

Review Article

Finding and Branding of Standards for Agro-Ecological Sound and Climate-Favorable Milk Production: On Imperfect Competition and Negotiation for Premium Quality between Retailers, Dairies and Farmers

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Abstract

As consumers and the public have become concerned about milk production, i.e. primarily with respect to negative environmental impacts and animal welfare, the industry seeks ways to establish more favorable modes of production; hereby primarily in negotiations with farmers and dairies, but avoiding regulations and interventions. Especially, branding and internal standardization shall help generating willingness to pay from consumers. To finance schemes the marketing of many companies has started campaigning on milk products, which are said being premium quality. Trying to get willingness to pay for additional services (beyond product quality, rather than positive impacts on animals) many companies have recently created own labels and even brands have been promoted which shall suggest to consumers a more or less environmentally and animal friendly farming. The same applies to retailers. Yet the criteria are set differently, partly in a power game, and pricing conveys huge difference in terms of mark-ups. Also claimed, farm gate pricing shall become fair. For instance at fresh milk markets in EU countries some packages sell for double price, not being only organic (bio) but also specifying things such as regional, guaranteed pasture feeding, almost hay (less concentrates), providing eco-system services, etc. At supermarket shelves a competition for fancy boxes and decoration has appeared which shall create willingness to buy (pay) special brands

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Citation: Nuppenau EA (2023) Finding and Branding of Standards for Agro-Ecological Sound and Climate-Favorable Milk Production: On Imperfect Competition and Negotiations for Premium Quality between Retailers, Dairies and Farmers. J Food Sci Nutr 9: 153.

Received: January 16, 2023; **Accepted:** January 21, 2023; **Published:** February 03, 2023

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and distract purchase from conventional products; but not only that, rather also attract market shares.

Keywords: Branding of environmental friendly milk products; Bargain model; Imperfect competition

Introduction

Some retailers in concentrated supermarket structures have created own-labels for milk (for example in EU countries), which shall show the environmental friendliness of their foods (in our case for milk and products purchased from dairy processors which partly give up their labels) and they hope this contributes to image improvement. In such case and as frequently observed today (2022), retailer brands and labels compete with dairy brands. Product differentiation and label creation are typical for modern retailing [1]. The logic follows [2] who claims that consumer willingness to pay for food will be best exploited with popular branding at minimum efforts, yet in the opinion of the industry. Parallel, farmer groups have started to respond, even forming associations, for instance of offering special practices, which are animal friendly, less polluting and contributing to pasture preservation. These farmer groups cooperate with selected dairy processors and become involved in negotiation for standards. Apparently, as participants in value chains of milk products strive for higher prices and getting premium milk placed (and better priced), yet based on animal welfare and environmental concerns, a new type of competition has emerged [3]. Milk should be bought at higher farm gate prices; efforts compensated, and the farmers think it is necessary for survival offering more comfort to cows and deploy animal friendly practices (private and market led improvement of animal welfare). Having costs hopefully compensated by better farm gate prices [4], consumers pay. But not all farmers are engaged; rather special farmers and farm groups come up. Many times these farmers are located in special landscapes with grasslands and they see easy scope for “better farming” (though frequently being labor-intensive smallholders [5]).

Note, ecologically sound farming is moreover already promoted partly by dairy factories (being cooperatives) and retailers have opened their minds for improvement of standards; even declare new standards and start marketing, campaigning and promotions. Hence, it seems that the private sector cares about animal welfare. There seem promising movements and some dairies support local farming; yet against competition from outside. They gain interest if it is regional a brand [6]. In reality, however, many initiatives have dissolved and currently there is frustration within farm communities, perhaps because of high aspiration (“fair” price), imperfect competition and inexperience within a system which has led to behavioral problems and good will may cease (for problems on adoption see: [7]).

We will contribute to the discussion by making suggestions on how to model a value chain in which dairy factories compete for shelf-spaces in supermarkets. The assumption and observation is: there are usually several value chains characterized by different standards and branding in milk industries. Standards and brands can be differently defined. They become negotiated along costs and

financial returns as well as power and capability of imposing standards on farmers. The retailer (discounter) perhaps decides for setting own standards and promote own brands; this relates to contracting. Alternatively, a discounter (special retailer) buys milk products from markets with labels from processors closer to farmer communication on standards.

Both use labels. The dairy processor labels usually show higher standards; commitment to support farmers and show improved prices in the value chain (do consumers know?). Our analysis shall be built along a bargaining model of [8]. Marketing organization can exercise power, which gets measured, and details for standards are modelled along indices. We parallel a full controlling of milk producing with “good” practices and see semi- or indirectly controlling of standards (brands) here by premium labels and prices. Premiums and standards are negotiated and market shares are determined in an oligopolistic market. Farmers have choices on different settings (practices), which are paid by types of cost sharing. Consumers are modelled with preference for known standards and willingness to pay for altered standards. Standards are indirectly decided within a chain by retailers because they are in command of financial sources (value-added). Incentives give mark-up; they can obtain from consumers.

In case of the market liberal theory of private coordination of standards at competitive markets, which is however only our starting, quality and standards seem being in the hand of consumers, or respectively their willingness to pay. But, intermediaries play a big role and they have discovered that additional value can be created for them if branding is perfected along willingness to pay WTP for brand, perhaps not reality; parallel some willing producers see potentially paid at low levels and mistrust value chains. If issues are those of oligopoly markets and imperfect competition, economist would suggest more competition. However, we have a problem of information. Since the issue is on environmentally and animal friendly farming, for instance greenhouse gas GHG emission, grazing, space, etc., processors and retailers play a major role (in assurance) even without full information of consumer/citizen (gap, [9]). It seems questioning whether the private value chain coordination will solve problems. Perhaps by analysis we will see? (1) We see a problem of correct consumer-citizen-coordination, here of preference transmission to farmers and creation of incentives. (2) The cow issues are not just one of preference and subjective utility, rather concern sustainability of farming. (3) Institutional problems of contracting, negotiations and incentives are involved which need deeper understanding for assessment. We work on these aspects. Start with a problem statement, scope for modelling and will provide new analytical insight for reducing the complexity to a feasible investigation. Yet the analysis is critical on possible achievements.

Problem Statement

We start with a thought experiment. Primarily analyzing the concern of consumers for environmentally friendly farming, the question is: should it include income transfers from consumers to farmers beside better prices for commodified services? As reference, how much price increase has to be taken into account getting voluntary participation and change in practice as well as transition to “better farming” done? Farmers request to consumers awarding; i.e. making a change in practice and appreciating their efforts (the reference is low standard). Also leaving them less deprived and asks for supporting income is an aim (for practices and ecology see [10]). The topic is: will the transition to more environmental friendly farming take

place without government intervention, or not? For instance in milk production, it is a matter of gradients and transmission which is in need and supported by institution, rules and regulations [11]. We may take an index of composed practices and add it to a mix of practices: grazing, hay making, less concentrates, new stalls, etc. However, we do not think that preference of consumers and willingness to pay for changing practices easily match.

For the preferences and knowledge of consumer it is postulated that they create an opinion at discounter level for payments (WTP, [12]). Though the absolute achievement, as preference based payment, can vary (in the language of economists and for retrieving behavior from observation it is heterogeneous: [13]), it is assumed that consumer’s mix achievements along given standards creating “own” believes. These believes are indicators to him (her) and the total quality (standard) is decisive for willingness to pay; not necessarily for willingness to accept (advertising for standards). Yes, it might be right that an aggregated behavior (at the market) can be depicted by market transaction, but this is limited in formation. There is perhaps competition for any attribute; but suppliers have only interest segmenting markets. Imperfect market issues play a role. At the micro-level preferences can be distinct for clients and would create many options. However, transaction cost matter and we must approach the “expected” behavior in terms of aggregation and formatting. As usual there is reasoning for “product” standards and branding creating segments in markets.

Especially since high standards are expensive, some consumers may go for lower standards; they will reveal a trade-off for willingness to pay and a retailer must make choices on offering specific outlays (what is perceived “workable” and communicate-able) and hence distinct brands will come up; some with low, some with high standard. The “diction” of preference creation is the job a discounter (its marketing experts) and processor will recognize and include it in his specification of the value chain (function), yet in communication with farmers. Note any attribute of animal and environmental friendly farming must be profitable. Perhaps in equilibrium, marginal preferences should be equal to marginal values of constraints, ideally creating a market for environmentally friendly food (i.e. spontaneously); in reality somebody, here the retailer sets standards, yet in his guess what pays off. From now we move to practical issues. Also note that we will not simplify too much and speak of organic vs. conventional. Rather the finding of standards for the overall market is of our interest in broader analysis.

From the consumer side as well as in the system description of the value chain (for ecological standards), three categories of milk products can be identified: (1) “conventional” with almost no branding (respectively dairies have no production practice duties in mind beside regulated minimum standards set by government, for instance of hygiene); (2) a trademark or brand with a “private” label of the retailer (mostly discounter with huge market share specify the label and the retailers pays a price straight to the dairy); (3) farmers and dairy factories deploy a “designed” brand (jointly and shared costs whereas prices for the premium are negotiated with the retailers who sees the brand as being superior). Note, brands are made visible in packaging.

I.e. for case (2) the dairy just produces along discounters will and does not specify own standards, rather the discounter/retailer sets the brand; whereas in case (3) the dairy is leading and the discounter buys long negotiations. Apparently the discounter (retailer) is the

bottleneck because it has shelf-space and power offering space. As well note, as consumers have higher willingness to pay because practices are strongly changed in category (3), the public might be most interested in the standardization of the dairy-farmer-schemes. Further, the dairy, sitting at the center is facing competition at conventional markets (1) and many farmer who may be not willing to do anything for the environment, just seek eventual profit from image improvement.

For further understanding: categories are differentiated along coarse practice assessments and no government regulates so far. Respectively the discounter (retailer) knows the additional willingness to pay of consumers for escalating standards, but may only offer in competition. From the point of view of retailers (today mostly discounters in highly developed countries) who control shelf-space, standards are attributes by gross margin which are calculated internal. They can influence sales. I.e. is believed that a retailer will not directly trade standards, but he can contract and maximize margins through shelf-space offer. Avoiding direct contracts with farmers, dairy processing companies are used as middlemen. In that context of delegation the dairy receives a premium (to be negotiated as well as the standard and the costs) and the retailer offers shelf-space for which a positive calculus of costs and benefits must prevail (maximizing returns from shelf). We project a co-operation in a game, which is beneficiary for both sides at retailing and processing. Then, a second co-operation is needed which is cooperation of farmers and the dairy processor. Actually it is contingent negotiation. Dairy processors receive a premium, if declaring standard, which, by knowledge of consumer appreciation, retailers translate in willingness to pay. At the different market segments imperfect markets prevail.

As a basic assumption for our description of the imperfect market of milk sales, here with respect to branding, we state that consumer preferences do not immediately translate into producer prices (differentiation). Conversely, farmers are not price (premium) followers; they will most likely determine the standard jointly with dairies on basis of contracts assuring premium sharing by checking costs. The hypothesis is: farmers will negotiate criteria for branding lexicographically, i.e. negotiate sequentially, with dairies. Presuming that both sides, dairy processor and farmer, have additional costs, because premium milk products are to be treated specially, interest has to be created by contract offers. This refers additionally to transaction costs. Moreover volumes are smaller than conventional through-puts. The dairy has to calculate what is a reasonable share of premiums given to farmers, yet on contracting basis?

Then, at the side of dairies, fees have to be paid for getting shelf-space. Apparently, the dairy processor will calculate all costs and benefits as well as see backing. If there is backing from discounters (premium), standards can become a business and farmer benefit. But only if conditions are known and the negotiated price transmission is realistic, perhaps not for all farmers; i.e. some farmers may quit practices (which are, for instance, not-animal friendly and pollute) others will decline (see no scope). Additionally a surplus for the dairy should prevail and importantly the discounter/retailer will seek improving image which farmers want to share. In that regards institutions such as principal-agent, incentive schemes and bargaining matter.

Background

Market structure and environmental and animal welfare orientation

A next question is how behavior is institutionalized. Indeed, as another though experiment; we could reckon farmers as agents and the processor (dairy) a principal in a scheme of active promotion of better practice. Such schemes, where the principal has to provide incentives for change in practices (here farmers towards higher standards), mechanism design comes into play [8]. It involves hierarchies and power and is appropriate for a game analysis getting contracts. However, along power one can also think the other way round: if one reckons dairies being agents of farmers for selling products, they should be responsible for designing standards and promoting sales. We ought to test this along a flexible power gradient defined as relative power in negotiating gains from co-operation. Furthermore, there is power of discounters and their strategies may define standards below what is obtainable from WTP. We can outline this in a specific modelling on controlled cooperation, i.e. in a value chain controlled by discounters and they provide the determining criteria for practices. Yes, the cooperation is on standards, but it shall be fueled by consumer willingness to pay WTP for certain standards. On pricing of milk and compensation for labor intensive farming, such farming in remote areas, it creates options on participation. Notice current versions are purely economic; there must be a creation of self-interest in producing more animal friendly and less polluting on the side of farmers. Following the rhetoric of farmers, they seem less concerned about environment and animal welfare as well as mainly request higher prices for higher standards in favor of the public [14]. Eventually beside static consumer preferences and willingness to pay at given markets, standards are unclear and costs are not negotiated yet. The society (citizens) is eager seeking improvements and higher standards, but farmer fear costs, and levels are vague. So the given structure should be used for institutions such as principal-agents. Only in perfect worlds it is expected that standards are nicely conveyed and we have advertising, documenting on packaging, etc.; more costs. The job is missing. Usually done by marketing branches of dairy factories and costly, there is a problem in co-ordination.

Activities

For the promotion of standards, as provision of an extra service, optimization of the retailer is needed, defining standards and being interested in images or campaigning as well as using the image of the specific dairy should be reckoned. Perhaps, milk production located in regions of positive connotations for consumers has better image. At differentiated milk markets beside pure product quality criteria and standards given by government, images play an important role. Equally, in branding and labelling we observe costly designs for media and consumer attention, attraction and involvement [15]. Any promotion is part of the industries' work getting WTP, but also having costs. Especially, as it is nowadays fashionable, intentions of declaring products "sustainable", climate-neutral", etc. matter and these labels fetch higher prices. In general, marketing shall take care of placements of farm products in media and packaging practices are important, but costly. Reviewing costs for marketing we come closer to real world of selling farming standards by products; i.e. promoted as change in practice. Again who does it; the discounter or dairy and how is cost sharing working. Not to become too illusorily on price transmission, we have to be careful with standards and their meaning by consumers, producers and intermediaries for WTP. Also who owns the "brand" and has command of it?

For this issue, a look its pricing policy helps. However, the analysis on standards has to promote “natural” ways of production (hay milk, pasture, etc.) as well dairies have to look for partners to establish the promotion campaigns. Branding is only working in conjunctions with farmers and gains must be shared. Then costs include promotion costs created by fighting back to competitors. It is assumed that equilibrium will exist on probabilities, success and deviations of standards between the leading dairies and market followers. In regards, for battle on consumer attraction by standard lifting see [16]. Leading companies shall anticipate a probabilistic-survival concept, getting equilibrium on standards: medium or high.

As we have a duality of highly intensive farms in the conventional sector vs., for instance, grassland based, more organic farms, it is important realizing scopes for contracting and standards with orientation of farms. Standards chosen can be quite different and rent seeking should be avoided [17]. Furthermore, again, the interest of retailers (discounter) is primarily gained from wishes for image campaigning, not really of special types of farming (for instance hay milk, grazing, etc.). Supporting farming types which are having environmental concerns, per se, is an illusion. For example, the origin of products (such as milk and cheese from mountains) is becoming more important than bulky flows of milk from estates, because image matters. At the other hand farmers think that they already have “best” products and it is merely a matter of marketing getting “fair prices”. Hence there seem strives for “windfall” profits, which is “natural”; but unrealistic. Though hidden, but emerging sooner or later on the agenda of negotiations, views on generating value added get conflicting. We have to be clear what is economic value and standard? Respectively, what is an image created with standards which pays off and who contributes what: farmers by practice or dairy by advertising?

Contracts

Whether and how windfalls (in value added) are created or not; yet as well as how gains are shared, are issues? To be solved they are to be negotiated. In regards expectations and bargains will occur. Note, standards and windfalls are not the same for participants in negotiations. Successively finding solutions and sharing different outcomes of standards is a matter of individual and contractual oriented arrangement [18]. Perhaps of the same ideas about standards, but also contributions, we shall see coordination on standards and price in a political economy framework. Moreover “image” promotion oriented people in marketing may have no idea what costs prevail (at farm level); just pursuing their favorite characteristic for farming is en vogue? For example, hay milk will sell perfectly because it creates images for pastures being said “natural”. For farmers it imposes costs and they prefer silage, which can be mechanized.

In order to settle the issues we take a deviation from a “perfect” market and standards are found endogenously. Our view of a standard is fuzzy. It goes more towards branding incl. standards based on practices and preferences. Also it is suggested by strive for economies of scale (low standard vs. special preference as market niche in case of high standard). Finally standards become discrete. This creates options in calculi for costs. The problem of “hen and egg” appears. Deviations for practice either are achieved by goal setting or transitory. New goals can be set and consequences are calculated (in monetary terms if we keep survival of farm business in mind). Notice farms are eager compensating their disadvantages in business. But this is not the ideal version of change in practice. Some farmers or groups of

farmers will perform, but at least cost. The dairy processor and retailer will face negotiations with associations. The issue of image and sharing is part of “co-operation” within groups and with processors. For example mountain grasslands may have a high image and retailers want to advertise; yet they still need products on shelf and start campaigning. Then, beside, campaigning, standards must fit to farm structure: hay milk, grazing, etc. An index in practices should prevail; it gives food quality standards in terms of a negotiated outcome of rechecking opportunities and offers of different dairies.

Importantly in negotiations one has to expose the mutual exchange (what is agreed, committed and shared) to a commodification of service and sales instruments (premium, cost sharing, etc.). In terms of commonly agreed variables, standards (commodified) are leading in different directions. Different directions appear because standards are interpreted in opposite directions: for example, by the discounter, negotiated between dairy processor vs. farmers negotiated with dairies. Then what are reactions within an appropriate management? For example, even a smallholder farm community in a mountainous area may still strive for larger farms and less grazing for economies of scale reason; use concentrates in order to get highest yield per cows, etc. However that contradicts images and dairies need to find out what is accepted by discounters. Fitting images matters! Mostly standards are opposing wishes and images on smallholders play a role in marketing. Farmers have to be convinced departing from strategies. But, only, if they trust in contracts offered, there shall be a successful sectoral adjustment (towards sustainability). In contrast discounters actually need images of “peasant farming” (small-scale) with biologically rich grassland, most likely no slurry, rather old fashion manure; etc.

Behavior

We must further appreciate that strategic behavior prevails on all sides. There is a threat on standards seen as “image creation” only, because it counteracts branding efforts. A big problem is trust. A strategic tool for detection of commitment is focusing on declining probability. One has to appreciate that another retailer gets access to better attainable images, if a dairy defects. So probabilities matter in negotiations and behavior is depending on assessments for probable (counter) actions. For counter-probability: a loss of customers is projected if the competitor becomes successful. Here shelf-place again matters. Probability and counter-probability have to be strategically addressed or met by a concession for dairy processors on price. This concession is important for farmers 0073 since it can change price levels along “world market prices” (case 1); wish for fair treatment! Studies ought to be not only on incentives for standard change, but about an element of “fair pricing”. By this wording, one ventures into farm policy. Farmers’ efforts are perhaps valued not only to produce hundred percent ecological (low yield with grass) vs. efficient (highest milk yield); rather move near standards and branding opportunities. We see standards coupled to pricing not only by premium choice, but also lifting of price pressure.

A major question is: how can the discounter convince farmers and what is a mechanism on probability for success with consumers, to be translated in awards for standard improving? We (those in design) must acknowledge that price recognition is built on probability appreciated by farmers becoming in comfort with practices fitting to them. The discounter wants efforts for image, apparently in comparison to competing in branding. But is it incentivized appropriately? We postulate that probabilities can be influenced by a consistence of standard in a particular value change (premium management) and inclusion of

own brands (fixing payments). Typical for principal-agent schemes, in the area of risk modelling, is that sharing delivers involvement. At the same time “fair prices” keep farmers off negotiating with competitors. In order of finding the margin, needed for improvement, the counter-probability tells a commitment at farm level which is subject to opportunity costs. I.e. if the discounter collects surplus money from consumer, it has to figure out how much the competitor is willing to pay for gaining equally access to raw products (milk in our case). In this regards a guess is that the competitor will equivalently come up also with a change in standard. For such game version or modelling of standard finding there are alternatives in contracting. Finally engaged actors (at least some) will anticipate actions of restricting competition by market segmentation. These actions maybe, in detail, new strategies to get consumers bound to brands by campaigning. Actually there is dynamics in market segmentation which has a rebound effect and farmers as well as dairies face guesses.

However, to retrieve momentum for behavior change as well as prepare the analysis for dynamics we need to depict the corresponding power aspects. Hereby we reduce the issue to a standard finding issue. Our core is a response function and assessment of strategies. In the mode of comparative static the approach shall make transformation, a vision and an equilibrium of new standards shall come up which is based on bargaining theory which entails alternatives.

Outline

For a representative retailer (discounter in concentrated markets) there are two options: 1. take already existing brands for designated practice; also leave negotiation of standards with farmers (branding and labelling is with dairy) and the dairy (assures trust in labels) or 2. self-design and commission an own brand with a passive dairy (it means that the dairy accepts branding of discounter, the dairy delivers farmer information on costs and pricing in order to get participation). In principle, it is a matter of complex alternatives. Standards (the word is used now synonym for brands) as well as negotiations on standards are different and to be specified actively. For “purchased” brands (standard of dairy) a negotiation variable is provision of shelf-space, which is competing with the own brand. Own brands of discounters are reckoned cheaper in terms of price paid; but have less appeal. The price is, anyway negotiated. High “premium” brands of dairies result in high WTP. A premium shall deliver a percentage in gains made in terms of mark-up (along WTP). The higher costs of procurement and processing at the dairy for higher premium are included through a bonus payment. The bonus depends on the achieved improvement in standard. In contrast, branding of the discounter in terms of knowledge in practice and farmer involvement is reckoned “primitive”; i.e. with respect to delivering service and reciprocal payments for animal-friendly farming (also climate improvements, yet the standard is low). However, some farmers will prefer the low standard in their cost-benefit. So we have another decision level.

Anyway, we depart from perfect competition by actively introducing restrictions on self-space (a negotiation variable for any dairy label) and given sale volumes (controlled by discounter). Note, discounters even have conventional milk at shelf for which they pay lowest prices, respectively. Any retailer may know, however, that he competes with another retailer, though big consortiums are procuring, yet on standard instead of volume at the one hand. Especially discounters are door- openers for sale of dairies. On the other hand there shall be knowledge (by market investigations: [19]) on consumer-WTP-price-standard-sales. (Fairly this is regressed at local markets.) Anyway

there is a “world market” price for minimal standards which is an alternative for trading milk and product for both, retailer and dairy. For own brands (discounter; given that volume of trade is already determined by purchases), sale volumes are part of negotiation with a dependent dairy. The negotiation shall be endogenous. Instead of having a negotiation on standards, however in this case, the standard for the own brand is subject to a declared minimum of mark-up for the dairy. Apparently the standard of more independent dairies is higher, since it is negotiated directly with farmers.

Anyway, one has to notice, as discounter, costs are higher if one goes for the dairy brand which might be needed for compensating image. There is a partial reluctance offering premium in reality. The discounter may think his own brand sells better: even be less good in terms of farm practice. For the image, then, there is a conflict. Taking some high quality branded and labelled products (done by dairy) is frequently reasonable for image campaigning (consumer confidence); but costs are high. The compromise is offering only limited self-space to the dairy due to a calculus, revealed. Nevertheless, as observable (Aldi in Germany as discounter and in general: see [20] discounters (and other retailers) frequently have both products at the shelf and differentiate consumer prices; here according to sales and profit margins. In effect, a mix strategy after negotiation is the outcome with lower procurement costs for own brands, but supplementing them with dairy brands. Apparently, the prices are negotiated, either.

Figure 1 gives an overview on relationships for bargaining potentials, channels and positions. There are four layers to be addressed: consumers, retailers, dairy processors and farmers. With respect to objectives, value chain contributions and gains as well as parameters for negotiation (be further analyzed below) we reference to profit functions (Greek parameter in Figure 1 give share for margins). Moreover, we may include government, which can gear the process by carbon taxing and subsidization (beyond this contribution), though rule setting occurs. Its objective is those of a bureaucracy [21].

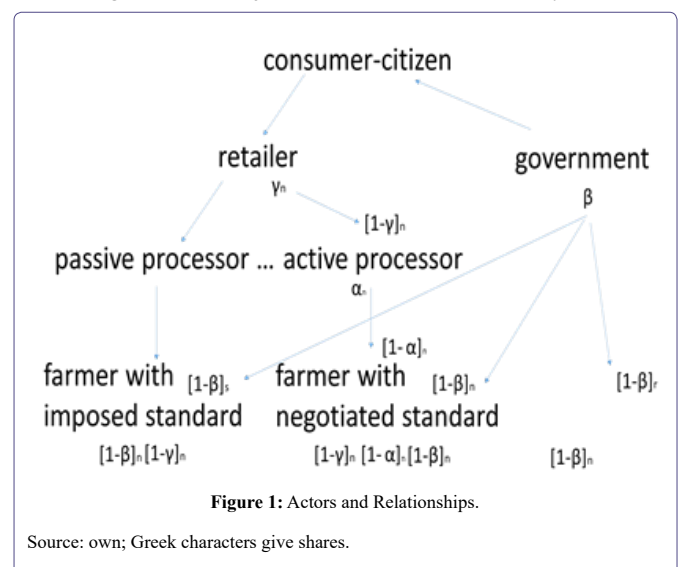


Figure 1: Actors and Relationships.

Source: own; Greek characters give shares.

About parameters and conceptual framework in circumstance of: (i) standard definitions, (ii) value sharing and (iii) contracts, notice gains in the value chain are not “fixed” (anonymous market); rather mutual negotiation on contract parameters. Contributions serve to explain normatively how the system improves. But also who is losing and gaining what?

Standard Setting within a Game Theory Approach

Standard setting and for own brand of retailer (discounter)

Our definition of the discounter-dairy-farmer relationship (for determining the standard in case of own branding, dairy branding and offering to discounter in the value chain), serves determining the parameter finding at which transactions prevail. Parameter finding can be firstly explored in a principal-agent nexus. Any standard commissioned by the discounter shall be above conventional practice, but lower than premium standard offered by the dairy processor in free negotiations (see below). Further note that the dairy is a passive intermediary in this case and those farmers which agree and follow practices in discounter brands are responsible to the discounter. Perhaps more farmers are willing to follow than in dairies' brands because criteria are weaker, i.e. if they get already a small premium many farmers will be already satisfied. The mark-up, even for small changes in practices, is evident; the price is set by the retailer exploring his position and referencing (comparing) to the option of buying advertised standard. (Currently in Germany this is called "Haltungsform"). For production, dairy processors are only service providers by separate processing and get paid by cost plus mark-up. The farmer has to accept or decline the standard (as participation constraint).

Though for provision of such discounter standard, the incentive must be correctly (sufficiently) calculated for individual farmers or group-wise (hereby in the style of incentive constraint as in principal-agent modelling). In regards discounter standard setting (incentive) and promotion of own brand matters first in terms of sales and WTP fetched by image. Again, the dairy processing company is like a unit which is merely hired through a cost compensation contract giving it a small mark-up. It is not involved directly in standard definition because the discounter's marketing division makes decisions on standard for farmers. Mark-ups are equivalently set along improvements. Still, we think, dairy processing companies are in fierce competition getting contracts with discounters (yet for reason of sales volumes and shelf-place; so they have no power in this type of standard setting). For an extended version one can look at the additional provision costs of milk packaging (many designs, making milk a commodity) and based on ads like "climate-neutral", promises, etc. Producing, processing and finding prices along outlined standards, as requested and offered, are directly controlled by the discounter, who seemingly knows consumer preferences. Since a function on price and standard is included, discounters make contingent choice. In respect trade volumes become essential. Farmers will feel restricted.

Interim: in the current version of focusing on brand (standard) selection, the discounter still has to contemplate on alternatives such as taking a processor's (dairy) brand. Indeed, one has to think about intention (complete interest) of all participants. It is not only quality or sales? So far, quantity as market share has not been mentioned. From the usually perspective of goal setting of discounters and dairy processors (turnover in terms of size of shelf-volumes and turn-over) for market shares (in terms of market power) sale opportunities are most important. They enable controlling variables in imperfect markets. With this idea in mind, we have to investigate the promotion effect of image, market share and sale for each branding, chosen, simultaneously.

In literature, information, promotion and image are reckoned shifting variables in demand (functions) based on advertising and getting customers [22]. In marketing images a core ingredient for a strategy

"creating" products - in our case "animal friendly"- is making them unique and attractive. So we have to add a component of promotion. For the objective function it means expenditures on some specific attributes promoted by campaigning and positioning even in public debates and costs can be high. For a smart use of "image", as already said, features of regional landscape, animal welfare, production practice, etc. matter. In the end communities of farmers may form clusters and offer ecological benefits which consumers also appreciate; for example less ground water pollution, etc. For such orientation (in concepts) "nature" is an image factor and promotion shall reckon synergies. Image translates into a competitive position through a definition of binary choice. First retailer and then commodity image come in sequentially. For competitors, who also will invest, a cutting edge is also image and it must match. After having passed consumers (representative) who will buy a whole brand assortment?

Remember, for retailers (especially discounters) the sales function is strongly price related (lowest purchase price offer) and brand dependent (perceivable standard); also, mostly by strong advertising; vice versa achievable "price" is a function of interplay with suppliers' willingness to accept standards. We take a mixed function for recognition of image by consumers and postulate, that retailers can gear image if images are sensitive to options accepted by farmers. Images of farm practices have to be met by suppliers (farmers). Setting special criteria and practice for milk production and its image, vertical structures must prevail. But, still there is competition. Usually a retailer has several brands, selected from suppliers, in shop; also dairies, all assured along special contracts. Typically for sake of attracting customers retailers make also decisions on in shop campaigns, only indirectly on criteria of farm practice (images).

Dairy brands

For brands of dairies another version prevails in bargaining, as said competing with discounter brands. These brands shall be actively promoted by the dairy and promotion is a decision variable for investment in brands; costs prevail, but how much? The same happens with price levels envisioned. Sales should be modelled along a partial monopoly situation, which is created by branding: i.e. residual to the discounter brand sales. We presume that advertisement will be equivalently based on criteria such as "natural"; but now it is the "real milk", eventually from a region (mountains) or farms sticking to special organic organizations (Demeter in Germany). Promotion has to be by own setting, eventually finding niche "standards". This standard will be just cutting edge in probability to be accepted, chosen "survival". It is a threshold problem for the dairy finding a brand which fits farmers and consumer acceptance. The success depends on suppression of revenue; making concession and looking at competitors. Brands remain in a niche.

For this, pricing policy helps. However, the analysis has to promote "natural" ways of production (hay milk, pasture, etc.) as well dairies have to look for partners to establish the promotion campaigns. Branding is only working in conjunctions with farmers and gains must be shared. Costs include promotion costs and created by fighting back to competitors. It is assumed that equilibrium will exist on probabilities, success and deviations of standards between the leading dairies and market followers. In this regards, for battle on consumer attraction by standard lifting [16] leading companies shall anticipate a probabilistic-survival concept, getting equilibrium on standards: medium or high.

Indeed, the dairy shall find appropriate distances between other standards (yet with the help of processors' marketing), i.e. finding a balance between higher and medium standard on gains and losses. The countervailing policy: obtainable market volumes with discount brands must be retrieved and farmers be informed on initiating the new standards. In the mode of negative incentives, competitors shall be "enforced" competing with standard in order to craft sales for own farmers; vice versa not to raise standards too much, making production too costly for "own" farmers. A way of dealing with this position is releasing price pressure if a standard is approaching a threshold above costs. It means striving for a balance that tries to make standards not too high for farmers to bear. Further in negotiation on own brands (of dairies) they must acknowledge competing with discount brands. A modus of finding the response is presuming a "gentleman" agreement on disarmament, respectively a mutual recognition of reciprocity. I.e. implicitly finding a way that price pressure is reduced. If decisions on standard findings promote sales retailers will adopt. The solution would be no major threat to standard setting of leading retailer. In respect to modelling it suggest a constraint on price determination.

$$s_{r,2} - s_{r,1} = \xi [p_d - p_r]$$

I.e. demand price above reference is linked to sales. We can envision such equation, if where are market shares and p are prices. Consequently the analysis needs an inclusion of price policy. Price policy is not negotiated; rather we assume that dominating discounters have scope for internally setting consumer prices; especially because prices are linked to standards appreciated by consumers. Sales as market share are important, though they depend on reaction in imperfect markets. We have market segmentation and pricing policy is conducted through branding.

Value chain

Finally some deliberations on expected structural change in the value chains are needed in order to get an understanding for behavioral change of actors reciprocating. The producer price most likely becomes further decoupled from consumer prices. As regards to the specification of incentives and compensations extra payments will come into operation. Further the position of the dairy in each case has to be clarified and it has to be admitted that sculpting rules might be abstract, first, and only next real, i.e. when institutional set-ups invoke some differences in behavior. In regards, as the idea is to include power of the retailer in a game for (i) price, (ii) standard, (iii) contract specification, etc. and (iv) finally volumes of sale, the processors will become more passive. Then dairy processing companies have to follow opportunities opened by discounters and the imperfect market issue will deepen. Ideas of discounters, about which branding standard sells best and be successful, are no longer transmitted by price signals, but direct through interference in business. Still, the dairy processor has to be please it if he is getting a "good" share of mark-ups. For analysis we should take a dairy that can still negotiate with farmers in regards to standards and shares in both: sales and consumer prices.

Any dairy must take part in negotiations on standard with farmers. The ultimate goal is seeking shelf-place received from retailers with whom specific contracts are made. The result is a talked premium and value chains become differentiates along instruments and contracts. At the level of final talk the exchange of retailer and dairy processor as well as the dairy processor are combined.

For the rule of the processor we have to start depicting the step-wise negotiation between, on the one hand, the retailer and the dairy processor, on the other hand, yet on behalf of the farmers. Then, elucidating negotiations between farmer and the processor, here on behalf of the retailer, the focus is on joint cost bearing. Both sides must be seen connected to the each other by dairies' strategies for standard promotion. With whom a first negotiation has been conducted depends on the position in the chain. Finally, we may reference to a discounter as master player (a discounter with strong power). In this regards the processor behaves like a broker seeking discounters. For the farmer it means value adding and standardization as well as seek shelf-place are done by the processor without interest on standard finding, just accepting. Though, processors do more in business, because they convert raw milk into processed milk (in specific commodities), it looks like searching for customers, only. For instance decisions on packaging, display, commodification etc. are delegated. The discounter makes products attractive.

In contrast, when having achieved shares in the market and mark-ups, i.e. assured shelf-space (now for own commodity brands on which it has command), the processor starts the negotiation with the farmers. Any negotiation is an "as if" negotiation exploring options to both sides, low and high standards. Here we have a type of political bargaining in the chain which is built on interest. The institutional frame is sharing of consumers' willingness to pay for extra animal welfare on the side of beneficiaries (farmers wished to recover costs). Contribution of standards in branding on the side of cost minimization (as costs incurred and hopefully compensated) prevails. The dairy, as intermediary, can offer and bottom-up farmers' willingness to accept, yet in exchange of improved shares in sales and revenues (value-added augmentation).

However, as the dairy processor has own interest in sharing τ_d (sharing of a price: $p \tau_d$ as obtained brokerage) and farmers' gain τ_r , the residual is $[1 - \tau_d - \tau_r]$. The focus should be on maximizing shares as brokers as usual in marketing (the rest goes to the retailer: [23]). τ_r stands for farmers' share in value chains; the retailer is residual. Apparently with low values in sharing τ_d for dairy and τ_r for farmers, it tells the retailer is the super-winner. Then coordination, in a bargained benefit sharing, may lead to low branding standards. Apparently, the consumers are the dupe because partners make cash with low service. As can be shown, shares depend on the power in bargaining. This power steams from (i) property rights in the game such as offering (ii) shelf-place, (iii) farm practice as well as (iv) in reaching effectively goals for animal welfare. Such issue becomes straight elements in specific chain managements, if it gets public. Notify the institutional setting for standard, so far, is private for "most natural"; no government mediation or specific traits in farm practice prevail. Rather, it can be assumed sub-optimal solutions appear and the government may have scope to interfere in a power game.

Branding and game theory in value chains

Finally, we have to understand what "branding" rightly means with respect to interest and power. We refer to the scope of putting the interests of actors and behavior into political economy models [8]. Seemingly being free in choosing labels, promotion campaigns (for "animal welfare and agro-ecological sound practices") as well as having an opportunity for grabbing WTP from consumers, choices on brands become discrete and binding. It is worth looking at formation of discrete choice alternatives. A question is what bargaining implies for those who want better standards and

how it relates to realities. We see strategies in imperfect markets for milk products commodified as outlined above. An issue is carving alternatives as if trading commodities. Who as the power defining practices in products?

Then, in bargaining and game theory [23], the power is subject to alternatives each actor has which have to be carved. As introduced, alternatives are brands to be supplied or accepted at any stage. All actors compete for shelf space. As standards are different (perhaps lower standards of discounters), farmers have choice applying practices and consumer have choices, but only for few brands. Anyway, farmers receive a price which is smaller in terms of cash for service than traders gain in imperfect competition; why? A discounter has a strong position with respect to influence on processor (provider). He established himself being a preferred vendor in the sense that deliveries are preferably on large volumes and on contracts. I.e. if pricing is basic as well as the dairy may have a weak position with respect to willingness of farmers not following standards, the outcome will be pressure on high aspiration in branding.

This is not good news for those who think agro-ecological practices can be easily promoted. Showing that, one can start with mutual games; but this would not reflect alternatives sufficiently. In extended games, alternatives on standards are to be set simultaneously, also in order to get power coefficients and reduce them. As already said farmers may work initially on a continuum of practice, but standardized clusters (as brands) will appear in negotiations. For instance with two dairies setting standards these standards become referentially for all farmers limiting choice. Choice options to contract get limited and complexity is reduced. Farmers will screen options at the limited market. For screening options, one can state steps and has to describe respective opportunities on making contracts. If the dairy processor, who gets deeper involved, will negotiate directly knowing alternative standards things may improve for animals.

Most discounters can deal with several dairies. However, hereby we always have shelf-place issue. Bargaining is not direct with farmers; rather the dairy processor wants shelf-place. Though additional more money made, alternatives are limited, because money comes only if the farmer delivers the wished standard. The question is: do all passively follow discounter standards? At this level of negotiation it has to be understood that the dairy best negotiates with numerous farmers on delivery of milk with limited standards set by the discounter or by itself. The alternative standard is an accumulated standard with the (other) farmer, respectively.

Summary

This contribution deals with branding and standard finding for food, here milk and products, which are sold referencing to agro-ecological and animal friendly practices. We introduced 3 actor levels: (1) farmers, (2) dairy and (3) retailers. In standard setting for brands we distinguish own branding of dairy and brands of discounters. The paper contains a description of the interest and potential behavior of actors with respect to the question of low vs. high standard finding.

Additionally scopes for payment modes and incentive are discussed. The consumer is reckoned willing to pay for different brands at margins and hence different practices. As institutional changes involve normative and positive aspects of description, a major focus was on innovations for potential bargaining and contracting. Also we mentioned that power and imperfect market conditions will be created and this has implication for price and premium finding.

References

1. Gronow J (2004) Standards of taste and varieties of goodness: The (Un) predictability of modern consumption. *Standards of taste and varieties of goodness* 38-60.
2. Ximena R, Garret RD, Lambin W (2017) Corporate investments in supply chain sustainability: Selecting instruments in the agri-food industry. *Journal of Cleaner Production* 142: 2489-2492.
3. Jiang R, Sharma C, Bryant R, Mohan MS, Al-Marashdeh O, et al. (2021) Animal welfare information affects consumers' hedonic and emotional responses towards milk. *Food Research International* 141.
4. Robichaud MV, Rushen J, de Passillé AM, Rushen J (2019) Associations between on-farm animal welfare indicators and productivity and profitability on Canadian dairies: I. On freestall farms. *Journal of Dairy Science* 102: 4341-4351.
5. Wezel A, Stöckli S, Tasser E, Nitsch H, Vincent A (2021) Good Pastures, Good Meadows: Mountain Farmers' Assessment, Perceptions on Ecosystem Services, and Proposals for Biodiversity Management. *Sustainability* 13: 5609.
6. Baker D, Graber-Lützhaf K (2018) Concentration in Agribusiness and Marketing: A Case Study of Arla Foods (6-1). *Case Studies in Food Policy for Developing Countries: Domestic Policies for Markets. Production and Environment* 2: 7.
7. Oliveira VHS, Anneberg I, Voss H, Sørensen JT, Thomsen PT (2018) Attitudes of Danish dairy farmers towards biosecurity. *Livestock Science* 214: 153-160.
8. Rausser GS, Swinnen J, Zusman P (2012) *Political Power and Economic Policy*. Cambridge.
9. Harvey D, Hubbard C (2013) Reconsidering the political economy of farm animal welfare: An anatomy of market failure. *Food Policy* 38: 105-114.
10. Busse M, Zoll F, Sieber R, Bartels A, Bokelmann A, et al. (2021) How farmers think about insects: Perceptions of biodiversity, biodiversity loss and attitudes towards insect-friendly farming practices. *Biodiversity and Conservation* 30: 3045-3066.
11. Bakken AK, Daugstad K, Johansen A, RoerHjelkrem AG, Fystro G, et al. (2017) Environmental impacts along intensity gradients in Norwegian dairy production as evaluated by life cycle assessments. *Agricultural Systems* 158: 50-60.
12. Islam MS, Zabin I (2013) Consumer's attitude towards purchasing green food. *Eur J Bus Manag* 5: 35-43.
13. Hasselbach JL, Roosen J (2015) Consumer Heterogeneity in the Willingness to Pay for Local and Organic Food. *Journal of Food Products Marketing* 21: 608-625.
14. Balmford A, Amano T, Bartlett H, Chadwick D, Collins A, et al. (2018) The environmental costs and benefits of high-yield farming. *Nature Sustainability* 1: 477-485.
15. Gehlhar J, Regmi A, Stefanou SE (2009) Brand leadership and product innovation as firm strategies in global food markets. *Journal of Product & Brand Management* 18: 115-126.
16. Borkfelt S, Kondrup S, Röcklinsberg H, Bjørkdahl K, Gjerris M (2015) Closer to Nature? A Critical Discussion of the Marketing of "Ethical" Animal Products. *Journal of Agricultural and Environmental Ethics* 28: 1053-1073.
17. Mutersbaugh T (2005) Fighting Standards with Standards: Harmonization, Rents, and Social Accountability in Certified Agrofood Networks. *Environment and Planning A: Economy and Space* 37: 2033-2051.

18. <https://www.euractiv.com/section/agriculture-food/news/germany-plans-transformation-for-more-animal-friendly-stables/>
19. Canavari M, Coderoni S (2019) Green marketing strategies in the dairy sector: Consumer-stated preferences for carbon footprint labels. *SC Briefing in Entrepreneurial Finance* 28: 229-314.
20. Braak A, Deleersnyder B, Geyskens I, Dekimpe MG (2013) Does private-label production by national-brand manufacturers create discounter goodwill. *International Journal of Research in Marketing* 30: 343-357.
21. [https://www.routledge.com/Bureaucracy-and-Representative Government/Niskanen/p/book/9780202309590](https://www.routledge.com/Bureaucracy-and-Representative-Government/Niskanen/p/book/9780202309590)
22. Stampa E, Schipmann-Schwarze C, Hamm U (2020) Consumer perceptions, preferences, and behavior regarding pasture-raised livestock products: A review. *Food Quality and Preference* 82: 103872.
23. Zusman P (1989) Peasant risk aversion the choice of marketing intermediaries and contract: A bargaining theory of equilibrium in marketing choice. Oxford 297-316.



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