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The influence of different framing strategies in the social construction of a niche

Ambidexterity in developing a bio resource market

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Abstract

Which framing strategy helps developing a regional bio resource market? Building on literature interested in the social construction of niches in the renewable energy technology, we examine how the enactment of different framing strategies (diagnostic, prognostic, and motivational) influence how a niche is shielded against competing bio-resource niches, how mobilization and learning unfolds, and pre-determine the strategies underlying the empowerment of a niche. In a comparative study, we evaluate two regional bio-resource projects aimed to develop a sustainable bio resource market for small scale combustion in the Netherlands in the period 2009 until 2014. In analyzing the first project, we found that a diagnostic framing strategy that emphasizes the sustainable character of a project is important for shielding a bio-resource project as well as developing exposure and legitimacy. However, it constrains mobilization and learning processes and requires a radical transformation of existing logics and practices. In the second project, we found that prognostic and motivational framing strategies are useful to spur nurturing in terms of mobilization and learning because such strategies provide a rational for action especially when such strategies account for the individual economic and image benefits of participating parties. Overall, our study suggest that a diagnostic frame is important to justify a bio-resource project but should not overshadow the processes that support the nurturing and empowerment of a bio resource niche. This papers aims to contribute to scholarship interested in the social construction of renewable energy niches by showing how framing strategies influence the development of niches. Furthermore, we offer interested renewable energy practitioners a taxonomy of framing strategies that can be used for shielding, nurturing, and empowering their ideas.

Key words: bio-resource, social-construction of niches, framing strategies.

Introduction

In the Netherlands there is a growing need for the adoption of renewable energy technologies like wind power and bio-resources to deal with the urgent problem of climate change. Despite this need, various scholars have argued that renewable energy transitions require long periods of time and involve structural change (Geels & Raven, 2006; Jacobsson & Bergek, 2004; Verbong & Geels, 2007). Energy transitions implicate a sensitivity to existing practices and frequent adjustment of goals to overcome the conflict between long-term ambition and short-term outcomes (Kemp, Rotmans, & Loorbach, 2007). One important challenge that that actors with a novel idea need to deal with the barriers of oftentimes 'taken-

for-granted' socio-cognitive frames related to traditional use of energy (Sengers, Raven, & Van Venrooij, 2010; Unruh, 2000). To overcome these barriers, scholars have pointed to the importance of protected niches in the development of renewable energy technologies (Kemp et al., 1998 and Kemp et al., 2001; Raven, 2005). Niches can be protected by public funds or from actors who are willing to invest in the development of new technologies (Kemp, Rip, & Schot, 2001). Shielded from existing regimes and practices, niches can nurture the technology by learning and the mobilizing social networks, collect and manage expectations of users, stakeholders, and policy makers, and further collectively empower the new technology by transforming existing practices if considered competitive enough (Smith & Raven, 2012).

The use of bio based resources (organic material) in the Netherlands in comparison to other EU countries is low. Some bio based technologies are pyrolysis, digestion, or combustion that require specific bio-resource materials. Despite the interest for technology development, especially smaller scale 'bottom–up" projects have difficulties to overcome the critical mass needed for market acceptance of the renewable technology. For instance, in a study of the emergence of bio-resource gasification projects, Negro, Hekkert, and Smits (2007), concluded that there are intensive periods of entrepreneurial activities performed by enthusiastic pioneers but it remains difficult to mobilize a persistent group of actors to push forward the technology. Others have argued that a deep engagement of local policy actors in the context of biofuel projects may help to support the emergence of local entrepreneurial processes (Van der Laak, Raven, & Verbong, 2007). Given such challenges, there is a need for developing insights in to the strategies used by enthusiastic pioneers to mobilize communities, local political actors as well as third parties in the development of bio-resource niches.

The aim of this paper is to understand how bio-resource niches develop through the enactment of different framing strategies by bio-resource technology pioneers. By framing

strategies is implied the enactment of deliberately created interpretative schemes (Benford & Snow, 2000) that bio-resource technology pioneers enforce to convince and mobilize communities, political actors, and third parties in a bio-resource project. Different framing strategies can be linked to the various key processes of niche development in a way that they contribute to shielding, nurturing and empowering of a niche (Smith & Raven, 2012). In other words, the use of different framing strategies can produce different outcomes in the way a bio resource niche is shielded from competing niches or regimes, the expectations of mobilized actors and how they undergo learning process during nurturing, and also inform the way the niche requires a 'stretch and transform' or a 'fit and conform' for further empowering.

Empirically, we focus on two related projects which are set up by enthusiastic pioneers who were engaged in the development of a small regional bio-resource market in the eastern part of the Netherlands, the Achterhoek. The core idea is to produce and exploit regional and sustainable harvested bio resource material as certified wood chips for the use of small scale direct combustion purposes. The first project, SoS (Stoken op Streekhout) started in 2009 and ended in 2012. This project was a part of a cross-border project with a few German "Kreises" and was substantially funded by EUREGIO. The second project, SSoS (Samen Stoken op Streekhout) is a successor of the earlier SoS. This project started in 2012 and is still ongoing. Unlike the SoS project, the SoS project is not subsidized and is based on a cooperation in which various actors participate on a voluntarily basis.

The research question that we pursue to answer is: how do different framing strategies shape bio-resource niche development in terms of shielding, nurturing, and empowering?

This paper is structured as follows: In the coming section, we discus literature on framing strategies and mobilization processes which so far has been particularly the domain of social movement scholarship. After that, we integrate the literature on framing strategies in niche development literature from a socio-constructionist perspective. Next, we introduce methods

and provide the background of each project, followed by a cross-case comparison and analysis. In the final section, we discuss implications, contributions, and limitations of the study and conclude the paper.

Framing strategies

Especially social movement literature points to the importance of framing as a key activity of social movements (mostly activist) to induce and legitimate collective action (Benford & Snow, 2000; King & Pearce, 2010). Frames denote *"schemata for interpretation"* (Goffman, 1974:21) that enables people to experience the world differently. Framing processes contribute to the development of a shared understanding of emotions related to a problem and the discursive practices needed to make new solution more relevant, as opposed to alternatives (Rao, 2009; Snow, Rochford Jr, Worden, & Benford, 1986). This happens oftentimes by naming, shaming, and praising (King & Pearce, 2010). There are three interrleated core framing tasks diagnostic, prognostic, and motivational framing (Snow & Benford, 1988). Diagnostic framing refers to problem identification and assignment of blame. Prognostic, framing refers to the offering of solutions, strategies, and tactics to solve a problem. Motivational framing helps providing a rational for action. Hence, rather than offering shame and blame criticue to incubment actors and existing practices, some studies showed how social movements can also enable the right conditions and rational for action for incumbent actors to set up new practices in sustainable markets. Therefore, social movements can be engaged actively in the de-institutionalization processes of existing practices. Lounsbury, Ventresca, and Hirsch (2003) for instance showed how social movements make space for sustainable non-profit organizations in the recycling industry. In a similar vein, Weber, Heinze, and DeSoucey (2008), showed how social movements created space for

sustainable meat and dairy products by using semiotic cultural codes of authenticity, sustainability, and naturalness which served the motivational, diagnostic, and prognostic functions of framing (Benford & Snow, 2000). In the wind power industry, Sine and Lee (2009) showed how movements use transformative framing practices and encourage entrepreneurial activity by altering the taken-for-granted understandings about the material-resource environment, that is, altering the meanings of objects of attention and their relationship to actors. These studies show that social movements can influence entrepreneurial activity by moderating the effect of supply and demand sides and shape the material-resource environment (Scott, Ruef, Mendel, & Caronna, 2000). In so doing, social movements frame and thereby shape which opportunities are salient to entrepreneurs and as such are able to mobilize beliefs, identities, and values (Armstrong & Bernstein, 2008).

Rather than crediting sustainable mobilization and change only to social movements, Ritvala and Salmi (2010) and Ritvala & Salmi (2011) direct attention to the notion of issue-nets. Issues nets are a set of independent firms mobilized by modern environmental workers who then jointly work on the development of sustainable solutions to existing environmental problems. In their studies, it is demonstrated that collective action implied the enactment of multiple frames one that highlights te need of having shared values, attitudes, and beliefs about the problem but also frames that support the need for individual business benefits like image, political, and economic interest of participating actors (Ritvala & Salmi, 2011).

In sum, framing strategies are important for actors who pursue to induce collective action. Framing strategies are useful to attract attention to a problem and provide schemata for interpretation, but also help providing strategies and tactics to solutions including a rational for action. This happens through diagnostic, prognostic, and motivational framing strategies. While framing strategies are usually associated with social movements and their representatives like activist, framing strategies can also be employed by incumbent actors who

mobilize themselves in so called issues nets. However, the way framing strategies are aligned is essential since network mobilization and change requires the emphasis on the collectively shared problem that need to be solved as well as the openness to the individual economic, political, and image benefits of participating actors.

Framing strategies and the social construction of niches

This paper studies how different framing strategies contribute niche development. Niches are identified as an important source of path-breaking innovations (Kemp et al., 2001; Kemp, Schot, & Hoogma, 1998; Smith & Raven, 2012). Smith and Raven (2012) point to the importance of three interrelated, yet analytically distinct properties of niche construction: shielding, nurturing, and empowerment. Niches provide so called protective spaces to nurture a new technology by shielding it from existing regimes (Geels & Raven, 2006; Rip & Kemp, 1998). There are passive niche spaces were selection pressures are less felt. For instance some rural areas in Germany that are located outside the scope of actors in the natural gas regime provide actors to experiment with renewable technologies. Niches can also be deliberately created through classic supply and demand side measures (subsidies, campaigns) on the basis of national policy regulations (Smith & Raven, 2012). Other measures are those induced by non-policy actors for instance resourceful entrepreneurs or so called business angels (Aernoudt, 1999), who temporarily protect actors with a novel idea from regime pressures. According to Schot and Geels (2008), the key processes underlying nurturing within protective spaces are experimentation, management of expectations, networking, and learning. These processes should contribute to resource commitments of business and political actors, collecting facts, and socio-technical implications, but should also include second-order learning (Schot & Geels, 2008). In so doing, actors can experiment with the new technology,

learn, and manage the expectations regarding the use of the technology from the perspective of different actors (Kemp et al., 1998; Schot & Geels, 2008). Protective spaces are important for an innovation to nurture but at some point the innovation must become competitive enough to fit and conform in existing practices or able to stretch and transform established practices (Smith & Raven, 2012). 'Fit and conform' empowerment refers to making the innovation competitive with mainstream socio-technical practices. An example of fit and conform is when biogas is distributed through the existing natural gas infrastructure (i.e. Cogas and Twence project). This in contrast to a 'stretch and transform' strategy which undermines regimes and requires the influence of ongoing change processes towards more sustainable forms and broader trends in society (Smith & Raven, 2012). Stretch and transform requires substantially more resource mobilization and political commitments (Kemp et al., 2007) and might indeed by supported by social movements (activist) to create an opening for sustainable entrepreneurial action (Sine & Lee, 2009; Weber et al., 2008).

According to Smith and Raven (2012) shielding, nurturing, and empowerment are distinctive processes, yet can occur simultaneously. Logically however, actors must first perform specific actions to shield the innovation from regime pressures, followed by the activities necessary to develop the innovation in that way that it can be implemented when considered competitive enough.

We identify framing strategies as an important activity in the construction of niches. We suggest that framing strategies are important in niche construction because they influence how niches are shielded from existing regimes but also from competing niches, how learning processes proceed, are shaped and expectations developed throughout nurturing processes. By framing strategies is understood the diagnostic, prognostic, and motivational framing efforts of actors. The framing strategies used to shielding a niche as those that shape their nurturing are also contingent upon the type of empowerment of a niche. For instance, a reliance on a

diagnostic frame might promote a stretch and transform strategy at the outset of a bio resource project whereas a motivational frame endorse fit and conform to match with existing practices.

Methods

For us, it is an empirical question to understand how different framing strategies are enacted by actors and how this contributes to shielding, nurturing, and the empowerment of a sustainable bio-resource market. Our research is based on a longitudinal qualitative research and can be characterized as a participant observation study (Czarniawska, 2004). The empirical data is based on two successive bio-resource projects that took place in the eastern part of the Netherlands in a region called "the Achterhoek". The first project called 'Stoken op Streekhout' (SoS) started in 2009 and ended in 2012. The second one, called 'Samen Stoken op Streekhout' (SSoS) started in 2012 and is still ongoing. We studied these projects from their inception in August 2009 until March 2014.

To assure a thorough understanding of how framing strategies are used in each project and contributes to the construction of a niche, we used three main data sources: interviews, documents, and observations. In the SoS project, we interviewed the key actors on a regularly basis. We interviewed spokespersons of the three participating agricultural associations, the CEO of their umbrella organization, local policy makers, and the two project leaders during the course of our research. Some of these interviews were structured and others took place in a more informal way. Structured interviews were audiotaped and transcribed. We also studied documents like minutes of the meetings, activity overviews, and brochures. We also observed the key actors during project group meetings in which project activities and results were discussed and new actions planned. Furthermore, we took field notes of responses of members

and policy makers during two, so called, road shows to promote the project in the region. In addition, we participated in the project in an advice-giving role. On this basis, we were frequently asked to share and discuss our vision on the progress of the project.

In SSoS, we primarily draw on observations during project group meetings as well as in depth and informal interviews with key actors. The formal interviews were audiotaped and transcribed. We also studied documents like early drafts of the project position papers, minutes of the meeting, and agenda setting for the following meeting. In addition, we attended several visits with the entire project group to user locations outside the region were we could observe how the technology works and benefited from collecting first hand user experiences about the technology and related issues like quality, service, and logistics. We sustained our advice-giving role in the SSoS project by becoming a member of the project advisory board, the so called 'Adhesiegroep'. Table 1 provides a summary of the data collection techniques used in each project.

	SoS	**SSoS**
Research period	3 years	1,5 year and ongoing
Interviews	60 hours in total with key members (3) and experts in the field	20 hours in total with key members (7), including project coordinator.
Observations	90 hours total (during meetings and road-shows)	30 hours total during project group meetings, advisory board meetings and site visits
Documents	Minutes of the meetings, agenda, activity overviews, brochures.	Minutes of the meetings, agenda, position papers (drafts).
Others	Secondary data sources	

Table 1: summary of data collection techniques in each project.

Given the complex research setting (multiple actors, multiple sites) our data analysis consisted of a number of iterative steps. Based on a careful reading of the documentation, interview material, and field notes taken from the observations in each project, we wrote narratives of the initiatives and constructed a chronology of the framing strategies that actors deployed to

sustain shielding, nurturing, and empowering'. Below we present a table (Table 2) with project characteristics and framing strategies used. After that, we discuss both case narratives

	SoS	**SSOS**
Duration	2009-2012	2012- to date
Project targets	1. Increase the economic value of hedgerows: if owners get a better price for their pruning's, they will invest more in landscaping and encourage the investment in new landscape elements. 2. So the ecological value of landscape elements and also the biodiversity in the region increases. 3. Setting up a management system to conduct landscape work more efficiently. 4. Creating a local outlet for wood-chips by encouraging collaboration between landowners and land managers for marketing of wood-chips 5. Providing information to local businesses and individuals on effective and cost-effective wood-fired heating systems.	1. Maximum regional utilization of the economic value of wood-chips to finance the maintenance of the regional forest, hedgerows, etc. of all the members involved (see key actors) 2. Maximum utilization of the energetic value of wood- chips from "the Achterhoek" for regional use of heat. 3. The development of a professional and efficient system to unburden customers (users of wood-chips)
Funding	100% by Euregio (INTERREG), Dutch municipalities, and German Kreisen	Members, volunteers, small subsidy application for pilot plant
Key actors	Consultants (Environmentalist), Agricultural associations, NPO (Natuurlijk Platteland Oost)	Joint agricultural associations (VALA), Ver. Natuurmonumenten, St. Landschapsbeheer Gelderland, Geldersch Landschap,Waterschap Rijn en IJssel, 10 regional municipalities,
Framing practices and values emphasized to provide *"schemata for interpretation"*	Pre dominantly diagnostic. Core values: sustainability, cultural value, and self-supporting region	Pre dominantly prognostic and motivational Core values: power, market interfaces, participation benefits, and sustainability

Table 2, project characteristics: project targets, actors and framing practices

The SoS (Stoken op Streekhout) project is substantially subsidized by the EUREGIO agency (approx. 800.000 euro). SoS is a counterpart of a similar project performed in Germany (Münsterland). One of the central aims of the joint project was to establish a joint landscape management system in both regions and to commercialize the residuals of landscape work as bio resource (wood-chips) in the region for small scale direct combustion use (max 1000 kw). In Germany, the use of bio-resource for small scale heating purposes is already an accepted technology and pose regime characteristics. In Germany, there is a well-established market for certified wood-chips that can be purchased throughout the country by

traders against market prices. Many farmers, larger households and also smaller firms rely on this technology. Consequently, the challenge of the German project members was to compete with market parties and prevent the out and inflow of wood-chips in the region. For the Germans, this could only be achieved by developing a more efficient landscape management system that connects a plurality of smaller privately owned landscape elements.

This was a lot easier for the members of the SoS project since 30% of the maintenance of the regional landscape elements in the Acherhoek is performed by three so called agricultural non-profit associations. These associations are usually funded by national and European subsidies that is especially reserved for landscape work and maintenance of the cultural value of landscapes. As non-profits, these associations could benefit from their participation in the SoS project because of an enhanced exposure in the region and the immediate financial compensation they receive for their involvement in the SoS project. Furthermore, embarking on a regional project could help them to explore the opportunities for exploiting bio-resource material and thereby reduce their dependence on governmental subsidies in the future (i.e. GLB regulations). Together with two environmentalist/consultants with a 'green' background, these associations formed the core project team.

In the Netherlands, the use of natural gas as energy source for heating purpose is the dominant practice. So, in contrast to the German counterpart, the SoS project team faced a substantial challenge in establishing a collective awareness amongst policy makers and communities to develop a sustainable regional bio-resource market. So far, small scale use of bio-resources, like wood-chips particularly for combustion purposes, was uncommon in the region. Moreover, bio-resource material in general was largely considered and treated as waste, rather than identified as a potential valuable energy source. There are only a few farmers in the Achterhoek using wood-chips for direct combustion. These farmers had so far reaped the benefits of relatively low prices. Nevertheless, there is a growing interest amongst policy

makers and municipalities in the Achterhoek to develop a sustainable region and lower their dependence on natural gas. There are various ‘green-platforms’ active in the region to promote and stimulate all kind of ongoing sustainable energy initiatives. At the background of the supremacy of natural gas practices and competing niches that the project team members of the SoS had to position their project

In the early beginning of the project, the members mainly draw on diagnostic framing strategies. In the campaigns towards the regional communities and policy makers, the members emphasized how the SoS project can contribute to a sustainable growth of the region by using regional produced wood-chips in a climate neutral way and thereby reduce further decline of ecological and the cultural value of the regional landscape. A good problem formulation was considered as important to attract the support from local policy makers who could help influence communities and local entrepreneurs interested to further exploit the idea. First of all, gaining sufficient legitimacy for the project was considered necessary to establish awareness and this is achieved by using diagnostic strategies. This strategy was also important to distinguish their project from competing sustainable projects in the region like pellet production and large scale pre-heating supply of bio-resource material at power plants, and of course the use of natural gas. In addition, the EUREGIO subsidy helped to create a longer term protective space in which members had room to experiment with their idea and develop it further. .A diagnostic framing strategy remained important throughout the course of the project. However, at some point, the members had to find a way to align the chosen diagnostic framing strategy with the solution offered and the rational for action for others to participate in the project. In nurturing the idea, one research institute (university of Wageningen) was temporarily attached to the project and appointed to conduct a field research on the maximum amount of wood-chips material that can be harvested in a sustainable way in the region. Another research institution (university of Twente) was

appointed to conduct a market research on customer preferences and willingness to adopt the bio-resource technology and use wood-chips from the region. The attachment of both research institutes was considered important for enhancing the legitimacy of the project, rather than collecting concrete knowledge only. Furthermore, road shows were used to collect experience and feedback from policy makers and potentially interested customers regarding the project. Although the key members were highly applauded for their sustainable initiative, there were still many concerns like pricing, the feasibility of the project in general, logistics like storage and drying capacity, reliability of the technology, quality issues, regulations and permissions, and ongoing competition of bio-resource collectors who were already active in the region.

What the SoS members had achieved throughout the three years is that they attracted an increased legitimacy in the region by raising the agenda for the development of a sustainable market for regionally harvested bio-resource material. The diagnostic framing strategy used was contributive to transform the meaning of biomass from 'waste' to a valuable sustainable bio-resource. Furthermore, the key members as well as the policy makers involved in the project learned a lot on the complexities involved in developing a regional wide sustainable bio-resource market. They concluded that its development require to get users familiar with the use of bio-resource as alternative for natural gas and address all the issues involved. The SoS project ended at the same time that the EUREGIO subsidy flow stopped.

The SSoS project started a half year after the closure of the SoS project. The difference with the SoS project is that the SSoS project is not subsidized at all. The SSOS project emerged by the initiative from a few enthusiastic volunteers and an experienced project leader. These actors believed that shielding the project from other projects is of key importance. In the absence of subsidies, actors emphasized the importance of gaining resource commitments to differentiate the project from other competing projects and particularly from biomass collectors active in the region. Rather than enacting diagnostic frames as in the SoS

project, the actors involved in the SSoS project made use of prognostic and motivational framing strategies. Efforts were spend to develop sufficient tactics to mobilize third parties into the project. The parties targeted were major landowners and landscape managers in the regions. These parties possess or maintain a substantial areal of landscape elements in the region. These elements must be maintained on a regularly base and the material harvested could be used as bio-resource material for the project and a such provide a financial compensation for these parties once bio-resource users are contracted. This instance of prognostic and motivational framing strategies lead to the involvement of resourceful actors like Landschapsbeheer Gelderland, VALA (collective agricultural associations), Geldersch Landschap, Natuurmonumenten, Staatsbosbeheer, Waterschap Rijn en IJsel and six municipalities in the region. Hence, becoming a part of large regional project and the possibility to get compensated for spending bio-resource material was a good reason for many of these parties to become a member of the SoSS project themselves. As a result, almost 65% of the regional landscape elements and potentially exploitable bio-resource material is pre-secured to the SoSS project and this power structure was considered as an important shield the project from competing niches but also to legitimize the importance of the project to policy makers and other green platforms in the region. Motivated by the potential future outcomes, the new members of the project were largely involved in developing a business model for the project. The development of detailed business model through several workshops sessions, was considered important to understand the practical implications of developing the infrastructure of a regional bio-resource market in terms of legal, logistical, economic, and technical issues. Learning was achieved by visits to user sites outside the region in which the members could observe the technology at work could and quality and logistic concerns addressed. This helped in developing the confidence of the members in the project to develop the SSoS further. Today, members are in the process of empowering by attracting lead-users like small

companies and financial resources to help customer invest in the technology if necessary. In presenting the value proposition to potential customers, members draw on diagnostic framing practices as well as motivational. Diagnostic because members referred to the persistent lack of sustainable regional development, and motivational because potential customers were pursued to engage in the project on the basis of their contribution to a sustainable regional development whilst enjoying economic as well as image benefits. The economic benefits are based on the idea that the price customers pay for wood-chips is not exceeding the price of natural gas (converted into Kilowatt per Hour). The image benefit is that users can show towards the communities that they care for sustainable regional development by using wood-chips from the region. An important feature of the value proposition is that future customers would not sense a real difference between the use of bio-resource and natural gas. In other words, the idea is that customers are unburdened from storage, technology maintenance, price, and quality concerns when participating in the project. Below (figure 1) a visualization of the business model.

Figure 1 Business model used for the SSoS project (borrowed from Schipper, 2013).

Below we summarize the different framing strategies in relation to niche development processes (Table 3).

	SoS	**SSoS**
Shielding Passively (pre-exist deliberate mobilization) Actively (deliberate and strategic creation) (Smith & Raven, 2012)	Active shielding: Shielding is ensured by subsidies. Diagnostic framing "the cultural value of the regional landscape is in danger" Prognostic framing "use of regional harvested bio mass material contributes the cultural value". Is different as opposed to alternative bio resource projects in the region. Engagement of Wageningen University and Twente to collect "evidence" about the feasibility of the project as well as to increase the legitimacy of the project.	Active shielding: Shielding is ensured by securing the amount of potential bio mass areal (landscape elements of participating parties in the project) which is necessary to protect material from competing bio resource niches or "regime" actors (i.e. Bruins & Kwast) Diagnostic framing: less emphasized (there is a common regional problem) Prognostic framing: persuasive strategies used to become member of a concrete regional high status project that solves a common problem
Nurturing A process that support the development of path-breaking innovations (Learning processes, articulating expectations, networking processes (Schot & Geels, 2008)	Learning: collecting facts and figures about amount of bio mass material and subsidies for labor work in the field. Lessons learned from the German counter parts. The management of expectations in line with diagnostic and prognostic frames (shielding continues). Especially transforming the meaning of biomass from waste to valuable resource Networking process mainly oriented towards mobilizing local policy makers and identifying a possible pilot plant (lead –user) Roadshows, workshops, with a strong focus on "doing good" for the landscape. Motivational framing "rational for action" was ambiguous (how to calculate and compare between alternatives?	Learning: what is needed for the development of a bio resource market? (i.e. resources, technology, money, activities, partners, value proposition, customer segments. Collecting and managing the diversity of expectations of members and potential contributing parties and lead users. Mainly on the basis on earlier prognostic and motivational framing (what is the rational for participating?) Networking processes focused strengthening commitment of powerful regional partners (i.e. AGEM) to advance further legitimacy.
Empowering (Smith & Raven, 2012) Developing widespread competitiveness	<u>Stretch and transform</u> strategy to change the existing natural gas and traditional bio resource regimes by emphasizing their solution as good and sustainable. Shield (subsidies) remained important during attempts to re-structure existing	<u>Fit and conform</u> to existing practices . "We are not so different" (natural gas) ('de klant wordt ontzorgd'). The customer is an integrative part of the business model, can use energy for a "going rate" price and spends also to sustainable regional

(shield can be removed?)	practices (so, cannot be removed)	development. Shielding against competitors (mainly bio-resource market) is regulated by contract and commitment to the project.

Table 3: framing practices in relation to niche development.

Results

Each case showed that an active form of shielding early in the beginning of a project is important process in the development of a niche. Shielding protected the development of innovative ideas from other competing 'renewable' projects. In the first case, this was achieved by relying on a diagnostic framing strategy considered necessary to distinguish the project from other renewable projects in the region and also from existing "carbon energy" practices. In so doing, and also with the help of long term subsidies, the key members of the SoS project were able building an active shield around their project by promoting the idea that their project prevent further loss of the cultural value of the landscape once landscape management is aligned with the use of regional harvested bio-resource material. The enactment of this diagnostic frame influenced mobilization processes, the development of expectations (too ambitious) of interested parties (mostly local policy makers), and also learning processes based on reports and the work of research institutes. The diagnostic frame used at the outset of the project also implied that the SoS project pursued a stretch and transform strategy. For instance, in line with the need to shield their project, the SoS project members spend substantial efforts in transforming the meaning of biomass from waste to a valuable bio-energy source. This was not only needed to further prevent the outflow of regional bio mass by traders who obtain the material for free, but also to change the way people should think about the present value of timber and plant material once converted into an energy source.

The SSoS project members in turn, relied more on a prognostic and motivational framing strategy. One important tactic was to mobilize resourceful actors in the project and thereby increase the amount of potential natural resources. This helped in shielding the project from other bio-resource projects ongoing in the region and typical bio-resource traders, but also to develop legitimacy for the project and attract attention of regional players. In contrast to the SoS project, diagnostic framing was considered less important because the key members believed that there is already a sense of urgency for sustainable regional projects. Rather, priority was given to nurturing the project by seeking how linkages between collective landscape management practices and the use of technology at the user level could be effectuated. This required gaining insights about production of wood-chips, prices, logistics like drying, delivering, and customer services required. Furthermore, the need for acquiring lead-users or demonstration sites deserved substantial attention. This was necessary to show interested parties that the technology works and also that delivery and services are assured. Moreover, potential customers are supposed to experience no differences between current "carbon energy practices" and bio-resource practices. Hence, rather than transforming existing meanings and practices like those performed in the SoS project, the focus of the SSoS project is on a 'fit and conform' strategy in pursuing a widespread competitiveness. This processes is still ongoing today.

Discussion and conclusion

We examined two different, yet related cases to understand how different framing strategies shaped the strategic creation of niches in terms of shielding, nurturing processes, and empowering strategies in the context of a renewable energy niche. Our study showed that

different framing strategies produce different kinds of niche development outcomes. There are a few important insights that emerged from our study. First, diagnostic framing strategies are specifically important for shielding a niche from competing niches but also from traditional regime related practices. However, a diagnostic frame can also overshadow nurturing processes in a sense that they can produce idealistic expectations of interested parties and also may lead to the exclusion of market parties like interested entrepreneurs.

Second, our second case study makes clear that the mobilization of resourceful actors into a project contribute to shielding but also to nurturing since all actors undergo the same learning processes at the beginning of a project. Our study showed that motivational framing strategies are especially important for the mobilization of actors because such frames provide a rational for participation. The rational for participation of the actors that we studied was the potential financial benefits of selling bio-resource material to the project over time, as well as the enhancement of their status as a member of a regional project. Third, we studied each project as a separate case. However, from an evolutionary perspective both projects developed in sequence. This implies that the reliance on diagnostic framing practices and the work done within the SoS project to transform the meaning of biomass material from waste to a valuable bio-resource might have been advantageous for the SSoS project. In other words, the diagnostic frames developed in the SoS project (doing good for the environment) enabled the SSoS project to engage early in learning and networking processes. However, shielding the project from competing niches and traders was considered as equally important for both projects.

In general, this study contributed to the strategic niche development literature (Schot & Geels, 2008), and particularly the literature interested to examine niche development from a social constructionist perspective (Smith & Raven, 2012). We extended this emerging stream of literature by examining how niches develop through the use of different framing strategies.

Although the power of framing is usually voiced in social movement literature and performed by activist (Benford & Snow, 2000; Rao, 2009), we showed how niche development comes about through the framing strategies and tactics used by enthusiastic pioneers actors interested in the development of renewable energy solutions. Our study also made clear that the development of green technology markets require sometimes the ability of actors (entrepreneurs or enthusiastic pioneers) to anticipate on the economic benefits that interested parties foresee by their participation in such projects (see also Ritvala & Salmi, 2011). So, rather than focusing on the sustainable solution for an existing problem only, our study suggests that actors should combine both in their communicative frames in the development of niches. This is especially important in the holistic type of cases we studied since in such projects actors must balance and match the supply (bio resource availability) as well as the demand site (setting up user interfaces).

We classified our study as explorative and is still developing. Further research involve the improvement of the theoretical concepts used, but also the exploration of alternative theoretical concepts that could match or contradict the findings of our study. Furthermore, there is room for improving the analysis based on the rich data available. In addition, we can benefit from our access to the project and continue the collection of real time data for future research.

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