Dit paper is gepresenteerd tijdens de online SEFI conferentie op 21 september 2020. Het is verschenen in de Proceedings van de conferentie.

Sjoer, E., Harn, R.C. van, & Biemans, P. (2020). Sustaining Professional Learning Communities. In: *Engaging Engineering Education*. *Proceedings of The 48th SEFI Annual Conference.* Enschede, University of Twente, 20-24 September, 1128-1136.

SUSTAINING PROFESSIONAL LEARNING COMMUNITIES

E. Sjoer[1]
The Hague University of Applied Sciences
The Hague, The Netherlands

R.C. van Harn
The Hague University of Applied Sciences
The Hague, The Netherlands

P.J. Biemans
Inholland University of Applied Sciences
The Hague, The Netherlands

Conference Key Areas: *Challenge-based education, future engineering skills*
Keywords: *Learning communities, sustainability, engineering professionals, multidisciplinary*

ABSTRACT

The Dutch horticulture sector has to deal with challenges related to sustainability and advancing technology. Engaging professionals and (engineering) students by working together in learning communities (LCs) is an emerging approach to respond to 'wicked problems'. In the Greenport West-Holland there are different types of these public-private collaboration initiatives. They work and learn together in LCs in order to innovate. Research has been done on how to start a LC, however it is not completely understood how it can (effectively) last. This research, funded by the province of South Holland, aims to gain insight into what it takes to engage participants of LCs in the longer term. Our research question is: What factors contribute to sustainable learning communities in the Greenport West-Holland? We interviewed public and private partners (n=10) of five LCs. All interviews were recorded, transcribed and analysed in Atlas Ti. Results show that collaboration between private and public parties is crucial in a sector in transition. Different disciplines come together: technical domains (e.g. robotization), horticultural knowledge, business and educational knowledge. The type of LC matters. The analysis revealed that to sustain the collaboration the LC should focus, among other things, on attracting people with drive and personal commitment to the shared ambition (instead of inviting organisations), should continually work on community building and show intermediate outcomes of actions and impacts. Identified preconditions for sustainable LCs are a good reputation and and long-term (financial) support.

[1] *Corresponding Author:*
E. Sjoer
e.sjoer@hhs.nl

1 INTRODUCTION

1.1 The challenge

The strategy of Greenport West-Holland, world-famous for its greenhouses, flowers, fruit and vegetables, is explained on the website: ‘Greenport West-Holland started the “Feeding and greening the megacities” strategy. The core of this strategy is that the region […] provides megacities in Europe with food and happiness and develops concepts for mega cities elsewhere in the world.’ [1] To move towards this ambitious strategy, the Greenport West-Holland horticultural cluster has identified several innovation tasks, such as developing into the first climate-neutral Greenport in the Netherlands. To achieve this, the Greenport sees public-private partnerships (PPPs) as an important approach and has set up several collaborations for conferences, masterclasses, courses and co-creative and co-innovation projects. ‘All the activities aim to stimulate collaboration between universities, vocational schools and companies preferably on a global scale and stimulates cross-overs and the connection between students and business and support them to innovate’ [1]
Over the past decade, many forms of public-private collaboration have emerged in the Greenport. As Harm Maters, the (former) deputy chairman of the Hortivation Foundation said: ‘The affiliated companies realise that structural and joint innovation [with knowledge institutes] is vital in order to stay ahead of the competition. […] After all, you are able to take bigger steps when working collectively, especially when it concerns problems or developments that affect multiple companies at an international level. An example that comes to mind is that of making greenhouses earthquake-proof.’ [2]
Although there are many innovation initiatives in the Greenport, they are often not fully implemented for a variety of reasons. It is difficult to work in a consortium with diversified interests. [3] [4] Furthermore, all parties involved are enthusiastic in the beginning; their contribution, however, bears the risk of diminishing with time. We should know more about what can be done to effectively sustain a learning community (LC) to achieve and scale up innovations. Moreover, engineering students and teachers, among other stakeholders, should learn how to participate effectively in these types of collaborations. The study aims to understand the factors that play a role in sustaining professional LCs in the Greenport.

1.2 Definitions

The LCs in the Greenport we are investigating are PPPs. They are framed differently by its stakeholders: field labs, (learning) communities, living labs, etc. We should take into account that they come in various shapes and sizes, with different goals and ‘stages in life cycle’. [5]

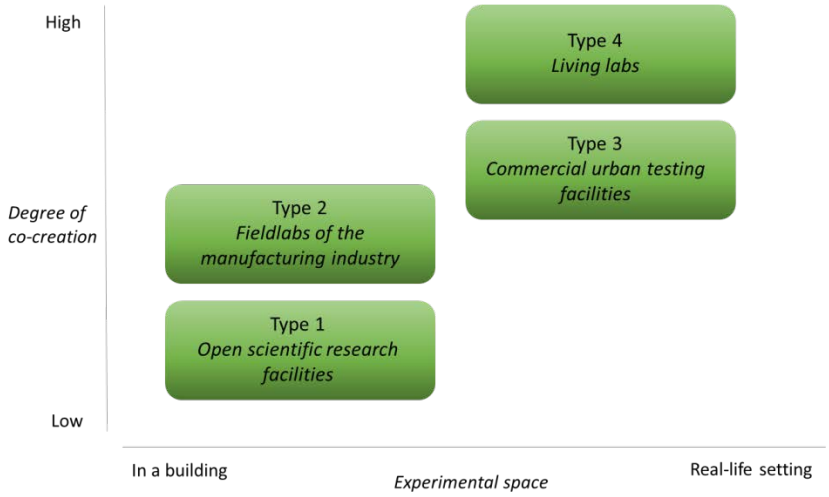

Fig. 1. Four basic types of collaborative initiatives [6].

In the Rathenau report, four basic types of collaborative initiatives are distinguished, based on two dimensions. These public-private initiatives differ from each other on the level of co-creation and the diversity of partner types (scientists, entrepreneurs, students, citizens). The second distinction is whether the experiments are carried out in a physical space such as a laboratory on a university campus, or in a real-life setting, such as a city's neighbourhood. An example of a field lab (type 2) in the Netherlands is 'Aqua Dock', a test facility for floating structures in the harbour of Rotterdam. An example of a living lab (type 4) is 'Circulair Buiksloterham', facilitating the development of a previously industrial region in Amsterdam Noord, into a sustainable and circular district. [6]

In literature, a field lab is often described as a partnership between companies and public organisations. [7] Field labs (type 1-2 in Fig. 1), compared with other PPPs, primarily focus on research and innovation. Research and development activities are carried out in such a way that the new knowledge and equipment (eventually) can be used by the industry to remain 'state-of-the-art'. The overarching goal is to strengthen the competitiveness of the industry by learning together for instance about the application of new technologies. Type 1 and 2 partnerships give companies better access to knowledge and research facilities of public knowledge institutions such as universities. In type 3 and 4, co-creation with a wider variety of parties is important (for instance citizens' initiatives), as well as in 'a real-life setting'. [6] We use the terms field lab, LC and living lab interchangeably and define the common denominators as follows: 'A partnership between private and public parties where learning, working and innovation are interconnected, with sufficient attention to the innovation challenge. The cooperation between the different parties is the added value of the field lab/LC. The cooperation is (partly) made possible by public financing. The LC performs (learning) activities and has a collective intention to deepen a knowledge domain and improve practices.'

This paper will focus on sustaining professional LCs. 'Sustaining' or 'sustainable renewal' is also not a straightforward concept. Following März et al. we define 'sustainable renewal' as a process rather than a final stage. [8] In this paper, it is

about the extent to which the LC can be further developed. Therefore, sustainable innovative change requires a continuous process of generating innovative, collaborative knowledge that can improve practices.

2 METHODOLOGY

Our research question is: *What factors contribute to sustainable learning communities in the Greenport West-Holland?*
Five LCs were selected based on the following criteria. The LC is a PPP, receiving public financing, and one of its objectives is innovation in the Greenport. The PPP has been in place for some time (e.g. not in the initial phase). We started with a list of existing LCs in the Greenport, provided by the Province South-Holland, and the innovation pact. We mapped these LCs against the selection criteria. We were aiming at a maximum variation of types of LCs. Therefore, after selecting two field labs (type 1-2), we decided to search for PPPs that could offer an additional perspective, using a snowball procedure through the networks of the authors and experts in the Greenport sector. We contacted the private or public partner of the LC and asked him/her to connect us with one of the other partners. As a result, following the distinction made by the Rathenau Institute [6], the collaborative initiatives in our sample are two type 1-2 LCs and three type 3-4 LCs.
For each LC, we interviewed a public actor, typically a university-affiliated researcher or a representative of the province, and a private actor, such as an entrepreneur or an innovation manager. In total, we held 10 in-depth interviews. The interviews were conducted from December 2019 until June 2020 and lasted 80 minutes on average (ranging from 65 to 106). The authors conducted the interviews in pairs, using a semi-structured interview scheme. Each interview started with general questions about their profession and company or organisation. The second block contained questions concerning the goal and activities of the LC and the role of the interviewee in the collaboration. This was followed by blocks of questions about the barriers and facilitators they encounter in the LC over time, examples of the revenues they generated and what it takes to use innovative ideas to transform practices. Finally, there were questions relating to what instrument(s) they need to take the LC a step further. In addition, to get a wider perspective of the sector as a whole, we interviewed several experts in the Greenport sector. The interviews were recorded and transcribed. All the transcripts were analysed with qualitative data analysis software.
To analyse the data, we used open and axial coding. One author created codes, grounded in the interviews, in several rounds. The three authors, together with two fellow researchers, subsequently started the process of axial coding. They compared, discussed and grouped codes. Those codes were assembled into factors. Finally, the factors were put together in clusters.

3 RESULTS

Based on the rich data from the interviews, in this paper we will discuss the factors that were mentioned most often and that were identified by most LCs. These factors

are clustered as follows: 1) person-related factors, e.g. the roles and characteristics of the participants 2) process-related factors, e.g. the working method in the community 3) content-related factors, concerning the content of the innovation that is central to the LC, and 4) preconditions, describing factors that are considered a necessity to subsequently achieve a result. The combination of factors that contribute to sustaining LCs in the Greenport West-Holland are listed in Table 1.

Table 1. Factors for sustainable LCs

	Clusters	*Factors*
1.	***Person-related***	*1.1. Drive, personal commitment*
		1.2. (The sum of) competences, roles
2.	***Process-related***	*2.1. Community building (continually)*
		2.2. Competitive sensitivity
		2.3. Awareness of the value of interdependence
3.	***Content-related***	*3.1. A shared vision of the future: 'pole star'*
		3.2. Intermediate outcomes of actions and impacts
4.	***Preconditions***	*4.1. A good reputation*
		4.2. Long-term investment, (financial) support

The analysis of the five LCs also shows that the type of partnership makes a difference. However, the contrasts and similarities between types 1-2 and 3-4 LCs need further consideration and are beyond the scope of this paper. That also applies to factors relating to the ecosystem within which LCs develop.

3.1 Person-related factors

Drive and personal commitment

To sustain a collaboration in a LC, 'having drive' and 'being personally committed' seem to be essential for everyone involved. According to the respondents, 'being driven' is about perseverance, passion, believing that this is the right way to go and that you are the one who can make a change: 'People who really want the energy saving to succeed' (university affiliated researcher). Personal commitment is the basis for sustaining participation in LCs. Therefore, it is important to keep addressing 'participants to their values because then they can [still] relate to the story'. When looking for new members, select the person rather than the company or organisation they represent as such.

(The sum of) competences, roles

Ensuring prolonged participation in LCs, however, requires more than 'just' having drive. A variety of personal characteristics of the participants have been mentioned. Because it was often the sum of these qualifications that were considered to be essential in sustaining LCs, specific roles could be distinguished. For instance, the role of the community manager: 'That is what keeps such a community together. [A person with] both knowledge, passion and vision, is the core of the community.' (project manager). A community manager must have substantive knowledge [of

horticulture], be able to ‘level’ with different parties, maintain a network and generate enthusiasm in a group (social skills). Other (preliminary) roles we envision are (programme) mediator (all types), project manager (type 1-2), innovation manager (type 1-2), pioneer (type 3-4), connector (type 3-4), and ambassador (type 3-4). The essence here is that you need to combine competences and roles: it is not ‘or/or’ but ‘and/and’.

3.2 Process-related factors

Community building (continually)

Working together in the longer term also depends on the extent to which the LC succeeds in building a community where participants ‘feel seen and heard’ and in which members of the community trust each other, can seek connections, ask questions, and start (new) collaborations. It seems obvious but things don’t happen by themselves. In addition, maintaining relationships and generating trust takes time and companies, in particular, often have an accelerated time frame compared to public partners. This makes the collaboration more complex.

Competitive sensitivity

Competition in the sense of maximising individual profit and to gain something by establishing superiority over others (win-lose situation) is a constraint that LCs have to deal with.

The type of company or organisation that participates, the way they perceive their ‘competitor colleagues’, as well as the innovation phase, play a role. In general, it is easier to collaborate in the pre-competitive phase. Sometimes, however, it is precisely the process of sustaining the collaboration that proves to be difficult. In addition to companies, competitive sensitivity also plays a role for public parties, for example knowledge institutions: ‘And of course it gets a bit busy with all the knowledge input’ (university affiliated researcher).

LCs should be aware of this competitive sensitivity and should deal with it in various ways. For instance, by inviting specific contributors and encouraging horticulturists to work in smaller groups so that mutual trust has a chance to grow. This can be achieved by dividing up areas of attention so that everyone contributes to a different part. The design of the meetings can also make a huge difference in this respect.

Awareness of the value of interdependence

‘There is no place for egos’, stated one of the participants. Participants must be willing to collaborate in the longer term. This is strongly linked to striving to achieve a shared ambition, for which participants have to be willing to step beyond their own interests and work towards the common goal. In their working method, the LC should create participants’ awareness of their interdependence in achieving this ambition. Also, to mature the collaboration, part of the working method entails dealing with other ‘cultures’ and being aware of the differences in the decisiveness and tempos of different participants. Otherwise, ‘People will be working in a multi-tiered system’ (private partner) and have dissimilar expectations.

3.3 Content-related factors

A shared vision for the future: 'pole star'

A shared vision is a basic condition that must be worked on continuously. That vision acts like the brightest star in the sky: the pole star. At the same time, it is important that the individual roles in the shared ambition are made explicit: 'What do we want to do next? What promising plans and ideas are there for the individual group members? Well, we bring these people and ideas together' (representative of the province).

Intermediate outcomes of actions and impacts

The added value of their involvement in the LC is important for every participant. For example, a private party indicated that participation provides knowledge and contacts with other companies: 'So these are all valuable things. But the bottom line is, you want to know what we gained [in money]?' (private partner). Type 1-2 LCs provide small-scale proof-of-concept i.e. the harvesting robot. However, it is necessary to prove the impact on a larger scale and/or the commercial potential, especially if the innovation is risky and complex. However, here you often see a vacuum between development and application. For type 3-4 LCs, the added value is in implementing experiments, such as increasing biodiversity by sowing flowers. Celebrating these types of successes also helps keep the energy high (mentioned in all types of LCs).

3.4 Preconditions

A good reputation

In order to sustain the collaboration in the LC, it is important that the community keeps growing and attracting the 'right' people. When the LC has a good reputation and a well-known organisation or an important entrepreneur in the sector is already involved in the community, this helps attract new partners. The LC can build a positive image by sharing successes with external stakeholders. An ambassador can help with this, they include people in the story of the LC by 'Telling, telling, telling' (private partner) and turn something abstract into something very practical.

Long-term investment, (financial) support

For all types of LCs, it was emphasised that financial (public) support is essential, not only at the start of the community but on a structural basis. In addition, various other forms of support can be distinguished that promote further development of the collaboration, e.g. by making equipment or expertise available. You can also look beyond your own sector for this.

4 CONCLUSION

In this paper, we investigated the factors that contribute to sustainable LCs in the Greenport West-Holland. Our research revealed that relevant factors to sustain a LC can be grouped into four clusters: 1) person-related, 2) process-related, 3) content-related, and 4) preconditions. In total, we considered nine factors in these clusters, which can be used as guiding principles for the further development of LCs.

Following on from our study, LCs should pay attention to attracting people with drive and personal commitment to the shared ambition instead of trying to attract organisations. In addition, it seems obvious that efforts should be made to build close long-term relations between partners involved in the LC, but that does not happen automatically and it takes a lot of time and effort to maintain those relations. The LC also plays an important role in handling competitive sensitivity between the partners. Moreover, LCs should show and ‘celebrate’ intermediate outcomes of actions and impacts, work on the reputation of the LC to attract new committed partners and guarantee long-term (financial) support. We have been able to distinguish different competences and roles that are all needed; it is ‘and/and’ and not ‘or/or’. This also applies to the nine factors: the sum of these factors contributes to sustaining LCs. This is why sustaining LCs requires continuous care of all participants.

The results from this study add to the growing literature about LCs. However, most of the papers are about establishing and supporting LCs rather than keeping a LC effective in the longer term. In order for LCs to make use of the factors described in this paper, we are designing a tool that can be used by participants of LCs, as well in educational programmes within Europe.

Furthermore, our interview data also revealed factors for how to make more use of the revenues of the LC (forthcoming, not in this paper). These factors seem to be intertwined with the factors described in this paper. Impact must be made to enduringly involve partners in LCs and at the same time it is difficult to make that impact together. Moreover, further research should be done on the role of the context of sustaining LCs and the different types of LCs.

Many innovation challenges in the Greenport are technology related. Building environmentally-friendly greenhouses is a high-tech innovation, as is for instance ‘precision farming’. Robot experts, data scientists and energy transition specialists are important. However, the (middle) management roles are also considered high-impact functions in the Greenport (forthcoming). Indeed, many technical inventions must be implemented (on a larger scale) to be profitable. Engineering students should be prepared for this transition. Therefore, students and teachers should know which relevant factors contribute to sustainable LCs and how to address these in the curricula. Which personal traits are relevant to contributing to different types of LCs and which roles can be distinguished? Furthermore, they should reflect on how to behave effectively in the community-building process and they should learn how to take advantage of being part of an open network. Moreover, engineering students will become the leaders of tomorrow. They will initiate, join or facilitate public-private collaborations and/or guide their employees to do this effectively. Fit for the future means engaging students in real-life challenges and collaborating transparently with a range of different stakeholders!

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