence leads to an interaction between consumer and product, where emotional feelings are attached to its brand and

therefore make it special for its consumer (Kroeber-Riel, 1984; Hartmann and Ibáñez, 2006). The brand thus represents the qualities the consumer ascribes to the product in a symbolic manner.

Marketing Strategies for Products with Added Value

Marketing products with added value in the agricultural sector can comprise marketing strategies such as direct marketing on-site or at farmers‘ markets, or promotion through guided farm tours or newsletters (Govindasamy et al., 2002; Buhr, 2004). In accordance with the strategies of niche marketing, a pull strategy may be reasonable to market products with added value, since it aims to serve a specific need or want of consumers. When applying a pull strategy, the product offer needs to be sufficiently attractive to consumers to create a demand (van Dam et al., 2004), as the (added value of the) product aims to serve a specific need or want that already exists.
Apart from that, the marketing opportunities need to be seen in the bigger picture, such as the regulatory opportunities or the (public) normative pressure (Elzen et al., 2011). Marketing products with added values in an existing supply chain requires an approach where the relevant stakeholders are taken into account to examine all possible opportunities and limitations, and at the same time balance the different claims to find a workable solution along the supply chain (cf. Roex and Miele, 2005; Ingenbleek and Immink, 2011).

3 Methodology

One way to explore the marketing potential of (products from) dam rearing systems is to investigate the opinion of relevant stakeholders towards it, specifically with respect to their perception towards the added value of the product. By doing so, opportunities and limitations about the project may be explored from different angles, which may allow for a more encompassing approach. Moreover, challenges and potential conflicts between the stakeholders may be revealed and taken into consideration when developing marketing strategies. This is of upmost importance, since a project only may be put into practice if all relevant stakeholders who have influence and an interest in the project, identify themselves with it in a pro-active manner (Shirey, 2012).
In this project, two ways are taken to investigate the marketing opportunities for dairy products from dam rearing systems. One way is to investigate the stakeholders‘ opinion towards the integration of dam rearing systems in the standards of an existing certification body that deal with additional efforts to common farming practices such as animal welfare for instance. The other approach is to examine the stakeholders‘ view towards the separate processing and marketing of milk (products) from farms with dam rearing systems. Thereby, also the response towards product packaging will be analysed as well as towards the setting up of a cooperative for all qualifying farmers.

Selection of Stakeholders

In this case, dairy processors, certification bodies, a relevant association for the dairy sector, farmers and retailers of organic products are considered as relevant stakeholders for the research.
Specifically retailers from organic shops are chosen on behalf of the retailer group due to their perceived relevance and specific stake for the project since all farmers participating in the project are certified organic. In this respect, dairy processors, farmers and retailers are the primary stakeholders in the supply chain, as they are directly involved and affected by changes in the supply chain. The investigated Dutch certification bodies are considered as secondary stakeholders since they are not directly affected by the project but may have considerable influence on the primary stakeholders (cf. Shirey, 2012).
Dairy processors are selected according to their affiliation with organic farming and / or extra efforts for animal welfare. Certification bodies are selected according to their relevance in the field of (organic) farming practices, livestock farming and animal welfare. They are included to investigate the potential to integrate dam rearing systems in their standards and thus make dam rearing a common practice for their certified farmers. Apart from that, the dairy farmers‘ interest group was contacted due to its perceived stake and influence towards dam rearing systems. Organic retailers were chosen randomly, except that a fair spread over the country was attempted to make the sample more representative. Consumers are not taken into consideration in this study, since the literature states a fundamental distinction between consumer attitude and actual purchasing behaviour (Ritchie et al., 1981; Uusitalo, 1990; Carrington et al., 2010). With this in mind, research related to consumer behaviour might be more appropriate by launching a test product on a small scale (van Dam, 2013).

Data Collection

Both the methodology and the structure and technique of the questions are based on literature (Siemiatycki, 1979; Fortado, 1990; Leech, 2002) and personal communications (van Dam, 2013; de Wit, 2013; Verwer, 2013; Hofenk, 2013). The interviews were semi-structured with open-ended questions (App. 1A). Thereby, respondents were given space to naturally develop their arguments without interrupting, and only when respondents seemed to move too far away from the topic, they were guided back. Each interview started with a short introduction about dam rearing systems and the study purpose, while adjusted for relevance for each stakeholder group respectively. Then questions followed about the added value of dairy products from dam rearing systems and their unique selling point, as well as about the (dis-) advantages of dam rearing systems and their marketing opportunities. Furthermore, respondents were asked about the possibility to integrate dam rearing systems into the standards of an (existing) certification body, their opinion about setting up a cooperative and a separate product line to an existing product assortment of a dairy company (App. 1).

With the dairy factories and certification bodies in the dairy sector, face-to-face interviews were conducted. Only one dairy processor was interviewed on the phone due to its relatively lower perceived stake. The director from the dairy famers‘ interest group was also interviewed on the phone, as the stake for dam rearing systems was considered moderate. All other respondents from these stakeholder groups are perceived to have a high influence, so that personal interviews were considered most suitable to obtain information (Figure 1) (Shirey, 2012). Three farmers were contacted and visited on-site for a more comprehensive insight on dam rearing systems, whereby with all other farmers interviews on the phone were conducted. The organic retailers were contacted via mail and asked to fill out an online questionnaire to get an impression about their position towards dairy products from dam rearing systems.

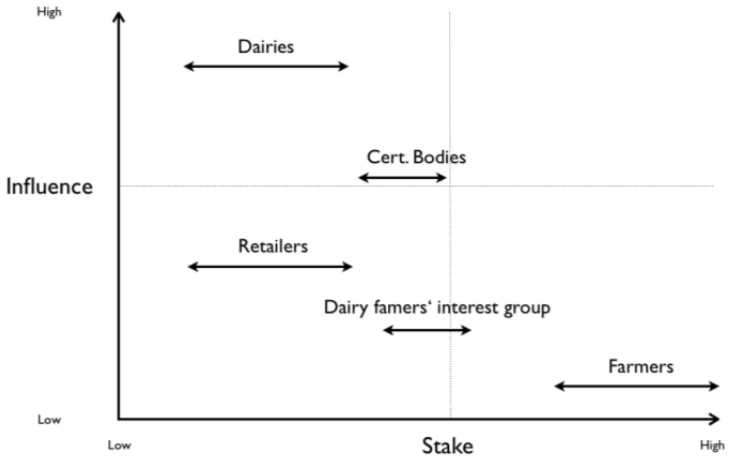

Figure 1. Prior perceived influence and stake for the stakeholders (based on Shirey (2012)

With respect to the questionnaire, the online program MWM2 was used to set up an online questionnaire to make it for the retailers easily accessible. The questionnaire comprised closed questions (single and multi-response), open-ended questions as well as questions measured with a semantic differential (7-point-Likert-scale) (App. 1B). Retailers were contacted by using an online

map from Udea (2013), a Dutch wholesaler for organic products, indicating organic retailers throughout the country. Additionally, the biojournaal, an online medium for the organic sector, advertised the questionnaire in the news on their website (biojournaal, 2013).

The number of respondents per stakeholder group as well as information about the respondents who took part in the online questionnaire is given below (Table 1).

Table 1.Methodology overview for the different stakeholders

Stakeholder	Functions of the Respondents	Methodology	N°
Dairy Companies	Director Manager NGO, Manager Sustainability	Face-to-Face Interviews	2
	Manager Marketing	Phone Interview	1
Certification Bodies	Directors	Face-to-Face Interviews	2
Other Organisation	Director	Phone Interview	1
Farmers	Farmers	Phone Interviews Farm Visits	8 3
Organic Retailers	4 retailers 2 others (1 dairy processor)	Online Questionnaires	10

Data Analysis

The data gathered from the interviews is analysed by using a systematic qualitative thematic analysis with a data-driven approach (Gorden, 1992; Boyatzis, 1998). Thereby, the data is coded for commonalities and differences in opinions, sorted per question and stakeholder group (s.a. van Dam et al., 2010). The results are organised per interview question, since opinions across stakeholders were most-often similar. For each question, common topics were identified per question across stakeholders, and opinions for and against gathered per topic. For this purpose, all relevant quotes were listed in a codebook, sorted per question, stakeholder and theme. The common topics are then reported, supported by selected quotes. The quotes are translated in English for the report to facilitate the reading flow, and the original Dutch quotes attached in the appendix (App. 2).

4 Results

4.1 Characteristics of the Stakeholders

From the **dairy companies**, one processes and sells both conventional and organic dairy products, one organic and biodynamic products, and one conventional, organic and biodynamic products. Two out of the three are operating as business enterprises and one as cooperative. Concerning the **certification bodies** as well as the **dairy farmers' interest group**, all that were interviewed have a relevant stake in the organic dairy sector with respect to the nature of their activities. In order to maintain anonymity, no more specific information about dairy companies, certification bodies and the dairy farmers' interest group can be given due to the small scene of organic dairy production and processing in The Netherlands.

The **retailer** group was contacted via email and asked to fill out the online questionnaire. The number of respondents remained rather small with 10 respondents (whereby only 5 completed the questionnaire). This may partly be explained by the coinciding holiday season. The annual turnover per respondent in the retailer group amounts for 2 out of 6 retailers to less than 250 000 €, and for 4 out of 6 more than 1 000 000 €, indicating considerable differences among respondents in shop size. Furthermore, the share of dairy products of the total turnover also is rather small among respondents, with the retailers having a share of dairy products up to 20 % in the total turnover (Figure 2).

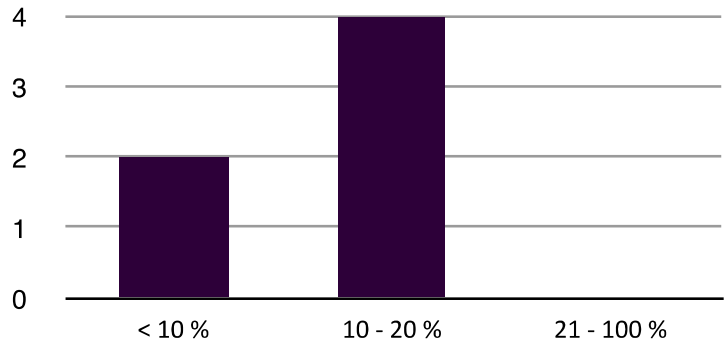

Figure 2. Share of dairy products from total turnover

The **farmers** that were interviewed had all, except for one, taken part in an earlier project on dam rearing and thus already possessed experience in it. One conventionally operating farmer was interviewed as well, who is also managing a dam rearing system and additionally processing and selling cheese on-site. Figure 3 shows were the interviewed farmers are located in The Netherlands.

Figure 3. Overview of the spread of the interviewed farmers with a dam rearing system

Farm size considerably differed from less than 30 to more than 60 cows, whereby most of the farms keep 51-60 cows (Figure 4).

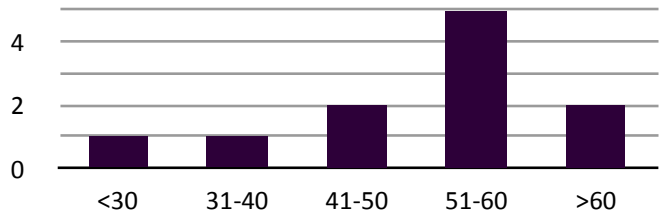

Figure 4. Number of dairy cows per farm operating with dam rearing systems (for N = 11 farms)

Most of the farmers indicate to have an average milk production of less than 6,000 kg per cow per year, which is closely followed up by 6 - 7,000 kg per cow per year (Figure 5).

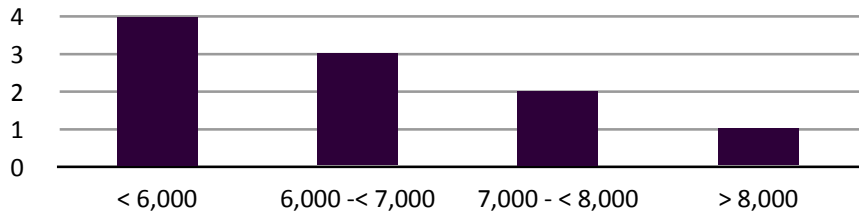

Figure 5. Average milk production per farm (for N = 10 farms; 1 without milk delivery)

Most of the farmers deliver their milk to Friesland Campina, more specifically to Ecomel, the organic stream of Friesland Campina. This is followed by the cooperative EKO Holland, which delivers the milk to varying dairy companies. One farmer operates with a pure suckling system and does not deliver any milk due to personal circumstances, and one processes almost all milk on-site to cheese and sells it as a regional product (so-called 'Streekproduct') (Figure 6).

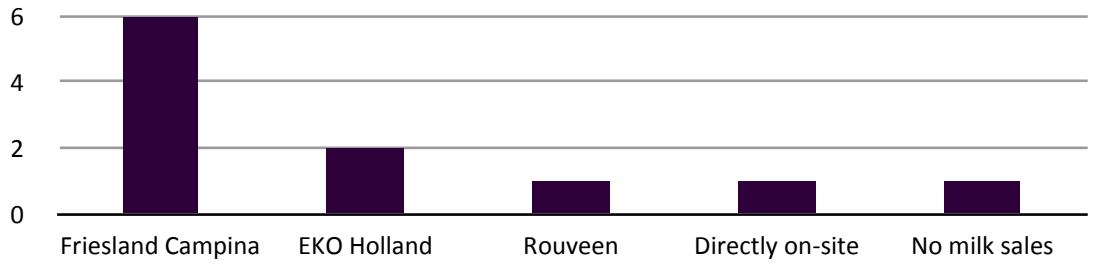

Figure 6. Dairy companies for milk delivery (for N = 11 farms)

Considering the duration the calves stay with their mother cows during the suckling period, farms differ widely. The calves either stay with their mothers for less than one week or at least 2-3 months. Thereby, two farmers do not operate with dam rearing systems anymore. One stated the occurrence and transmission of diseases as the reason to stop, the other an insufficiently adjusted stable (such as insufficient space requirements in the stable to have calves among the herd) (Figure 7).

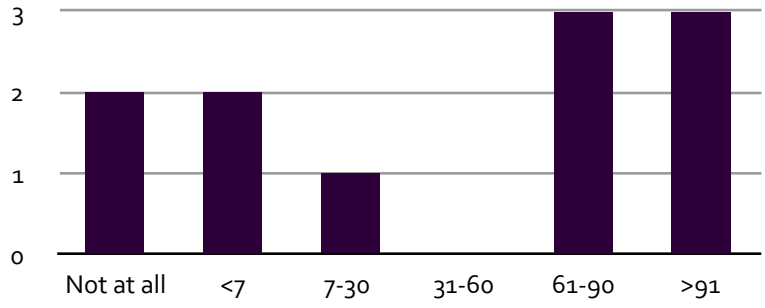

Figure 7. Duration of calves kept with the mother-cows during the suckling period (for N = 11 farms)

4.2 Stakeholder Analysis

The results from the interviews are organised as follows. First, a summary of the statements about advantages and disadvantages of dam rearing systems are given, which are followed by the stated marketing opportunities for products from dam rearing systems, and the respondents‘ perception towards a separate product line. Furthermore, a summary of the respondents‘ opinion about specific product packaging and a certificate is reported, as well as the certification bodies‘ perceived role towards it. Finally a summary of the respondents‘ statements about a potential cooperative for farms with dam rearing systems is reported, and additional results are given.
Original quotes (in Dutch and English) of the interviewees are presented in the full report.

(Dis-) Advantages of Dam Rearing

The opinions about advantages and disadvantages about dam rearing are diverse, whereby similar opinions and viewpoints are mentioned across stakeholders.

All respondents across stakeholders stress the positive effects on **animal welfare**, animal health and behaviour. In particular, dam rearing systems are considered to have positive impact on the animals‘ immune defence and on the mother-cows‘ longevity and fertility. Across stakeholders, the respondents also see positive effects on the calves‘ health, development and growth. Furthermore, dam rearing systems are assumed to be beneficial for cow and calf as they lead to better behaviour in the herd and to give cows the opportunity to perform their natural behaviour among which maternal care. Thereby, the maternal attention and care is viewed to positively stimulate the calves‘ development and learning behaviour.

On the other hand, all stakeholders also see weaknesses in dam rearing systems that may negatively affect animal welfare. Among all stakeholders, the risk of direct disease transmission of paratuberculosis and salmonella is stated as a critical issue. This was the reason for one farmer to stop with keeping calves with the cows. Apart from that, farmers also state the separation of cow and calf after the suckling period as problematic, so that another farmer limited the suckling period to 3 days to reduce the problems.

Another aspect the stakeholders mention related to dam rearing systems is the positive **image** it brings along, with keeping calves with the cows prompting the consumers‘ positive emotions. Both the managers from a dairy company and the director from a certification body also see dam rearing systems to hold the potential of a sound argument towards consumers. In their opinion, many consumers are not aware that calves are usually not reared with their mother cows.

Apart from that, all stakeholders see the **farmers‘ voluntary additional effort and commitment** of keeping calves with their mother cows as an advantage. The fact that farmers demonstrate extra engagement concerning animal welfare, which is not required by the standards for organic and / or biodynamic farming, is considered positively.

Moreover, the director from a dairy company and farmers discuss the **financial impact** from dam rearing systems. Advantages are mainly seen in the better health condition of cows and calves, and

especially the better development and growing performance of the calves. One farmer mentions that the better performance of the calves can yield in higher sales prices. On the other hand, the stakeholders critically discuss the loss of saleable milk if calves have unlimited access to their mothers, which needs to be compensated elsewhere to prevent financial losses.

Apart from that, the opinions about the **feasibility and the management of dam rearing systems** are mixed among stakeholders. Among farmers, dam rearing systems are seen positively with respect to the workload, as the calves do not need to be fed separately anymore, as well as with respect to the (financial) sustainability of a farm, as a better health status of animals will keep medication costs low. In contrast to that, respondents from the dairy companies state that the current farming practices are rather opposed to dam rearing systems, as calves are separated from their mother cows as quickly as possible in order to prevent any disease transmission.

Among farmers, additional space requirements and / or special adjustments for dam rearing systems are mentioned as another difficulty. Farmers also point out that with dam rearing systems, extra attention is needed with the handling of calves, as they otherwise become too wild and shy when only bonding with their mother. Furthermore, extra attention is required concerning cows with an adverse udder shape, as some calves may then not succeed in suckling, which in turn will lead to an insufficient milk uptake.

Another point that farmers mention related to dam rearing systems is the special attention that is required during the milking time. On the one hand, calves are said to unequally empty the udder-quarters, and cows on the other hand to hold the milk back when being separated from the calves during the milking time. Both can bring unwanted negative consequences along.
Apart from that, a lack of knowledge and experience is stated among farmers as another critical point of dam rearing systems.

One farmer emphasises that when operating with dam rearing systems, farmers lose considerable control over the milk production of their cows. Dam rearing systems do not allow to trace back the individual milk production per cow - especially when calves suckle at several cows. The milk robot further only measures the milk the cow delivers there, so that a cow without a suckling calf will have a higher milk production than one with a suckling calf. This raises problems when one wants to calculate the BSK (Bedrijfsstandaardkoe = the standardised milk production value for each cow to the 50. day of the third lactation period) or Lactation value.

Moreover, farmers state that operating with dam rearing systems is not only a matter of feasibility, but also of conviction and personal motivation.

When the respondents from the retailer group were asked about their perception towards dairy products from dam rearing systems, they first and foremost consider them good, tasty, healthy, animal-friendly, appealing and sustainable (Figure 8). Apart from that, respondents tend to evaluate the products as environmentally-friendly, even though the consent is pronounced to a lesser extent.

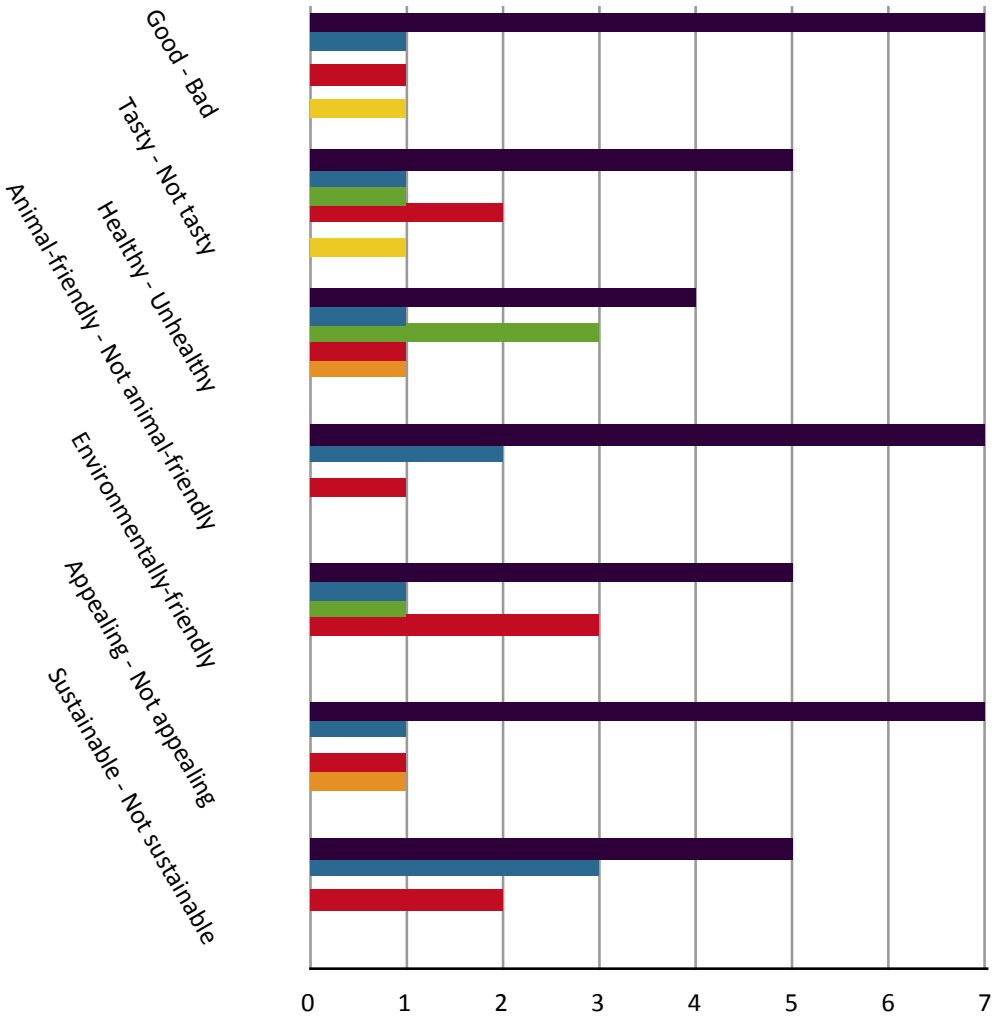

Figure 8. Perception of respondents from the retailer group towards dairy products from dam rearing systems (N = 10)

Marketing Opportunities

The stakeholders were asked whether in their opinion dairy products from dam rearing systems could be marketed and in which way. The respondents‘ reactions were mixed and the ideas about marketing strategies diverse.
The dairy farmers‘ interest group recommends consumer research to receive an impression of the consumers‘ position towards dairy products from dam rearing systems.

Concerning the **marketing of dairy products** from dam rearing systems, the opinion from a farmer and from the director of a dairy company concur, that marketing should be specific and directed in order to be successful. The farmer states that dam rearing systems should become visible and transparent to consumers and suggests to communicate to consumers via movies and social media. The director from the dairy company suggests to engage in cooperations with relevant associations and environmental organisations that can facilitate the marketing of the products.

Among retailers, two respondents see marketing opportunities for those consumers who consciously handle their food consumption. In their opinion, marketing should take place regionally, on-site, via (rustic) advertisements and TV commercials.

Furthermore, both among certification bodies, dairy companies and retailers, the respondents share the opinion that emotions rather than sustainability should be used as argument to market the products.

Farmers see the selling of dairy products as **regional product** ('Streekproduct') as a marketing opportunity. This could allow them to organise the sales according to their individual situation and preference. It is assumed that through selling the products regionally, the added value could be marketed, especially as big dairy companies are not assumed to particularly value dam rearing systems.

Apart from that, dairy companies, farmers and retailers see **direct marketing** as a good way to market products from dam rearing systems. Retailers further see the processing on-site as the way to market such products best. The experiential value that is assumed to come from dam rearing systems is seen to make direct sales on-site interesting, and even more so for farmers who produce cheese on-site. This is seen to go hand in hand with the special appeal direct sales are assumed to have.

In line with this, a farmer emphasises direct marketing as the most appropriate manner for products from dam rearing systems from a present-day perspective, unless dairy companies start to explicitly ask for it and are going to pay a premium.

On the other hand, another farmer states that processing and selling dairy products on-site requires extra investments with respect to time, effort and money, and that the farmer has to organise the marketing him-/herself. These expenses should be compensated by higher product prices, which the farmer strongly doubts to be reasonable when thinking of the consumers' willingness to pay.

Moreover, the director of a dairy company sees an online shop as another possibility to directly sell the products. There the farmers can directly see and watch the marketing effects and stay independent from the decision making of wholesalers. Environmental organisations are further suggested to approach for support with respect to the marketing. Among retailers finally, such dairy products could be sold in health stores and organic shops.
When the stakeholders were asked about their ideas about possible **marketing strategies** for the dairy products, both dairy companies and farmers share the opinion that the products should not solely be marketed with the argument of sustainability or animal welfare.

With respect to the type of products that could be offered, retailers suggest especially cheese, but also meat and more generally non-perishable products. Both among certification bodies and farmers, the idea arose to sell products from dam rearing systems especially in the form of ice-cream or an

appealing dessert. As the cuddly factor of keeping calves with the cows is assumed to best appeal to children and mothers, products targeted at children are seen as a good marketing strategy. But also the ice-cream company Ben & Jerry‘s was mentioned as an opportunity to sell products from dam rearing systems due to its considered premium status and extra activities related to for instance fair trade or animal welfare.

When stakeholders were asked about their perception towards the **market potential** of dairy products from dam rearing systems, both the dairy farmers‘ interest group and a farmer expect a positive reaction from the consumers.

On the contrary, most farmers and a dairy company see only limited market potential for products from dam rearing systems. First of all, the Dutch market is seen as a very small market, and even smaller for organic products and such specific ones as from dam rearing systems. As the number of farmers operating with dam rearing systems is very small and rather spread around in the whole country, farmers see logistic problems as the main problem to market products separately.

Retailers see market potential for dairy products from dam rearing systems on condition that an added value could be clearly stated and communicated while not affecting current price levels for this product segment. Thereby, a convincing business model is desired before thinking about possible sales.

When the stakeholders where asked about selling dairy products from dam rearing systems under a **separate product line**, a farmer finds it problematic to set up a separate product line within the organic sector. Among dairy companies, certification bodies and the other farmers, respondents share the opinion that the required logistics to collect the milk are inappropriately high as compared to the revenues that could be expected.

The director of a dairy company puts it the other way round, that products from dam rearing systems should not be marketed separately, but aggregated with other additional farming efforts (antibiotic-free, without soy, no dehorning or debutting) to one group.

A specific **product packaging** showing that the dairy products come from farms with dam rearing systems is generally seen very positive among all stakeholders. One farmer expresses concerns that if the modifications on the packaging will be too big, consumers may not be able to recognise ‘their‘ product anymore, and may then look for something else. All other stakeholders take a positive stance towards specific marketing efforts on the packaging. The dairy farmers‘ interest group emphasises the necessity to have a sufficient basis of farmers operating with dam rearing systems when actively promoting the products from these production systems.

Furthermore, a modified product packaging is considered as good means to inform consumers about it, as it is seen to make the extra efforts recognisable and transparent on the product. Thereby, farmers and certification bodies suggest photos, stories and a link to a website on the packaging, to make the product appealing to its customers. Two farmers stress that solely pictures and stories on

the package are insufficient to get a message adequately across nowadays, and that a link on the product to a website with video‘s are considered more appropriate. Thereby, a farmer recommends to set up a website by a group of farmers rather than by individual ones, also to have sufficient activities and updates on it.

A Certificate for Dairy Products from Dam Rearing

When stakeholders were asked about their viewpoint towards a certificate for dairy products from dam rearing, the opinions varied broadly. Nevertheless, the prevalent opinion across stakeholders is that a certificate for products from dam rearing systems is not considered as an option at the moment. Among the certification bodies, the scene for products from dam rearing systems is considered too small at the moment for a specific certificate.

It is further considered unrealistic for sales by retail as retailers are considered to preferably sell their products under a private brand in order to be able to self-determine the purchase of milk without the requirement to trace it back to specific farms.
To the contrary, the respondents from the retailer group consider a certificate as rather necessary, but at the same time of only limited importance. Even though the respondents attribute a certain appeal to it, it is not clearly perceived as a reliable means to guarantee certain production standards related to dam rearing systems (Figure 9).

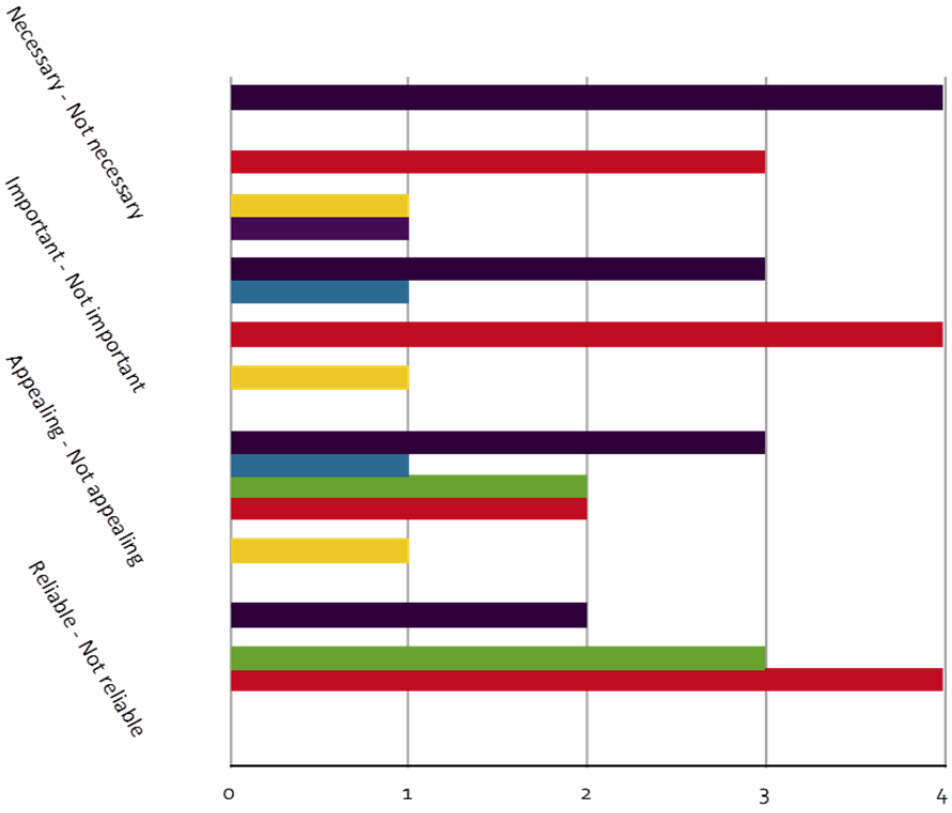

Figure 9. The opinion of the retailer group towards a certificate (N = 10)

Across dairy companies, certification bodies and farmers, several respondents share the opinion that an extra certificate only confuses consumers, raises additional costs and most likely does not yield in anything beneficially. Nevertheless, some farmers and the managers of dairy company see possibilities in a certificate from the *Dierenbescherming,* an animal protection organisation, or *Wakker Dier,* a Dutch animal welfare organisation for farm animals. One farmer, however, does not see that as an option. The *Dierenbescherming* does not hold sufficient differentiation to make a clear distinction within the organic sector in his opinion, so that a separate (new) certificate is assumed to be more effective. Both this farmer and the dairy farmers' interest group are of one mind that it also requires specific standards that need to be fulfilled by the farmers in order to get certified, such as the length the calves are to be kept with the cows for suckling.
The director of a dairy company stated in the interview to not see much potential in a marketing strategy for only dam rearing systems, but rather in a **dynamic certification standard** where it is among others one of the elements constituting it. The idea behind is to set up a list with several elements and sub-elements. Then, farmers could choose their own individual farm profile within certain boundaries that fits their situation best. The director further suggests to assign points to each sub-element, where each farmer has then to reach a minimum number of points per element.

Both among farmers and dairy companies, the idea arose to set up sub-levels within the existing certificate for organic farming that can more precisely differentiate and guarantee different levels of efforts on top of the minimum standards. The director from the dairy company names extra efforts as Bio^{+}, Bio^{++} and Bio^{+++}, and sees the future in a more dynamic rather than rigid certification system.

The dairy farmers' interest group and some farmers on the other hand do see an opportunity in a specific certificate, provided that dam rearing systems have more added value than they have at the moment and that it can be represented in an adequate manner. Furthermore, the standards for the certificate should be feasible within the existing farm management and housing system, and no extra costs should be involved.

Among farmers, consumer research is recommended to identify whether a certificate is desired and appreciated or not, and whether dam rearing systems as such have marketing potential. Retailers tend to expect a certain interest of consumers in dairy products from such a production system (Figure 10).

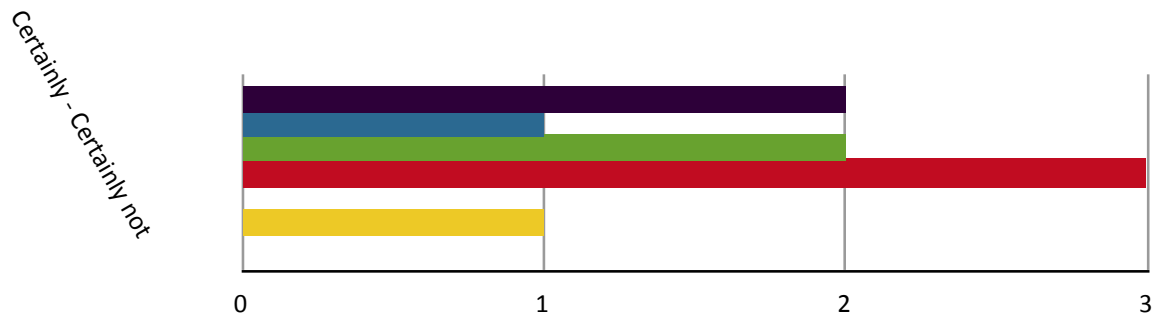

Figure 10. The opinion of retailers concerning the interest of consumers

The directors from the certification bodies were asked about what ***role the certification body*** could play with respect to (products from) dam rearing systems. Both directors are willing to support it, provided that either dam rearing systems make relevant progress or that other stakeholders show relevant interest. The dairy farmers‘ interest group is willing to support dam rearing systems concerning their communication and the product sales.

A Cooperative

When the stakeholders were asked about setting up a cooperative for dairy products from dam rearing systems, the dairy farmers‘ interest group, dairy companies, farmers and the majority of retailers consider the number of farmers operating with dam rearing systems insufficiently for it. A sound basis of farmers producing milk with dam rearing systems is required when thinking of specific marketing strategies for this management system. Apart from that, solely marketing the aspect of dam rearing systems is seen to differ insufficiently to be successful.
At the same time, farmers also see the effort related to the separate processing and marketing of dairy products from dam rearing systems inappropriately high, not forgetting that a sufficiently large product assortment needs to be offered.

Furthermore, farmers see another main problem in the logistics, as the farmers operating with dam rearing systems are too much spread in the country. Moreover, the extra costs that are assumed to come along with products from dam rearing systems are seen critically as opposed to the expected extra profit that could be made at the present day.
On the other hand, farmers also see a certain opportunity in a cooperative as it is seen as a way to keep the added value closer to producers rather than losing the (extra) profit to intermediaries.

5 Discussion

This chapter comprises a re-evaluation of the different stakeholders‘ stake and influence, as well as a SWOT analysis that is based on the results from this study.

5.1 Re-evaluation of Stake and Influence of the Different Stakeholders

Before the respondents from the different stakeholder groups were consulted, their stake and influence was estimated (see p. 14. Figure 1). After carrying out the stakeholder analysis, the situation was estimated one more time (Figure 11).

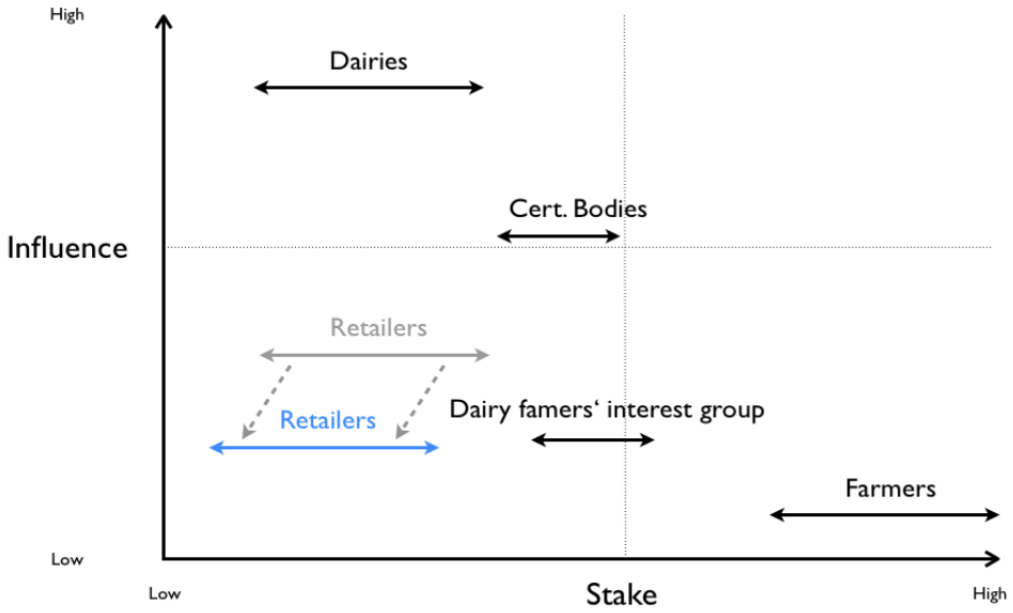

Figure 11. Post perceived influence and stake for the stakeholders (based on Shirey (2012)

After carrying out the research, it turned out that for farmers, dairy companies, certification bodies and the dairy farmers‘ interest group, the estimation still remains more or less the same. Farmers expressed interest and engagement in dam rearing systems, but have only limited influence in the supply chain. The dairy farmers‘ interest group and the certification bodies also stated certain interest, but perceive their scope of action rather limited at the moment. This was mainly related to the pioneering stage of dam rearing systems, in combination with the small base of farmers operating with it. The dairy companies that are perceived to have high influence, see a separate processing and marketing of dairy products from dam rearing systems in their business not as an option yet. Only one dairy company expressed interest in their further development and see a certain potential in dam rearing systems as an innovative farming method.
Retailers are the only stakeholder group that seems to take a slightly different position with respect to

their stake and influence. The retailers‘ influence is perceived to be lower after the stakeholder analysis, since the dairy companies‘ position in the supply chain is perceived decisive. This together with external hazards such as logistical problems seem to take considerable influence on the (further) supply possibilities to retailers. In addition, the fact that the general response rate was low with 10 respondents, while only 5 of them completed the questionnaire (while 34 in total have received a personal mail, and an advertisement was put online on biojournaal), may also point to a critical point. Thereby, the methodology could have played a part, where personal interviews may have been better suited for such a pilot project, so that potential questions could be directly answered in case of ambiguities.

5.2 SWOT Analysis

A SWOT analysis is derived based on the results from the stakeholder analysis (see Homburg and Krohmer, 2009). Thereby, the strengths (S), weaknesses (W), opportunities (O), and threats (T) of / for dam rearing systems are identified based on the interviews, and listed in a table (Table 2).

Table 2. Strengths, Weaknesses, Opportunities and Threats of dam rearing systems

Strengths (Internal)	Weaknesses (Internal)
• Positive effects on animal welfare of cow and calf, on calf development and growing performance, and on the behaviour of cow and calf (socialisation, maternal care of cows), better animal health • Eventually higher sale prices for the calves due to a better performance and development of the calves • Reduced workload, as calves don‘t need to be bucket-fed anymore • Voluntary extra effort of farmers on top of the standards for organic farming • Positive image of dam rearing systems towards consumers, potential of a sound marketing argument for good animal welfare • Product characteristics that fit regional (niche) marketing (as ‘Streekproduct‘) • Added value well-suited for direct communication and direct marketing, especially when the products are processed on-farm (e.g. cheese) • Cooperations with relevant (local) associations and environmental organisations (concerning PR / marketing / advertisement) • Aggregating dam rearing systems with other additional efforts (no antibiotic use, cows with horns, no soy, ...) to one e.g. certificate (e.g. Bio+); Distinction within the organic certification system with sub-levels and related standards (Bio+, Bio++, Bio+++); a dynamic certification system	• Improved animal welfare for animals from dam rearing systems not scientifically proven yet • Risk of direct disease transmission between cow and calf • Loss of saleable milk • Additional space requirements / special adjustments needed • Extra attention needed concerning the sufficient milk uptake of calves, and during milking (calves empty udder unequally, cows tend to restrain the milk flow when being separated from calf for the milking) • Loss of control over the milk production per cow, and milk consumption per calf • Limited expertise and experience with dam rearing systems for farmers. • Farmers need to get used to operating with dam rearing systems (adjustments in mind-set needed as well) • Strongly limited number of farmers operating with dam rearing systems, therefore also insufficient base of farmers and unsuitable geographical situation to set up a cooperative • Processing and selling on-site requires expertise and skills, time and financial means as well as a suitable location, which can make the processing and selling on-farm unfeasible for many farms • Rentability of dam rearing systems unknown • No specific marketing / advertisement strategies yet; And before starting with specific marketing efforts for dam rearing systems, a sufficient and stable base of farmers operating with it should be guaranteed)

Strengths (Internal)	Weaknesses (Internal)
	• Missing competence transfer and communication in and between stakeholders and along the supply chain • No standards / commonly agreed good agricultural practices for dam rearing systems; large variation in suckling period, foster mother / biological mother, handling of separation • A market pull would not find sufficient supply at the present day (dam rearing systems still in the early stages of their development) • Very specific niche market (already within the organic sector; would be a niche within a niche) Limited market potential in The Netherlands, as organic products already have only a rather small share • Logistic problems Large spread of farmers operating with dam rearing systems across the country • Different milk suppliers across the country

Opportunities (External)	Threats (External)
• Emotional sensitivity of consumers towards animal welfare (calves with the cow) • Children (and their mothers) perceived as attractive potential target group; (kids') desserts and ice-cream as appropriate products, but also cheese • Raising consumer awareness of current dairy production systems (that calves are usually directly separated from their mother cows) might eventually yield in a demand for products from dam rearing systems • Milk quota ends 2015 - higher milk production can be expected with an overflow of milk supply, limited availability of milk quota; the overproduction can be used for suckling, leading to a higher calf development performance • Market potential for regional products • Interest from hospitals / restaurants (special advertisement could be made, potential for premium prices)	• Current national difficult economic situation; potential negative consequences for investments in the research sector • Limited availability of (external) support • Dam rearing systems are not perceived as particularly interesting by (several) dairy companies, certification bodies and retailers; Certification bodies see only very limited scope of action at the moment; A separate certificate also brings extra costs along • Technology is not geared to operate with dam rearing systems; the milking system is not taking it into account • Demand for (specifically) products from dam rearing systems unknown

The strengths and weaknesses are of internal nature, meaning they are inherent to dam rearing systems and therefore may be amenable to direct influence. Opportunities and threats are of external nature, and thus environmental factors that can exert certain influence on the development and / or success of dam rearing systems by setting a specific external framework.

In this SWOT analysis, the identified internal advantages and disadvantages are linked to the external ones (Table 3). Thereby, the development and marketing potential of dam rearing systems is analysed by linking the external opportunities to the internal strengths and weaknesses (O - S, O - W). Furthermore, limitations and drawbacks are identified by linking the external threats to the internal strengths and weaknesses (T - S, T - W).

Table 3. Overview of the SWOT analysis approach

SWOT		Intern	
		Strengths	Weaknesses
Extern	Opportunities	O - S	O - W
	Threats	T - S	T - W

The SWOT analysis is organised by priority, so that the elements highest ranking in priority are stated first. Priority is given to elements with the highest share of internal possibilities for action (both with respect to strengths and weaknesses) as it eventually allows for direct influence and development, as compared to external influences that may lie beyond reach.

How to use internal strengths to capitalise on opportunities (O - S) ?

The emotional sensitivity of consumers - especially of children - towards animal welfare and dam rearing systems could and should be utilised in the **development of (suitable) products**. This could yield in desserts, ice-cream or cheese specific for children, such as a kids‘ cheese with a specific shape for instance (*see also 6.2 Recommendations*).

As discussed among stakeholders during the interviews, the extra effort of dam rearing systems on animal welfare may gain in importance by a certificate that becomes visible on the final product in the form of a label. As it became quite quickly clear during the interviews, a separate certificate only for dam rearing systems is too specific and constrained, and the incorporation into the standards for biodynamic or organic farming too far-fetched yet. An opportunity with potential however, could be to sell the products under the **certificate for regional sales** as so-called ‘Streekproduct‘ (see Erkend Streekproduct; voor consumentenonderzoek see Vijn et al., 2013). Since the number of farmers is rather small, the products from these farms are thus likely to be unique in their region for this special way of animal husbandry. The association behind this certificate also organises the marketing for their products, so that this is not of the farmers‘ task any more. Apart from this, the previously mentioned foundation SMK (**S**tichting **M**ilieu**k**eur) could be approached to identify the potential for dam rearing systems in their more dynamic certification system for sustainable dairy cattle husbandry.

The milk quota as it exists to the present day, will be abolished in 2015. Since the milk production per farm will not be regulated anymore then, a growing over-supply could be a possible consequence due to an increase of milk production per farm (Jongeneel et al., 2010; Samson et al., 2012). With this in mind, dam rearing systems may have the pioneering potential as **innovative farming method**. Calves from dam rearing systems take up considerably more milk than calves that

traditionally get bucket-fed, as the latter only have restricted access to milk (Wagenaar and Langhout, 2007). Therefore, individual farmers could evade the risk of considerable drops in milk prices by operating with dam rearing systems on their farm, as an over-supply of milk is expected to directly (and negatively) affect milk prices. This may especially be of importance if the upward trend towards continuous farm growth shall be of longer lasting nature.
In addition to that, it seems that consumers are currently not aware of the current farming practices of calf rearing. Therefore, farmers operating with dam rearing systems may hold a competitive advantage as compared to farmers who traditionally separate calf and cow - not only with respect to the end of the milk quota, but especially towards consumers who get informed about the different rearing systems. Informed consumers may be assumed to prefer the dairy products from dam rearing systems then over those from the traditional rearing systems. Campaigns promoting dam rearing systems could be one of the steps to raise public awareness, which could be initiated by the farmers' initiative, together with other associations and a research institute or local governmental agencies.

How to deal with internal weaknesses to be able to capitalise on opportunities (O - W) ?

First of all, concerning the management of dam rearing systems, it became clear that there are numerous difficulties the farmers face up to now, that leaves them to pioneering with trial and error. The current bottlenecks of dam rearing systems range from health issues, technical obstacles, the insufficient transfer of knowledge, to difficulties related to the marketing and sales activities.
With respect to the animals' health status, dam rearing systems facilitate the direct disease transmission and require deliberate prevention measures (see also van Dixhoorn et al., 2010a). The fact that the calves suckle freely implies that farmers lose control over the calves' milk uptake, so that the dietary status can only visually be checked or estimated via the weight development and growth. The (average) milk production per cow can furthermore not be assessed during the time of suckling. The milking robots do not provide an option to integrate cows with suckling calves in the system yet either. This leads not only to drawbacks concerning the information about the animals' performance. It also hampers the easy and early detection of warning signals or critical values, and thus requires other approaches to keep track of the animals' performance as well as their health and dietary status.
Another point is that many farmers state a lack of information exchange concerning dam rearing systems. One of the consequences is that every farmer has developed an individual manner of operating with a dam rearing system that fits best to the existing farm conditions. Therefore, an **initiative for farmers** with dam rearing systems could be one step to facilitate the competence transfer, which could be presided by farmers. It could be the centre of all activities from where approaches to relevant institutions start out. A research institute such as Louis Bolk seems to be well-suited to provide 'best practices' guidelines of dam rearing systems to which farmers could refer if needed. Therefore, both a stable base of a sufficient number of farmers who successfully operate with dam rearing systems for considerable time, and an initiative with regular meetings seem important prerequisites before starting to explicitly market dam rearing systems other than on individual scale.

With respect to the status quo of dam rearing systems, **cooperations** of the farmers‘ initiative **with relevant associations** or environmental organisations could be an option to facilitate an effective communication towards the public and promote the marketing of their products. Thereby, relevant associations could specifically address their members, who already demonstrate a certain stake merely through their membership. Therefore, the chances that (products from) dam rearing systems may find a positive echo seem to be higher in this area.

As stated earlier, dairy products from dam rearing systems neither undergo **specific marketing** yet, nor is it financially rewarded to the farmers. The fact that dam rearing systems are not part of the marketing strategy could also be one of the reasons why farmers operating with them do not experience a financial reward for the extra effort. The marketing potential for products from dam rearing systems via dairy companies seems to be rather limited. Therefore, the integration of the (processing and) sales on-site seems to hold considerable potential, particularly as it allows customers to directly see and experience the benefits dam rearing systems bring along. This includes the observation of animals (cows with calves) on the meadow or visits to the stables, and especially making the connection between the (producing) animals and the final product (cheese, dessert, ...).
Specific marketing efforts can range from advertisements in local newspapers and small signs at the street, to apps on the product packaging that directly link to the website of the farmer(s) or the initiative. On product level, a specific focus on dam rearing systems on the **packaging** is needed, as the visual appearance is decisive when catching the consumers‘ attention. This is particularly true if it is a credence attribute such as animal welfare that is supposed to be a key marketing aspect, as it is neither visible to consumers, nor can it be evaluated after product consumption. Specific marketing efforts are thus needed that enhance the image cultivation towards consumers and make the product unique. The positive image dam rearing systems are assumed to have facilitates lasting customer loyalty. Particularly product branding is thereby a key element that could be utilised, especially in the case of direct sales. Thereby, farmers could attach their unique and individual image to the product in the form of an individual brand (that may comprise a product label) that directly addresses and appeals to the consumers‘ emotions and empathy (Graham et al., 1994; Vranešević and Stančec, 2003; Yan, 2010).

As stated in the theoretical background, an added value needs to be ‘relevant and welcomed by consumers‘ (De Chernatony and McDonald (1998), in De Chernatony and Harris, 2000). Since no **consumer research** has been done yet for this specific area, it is unclear whether there is any demand for (dairy) products specifically from dam rearing systems. The identification of a relevant target group of consumers is crucial to identify the market potential and relevant market segments for products from dam rearing systems. Thereby, universities together with research institutes such as the Louis Bolk institute could carry out the research. Only then, products can specifically be marketed, with higher chances to successfully match the supply with the existing demand.

Another point is that the extra effort of dam rearing systems gets lost the moment the (raw) products leave the farm if not processed and marketed on-site, since stakeholders do not communicate about it yet. Therefore, the **coordination, communication and cooperation between stakeholders**

should ideally be strengthened and enhanced. This is not only important with respect to the transfer of knowledge and ideas, but also to prevent the loss of previously added value along the supply chain as in the case for the extra efforts for animal welfare. Even though the project focuses on dairy products, it became apparent that for organic farmers, considerable value is also lost through the sales of bull calves, as bull calves are most often sold to the conventional fattening stream. Thus, the calves could either be sold to the organic fattening stream, or attempted to be slaughtered separately in the proximity, so that the meat could be sold under a regional label ('Streekproduct'). The conventional dairy farmer in the stakeholder analysis thereby serves as an innovative example - not only are the lower productive cows inseminated with semen from beef cattle breeds, but also is this offspring planned to be slaughtered and marketed on-site as regional product. Next to this, local restaurants or shops with regional products could be approached to investigate their interest for (dairy and meat) products from dam rearing systems.

Figure 12 summarises the potential for (products from) dam rearing systems.

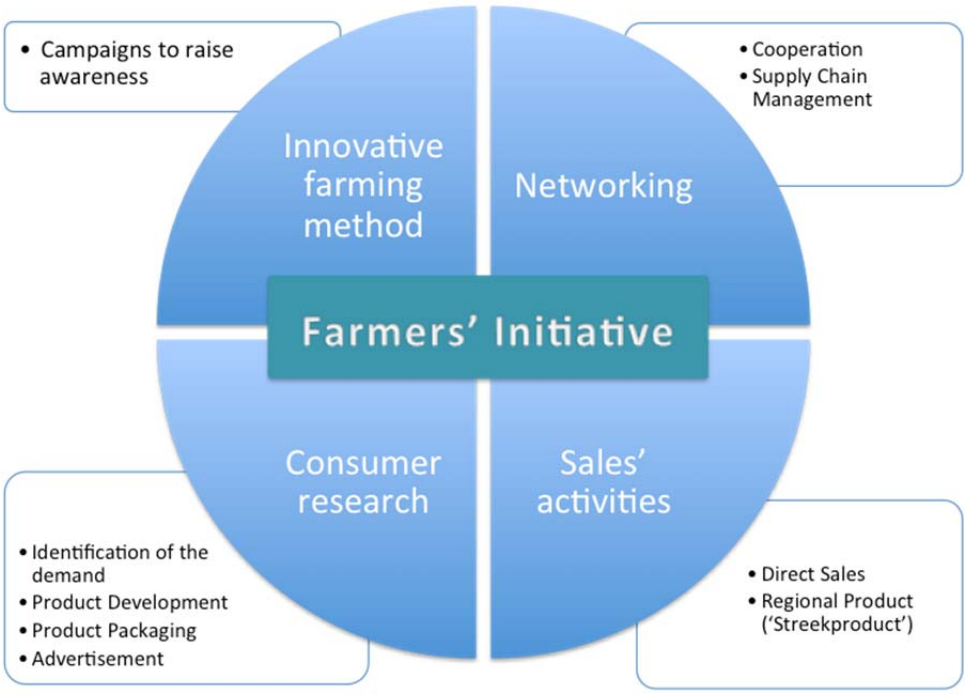

Figure 12. The potential for (products from) dam rearing systems

How to use internal strengths to minimise the impact of threats (T - S) ?

A critical point are the **logistics** due to the large spread of farms that currently operate with dam rearing systems. In addition to that, dam rearing systems are up to now a specific method of animal husbandry that is almost solely practised in the organic sector. This makes the products to **niche products within the organic stream**, thereby narrowing their marketing potential considerably

down, as already the market share for organic food products is rather small in The Netherlands with 1.8 % (EC, 2010). Therefore, the current situation of dam rearing systems leaves for the moment only a limited number of promising marketing opportunities. The positive image dam rearing systems are assumed to have towards consumers and their potential of a sound marketing argument concerning animal welfare make regional niche marketing the most suitable marketing option. Direct marketing seems to be a good marketing strategy, especially when the products are processed on-site. Thereby, the direct contact to customers allows for the communication of the added value and inform customers about dam rearing systems.

How to deal with internal weaknesses that allow threats to have a serious impact (T - W) ?

Concerning external conditions, the economical situation in The Netherlands is currently under tension, which becomes evident by a decreasing GDP per capita with a decrease of - 1.1 % in 2013 (Country Economy, 2013), an unemployment rate of currently 8.7 %, and counting (Trading Economics, 2013). This may also affect the (public) **investments in the research sector**. In these early stages of dam rearing systems, further research is required. This is particularly important, since it has only merely been scientifically investigated yet whether dam rearing systems positively affect animal welfare. The further development of dam rearing systems therefore also depends on the economical situation and the funding that will be provided (such as by public institutions). At the same time, it highlights the importance of a farmers‘ initiative, so that at least internally among farmers, a competence transfer could take place.

Up to now, neither the **demand** for products from dam rearing systems has been investigated yet, nor the consumers‘ willingness to pay. If consumer research would yield in an insufficient demand, dam rearing systems would need to be investigated whether they are per se interesting for farmers as farming method without a specific marketing potential. On the other hand, it needs to be kept in mind that in the case of a certain market pull for products from dam rearing systems, only a very limited **base of farmers** could supply products, which eventually may not be able to match the demand.

Finally, the lack of **commonly agreed standards** to which farmers adhere becomes apparent in the large diversity of how dam rearing systems are handled across farms. This comprises the length of the suckling period, whether mother cows or foster cows are used, and the manner the farmers handle the separation of calf and cow. This together with the current lack of communication within and between stakeholders make it difficult to establish dam rearing systems as officially acknowledged farming method and set up specific marketing strategies. Next to that, the costs a certificate necessarily brings along and the limited scope of action the certification bodies see to the present day make a (national-wide) certification of products from dam rearing systems not yet applicable.

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