

# D4.5 CAPACITY BUILDING PACKAGE OF MATERIALS FOR OPERATING A HUB

**WP 4** 

28 February 2022





#### **DOCUMENT IDENTIFICATION**

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Project Full Title Connecting the dots to unleash the innovation potential

**SmartAgriHubs** 

for digital transformation of the European agri-food sec-

tor

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### **LIST OF ABBREVIATIONS**

Abbreviation	Explanation
CC	Competence Centre
D	Deliverable
DIH	Digital Innovation Hub
FIE	Flagship Innovation Experiment
IPR	Intellectual Property Right
IE	Innovation Experiment
ISSM	Innovation Services Maturity Model
RC	Regional Cluster
RDI	Research, development and innovation
RTO	Research and Technology Organisation
SAH	SmartAgriHubs
SME	Small and Medium Enterprise
TRL	Technology Readiness Level
WP	Work Package

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#### **PROJECT SUMMARY**

Digital technologies enable a transformation into data-driven, intelligent, agile and autonomous farm operations, and are generally considered as a key to address the grand challenges for agriculture. Recent initiatives showed the eagerness of the sector to seize the opportunities offered by ICT and in particular data-oriented technologies. However, current available applications are still fragmented and mainly used by a small group of early adopters. Against this background, SmartAgriHubs (SAH) has the potential to be a real game changer in the adoption of digital solutions by the farming sector.

SAH will leverage, strengthen and connect local DIHs and numerous Competence Centres (CCs) throughout Europe. The project already put together a large initial network of 140 DIHs by building on its existing projects and ecosystems such as Internet of Food and Farm (IoF2020). All DIHs are aligned with 9 regional clusters, which are led by organizations that are closely related to national or regional digitization initiatives and funds. DIHs will be empowered and supported in their development, to be able to carry out high-performance Innovation Experiments (IEs). SAH already identified 28 Flagship Innovation Experiments (FIEs), which are examples of outstanding, innovative and successful IEs, where ideas, concepts and prototypes are further developed and introduced into the market.

SAH uses a multi-actor approach based on a vast network of start-ups, SMEs, business and service providers, technology experts and end-users. End-users from the agri-food sector are at the heart of the project and the driving force of the digital transformation.

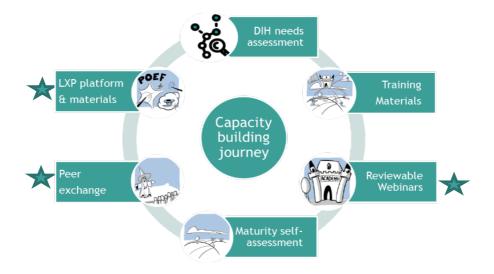
Led by the Wageningen University and Research (WUR), SAH consists of a pan-European consortium of over 160 Partners representing all EU Member States. SAH is part of Horizon2020 and is supported by the European Commission with a budget of €20 million.

#### **EXECUTIVE SUMMARY**

DIHs aim to support and accelerate the digitalization and (more recently) the green transition in Europe. To do so, DIHs need to develop relevant activities and service portfolio as well as efficient process and effective organization of their hub. Work Package 4 aims to support the capacity building of DIHs in the SmartAgriHubs community. This Deliverable 4.5 outlines the activities and materials undertaken by SmartAgriHubs - and WP4 in particular- to aid agri-DIHs in their operations as a one-stop-shop initiative in their region.

The deliverable builds on the logic and analysis of D4.4 and contributes to the capacity building results by outlining the activities supporting DIHs in their operations (i.e. after they have been established).

The capacity building activities should be seen as a process, connected to various tools and activities within SmartAgriHubs. The figure below provides an idea of the intervention logic as seen by the task team. The elements marked with stars are the focus of the current deliverable (but the rest are also mentioned to connect all the dots).



The Capacity Building activities for establishing a hubs have resulted in:

- In total 12 capacity building webinars took place between December 2019 and January 2021. Some of these refer to setting a hub, some to operating a hub, or both. Overview can be see in section 3.1 or the SmartAgriHubs portal <a href="https://example.com/here/">here</a>.
- A peer Learning and Exchange Programme (LXP) was initiated, including 5 peer exchange events.
- In total 2 courses on Peer exchange and on Writing a proposal have been launched in LXP platform supporting the DIHs, combining over 11 modules and over 86 separate learning objects and exercises.
- The whole LXP program was supported by a facilitated peer-learning community space (available here).
- The SmartAgriHubs Portal has been populated with relevant materials from existing other projects.

Based on the capacity building activities and tools used, we can conclude that:

- capacity development needs vary per DIH meaning that the capacity building materials need to meet varying needs, sometimes making the distinction of needs in setting up and operating a hub difficult to distinguish

- Mixing different modes of capacity building might be needed to address the previous point, therefore also prompting the consortium to adapt a flexible approach
- there is a observed need for peer sharing and learning to provide practical examples of how other DIHs approach challenges/services, etc.
- Capacity development seen as important but daily operations and capacity restraints may affect turnout
- as the ecosystem develops and the needs change, the capacity building should also be flexible and adaptable.



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#### 1. INTRODUCTION

#### 1.1. DOCUMENT BACKGROUND

The key objective of Work Package (WP) 4 is to empower Digital Innovation Hubs in becoming an effective one-stop-shop, offering a relevant set of services for the end-users, and supporting the development of their regional ecosystem, and the agri-food sector in particular. DIHs connect with a number of actors in their ecosystem in order to support their customers with a combination of services, including technology, business, ecosystem and skills development support. To enable the DIHs in their operations, WP4 provides capacity building support to the DIHs in the SmartAgriHubs community. The support from SmartAgriHubs can be seen as an enabler, providing the DIHs in the agri-food sector with materials, tools and opportunities to learn and build their capacities towards more sustainable operation.

This deliverable aims to provide an overview of the activities offered by SmartAgriHubs to support the DIHs in professionalizing their activities. The deliverable also compiles various materials, prepared to ease the functioning and work of the hubs such as the a peer exchange and learning programme (see Annex) and webinars. This deliverable is the second of two, where the first one (D4.4, available <a href="here">here</a>) aimed to compile materials helping DIHs in launching and growing their initiatives. It should however be highlighted that the two phases of establishing and running the hubs are not strictly separated as the needs and the topics may in many cases overlap (e.g. re-evaluation of the services and business models is likely throughout the DIH existence). Consequently, the capacity building is seen from a more general needs-based position, taking into account the DIH journey in developing their capacities.

# 1.2. ACTIVITIES RELATED TO THE CAPACITY BUILDING FOR OPERATING A HUB

Within the task on capacity building for operating a hub, the following activities were conducted:

- After a mapping of available materials from other projects, SmartAgriHubs capacity building webinars were held and added to support the functioning of the hub. An overview of the webinars is provided in section 3.1 and can be found on the SAH portal <a href="here">here</a>. In total 12 capacity building webinars took place between December 2019 and January 2021. Of these, 5 could be seen as contributing to both operating and establishing a hub, 3 were more focused on operating a hub, and 4 were more focused on establishing a hub.
- A peer Learning and Exchange Programme (LXP) was initiated to support the friendly peer learning and capacity building among DIHs in SmartAgriHubs. In total, 5 peer exchange meetings have taken place.
- Based on the identified needs for further support, the LXP was supported with additional self-study materials and courses to support the individual follow-up and development of the DIH. In total 2 courses have been launched in LXP platform, combining over 11 modules and over 86 separate learning objects and exercises. One of the courses is developed by WP4 (on <u>DIH exchange on capacity development</u>) and the second one by WP2 and WP3 (on <u>writing a proposal</u>).<sup>1</sup>
- The whole LXP program was supported by a peer-learning community space, where the LXP courses could be found together with opportunities to ask questions and

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<sup>&</sup>lt;sup>1</sup> Access to these materials is only possible with a registration (follow the links).

exchange ideas in a expert moderated chat-like setting with other DIH (an approach referred to as online social learning).

# 1.3. OVERARCHING LOGIC OF THE CAPACITY BUILDING AND CONNECTION TO OTHER ACTIVITIES

The capacity building materials and efforts (either for setting up or running a hub) should not be seen in isolation. Rather, they present a journey which connects to various tasks and activities in SmarAgriHubs. The following intervention logic and connections have been imagined by the team, where activities from different tasks have built on each other. The focus of this deliverable is marked with a star:

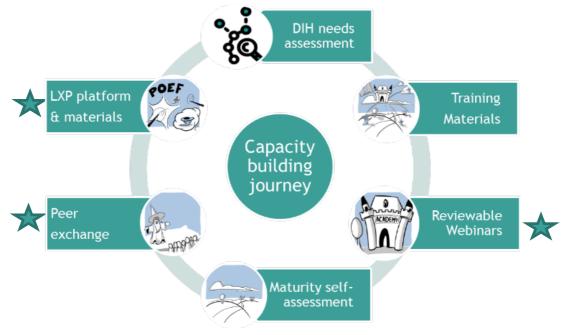


Figure 1: Capacity Building intervention logic

First, a needs assessment of the DIHs in the SmartAgriHubs community was conducted to identify what capacities the DIHs need and provide input for the SmartAgriHubs intervention (SmartAgriHubs D4.1 Needs Assessment Report, 2019). Secondly, the DIHs were provided with tools made available through the SmartAgriHubs Innovation Portal to assess their own services in order to provide them with insights in their status quo and therefore guide their development to meet the end-user needs (farmers, technology companies, agri-food stakeholders) (D4.2 vs 3, Berkers F, et al 2021). Thirdly, an initial package of capacity building materials for "establishing a hub" was developed to support the DIHs in launching and growing their activities (D. 4.4 TNO, 2020). These materials encompassed both materials from other initiatives and SmartAgriHubs webinars. In this deliverable, we outline the additional webinars developed to ease the work of the DIHs (for running or setting up a hub).

Fourthly, next to the self-assessment and supporting training materials, a peer exchange programme has been initiated to support DIHs to learn from each other and exchange (good) practices. Lastly, the capacity development has been supported by follow-up Learning and Exchange Programme Portal and additional materials for self-study and assignments are provided (see Annex). The LXP platform allows for the DIHs to also engage in an expert moderated 'chat' and respond to each other's questions and share experiences (a process referred to as social learning). In addition to a course on peer exchange developed under WP4, WP2 and WP3 have developed to the LXP platform course on proposal writing, outlining materials on financing, tips on writing proposals as well as information on replicability and reusability of results (e.g. tech).

The capacity building is also connected to WP1 which supports the SAH community and forum and where materials from webinars and other materials are published.

#### 1.4. READING GUIDE

The deliverable starts with introduction to the approach and outline of the chronological order of the activities in aiding the DIHs in their operations. This is supported with background analysis of topics and connection to tools in SmartAgriHubs. Chapter 3 then discusses the three main capacity building activities: 1) the webinars provided, 2) the Peer exchange and Learning Programme (LXP), including the LXP platform and materials and 3) the mapping of existing materials. Lastly, we draw some conclusions from the process and lessons learnt.

# 2. APPROACH TOWARDS THE CAPACITY BUILDING ACTIVITIES

#### 2.1. THE STEPS TOWARDS CAPACITY BUILDING SUP-PORT FOR OPERATING A HUB

This chapter deals with the approach we used for developing, populating and learning from the capacity building activities. The task and activities followed the following rationale:

- Based on previous experience in projects,<sup>2</sup> a first outline of the main steps to establish a
  hub has been developed in (D4.2 DIH Capability Maturity Model.v3). This has further
  analysed focusing on the elements identified as important to operate a hub in chapter
  2.2.
- Based on these experiences, existing materials from other projects for initiating and operating a hub were mapped and included in the SmartAgriHubs portal.
- Dedicated webinars on identified missing topics focused on the agri hubs were organized (some of setting up and some of operating a hub) between December 2019-2021.
- Further needs and request from DIHs have been captured via a needs assessment at the start of the project (D4.1), the webinars opened to the community, as well as via individual ad-hoc communication with DIHs and a project-wide effort to collect insights from interviews
- Based on this, a peer-exchange programme was initiated in spring 2021. The approach
  was extensively discussed in the PSG and with the regional clusters. It was presented in
  the January 2021 webinar. A first design of the peer-exchange days was developed and
  approximately 36 participants registered;
- Needs from the participating Hubs were collected in these days. Based on this materials in the LXP platform for self-study were developed and uploaded in summer 2021.

<sup>2</sup> The XS2I4MS mentoring programme provided support for 29 consortia to conduct feasibility studies to set up DIHs. The steps also build on research on financing the set-up and continuation of Large-scale RDI initiatives from EU-Great! (see M de Heide and M Butter (2016), D5.3 Report assessment match/mismatch and issues with combined funding. EU-GREAT project) Further, insights from trainings in different regions to set up DIHs have been used.

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- Following lessons learnt from the first round, the peer exchange process was slightly
  updated to shorten the sessions and transition from a more streamlined approach towards
  the whole community to a boutique approach tailoring meetings to the participating DIHs;
- An analysis of the maturity assessments was made in 2021 (See D4.2 v3.) and 4 identified services were found to have lower maturity by a larger group of DIHs. The services identified relate to 'Strategy development', 'Ecosystem learning', 'Representation/Promotion', and finally 'Technical support on scale-up'.
- Based on this, DIHs were invited to participate in a second round of "boutique" peer-exchange meetings, which took place in Q1 of 2022. ("Boutique" refers to the fact that DIHs were contacted individually beforehand to explain the expectations and benefits and to achieve commitment). New boutique peer exchange meetings based on the same analysis are expected in Q2 of 2022.
- Materials of the webinars and the LXP are described in the chapter 3 and screenshots from the learning and exchange platform are provided in the Annexes.

# 2.2. BACKGROUND TO CAPACITY BUILDING TOPICS FOR OPERATING A HUB

#### **Introduction to the topics**

Based on research from the EU-Great project and XS2I4MS, we can distinguish among five main phases of a development of DIHs.<sup>3</sup> The capacity building activities of SmartAgriHubs aims to address these different phases. This deliverable focuses on initiation, stabilization, growth - the three phases after the DIH starts but builds on the materials already developed to support DIHs in their preparation and initiation as some of the topics are recurring.

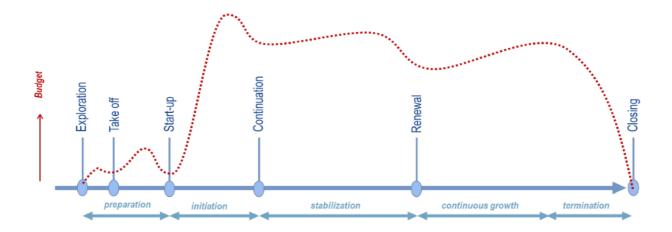


Figure 2: Evolutionary stages of innovation initiatives (source: EU-GREAT! and XS2I4MS)

Once a DIH is established, its objective is to mature and continue to add value to its ecosystem. This requires continuous adaptation of the activities and assets of the DIH to reflect the needs of the ecosystem as well preparation of sustainable operation. Looking at this objective, the following elements can be distinguished with regard to capacity building:

#### **DIH Innovation Services portfolio**

Marcel de Heide, and Maurits Butter (TNO), TECNALIA, CEA, VTT, HVMC, INESCPORTO, PWR (2016), "Deliverable 5.4 Manual - Setting up investment plans for large scale RDI initiatives",

DIHs are often defined by the services they offer as the services are the key through which the DIH delivers value. As explained in D4.4, the services portfolio of a DIHs is likely to evolve over time and the service delivery mechanisms may also change. Here, we distinguish three types/ categories of services offered by DIHs: ecosystem development, technology support, business support. Note that more recently<sup>4</sup>, the topic of skills and capacity development has increased in importance (in the SAH Maturity Model for self-assessment, these are part of the business or tech support depending on the topic).

A distinguishing characteristic of the DIHs is that they **offer a combination of all three types of services**. <sup>5</sup> This mix of the service portfolio (or access thereto), enables the DIHs to turn into a one-stop-shop in the region. The exact services in this mix however may vary: as an example the ecosystem development activities may relate to brokerage services as well as awareness creation or networking events, reflecting the regional needs.

Given the differences in the services mix, the capacity building materials have focused on providing the DIHs with the tools to better understand and evaluate their portfolio mix. Examples include the webinar on "Steps setting up a hub" and the "business models for DIH". Further, the SmartAgriHubs project provides DIHs with a tool to self-assess their maturity, with a focus on their services. Last, but not least, the peer exchange programme focused on sharing (good) practices via the peer exchange meetings and the LXP platform. Specifically, the last 2 peer-exchange meetings (7-8 February 2022) were triggered after an analysis showcasing lower maturity in 4 services. The two exchanges, while focusing on various topics, gathered hubs in two main groups: those more interested in building the ecosystem and those more interested in technology related topics (e.g. agri-tech solutions, technology facilities, supply chain transformation).

#### **Business model development**

Related to the services portfolio is the topic of establishing a sustainable business model of the DIHs. DIHs, just like any other entity need to consider not only how to create value but also how to cover the costs (and potentially profit) from their operations. While a business model should be already considered at the preparation stage, DIHs often need to adopt multiple-business models to reflect the fact that they often also address a market failure<sup>6</sup> and their public-private function.<sup>7</sup>

To support the agri-hubs, a dedicated webinar on the topic was organized, looking at the business model, collaborative business models (as well as platform models) and financing funnel. The good practices shared from DIHs in the webinar were later on also enriched for the LXP platform where specific modules were included on strategy development and financing of DIHs (based on shared needs from the participating DIHs).

#### **Operational challenges**

After the initiation of the DIHs, a number of operational challenges might emerge. These could be connected to the governance, but practically also to data sharing, scaling up activities and building connections. To support the DIHs in these aspects, capacity building activities focused on:

- Introducing specific re-watchable webinars on topics such as farmer-centric innovation and data sharing. The objective of these webinars was to introduce the topics and initiate a discussions, building on experience of experts, previous projects (e.g. IoF2020) and DIHs.

<sup>&</sup>lt;sup>4</sup> Sassanelli, Claudio, et al. "Towards a reference model for configuring services portfolio of digital innovation hubs: the ETBSD model." Working Conference on Virtual Enterprises. Springer, Cham, 2020. <sup>5</sup> Butter, M., Karanikolova, K., Gijsbers, G., Goetheer, A. (2020), "Digital Innovation Hubs and their position in the European, national and regional innovation ecosystem", in Denise Feldner (ed.), Chapter in: 'Redesigning Organizations - Concepts for the Connected Society', Springer Nature Switzerland <sup>6</sup> Butter, M., Karanikolova, K. (2018), Support to Development of a Basque Digital Innovation Hub, TNO report, Project reference code: 931101

<sup>&</sup>lt;sup>7</sup> JRC (2020), "Digital Innovation Hubs As Policy Instruments to Boost Digitalisation of SMEs: A Practical Handbook & Good Practices For Regional/National Policy Makers And DIH Managers"

- A second main capacity building tool used was the peer exchange to enable DIH practitioners to learn from each-other's experience. While the individual circumstances per DIH differ, the participants had challenges in common, often relating to scaling up activities, connecting to the formers, development of certain services, promoting the activities of the hub, strategy to attract new farmers/companies to the hub, etc. Looking at the discussions, we can draw the conclusion that operations and circumstances always differ. But approaching the DIH as a strategic long-term project from partners was mentioned as a good way to proceed. The DIHs also shared their experience of building the DIH as a process, adding new projects and capacities via experience as well as opportunities and new partners. But the need for flexibility in offering the services and finding solutions by the hub or via the ecosystem for their "customers" (farmers, technology solution providers, or relevant stakeholders) was seen as key.

It should be noted that operational topics may vary depending also on the phase in which the DIH is developing.

#### Cooperation and collaboration among DIHs

While DIHs aim to provide a one-stop-shop for their users, it can be perceived that not all infrastructures, capacities and capabilities are available in a single region. Cooperation and establishing connections with other initiatives (on regional and cross-regional level) could provide the DIHs with partners offering these capacities, thus also expanding the ability of the DIHs to support their local ecosystem.

This step in the DIH operations is recognized by a number of initiatives: SmartAgriHubs, for instance, aims to support the EU ecosystem of agri-hubs in finding each other, supporting each other's capacity, and network. The JRC, has identified the creation of national and international links as step 6 in their Practical Handbook & Good Practices for regional/national policy makers and DIH Managers (2020). Many other initiatives can also be mentioned: BOWI project aims to support the creation of continuous inter-regional innovation corridors supported by DIHs in widening and mature regions; EIP-AGRI presents a number of initiatives supporting the technology, skills and knowledge transfer with the Agricultural Knowledge and Innovation Systems (AKIS) as only one of the examples.

SmartAgriHubs supports the collaboration among DIHs in various ways – a map and search function, an observatory, workshops, events, community platforms, dedicated forum, regional clusters, etc. With regard to the capacity building, the peer-learning and exchange meetings have been a main method to connect DIHs to each other. Further, the LXP modules and the re-watchable webinars have both attempted to initiate discussions and to showcase good practices with the expectation that this will inspire other members to reach out to each other and possibly continue the collaboration.

#### **Continuous self-improvement**

Last but not least, as defined by the JRC in step 7, the DIHs need to continuously evaluate their activities and if needed adjust to ensure that maximum impact is created. To support this process, the maturity self-assessment tool for DIH provides a way to continuously monitor the service portfolio of the DIHs.

<sup>&</sup>lt;sup>8</sup> JRC (2020), "Digital Innovation Hubs As Policy Instruments to Boost Digitalisation of SMEs: A Practical Handbook & Good Practices For Regional/National Policy Makers And DIH Managers"

https://bowi-network.eu/

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<sup>&</sup>lt;sup>10</sup> https://ec.europa.eu/eip/agriculture/en/publications/agricultural-knowledge-and-innovation-systems-akis

# 2.3. COMBINING EXISTING MATERIALS WITH NEW TRAININGS

Within the capacity building activities, SmartAgriHubs has relied on a hybrid approach where we have combined mapping of existing trainings and capacity building materials with new activities and new materials developed within the framework of the SmartAgriHubs project. In this way, we have aimed to limit the replication of effort and leverage on already existing and relevant materials. Therefore, other projects have been scouted to see what (training) materials they offer. Overview of identified relevant materials was first provided in D4.4. and the following section offers an update with new materials that can potentially be referenced in the SmartAgriHubs community. Materials from other projects can be found on SmartAgriHubs portal under Training here. The snapshot below also provides a glimpse of how the training page looks like.

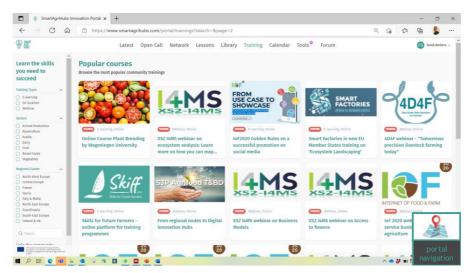


Figure 3: Overview of links to materials from relevant projects on the SAH portal (source: Presentation of Frank Berkers, 17 Nov. 2021)

# 2.4. TOOLS TO FACILITATE THE CAPACITY BUILDING IN SMARTAGRIHUBS

As introduced above, the capacity building activities in SmartAgriHubs should be seen as part of a journey, where the capacity building is only one step. DIHs also benefit from a number of other activities in SmartAgriHubs: to name a few, the open calls stimulate innovation in the ecosystem as well as DIHs to expand their capacities and support experiments (WP2), the Competence Centres – which often form a core to a DIH – are supported with a tool to showcase their technology solutions and systems (WP5), and the SmartAgriHubs network is actively building a growing community.

Looking at the capacity building, the following tools developed within SmartAgriHubs should be noted:

## 2.4.1. SmartAgriHubs portal as a place to find relevant trainings and webinars

All webinars (and their corresponding materials) as well as relevant materials from other projects are published on the SmartAgriHubs portal. The portal offers a place where all members can submit and find relevant materials. As such, the SmartAgriHubs community targets all stakeholders – farmers, innovators, hubs, competence centres, other projects – who can join and connect to and contribute to the community.

As part of the community space, a dedicated section is available for Training. Further, the Library provides access to materials related to community building and content sharing where a number of the materials from the capacity building activities can be found.

The SmartAgriHubs platform also provides access to the Learning and Exchange Platform (LXP) and the Innovation Services Maturity Model Self-assessment tool (under Tools). Note that currently DIH related tools are only available to organizations that have indicated the role of 'DIH'. Both of these are briefly outlined below.

#### 2.4.2. Peer exchange and the LXP portal

The capacity building via peer exchange is also supported via a Learning and Exchange Platform (LXP) which aims to stimulate the continuous exchange among hubs. The platform has two main functionalities:

- 1) It provides access to **content** organized in courses, divided in various modules. Each of these provide content on a specific topic, stimulating self-study in small, easy-to-follow pieces (a video, article, template, etc).
- 2) Possibility to directly '**chat'** and exchange with other hubs. The function of these chats is to start discussions on a particular topic. This chat is moderated by topical experts.

The LXP is mostly supporting and acting as a follow-up of the peer exchange meetings. The link to the LXP is also provided under Tools of the SmartAgriHubs portal. The LXP tries to balance the value of peer-to-peer interaction and the time and effort it takes versus the reusability and a-synchronous use of online tooling.

#### 2.4.3. The DIH Innovation Services Maturity Self-assessment

Last but not least, the SmartAgriHubs Portal also provides access to the Innovation Services Maturity self-assessment. This tool provides DIHs with insights into their service portfolio and areas where they can still develop. The Maturity self-assessment tool is self-standing but it forms a key point in the capacity building, as it often is the starting point for DIHs to identify areas of improvement as well as to monitor their progress.

The tool is also key for the capacity building activities. As an example, it can support forming groups of peer-exchange among DIHs. It was also used to identify 4 services which appear to be under-developed by a number of hubs (see D4.2), thus leading to forming new peer exchange meetings (described below).

# 3. MATERIALS AND ACTIVITIES SUPPORTING DIHS IN THEIR OPERATIONS

#### 3.1. WEBINARS FOR OPERATING A DIH

In order to support a wide access to materials that can ease hubs in their operations and/or first steps, a set of webinars were provided by SmartAgriHubs. The webinars were specifically selected as a mode of capacity building in order to reach a wide group of DIHs in order to ensure access and awareness in the community of the main capacity building topics. The objective was to provide the DIHs with a introduction to the topic, create a structural thinking of the DIHs on the selected topic, initiate discussion and in many of the cases share a good use case with the DIHs.

The webinars were also made available on the SmartAgriHubs portal, where links with rewatchable videos are provided. This ensures that the materials are accessible for new DIHs joining the SmartAgriHubs community as well as for any hubs which might have missed the opportunity to participate in the webinars. This is in line with the capacity building strategy to provide wide and re-usable access for DIHs.

The topics of the webinars were based on the needs assessment at the start of the project, combined with the experience of the SmartAgriHubs team and the indications provided by

DIHs in the various webinars. <sup>11</sup> As mentioned, the webinars have addressed topics that relate both to the establishment and the development of the hubs as some of the topics are relevant for both phases and due to the diversity of the SmartAgriHubs community.

The table below presents an overview with the SmartAgriHubs webinars dedicated to the capacity building.

#	Title	Date	nmbr at- tendees	total youtube views SAH+TNO channel (as of 28-02- 2022)
1	Webinar: 'Skills and capacities for Digital Innovation Hubs' ( <u>link</u> )	17-12- 2019	29	122
2	Webinar: 'Steps towards creating a DIH' ( <u>link</u> )	31-1-2020	14	146
3	Webinar: SmartAgriHubs Observatory: Building joint tools for sustainable digital Agri businesses ( <u>link</u> )	11-3-2020	40	45
4	Webinar: 'Governance for Digital Innovation Hubs' (link)	21-4-2020	98	248
5	Webinar 'Data sharing in agriculture and the Code of Conduct' (link)	20-5-2020	109	239
6	Webinar 'Strategy Development for Digital Innovation Hubs' ( <u>link</u> )	18-6-2020	91	112
7	Webinar: 'SmartAgriHubs Innovation Services Maturity Model for DIHs' ( <u>link</u> )	6-7-2020	39	217
8	Webinar: 'Ecosystem Analysis for Digital Innovation Hubs' ( <u>link</u> )	16-7-2020	30	122
9	Webinar: ""Farmer Centric Innovation and DIHs" (link)	24-9-2020	47	72
10	Webinar: "European Digital Innovation Hubs and collaboration in the DIH ecosystem" (link)	22-10- 2020	123	155
11	Webinar: "Business Models for DIHs" ( <u>link</u> )	19-11- 2020	58	120
12	Webinar "Launch of the SAH DIH Peer exchange program" (link)	29-1-2021	37	82

<sup>&</sup>lt;sup>11</sup> A detailed analysis of the needs assessment can be found in D4.1. For a detailed analysis and mapping of the needs with regard to materials gathered from other projects and planned webinars within SmartAgriHubs, see TNO 2020, D4.4. Capacity Building Package of Materials for the Establishment of a Hub

#### 3.2. THE LEARNING AND PEER EXCHANGE PROGRAM

After this series of webinars, it was considered an important evolutionary step to support DIHs in taking the lead in their own growth. This insight also came from a consultation amongst DIHs, during which they indicated they would want the opportunity to engage and exchange with their peer DIHs on practical cases. Furthermore, receiving information was perceived to be important, but there was a shared need to complement this information with additional discussions with other hubs to learn from each other and deep-dive more on specific cases from practice.

The SmartAgriHubs Learning and Exchange program and platform (LXP) was consequently designed to address both these pillars; self-directed capacity building, and peer exchange. This program is available to all SmartAgriHubs DIHs. In the accompanying online environment, based on so-called 'social learning' software, both self-learning and possibility to exchange are being facilitated.

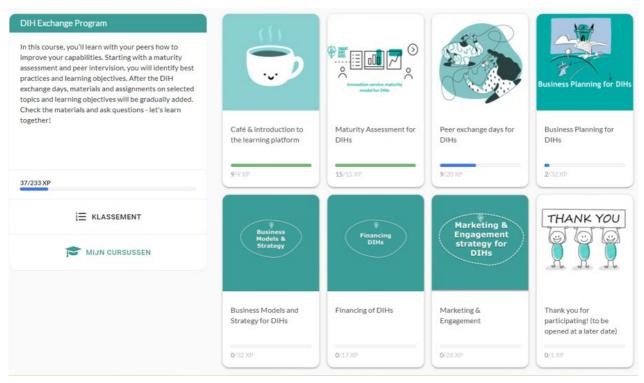


Figure 4: screenshot of the DIH Exchange programme LXP course in the LXP platform

#### 3.2.1. The design of the program

Originally the program itself consisted of a plenary meeting to kick-off the program, followed by peer exchanges in smaller groups. These smaller groups were formed to balance newer and more experienced DIHs based on maturity assessment results (see also D4.2 DIH Capability Maturity Model), in order to ensure that DIHs can share on specific challenges as well as gather insights from DIHs in different phases of development. For the DIHs not yet familiar with conducting a SAH maturity assessment, the WP4 team dedicated a specific day before to plenary meeting to supporting DIHs with filling in the assessment. In the subsequent week, in the smaller groups, the DIHs pitched their organisation and their assessment results, and shared expectations and goals for capacity building. After this session, all participating DIHs

were invited to actively use and reflect on the material on the platform. Discussion points paired with the learning material helped spark discussion amongst the DIHs.

The registered amount of DIHs joining the first round of peer exchange was not reached (about 6 instead of 36 participants). After careful analysis of the reasons, we turned to a new approach to the LXP: the more intimate 'boutique'. Rather than inviting a whole group at once, for the boutique LXP exchange, we reached out to DIHs one on one (either by phone or e-mail). By asking about their specific cases and capacity building needs, we could then create tailored groups and far more engagement to join the program.

The boutique round of February 2022 was also based on the analysis of the maturity assessment results, forming another basis of the agenda of the peer exchange session (that replaces the bigger plenary session).

The journey from the session towards the interactive platform remains the same.

So far, 5 exchanges took place: two mass marketed exchanges and 3 boutique approach exchanges. More boutiques are expected in Q2 of 2022. An overview is provided below:

What	When		
1 <sup>st</sup> Peer exchange	19-20 April 2021		
2 <sup>nd</sup> Peer exchange	17 May 2021		
1 <sup>st</sup> Boutique peer exchange	3 June 2021		
2 <sup>nd</sup> Boutique peer exchange	7 February 2022		
3 <sup>rd</sup> Boutique peer exchange	8 February 2022		

#### 3.2.2. Materials developed for the LXP platform

In order to support self-development and further exchange among the DIHs, specific courses were developed with background materials and short assignments in the LXP platform. In the learning platform one can find topic-related content in different shapes and forms (e.g. articles, video recordings, presentations, templates and exercises). The materials developed are a reflection of the expressed needs during the course of the project and the first exchange round.

Currently the following courses and modules are offered on the LXP:

#### Course 1 - DIH Exchange program

This course contains a wide variety of materials to support interactive capacity building. It contains 3 explanatory modules (e.g. about the platform itself and the maturity assessment), complemented by 4 topical modules on Business Planning for DIHs, Business models and Strategy for DIHs, Financing of DIHs, and Marketing and Engagement.

These modules all contain bite-sized materials for DIHs to deep-dive into the topic with background information and examples from practice, and to exchange cases and have discussions. Each of the modules, includes 6-8 items (a video, a PowerPoint, a use case, material, exercise, etc) which the enrolled DIHs can access to support them in their self-study and exchange with other DIHs. In total there are 63 objects including 8 exercise submission objects. Of those, 44 of the objects are dedicated to the 4 topical modules.

The topics of the modules were selected following the first peer exchange meeting and analysing the needs (from the learning objectives and discussions) of the participating DIH. It was observed that many of the DIHs in the exchange were comparatively young initiatives. Even when established by a long-term partner, they aimed to still develop as a DIHs (including new partners). Therefore, horizontal topics related to their business plan, growing the

awareness of the hub activities and developing a longer-term strategy and financing were identified as needs. Consequently, these were translated into training modules.

#### Course 2 - Proposal writing

This course contains modules on principles of R&D project financing, types of funding schemes for IEs, collaborative frameworks for proposal and project development, and going from results to a business plan. The objective of the course was to support the DIHs also in preparing for proposal writing in SAH open calls as well as with general information supporting the DIHs in addressing different funding organizations (e.g. to help their clients).

In total 20 objects supporting the study of the hubs are included.

Below a visual of what a module can look like (see further in Annex 1):

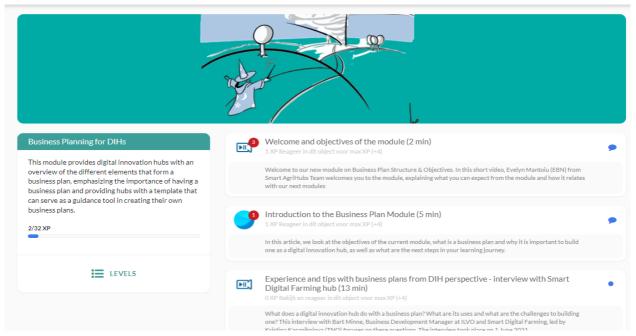


Figure 5: Screenshot of the Business Planning module of the DIH Exchange Programme course in the LXP platform

#### 3.2.3. Observations from the LXP so far

Based on the experience with the LXP so far, we can identify the following observations. Firstly, it should be noted that some of the topics in the peer-exchange groups touched upon topics also addressed by some of the open webinars. This shows the need for **combination of different capacity building activity types**. The learning and exchange programme is very much focused on exchanging among peers on the process, their experience, difficulties and successes. Therefore while the topics might partially overlap with webinars, the interaction in the LXP and the indirect networking add a new level of learning.

Secondly, the peer exchange by itself can be seen as a way to both share experiences and learn from peers, establish new contacts, and dedicate comparatively contained effort to the activity. However, **a tailored/boutique approach** is needed in order to identify the needs of the DIHs and match them in a relevant group. Following the analysis of the first peer exchange days, it was identified that DIHs connect more effectively when there is a common topic/issue they all need to tackle. To identify this and tailor the discussion and the group, a

much more involved approach is needed, where DIHs are consulted (almost on an individual basis) to identify where exactly their challenges and strengths lie.

Thirdly, DIHs often are stressed for time and human resources. This means that shorter exchanges with clear end result are preferred (which led to the respective adaptation of agendas in the boutique peer exchange groups). In that sense, the team has found that while the follow up in the LXP is seen as valuable, DIHs find it difficult to commit time to visit the self-study materials and engage in a further exchange.

Furthermore, the peer exchange sessions are also an excellent way for facilitating experts to get deeper understanding of challenges that DIHs face.

#### 3.2.4. Communication and dissemination of the LXP approach

The LXP was communicated to the SmartAgriHubs community and the DIHs in the following ways:

- A virtual visit to all Regional Clusters before the launch (February 2021)
- A launch webinar in February 2021 for whole network
- An e-mail to all DIHs with registration link (+ reminder) and social media post
- Registration opening a few weeks before the plenary session
- The Maturity Assessment support day the week before the plenary session (April 2021)
- LinkedIn post after the peer exchange session of June 2021
- The LXP in the SAH newsletter (July 2021)
- A social media post on the proposal writing course (Sep 2021)
- The presentation on next peer exchange round (Q1 2022) to the Regional Clusters in November 2021
- An e-mail about the forthcoming peer exchange round to 48 DIHs based on maturity assessment results (Dec 2021)
- The new peer exchange round with 17 DIHs in Feb 2022 was communicated in the RC day on February 8 2022.

One of the lessons learnt for the team is that DIHs receive a lot of information. Therefore, the communication and bringing attention to the LXP through the SmartAgriHubs network, including via the Regional Clusters, is seen crucial to stimulate interest. In most cases, personal contact by email or phone appears most effective to gain commitment for participation.

#### 3.2.5. SAH materials mentioned in other projects

The SmartAgriHubs capacity Building materials have been cited also by other EU projects. An example if the AfriCanEU project, which has included modules form the SmartAgriHubs LXP in their catalogue of trainings (<u>Training Resources - Online Courses - AfriConEU</u>). This is one example of how the project is reaching beyond the SmartAgriHubs community and showcases the relevance of the materials to other EU projects and communities. Such references increase the impact of the project and also show that the materials and the capacity building program form an important part of the SmartAgriHubs legacy.

# 3.3. OVERVIEW OF IDENTIFIED RELEVANT MATERIALS FROM OTHER PROJECTS (ADDITIONAL TO D4.4)

D4.4 conducted an extensive analysis of existing materials and trainings from other related projects. That was also complimented with analysis in WP5 (see D5.5).

Based on the experience of the SmartAgriHubs team in DIHs, international collaboration and national capacity building programs, as well as the needs analysis developed in D4.1, links to selected training materials from EU projects were included in the SAH portal. Additionally, the whole community could upload materials they deem relevant (as per the SAH community design).

In this deliverable we outline a small number of additional materials from projects that the team has found interesting:

- <u>EIT-Food</u><sup>12</sup> has catalogued a number of projects, including courses on topics such as "<u>EIT Food - Circular Business Models for Sustainable Urban Food Systems</u>" and many more for professionals, organizations, students, etc.
- BOWI project on collaborations: Regarding identifying the focus of a DIH and its importance in establishing collaborations, the webinar by BOWI, DIHNET and Vanguard has been identified as a potential source to support DIHs to identify areas where they can collaborate. The BOWI project and webinars of the idea of creating inter-regional collaborations can also support DIHs to identify with whom and how to proceed with It should be noted that the tool is generic for DIHs and not particularly for agri-DIHs.
- <u>FarmDemo project showcasing demo cites:</u> one of the ways in which DIHs can showcase the possibilities of advanced technologies in agri-food is through the organization of demo sites. The FarmDemo project<sup>13</sup> offers videos of demo farms across Europe as well as training kit to develop a demo site.
- Specific technology/sector training: Looking at specific trainings regarding a technology or sector, various projects have developed dedicated trainings. In the capacity building activities, the focus is rather on the DIHs as an initiative that can support the agri and industrial stakeholders. Yet, it is worth mentioning several initiatives which provide access to training materials on specialized topics. The BET project<sup>14</sup> for instance has developed trainings in the form of videos, self-assessment and articles on biocontrol. Their training programme can be found here: (https://mygreentrainingbox.com/).

In the EURAKNOS<sup>15</sup> and EUREKA<sup>16</sup> project, an <u>EU FarmBook</u> has also been developed to make results from EU multi-actor projects easily accessible via an EU-wide, centralised and open-source knowledge platform on topics such as crop farming, live-stock, forestry, society, environment, economics with information about results as well as experts in the field.

<sup>12</sup> https://www.eitfood.eu/eit-food-projects

<sup>13</sup> https://farmdemo.eu/

https://ec.europa.eu/programmes/erasmus-plus/projects/eplus-project-details/#project/2018-1-FR01-KA202-047892

<sup>15</sup> https://euraknos.eu/

<sup>16</sup> https://www.h2020eureka.eu/

#### CONCLUSIONS

Based on the experience of the team in aiding the DIHs in their operations, we can draw the following conclusions and next steps.

#### Capacity development needs vary per DIH

While it may seem obvious, it needs to be stated that capacity building needs vary per DIH. Not only are DIHs not all in the same phase, but also their focus and needs change over time. In the agri-food sector in particular, the DIH concept is comparatively new (initially DIHs emerged from the manufacturing sector). This means that many DIHs are just starting or scaling up their activities to add value to the agri-food ecosystem. Even initiatives with established operations are continuously developing – evolving their services, partnerships, business models. This means that even highly experienced hubs may at a certain point need materials widely associated with the setting up phase (e.g. if a hub is expanding its consortium or shifting its strategy).

For capacity building this implies two conclusions:

- 1) It is difficult to always distinguish capacity building needs in the start-up and the operating/active phase of the hub;
- 2) The needs, even in the same topic, per hub would vary depending on their previous experience. This means that different methods to support the hubs are needed to match their needs.

#### Mixing different modes of capacity building might be needed

The above reasoning also led the consortium to develop different activities to support DIHs in their activities. Tools were combined with existing materials, new webinars and finally peer exchange and a platform for self-study. This mix is needed not only to meet the varying needs but also to reflect the limited capacity that DIHs can dedicate at a single instance on a topic. The variety of materials also allows for DIHs to access the material at a time of their need or review it.

#### Need for peer sharing to provide examples on how to further develop

Given the different circumstances in which DIHs operate and the various stakeholders they address – be it farmers or agri-tech providers, research of society – developing materials that support these different entities and capture all elements a challenge. The capacity building materials therefore aim to usually provide a structure and indication of how a topic could be addressed.

The discussions of the DIHs however revealed that they also highly value experience and examples from their peers. While the exact circumstances are difficult to match, the DIHs can glimpse the approach, the challenges and success process of their peers. This provides them with valuable examples that they may replicate or learn from. Therefore, sharing of good practices and exchange of experience has been introduced in the peer learning and exchange program.

#### Combining a mass approach with more intimate 'boutique' peer exchange

One challenge for stimulating peer exchange is to identify the appropriate group, where common challenges and good examples can be shared. This requires closer discussion and contact with the participating DIHs. Consequently, the broader approach of webinars and materials for self-study in the LXP platform have been combined with a more tailored, boutique approach initiated in the peer exchange meetings.

## Capacity development seen as important but daily operations and capacity restraints may affect turnout

In the first peer exchange meetings, despite the considerable registration for the meetings, much fewer DIHs actually attended the exchange. Studying the reasons, the team identified several lessons that were then taken into account to adapt the approach. Firstly, DIHs value capacity building. Yet, they are often faced with limits with regard to time or people who can join meetings. Therefore, shorter sessions were preferred. Secondly, while access to materials as a follow up is seen as beneficial (based on interviews with DIHs), it is

difficult for the DIH to prioritize self-study when everyday activities require their attention. Therefore a mix of tools – some reviewable at a later stage, combined with shorter meetings and possibility to still access self-study were appreciated. The team has also considered exclusivity or access to materials for a limited time as a strategy to explore in the future to highlight the value of the materials. Lastly, it should also be mentioned that DIHs are at times faced with a large amount of information. Therefore to capture their attention, a dedicated marketing is needed.

#### Need for flexibility to address the needs of a large ecosystem

As mentioned previously, the capacity building activities in SmartAgriHubs took different form and have changed in response to received feedback and needs from the ecosystem. Given the breadth of the ecosystem, the varying needs and the continuous development of the ecosystem, it is crucial for all activities to remain flexible and adaptable. The capacity building activities should therefore be seen as a learning process by itself too as in SmartAgriHubs we explore different modes in which to aid and support DIHs to deliver the maximum value to their agri-ecosystems.

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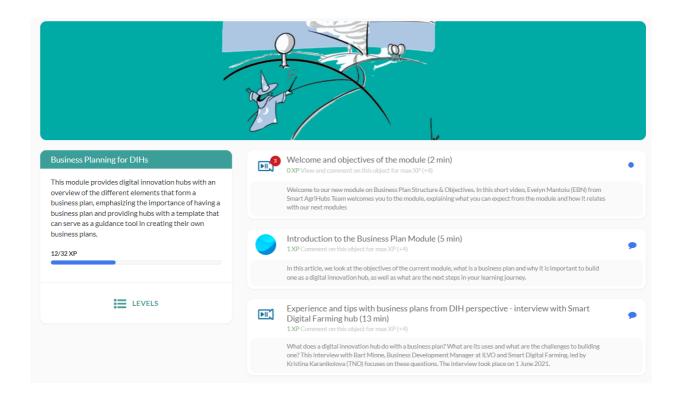
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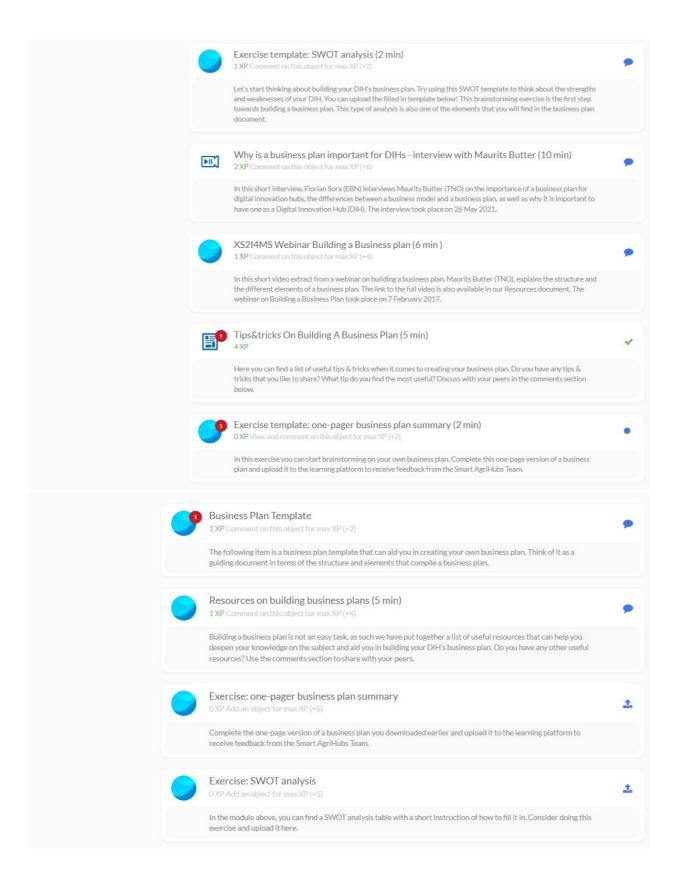
# ANNEX: OVERVIEW OF LXP MATERIALS AND ARTICLES

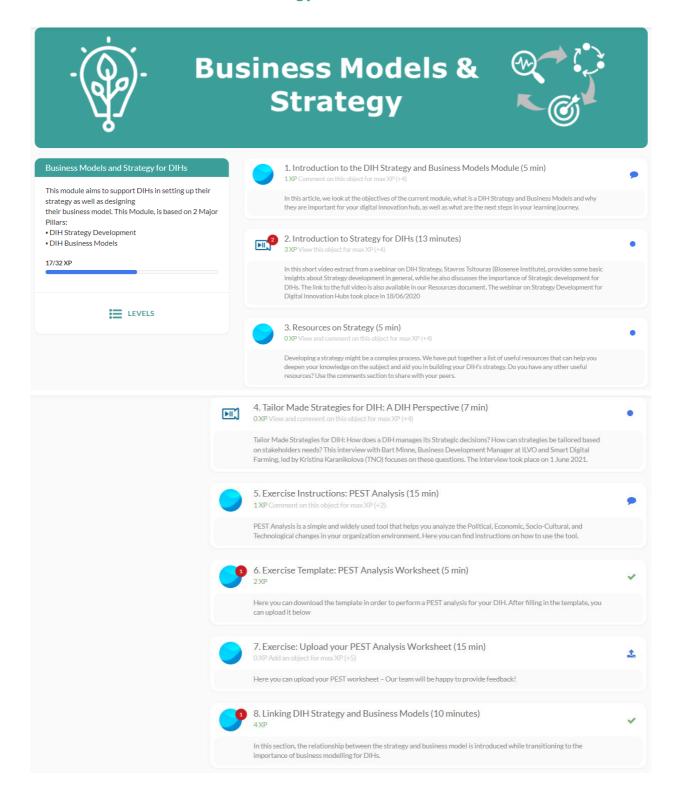
#### Overview of the content of the LXP course on DIH exchange

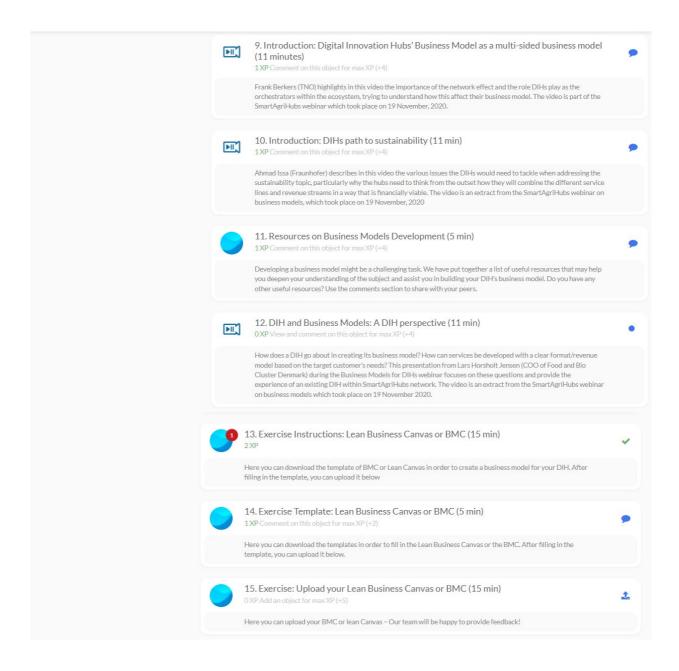
In total, 7 modules were developed in the DIH exchange course. Out of these, 4 modules were more focused on the content to support DIHs build capacity of topics identified in the first peer-exchange meetings. The snapshots below provide an overview of the content of these 4 modules (as of 13 February 2022). The remaining of the modules were focused on providing the DIHs with an opportunity to get to know each other and introduce each other (the Café), to prepare and understand the process of the peer exchange (the peer exchange day) and to provide them with instructions on why and how to conduct a maturity self-assessment for their services (Maturity Assessment).

#### **Module Business Planning for DIHs**

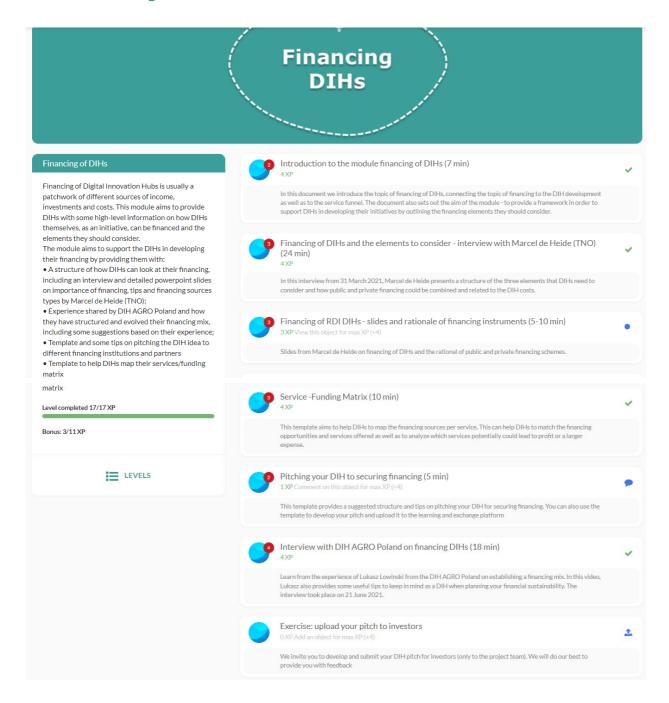






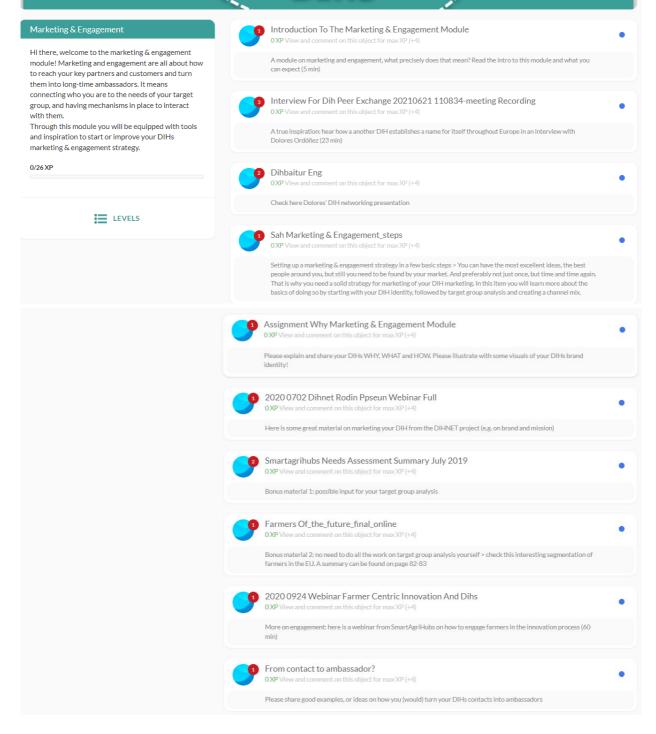


#### **Module Financing for DIHs**



#### **Module Marketing and engagement for DIH**

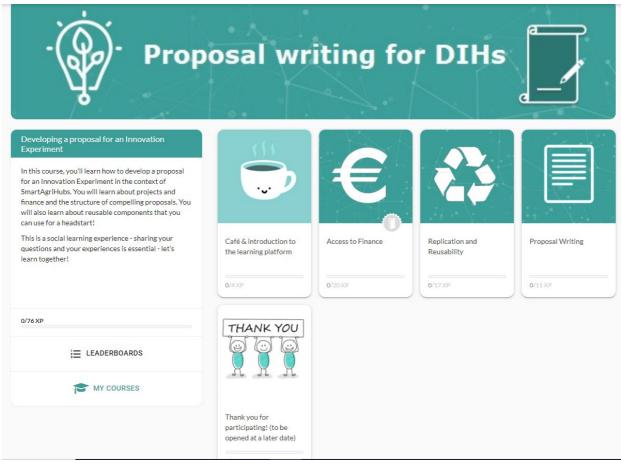
# Engagement strategy for DIHs



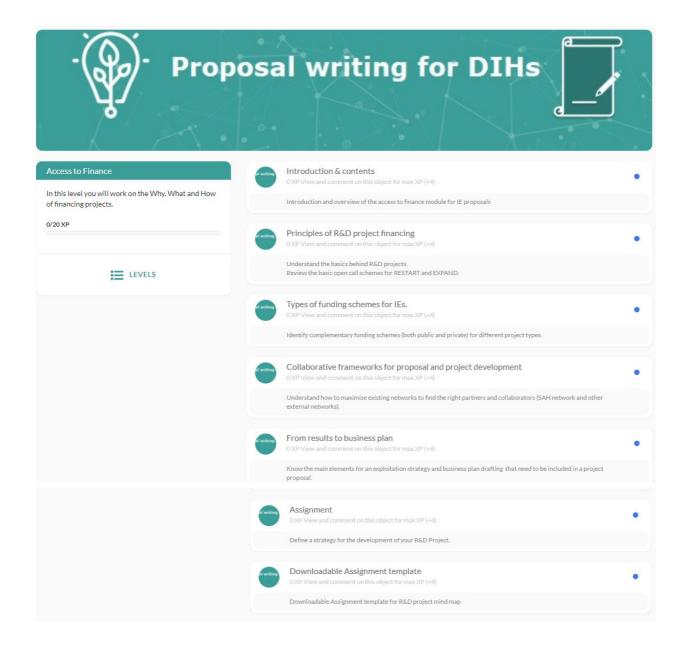
#### Overview of the content of the LXP course on Proposal Writing

The course on proposal writing aimed to provide DIHs with information and materials to support them to develop a proposal for an Innovation Experiment in the context of SmartAgriHubs. The materials were developed by experts from WP2 and WP3.

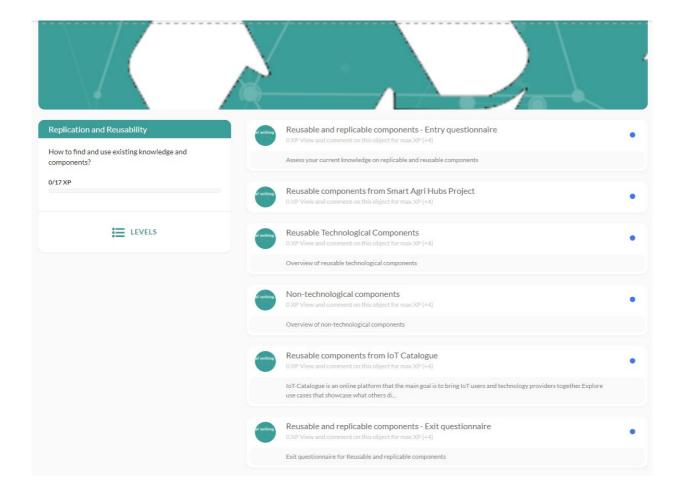
In total there were 4 modules, 3 of which content focused. The snapshots below provide an overview of the content of the 3 content focused modules. The fourth module – Café and introduction to the learning platform – aimed to provide the participants with some background and introduction to the structure as well as a place where DIHs can introduce themselves (to support networking).



#### **Module on Access to Finance**



#### **Module on Replicability and Reusability**



#### **Module on Proposal Writing**

