

Investigating Features of Chain-wide Sustainability Initiatives Favouring Sustainable Development in Flemish Agriculture

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Abstract: Sustainable development in agriculture cannot be seen separated from the whole agri-food system, and therefore requires chain-wide sustainability initiatives (CSIs) committing several agri-food actors to joint sustainable development. Such CSIs are still scarce in Flanders (Belgium). To spur agency towards the development of such chain-wide sustainability initiatives, an intervention was set up aiming for inspiration of and reflection on existing CSIs by Flemish agri-food actors. In this paper we expound on the design of our intervention, aiming at understanding the key features of a SCI as conditions that stimulate agency in the development CSIs in Flanders, and trying to relate these key features to sustainable development in agriculture. We designed our intervention based on the theories of social learning, formative interventions and Vygostky's principle of double stimulation. It enabled us to list specific features (regarding the meaning of sustainability, implementation scale, participation, cooperation and communication) for CSIs that could be linked to CSI goals. The various features mentioned in the workshop show that CSIs can be consisted of very different feature constellations, and thus also have very different outcomes regarding sustainable development in agriculture. Our results can be used as a start for further investigation on the specific feature constellations of CSIs needed for sustainable development in agriculture.

Key words: Chain-wide sustainability initiatives, intervention, social learning, agency, features

Introduction

Sustainable development in agriculture cannot be seen separated from the whole agri-food system, as on-farm decisions often depend on dynamics in and demands from the wider agri-food system. Several authors recognize the need for a structural transformation of the agri-food system towards sustainability, requiring organization-exceeding, qualitative system innovations, involving a variety of participants within the system (Hubeau et al. 2017; Loorbach & Rotmans 2006). Additionally, scholars in supply chain management stress the necessity for various chain actors to collaborate to construct more efficient and responsive supply chains (Matopoulos et al. 2007, p.177). We argue that such collaboration is equally important when it comes to sustainable development of these supply chains. However, concrete chain-wide sustainability initiatives (CSI) committing several agri-food actors to joint sustainable development are still scarce in Flanders (Belgium). This also constrains sustainable development in agriculture. Commitment from several agri-food chain actors in a joint initiative implicates higher complexity, with multiple, sometimes conflicting interests and goals which might hinder joint action (Hoes et al. 2015). To deal with this complexity, Beers et al. (2016) posit that learning processes are one of the steering options towards more sustainability. More specifically, collaborative or social learning processes, in which participants share personal meanings and co-construct shared meanings, is seen as key to sustainability transitions (Beers et al. 2016). We argue that such processes between actors of the agri-food system are needed for CSIs, because they can increase the mutual knowledge

about what different actors in the agri-food system value in CSIs, thus stimulating agency in CSI development.

In Flanders, a project aiming at the transformation of the Flemish agri-food system towards more sustainability was initiated in 2013 (Hubeau et al. 2017) by actors of the agri-food system. According to the project rationale, the envisioned transformation should be driven by motivated actors of the agri-food system (regime), involving all relevant actors. Furthermore, it should start from the current agro-food system to find solutions for several societal challenges by implementing developed and applicable solutions from specialized niche markets and setting up fostering initiatives. To spur agency towards the development of such chain-wide sustainability initiatives, the initiators set up an intervention aiming for inspiration of and reflection on existing CSIs for the actors of the Flemish agri-food system. This intervention allowed to retrieve relevant information about what different actors of the agri-food system value in CSIs.

The aim of this paper is (i) to expound the design of our intervention approach, (ii) to understand the key features of a SCI as conditions that stimulate agency in the development of CSIs in Flanders, (iii) to relate these key features to sustainable development in agriculture.

Designing our Intervention

The intervention set up was based on the following theories. Primarily, we designed the intervention as a setting to stimulate social learning. Social learning is valued by several researchers to deal with complex societal problems (Beers et al. 2016; Loorbach & Rotmans 2006). It is defined as an interactive process in which ways of dealing with complex problems can be identified, by integrating knowledge of multiple perspectives from a heterogeneous set of actors, that serve as a basis for joint action (Beers et al. 2016). In this way, learning is a way to ensure that any particular elaboration of a CSI, is meaningful and practical to whom it concerns (Loeber et al. 2007). Furthermore, the developed intervention was what Midgley calls a formative intervention in the agri-food system. It is a “*purposeful action by a human agent to create change*” (Midgley, 2000, p. 113 in: *Engeström, 2011*) that is designed as a specific form of social collaboration to push development of the agri-food system further (Virkkunen & Schaupp 2011). The aim of formative interventions is the development of new practices, using a practitioner-centred approach (Ellis et al. 2015). At last, we used Vygotsky’s principle of double stimulation. Using this principle, an intervention starts with the characterization of a complex problem, also called the primary stimulus. Since solutions for this kind of complex problems cannot be identified directly by the participants, a second stimulus is needed to spur participants towards agency. This second stimulus stimulates them to reinterpret their common problem and better understand underlying causes.

Taking into account the aforementioned theories, we designed our intervention as follows. First, as a primary stimulus, we gave an introduction about the overall project on transformation of the agri-food system in Flanders, sketched the problem of limited CSIs in Flanders and explained the aim of the intervention. Second, as a secondary stimulus, representatives of four inspirational CSIs gave plenary presentations on their initiatives. The CSIs were IKM sustainability monitor (Belgium), Foundation Skylark (“Stichting Veldleeuwerik”, The Netherlands), “Zeeuwse Vlegel” (The Netherlands), Bord Bia Origin Green Charter (Ireland). Table 1 gives an overview of their main features. The representatives of these CSIs informed the audience on how the initiative started, on the activities and its tools, their strengths and weaknesses and on how they see their future developments. Third, a world café was organised allowing participants to freely ask questions to the CSIs’ representatives. Fourth, group reflection was induced on how insights from the CSIs could be transposed to the food chains in which participants are involved. Participants were subdivided in little discussion groups of their choice, if possible according to their involvement in certain

agri-food chains (e.g. pigs chain, arable chain, ...), if not in a “general” group of participants that were not involved in a specific agri-food chain. The key question addressed in these groups is “which aspects should be incorporated in a chain-wide sustainability initiative (for a specific agri-food chain)?”. The input given by the participants was clustered according to the following CSI features: goal, actors, tools, approach, boundary conditions. During the following discussion converging and conflicting elements were elucidated, and underlying conflicts and possible solutions were revealed. All interested Flemish agri-food actors were invited; e.g. farmers, farmer union representatives, buyers, supply chain partners, retail,

Table 1. Main features of the inspirational chain wide sustainability initiatives used in our intervention.

Initiative	IKM sustainability monitor	Foundation Skylark	Zeeuwse Vlegel	Bord Bia Origin Green Charter
Country	Flanders (Belgium)	The Netherlands	The Netherlands	Ireland
Goal	Securing sales market for Belgian milk and respond to societal sustainability demands.	Sustainable development of arable sector by means of knowledge exchange.	Environmental friendly production of wheat without the use of pesticides and chemical fertilizers.	Promote Irish food industry by stimulating best practices regarding sustainability in the Irish agri-food chain.
Main actors involved	Dairy sector and industry, farmers organizations.	Arable farmers, chain actors (suppliers and industry), independent farmer organizations, advisory organizations.	Farmers from Zeeland, millers, bakeries, environmental federation from Zeeland, consumer and farmer organizations.	Irish food board, government, private industry, primary producers.
Tools for sustainable development	Checklist of sustainability measures for dairy farmers, coupled to IKM quality standards.	On farm sustainability plan using 10 indicators. Farmer sustainability profile. Process is ISO accredited. Knowledge exchange workshops.	Own warranty system. Label for regional product.	On-farm sustainability audits. Origin green charter that stimulates companies to pursue concrete sustainability targets in a 5 yearly sustainability plan. Process is ISO accredited.
Approach	Deliberate participation by dairy farmers. Dairy farmers choose on the checklist which sustainability measures they want to pursue. Audit checks if measures are actualized on the farms.	Farmers yearly make a sustainability plan with farm advisor, pursuing 4 new measures. Sustainability profile is used as communications tools and offers insights evolution and measures taken by farmers. Farmers discuss sustainability plan on farms in groups of 10 farmers, facilitated by regional coordinator. Farmers participate in knowledge exchange workshops organized by chain actors.	Farmer delivers environmental friendly produced wheat and receive extra price for their product per kilo. Miller mills wheat on millstone. Bakery bakes bread provided with label.	Companies develop a sustainability plan focusing on three concrete sustainability targets from three different target areas. Bord Bia provides advisory services for farmers to improve. Bord Bia provides support and feedback on the development of the sustainability plans, e.g. during planning workshops. Verification of sustainability targets by an independent agency.
Result	Communication about sustainability efforts of dairy sector.	Continuous process of on farm sustainable development. Knowledge exchange between farmers and chain actors.	Bread is sold as “Zeeuwse Vlegel”-bread in bakeries.	75 % of the Irish companies joined the charter. Communication about progression of Irish companies as a whole and in specific.

Methods

Data were acquired during an intervention organized in Brussels on March 13th 2017, according to the format as described above. In total 41 participants attended the workshop, representing different actors and stakeholders of the agri-food system (Table 2). We categorized actors who have an active role within the agri-food system as an internal actors, e.g. farm suppliers, farmers, agricultural auction market, food industry, retail. Stakeholders who do not have an active role in the agri-food system are categorized as external actors, e.g. farm advisors, government, research, press, societal actors. Figure 1 gives an overview of the definitions we use in this manuscript. We also attributed representatives of a CSI to a separate category. Actors can be attributed to multiple categories.

Table 2. Participants of the workshop attributed to different categories.

	Actor type	Total amount of participants	Participants in polling exercise	Participants in discussion groups
Internal actors of the agri-food system	Farm suppliers	4	4	3
	Farmers/farmer representatives	7	4	4
	Intermediary actors	1	0	1
	Food industry	4	2	3
	Retail	2	2	2
External actors of the agri-food system	Research	6	0	1
	Societal actor	2	2	2
	Government	6	6	6
	Farm Advisor	4	3	3
	Press	3	3	2
	Chain-wide sustainability initiative	2	1	1
	Total	41	27	38

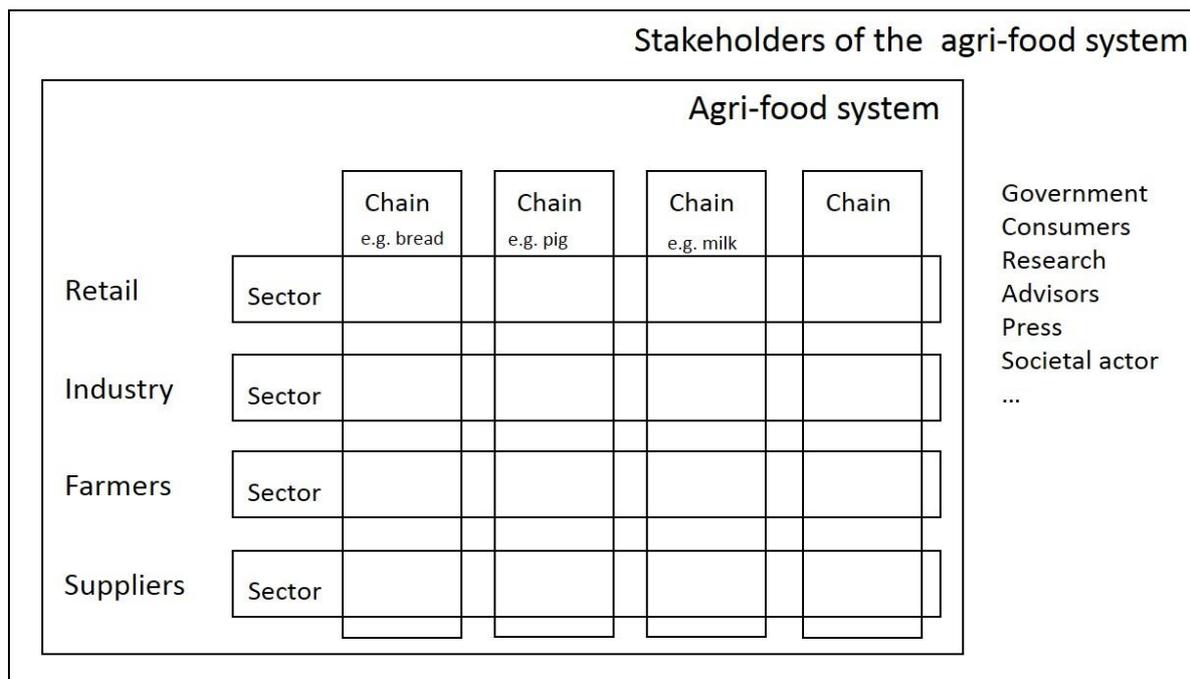


Figure 1. Overview of the definitions used in the manuscript related to the agri-food system.

At the beginning of the intervention, each participant received a form with open questions on the CSI under scrutiny. Questions involve: Which elements of this initiative do you find most relevant for chain wide sustainability initiatives and why? Which elements of this initiative would you not adopt in a chain wide sustainability initiative and why? This form could be completed during the presentations and the world café. The answers were used as input for the discussion groups. Fifteen forms were collected afterwards.

Between presentations, we organized a polling with electronic remote polling devices, asking the participants' opinion on several statements regarding CSI features just presented by the representatives of the initiatives. In total, 12 questions were asked using the remote polling devices, 3 per inspirational initiative, 27 participants voted on the questions. The questions could be answered by voting on a score on a five-point Likert scale, ranging from 'I strongly agree' to 'I strongly disagree'.

During the group discussions participants wrote down the two key features they found most important for a CSI. These were fixated on a white paper and grouped according to the features: goal, actors, tools, approach, boundary conditions. During the discussions mind maps were made on the white papers. The discussions were recorded.

The discussions and forms were transcribed and qualitatively analysed in Nvivo11. The features of CSIs mentioned in the transcripts were coded grounded (Strauss & Corbin 1998), and while coding we attributed the mentioned features to three main clusters: actors involved in CSI, approach and tools of a CSI, goals and outcomes of the CSI. While coding we also specifically focussed on what different participants in the workshop appraised.

Results

Results indicate that important features of the approach and tools used and actors involved in a CSI depend on the goal set for that specific CSI. Therefore, we first describe the CSI goals as defined by the workshop participants and then we describe the different CSI approaches and tools that, according to the workshop participants, could be used to attain these goals (Figure 2).

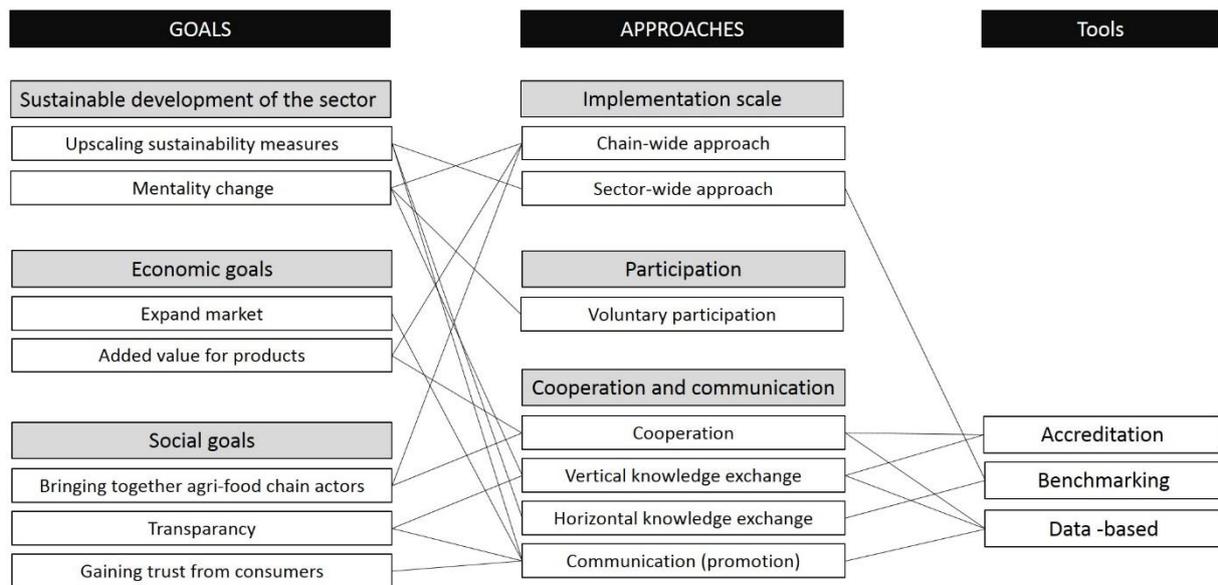


Figure 2. CSI goals, approaches and tools and their relationships discussed during the workshop.

Goals for a CSI

Although the goal of CSIs is sustainable development, some participants emphasized specific dimensions of sustainability (such as economic dimension and social dimension).

Some participants (3) state that actual holistic sustainable development should be pursued, involving all three dimensions (ecological, social and economic), including a changing mind-set of agri-food actors. They fear that otherwise the concept of CSI would be hollowed, by merely window dressing activities or economic pursuits.

Yet, other participants would like to emphasize the economic dimension in the goal of a CSI, stating that the efforts done for implementing ecological and social sustainability measures should be recovered in monetary value. Such goals might be added value for the products (claimed by 2 farmer representatives) or simply fair product prices for farmers (claimed by 2 societal partners). In the polling all participants agreed that farmers deserve an additional payment for their sustainability efforts. During the discussion groups, five participants claimed that CSIs should play upon the commercial potential of sustainability, e.g. by expanding the market for their products. The export-oriented Bord Bia Origin Green initiative served as an example on this topic. Some participants valued this initiative because it made '*sustainability*' its most important sales argument for Irish food products.

Further, participants also specifically emphasized the social dimension in the goal of a CSI. The most mentioned goal was bringing together different agri-food chain actors, from producer to consumer (4 respondents), and gaining trust from consumers (3 respondents). These goals stress the importance of consultation and cooperation and knowledge exchange respectively (see further).

Approaches and Tools

Table 2 shows if the approaches and tools administered as valuable by the workshop participants, are also features of the inspirational CSIs of the workshop.

Table 2. Valuable features as mentioned by the workshop participants and their presence in the inspirational CSIs.

	IKM sustainability monitor	Foundation Skylark	Zeeuwse Vlegel	Bord Bia Origin Green Charter
Meaning of sustainability				
Sustainability as a concept of continuous development		x		x
Implementation scale				
Chain-wide approach	x	x	x	x
Sector wide approach	x			x
National, multi-sector approach				x
Bottom-up approach		x	x	
Gradual growth of the CSI		x		
Participation				
Voluntary participation	x	x	x	x
Binding commitment	?	x	x	x
No one-fits all approach	x	x		x
Support for participating companies		x		x
Cooperation and communication				
Vertical knowledge exchange		x		
Horizontal knowledge exchange		x		
Benchmarking				x
Monitoring	x	x	?	x
Use existing monitored data				x
Accreditation	?	x	x	x
System certification	?	x		x
Product label			x	x
Ambassadors to spread the word		x		x

Meaning of Sustainability

The abovementioned goals and emphasis on specific sustainability dimensions, resulted in different suggested approaches to give meaning to and ‘measure’ sustainable development in CSIs. Some participants clearly valued a holistic view on sustainability (social, ecological and economic dimension), others merely valued one specific aspect of sustainability, like carbon footprints, pesticide use, local products and raw materials, product quality and corporate social responsibility. Further, 7 (47%) respondents of the templates stressed the importance to focus on sustainability as a concept of continuous development, as practiced in Bord Bia Origin Green Charter and Foundation Skylark (Table 2). This can be put in contrast to the value some participants in the discussion groups attributed to the use of standards, having a static character. A respondent experienced with this dichotomy therefore stated that standards could be used as a minimum target for CSI participants, while during participation they can be encouraged to continuously make further efforts.

This myriad of interpretations on how to ‘measure’ sustainable development, stresses the importance of three other processes in CSI development. First, the implementation scale, encompasses the actors who should be involved in the development and implementation of an initiative (thus co-deciding on the interpretation of sustainable development in the CSI) and the actors who should actually participate in taking sustainability measures. Second, participation, focusses on the procedures in a CSI that support participants in the sustainable development of their company. Third, cooperation and communication in CSIs, involves the needed interactive processes for setting up and implementing an initiative with multiple agri-food actors, such as interactions, monitoring, knowledge exchange, one –way communication.

Implementation Scale of a CSI.

The implementation scale is a crucial feature, as it defines who should be involved in the development and implementation of a CSI. It concerns both the horizontal extent (representation of the agri-food system by each chain actor, e.g. farmers, processing industry, ...) and the vertical extent (representation of the whole agri- food chain from farmer suppliers to retail). 96 % (27) of the polling participants agree with the statement that a CSI should engage all vertical chain actors for sustainable development. Data retrieved from the discussion groups and templates show that the respondent group can be subdivided in two groups: a group merely advocating the involvement of all chain actors as stakeholders in an initiative and a group favouring active participation of all chain actors in taking sustainability measures in the CSI. This latter group seemed specifically concerned with the farmers, as product buyers and food industry often claim sustainability by imposing standards and regulations on farmer products, without actively performing sustainability measures themselves.

Regarding the horizontal extent of a CSI, a lot of participants favour an initiative involving the whole sector, e.g. involving all dairy farmers and the whole milk industry, instead of merely a niche (e.g. IKM sustainability monitor). According to the participants, a sector-wide approach is needed for sustainable development within the whole sector, because it inhibits rivalry between peers, enables upscaling of sustainability measures throughout the whole sector, thus changing mind sets. However, some participants (mainly farmer representatives in the milk and meat group discussions) argue that such a sector wide approach provides little market potential, preventing chain actors to gain commercial profit from participating in a CSI. For example, it is difficult to obtain a better price for sustainably produced bulk products like milk that serve the world market. Additionally, critics fear that a generic approach would become a licence-to-produce, thus losing its voluntary character for participation (see further), specifically for farmers. Others claim that a CSI would benefit from being a licence to produce, but that in this case farmers should receive a fair price for their products (4 participants). This threat of inflicting a licence-to-produce stresses the importance of a bottom-up approach and /or consultation with farmers for sector approaches. In this light, 68 % (19) of which all farm advisors, farmer representatives, industry and societal actors of the polling participants agreed with the statement that a bottom –up approach, involves farmers from the very start of the initiative, as practiced in the initiative Foundation Skylark, is important.

Some of the participants also indicated that a sector-wide approach could be difficult to achieve. Specifically the meat discussion group addressed the problem of a scattered sector for implementing a generic, sector wide approach. The Flemish meat sector is constituted of multiple little companies, thus lacking a big organisation that could initiate such a CSI. Yet, the initiative Foundation Skylark argued that they did start with only one industrial company and 10 farmers, and only during time they grew to their current size. Some workshop participants seem to support this gradual approach.

The national, multi-sector approach of the initiative Bord Bia Origin Green charter, clearly inspired workshop participants because of the transparency towards consumers and customers and the country branding focussed on the export market. One workshop participant from retail, mentioned this as one of the most important features of a CSI. Because of the transparency for the consumer, also other participants promoted the expansion of already existing initiatives, to prevent the upcoming of new labels or systems which could further complicate the current myriad of sustainability labels and systems for products.

Participation in CSIs.

67% (19) of the polling participants agree that participation should be voluntary. Such a voluntary approach above all focusses on stimulating companies, appealing for their intrinsic motivation, rather than obliging them to participate. But a voluntary approach does not mean that participation is free of commitment or engagement, as stressed by some workshop participants. Commitment can be attained, for example, by making use of sustainability targets, set by the participants themselves, standards or the CSI.

Further, the workshop participants argue that a CSI should not be a one-fits-all approach, but should include sufficient degrees of freedom for participating companies. They reason that different chain actors need different approaches for sustainable development. For example, Bord Bia Origin Green Charter provides distinct approaches for stimulating sustainable development with farmers and companies of the food industry. But also different companies within one actor group (e.g. farmers) need a tailored sustainable development plan (e.g. regarding the implementation of sustainability measures). For example, 56 % (15) of the polling participants agree that companies should be able to choose which sustainability measures they want to pursue, as is the case in the initiatives Foundation Skylark, IKM Sustainability Monitor and Bord Bia Origin Green Charter. Some participants, inspired by the initiative Zeeuwse Vlegel, state that too ambitious sustainability measures exclude or deter companies to join a CSI.

To assist participants in the development and implementation of their sustainability plans, 86 % (24) of the polling participants agree that CSIs should provide support for participating companies. In the initiative Bord Bia Origin Green Charter, support is provided adjusted to the type of chain actors: e.g. farms are evaluated on sustainability measures and subsequently advised by farm advisors; companies of the food industry are supported to develop a sustainability plan with specific actions. According to the workshop participants (discussed in the general discussion group), farm advice on sustainable development could be facilitated by Flanders' agricultural knowledge centres or by government supported farm advisors.

Cooperation and Communication in CSIs.

Since most of the participants promote chain-wide or even sector-wide initiatives for sustainable development, cooperation, interaction and communication are of major importance both while developing and implementing a CSI. Cooperation of internal and external agri-food actors is mentioned as an important social process in CSIs (and was even attributed as a goal, see earlier). Key features of cooperation are mutual interaction (two way process) and communication (one way process) between all relevant actors.

Mutual interaction is needed to secure that a CSI is supported both by internal agri-food actors and external stakeholders (e.g. environmental, consumer and societal organisations). This is a time-consuming and thus costly activity. As a specific form of interaction, 79% (22) of the polling participants and 33% (11) of the discussion group participants claimed that knowledge exchange was of major importance in a CSI. According to the participants, knowledge needs to be exchanged both vertically (between different types of chain actors, e.g. between farmer and industry), horizontally (between peers in the same sector, e.g. farmers

mutually) and externally (with stakeholders of the agri-food system, e.g. researchers, advisors, consumers, ngo's). Vertical knowledge exchange can involve information about (i) production processes, to create a better understanding about each other's processes and to tune and optimize these processes, and about (ii) sustainability measures, to enable transparency and trust between chain actors. Horizontal knowledge exchange is a means to encourage sustainable development. By exchanging experiences and knowledge between peers, sustainability measures can be scaled up throughout the sector, e.g. a widespread implementation of solar panels amongst farmers. Knowledge exchange in general is stated to be a costly activity, and in the workshop discussion groups there was no clear solution about how and by whom this should be organized. Some suggested government or sector organisations could facilitate both processes. Specifically, for knowledge exchange between farmers existing discussion groups of farmer organisations could address sustainability measures.

One-way communication involves the communication from a specific agri-food actor towards (i) peer companies, (ii) fellow chain actors and (iii) consumers and external stakeholders. To favour trust, transparency, and encouragement of actors, one-way communication should be supported by activities, such as monitoring, accreditation and labelling or certification.

First, a data-based approach, facilitated by *monitoring*, is according to the templates valued by 5 workshop participants (33%). This means that sustainability measures incorporated in the CSI should be measurable, monitored and communicated towards both internal and external actors. However, as the facilitation of knowledge exchange, monitoring is a costly activity and the question remains who will pay for this. To lower costs and administrative burdens for the CSI participants, the workshop participants suggested to integrate existing data-systems (e.g. monitoring for existing standards) in a CSI monitoring system, as Bord Bia Green Deal Charter does. 57 % (16) of the polling participants agreed on this matter. Communication of monitored data between participating companies creates transparency and trust, which according to the participants is needed to foster good relationships between CSI actors and to promote the CSI towards the market (consumers). The workshop participants indicated transparency as a delicate matter for competing companies. Still 78 % (22) of the polling participants agree that key statistics of a CSI should be communicated to external stakeholders. Data- acquisition through monitoring and communication can also be used as a tool to inform companies about the progression of their peers through *benchmarking*. Benchmarking might encourage companies that perform less on sustainability measures to make extra efforts, thus aiding the upscaling of the implementation of sustainability measures.

Second, *accreditation* is a way to assure trust towards both consumers and fellow internal CSI actors. Accreditation involves that companies are able to prove that they actually make progress regarding sustainable development. 64 % (18) of the polling participants agree that an accreditation system developed by the CSI is an important feature (all industry actors (5) disagreed on this matter). Several participants stressed the importance of audits performed by an independent organisation. About whether the system or the product should be certified, 57% (16) of the polling participants agreed that a system certification is needed. In the templates, specifically researchers mentioned this as positive feature.

Third, labelling and certification are put forward as examples of one-way communication both towards chain actors and consumers. Seven participants stressed the importance of communication towards consumers. Specifically, in the meat sector, that is rather negatively perceived in Flanders regarding sustainability. 50 % (13) of the polling participants, of which all retail actors, agreed that a product label should be provided (29 % (8) disagreed). However, when the biggest part of the companies in a sector are involved in a CSI, consumer

trust can be gained by merely spreading the story (e.g. by using ambassadors as Bord Bia Green Deal Charter does).

Discussion

Knowledge Exchange in a CSI as an added Value to Sustainable Development in Agriculture

Knowledge exchange in a CSI was stressed as an important feature by the majority of the workshop participants. Its multiple dimensions, vertical (cross chain-actors), horizontal (between peers) and external (with external stakeholders of the agri- food system), can also have an added value specifically for sustainable development in agriculture. Horizontal and external knowledge exchange are especially useful for farmers to gain insights in effective measures for tackling sustainability problems and deepening the understanding of the underlying processes of these problems. Vertical knowledge exchange is needed in both the development and the implementation of CSIs, specifically since the workshop participants demand a chain-wide involvement and engagement (actively performing sustainability measures) of all chain partners. Knowledge exchange between farmers and other chain actors enables to gain ownership for sector related sustainability problems and solutions, creates trust amongst participants and guarantees transparency on the pursued sustainability measures and their results (Luederitz et al. 2016). Specifically, it might empower farmers in the agri-food system, for example by preventing other chain actors to merely impose standards on them without their consent, or it allows negotiation about fair division of costs and additional market value attributed to the SCIs amongst participating chain actors.

While studying the design and organization of experiments aiming to create the social learning situations needed for sustainability transformations, Bos et al. (2013) also found that initiatives should allow for formal and informal interactions both horizontally and vertically. This stresses the issue of facilitation of knowledge exchange, which according to the workshop participants is very costly. In the discussion groups several options for the facilitation of knowledge exchange in Flanders were suggested. Vertical knowledge exchange should be facilitated by a neutral actor, and some workshop participants asserted that Flemish government should play a far more active role in this. A marketing institution promoting Flemish food (FLANDERS FOOD), that is widely supported by agri-food system actors, could be an interesting facilitator. For horizontal knowledge exchange, the sector organisations (e.g. farmer organisations) were specified. In Flanders there already exists official sector consultation. For external knowledge exchange, workshop participants designated an important role to the agricultural research and test centres, that are widely present in Flanders. Further, European and regional programs were mentioned as a way to financially support the initiation of CSIs, although they often ask for long term engagement of its actors to guarantee successful continuation after the program has ended.

Evaluation of the Workshop

Our workshop aimed at advancing the knowledge on key features of a CSI that is supported by all relevant agri-food actors, thereby furthering the insights of agri-food actors and stimulating agency. The workshop stimulated participants to analyse and reflect on existing CSIs and to take steps towards specific CSI design. The workshop participants valued the diversity in inspirational CSIs used in the workshop, while frequently referring to them to make their point in the discussion groups. Using such inspirational sources is then a valuable tool. We chose inspirational CSIs with different types of initiators (farmers, food industry, milk sector), which proved doubting agri-food actors that it is possible for every actor type to initiate and contribute to CSIs. Further, the inspirational CSIs enable agri-food actors to learn how to deal with seemingly counteracting context factors (e.g. the scattered meat sector).

Furthermore, the use of multiple inspirational initiatives enables comparison of positive and negative outcomes accompanied with particular approaches and tools used in these CSIs.

Due to limited time and a restricted amount of internal actors from specific agri-food chains (e.g. beef, beer, bread, ...) (less than 50% of the participants), thoroughly elaborated designs of CSIs did not emerge. Iteration of a similar workshop with more participants from specific agri-food chains can complement and deepen our results.

Further, we could only limitedly attribute specific valued features to specific types of actors, for example like the two actors representing retail, who highly valued the transparent communication towards consumers by using a product label. This requires more participants and more thorough discussions. The limited time available during the workshop, did not allow us to find out the degree to which participants concurred with all mentioned CSI features. However, we experienced little insurmountable disagreements regarding CSI features during the polling or the discussion groups. For example, the opponents of a sector-wide approach, were rather motivated by the fear of farmers being obliged to perform sustainability measures without enjoying the additional market value that would be obtained for these efforts by other chain actors (e.g. retail and industry). So when a fair division of added value created by a measures taken is equally divided amongst all chain actors in the CSI, this discussion seems to be closed.

During the discussion groups we felt some resignation with the participants about how to deal with the results of the workshop, except for the initiators of IKM sustainability monitor, since they were clearly inspired to include the currently lacking knowledge exchange in their initiative. Barriers for agri-food actors to take the lead in CSIs might be lacking interest in a chain-wide approach (which is also reflected in the number of participants at our workshop despite our efforts to invite them), because of the time consuming and costly activities of facilitating interactions between actors, knowledge exchange and monitoring progressions.

The shortcomings accompanied with our workshop, show future interventions to foster agency in the Flemish agri-food system are needed.

Conclusions

Our workshop was a first attempt at listing important features of a CSI, also highlighting some opportunities and barriers for developing CSIs in Flanders. Our results show that CSIs can have very different constellations regarding the definition of sustainability, the actors involved, their implementation scale, the engagement of agri-food actors We posit that different constellations imply diverse needs (e.g. for sector-wide initiatives versus initiatives focussed on one specific end product) for their development. Our results can be used as a first attempt at identifying such needs, but the enrolment of actual support for actors to develop, CSIs requires further investigation on the needs related to different types of CSI constellations. Furthermore, the outcomes also will differ according to the CSI constellation, e.g. not all CSI constellations will probably have the same influence on sustainable development in agriculture. So, additional research is needed to identify the specific features needed for agricultural sustainable development within the context of CSIs.

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