



**SMART
AGRI
HUBS**

D1.3 ECOSYSTEM BUILDING STRATEGY

WP 01

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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 key to address the grand challenges facing 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 the Internet of Food and Farm (IoF2020) project. 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. The end-users from the agri-food sector are at the heart of the project and represent the driving force behind 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. The project is part of Horizon2020 and is supported by the European Commission with a budget of €20 million.

EXECUTIVE SUMMARY

The SAH ecosystem building strategy is designed to sustain and expand the current agri-tech innovation network by helping its members to set-up a pan-European, multi-stakeholder innovation ecosystem.

The current strategy shows how the building of the ecosystem can:

- realise effective engagement with all stakeholders in the network;
- cover all the regions in Europe to demonstrate the successes of DIHs work;
- ensure that interaction between all stakeholders is provided through the Innovation Portal;
- change behaviour and perceptions in the agri-tech sector.

The ecosystem building is divided in three phases, according to the duration of the project (Sowing, Flowering and Harvesting) and the ecosystem levels (Within DIH, Between DIHs and Beyond SmartAgriHubs). Stakeholders are at the heart of the ecosystem, and a thorough analysis was conducted to position them for the development of the strategy. Using the Ackerman & Eden interest/power matrix, the strategy allows the appropriate actions to be triggered towards the right stakeholder group:

1. **Subjects:** like the DIHs, business partners, technology providers, Competence Centres, and the Innovations Experiment have a strong drive in building a thriving ecosystem, but not the power to influence an overarching ecosystem. To achieve this, the strategy details activities of cooperation and coalition building, to support this group to increase their overall power.
2. **Players:** varying from end-users, such as farmers, to the knowledge institutions and the general public are not dependent on the ecosystem yet crucial to its development. The strategy to enhance their engagement should focus on identifying the catch to sensitise them on the importance of an ecosystem.
3. **Crowd:** involve actors with both less stake and power in the goal development, therefore hardest group to engage. Finding the hook to raise their engagement is key to get them on board.
4. **Context setters:** Building a strong identity, and a common group goal imbued with a sense of belonging to the SAH community is crucial in this group in order to enable further development of the project.

Next to the stakeholder's analysis, the framework in which the ecosystem is being built is of equal importance. In this sense the SWOT analysis highlights that there are many opportunities that can be capitalised on in order to enlarge the SAH ecosystem, for example building on the experience of already existing networks (IoF2020) and capitalise on the momentum of the digitisation of agriculture in the EU policy. However, to build a self-sustainable ecosystem several elements need to be taken into consideration like the complex multi-stakeholder landscape with differences approach in ecosystem and the conservative behaviour and reply of some of the stakeholders. The role of the SAH ecosystem will be to align their interest and bring them together around the common goal of building a pan-European network of DIHs.

In conclusion, SmartAgriHubs is an innovative ecosystem of ecosystems, which implies dealing with different stakeholders, different challenges and different interests. The ecosystem building strategy unfolds on the appropriate actions to unite the stakeholders, their interest and expand the community altogether.

LIST OF ABBREVIATIONS

This section is dedicated to project specific terms and abbreviations that were used throughout the document.

CC – Competence Centre

DG AGRI – European Commission Directorate General for Agriculture and Rural Development

DG CONNECT – European Commission Directorate General for Communications Networks, Content & Technology

DIH – Digital Innovation Hub

EC – European Commission

FIE – Flagship Innovation Experiment

IE – Innovation Experiment

IoT – Internet of Things

KPI – Key Performance Indicator

RC – Regional Cluster

SAH – SmartAgriHubs

WP – Work Package

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1. INTRODUCTION

SmartAgriHubs helps to digitally transform the agricultural production system by shaping innovations in the EU territory and aligning the interest of stakeholders in the project. The SAH community promotes the creation of a self-sufficient ecosystem of DIHs and Competence Centres aiming to achieve a complete coverage in Europe. SAH is aiming at an open, inclusive ecosystem, accessible to all relevant agri-food stakeholders, from farmers to technology providers, and other organisations at regional/national/European level who are interested in this issue.

The document starts with an introduction of the objectives of the ecosystem strategy and with an overview of the structure of the report.

1.1 GENERAL GOALS

The goal of the ecosystem building strategy is to connect all the different layers with its adjacent players in the agri-tech sector and create a self-sustaining, solid network all over Europe. DIHs are placed at the heart of the network, and they will ultimately contribute to the overall goal of ensuring a digital transformation of the European Agri-food production.

More specifically, the ecosystem building strategy will focus on the following objectives:

1. Building a network of agri-related DIHs and facilitating collaboration among them in the EU;
2. Supporting and maximizing the outreach of the Pan-European Innovation Experiments;
3. Enhancing financial support through open calls and private investments to interested stakeholders in the agri-tech sector;
4. Ensuring the long-term sustainability of the network;
5. Promoting the expansion of the DIHs by including new DIHs/CCs in the network.

SmartAgriHubs is essentially an ecosystem of DIH ecosystems based on an extensive European network of existing DIHs, CCs, and also incorporates existing ecosystems such as the one established by IoF2020 stakeholders¹. It combines ongoing initiatives, knowledge and experiences and facilitates the connection to missing, or mutually reinforcing components.

1.2 STRUCTURE OF THE REPORT

This document has been developed based on the experience gained in similar agri-tech projects like IoF2020 and in joint cooperation with members of Work Package 1. The close interaction with the Regional Clusters has also helped to shape the structure of this strategy and adapt it to regional/local needs. The strategy focuses on the ecosystem building and presents the reader the necessary/relevant information on how to reach out to as many new users as possible and involve them in the network. The ecosystem strategy is aligned with

¹ *IoF2020 is an EU-funded Internet of Things (IoT) Large-Scale Pilot programme under H2020, which aims to facilitate the uptake of IoT technologies in the European agri-food sector.*

the communication strategy and follows the same methodology and approach and is therefore included in Annex I.

The document is divided into seven main chapters:

- Chapter 1 presents the main ideas and goals behind the SAH ecosystem;
- Chapter 2 provides a general overview of the current situation of the agri-tech sector in Europe, followed by an introduction to the specificity of SAH project and the need to build a robust ecosystem;
- Chapter 3 defines the methodology of the strategy;
- Chapter 4 lays down the stakeholders and SWOT analysis;
- Chapter 5 dives into the strategy itself, presenting the focus, target group and actions;
- Chapter 6 presents the roadmap to obtain a legal structure for SAH beyond 2022;
- Chapter 7 tackles the timeline of the activities proposed in the ecosystem building strategy.
- Annex I: communication and dissemination strategy

The ecosystem building strategy is an ongoing process and should be regarded **as a living tool** trying to connect different dots and stakeholders across Europe throughout the duration of the project. Building the ecosystem is a lengthy process that requires the involvement of all the partners, flexibility and willingness to adapt to an ever-changing context. **The implementation of the ecosystem building strategy will be reflected upon continuously throughout the project's lifespan.**

2. ROUTE TO THE DIGITAL TRANSFORMATION OF THE EUROPEAN AGRI-FOOD PRODUCTION

This chapter acts as a background description of the context in which the ecosystem building strategy unfolds. It will first briefly tackle the current situation of the agri-tech sector in Europe, highlighting the main challenges and hurdles it faces. Afterwards, the 'why' of the SmartAgriHubs project will emerge as a response to the scenario described below, stressing the need for the establishment of a robust ecosystem.

2.1 ABOUT THE DIGITAL TRANSFORMATION

Digital technologies such as Internet of Things (IoT), Blockchain, Big Data, Artificial Intelligence (AI) and robotics, carry the potential to help tackle the great challenges of today's agricultural industry in ensuring a sustainable, resource efficient, safe, high quality European food production. Therefore, the digitisation of agriculture is at the top of the EU Agenda and will be a significant topic in upcoming European legislation for the agri-food sector (e.g. the new Common Agricultural Policy CAP) as well as in future EU research funds.

Although digital agriculture may be a very promising endeavour, there are several obstacles that prevent it from reaching its maximum potential. First among these, the presence of a fragmented agricultural sector. Europe covers a wide and heterogeneous area, where farming is performed in different ways. Countries might be specialized in diverse sectors, with diverse cultures and traditions and with a different economic situation; a wide range of stakeholders might be involved and, depending on the level of innovation known or available, they might be more reluctant or inclined to welcome new technologies. It is a real challenge, then, to put together all the pieces of the puzzle, and to try to keep on fostering the development of the more advanced countries while also getting the least developed ones on board.

Alongside the more sector-specific considerations, there is still a large fragmentation in terms of knowledge exchange, the elaboration of convincing and profitable business cases for the key stakeholders, and the alignment of private and public funds to finance innovation and scale-up the market extent. These aspects form the basis for a successful and widespread implementation of such technologies.

The above issues lead to the third, big challenge, which is about involving the farmers – the end-users of digital innovations. They are the ultimate users of these innovations; therefore, their involvement is essential and needs to be fostered alongside that of the other stakeholders. In fact, apart from a small group of frontrunners, European farmers still do not seem to hitch to digital technologies. Therefore, the ecosystem building practices also include support the DIHs to reach out to their local farmers. Similarly, the RCs will also be helped in their function as a bridge between the SmartAgriHubs project and farmers.

The scenario pictured above portrays a very complex and multi-layered context, with great hurdles to overcome and heterogeneous stakeholders to connect in the most efficient and effective way. Figure 1 displays the digital transformation of the agri-food value chain.

The Digital Transformation of Agri-Food

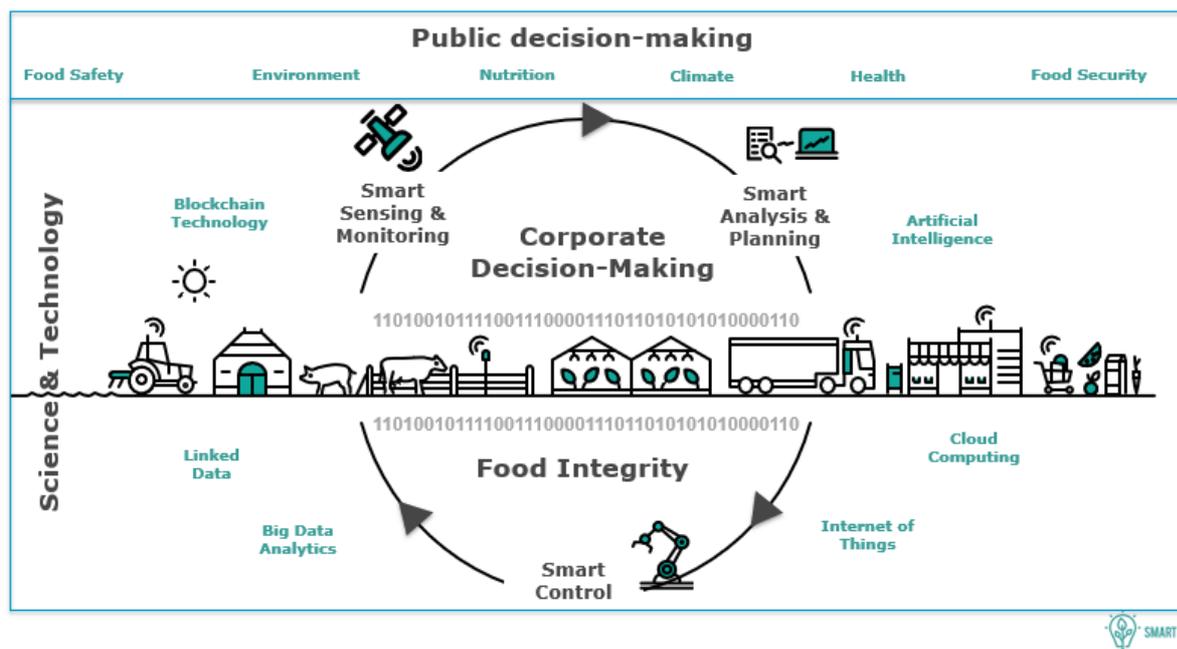


Figure 1 The Digital Transformation of the Agri-food chain

2.2 ABOUT THE NEED FOR AN INTERCONNECTED ECOSYSTEM

The term “ecosystem” was first used by the British botanist Arthur Tansley, to describe a community of organisms interacting with each other and their environments — air, water, earth, etc. In order to thrive, these organisms compete and collaborate with each other on available resources, co-evolve, and jointly adapt to external disruptions.² Similarly to the organisms in the biological ecosystem, the DIHs in the European agri-tech ecosystem develop around specific innovation(s) by both racing and cooperating with each other. Every DIH comes with its own network of business providers, technology experts, researchers, financial investors and end-users such as farmers.

SmartAgriHubs strives to ensure the long-term sustainability of the DIHs ecosystem. It aspires to do so by creating an “ecosystem of ecosystems” able to connect different DIHs within a specific country/area while at the same time, establishing cross-regional links to maximize cooperation throughout Europe.

² Retrieved from <https://www.investopedia.com/terms/b/business-ecosystem.asp>

3. METHODOLOGY

This Chapter illustrates the methodology used to develop SmartAgriHubs' ecosystem building strategy. SmartAgriHubs is a complex and multi-layered project, and the methodology applies a multi-level approach to respond to these needs. The key concepts explained in the following subchapters constitute the backbone of the whole document: understanding them is essential to fully grasp the reasoning behind the activities that will be carried out to develop the ecosystem. The last subsection wraps up the notions and explains how the different concepts fit with one another into a thorough methodology.

3.1 ECOSYSTEM PHASES

SmartAgriHubs already starts from a strong ecosystem. Along its 4-year timespan, the project will expand, welcome new stakeholders inside the network and identify new and different objectives to attain, for which a diverse strategic approach will be needed. The ecosystem phases respond to this ever-changing context by structuring the projects' activities in three subsequent periods:

- Sowing (M01-M09);
- Flowering (M06-M36);
- Harvesting (M24-M48).

The **sowing phase** represents the initial nine months of the project, and aims to build up a coherent, unique and recognizable structure of SmartAgriHubs, thereby strengthening the initial ecosystem base. Given the wide and diverse stakeholders already involved in the network, the activities performed during the sowing phase will focus on ensuring that all actors feel involved in the project and understand its mission and goals. The objective here is to develop a sense of belonging which will be essential for the expansion of the ecosystem towards external stakeholders in the following phases.

Once the starting ecosystem is in place, it is time to provide the means to further extend and reach out to other actors, supporting the DIHs and favouring the development of successful results. Therefore, the **flowering phase** focuses exactly on strengthening the DIHs network and the innovation ecosystem, with the objective of empowering DIHs to build up their network where all sectors (technology, agriculture, finance, research) come together and effectively start reaching out to farmers

The **harvesting phase** encompasses the last period of the project. The results coming in from the activities performed by the growing network will be used to showcase the ecosystem's success stories, providing a hook to incentivize other stakeholders, including farmers, to come on board. The established ecosystem will then become a proper legal entity by the end of this phase.

3.2 ECOSYSTEM LEVELS

SmartAgriHubs' ecosystem will be built and expanded throughout the duration of the project and beyond. However, the magnitude of the ecosystem also depends on the impact the project is able to deliver at the geographical level. That is why, alongside the time-related ecosystem phases, SmartAgriHubs' activities will also be tailored according to their geographical extent, referred to as "ecosystem levels":

- Within DIHs;
- Between DIHs;

- Beyond SmartAgriHubs.

The first layer concerns the network that needs to be created **within DIHs**. This network constitutes the backbone of a solid ecosystem. Ecosystem building activities should aim at strengthening expertise and capabilities inside the hubs, to equally involve partners in each DIH, whether they are business providers, technology experts, researchers, financial investors or end-users.

The relationship **between DIHs** will be enhanced by fostering collaboration among the nine Regional Clusters. At this level, building trust among partners is key to link the different areas in Europe. Cross-regional cooperation, expressed through joint participation in different IEs, will give the already advanced regions the chance to share their knowledge whilst providing the less advanced ones with the support they need to progress, fostering mutual learning.

The ecosystem we aspire to put together needs to be self-sustainable in the long-term. Therefore, the activities performed will also focus on what happens **beyond SmartAgriHubs**, exploring different scenarios to establish the network as an entity that will be able to autonomously and successfully perform for the years to come. Moreover, the ecosystem will not be limited to just involving agricultural stakeholders in the strict sense. Digitisation offers plenty of opportunities to establish widespread connections to other, non-sectorial audiences and actors, giving the network a more robust and global reach.

According to the ecosystem levels, then, SmartAgriHubs' activities will simultaneously address the local, national, regional (within a single Regional Cluster), cross-regional (cooperation between two or more Regional Clusters), European and International (extra-European) arenas, like shown in Figure 2.

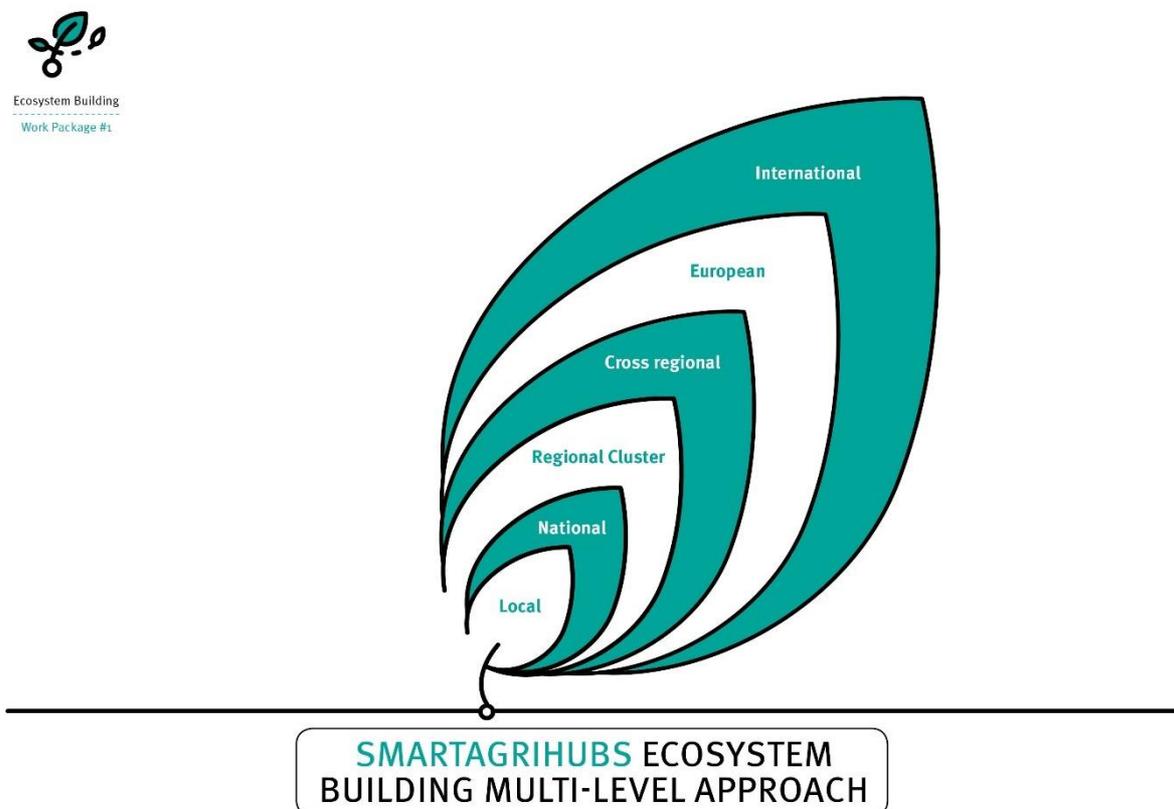


Figure 2 Graphic representation of SAH's multi-level approach based on the ecosystem levels.

3.3 CLUSTER APPROACH

Building on existing successful projects like IoF2020, SmartAgriHubs' initial ecosystem base involves a multitude of stakeholders, spread among all 28 Member States. To make sense of this varied network, the European area has been divided into 9 Regional Clusters, which group different countries according to their geographical zone:

- **Central Europe:** Czech Republic, Austria, Switzerland, Hungary and Slovakia;
- **France;**
- **Iberia:** Spain, Portugal;
- **Italy and Malta;**
- **North-East Europe:** Latvia, Lithuania, Estonia and Poland;
- **North-West Europe:** The Netherlands, Belgium, Germany and Luxembourg;
- **South-East Europe:** Greece, Romania, Israel, Balkan countries and Turkey;
- **Scandinavia:** Denmark, Sweden and Finland;
- **UK and Ireland.**

The clusters are the “eyes and ears” of the project on the ground, representing a group of DIHs, Competence Centres and Innovation Experiments in their corresponding areas. The cluster approach allows a broad, pan-European coverage and helps to intensify the outreach of technological transformation.

The RCs ensure access to all existing knowledge and expertise in the region and facilitate exchange of best practices between DIHs and other RCs. The project has already identified a total amount of over 140 DIHs - connecting farmers, technology providers and funding opportunities - and 2000 CCs - providing the facilities and the technical expertise. The DIHs will cooperate with the CCs, which in turn can become DIHs themselves. SAH also selected 28 Flagship Innovation Experiments (FIEs) that are connected to a DIH, which are outstanding examples of IEs where innovative solutions are tested and validated on farms or in other parts of the agricultural value chain.

This network of DIHs, CCs, FIEs, RCs needs to find its way to policy makers, the scientific community and the general public. All these stakeholders together form the initial SmartAgriHubs Ecosystem, which will grow and become a solid, self-sustainable system.

3.4 THEMATIC APPROACH

SmartAgriHubs mainly addresses the very beginning of the agri-food supply chain. In fact, the experiments and technologies tested in DIHs, CCs and practically implemented through IEs involve the five main European agricultural sectors:

- Arable;
- Livestock;
- Fruit;
- Vegetables;
- Aquaculture.

These sectors represent a powerful means to link different European Regions. The activities of the ecosystem building strategy will identify common grounds on which to base successful collaborations and knowledge exchange, with sectorial synergies being one of the possible approaches. For instance, effective cross-regional cooperation can be achieved through the replication of IEs in the same sector but in different geographical zones.

3.5 WORK PACKAGES

At the top of the project's structure, the Work Packages play an essential role in coordinating the different activities and reaching the proposed objectives. Each Work Package has a precise function which is critical to build up a strong ecosystem:

- Work Package 1: Ecosystem Building;
- Work Package 2: Network Expansion by Open Call;
- Work Package 3: Monitoring and Evaluation of IEs;
- Work Package 4: DIH Capacity Building and Monitoring;
- Work Package 5: Competences Centres (CCs);
- Work Package 6: Project Management.

WP1 has the lead in elaborating the strategy and the activities to expand and strengthen the existing ecosystem. However, cooperation with other WPs is essential to guarantee a smooth involvement of all relevant target groups and to keep track of the overall project's developments.

3.6 INTEGRATING THE CONCEPTS INTO A THOROUGH METHODOLOGY

All the approaches and concepts separately explained in the previous subsections need to collectively fit inside a coherent and reasonable methodology. Figure 3 visually represents how the ecosystem building strategy integrates these different elements.

The first main division is done according to the ecosystem phases (Sowing, Flowering, Harvesting), establishing three timespans: for reasons of convenience, in Figure 2 the phases are divided, but in reality, they overlap with one another, having as critical dates those inserted in the timeline. Within each phase, the strategy is tailored according to the three different levels (Within DIHs, Between DIHs, Beyond SAH). The content of each level addresses the main target groups and the activities put forward to involve them. The major players within the strategy are RCs, DIHs and CCs (visually represented by the colourful icons of the RCs), Partners in the WPs (represented by their icons), with the sectors being a fundamental element to create synergies. At the beginning of the Sowing phase, the ecosystem is limited to the initial pool of stakeholders within the consortium, but, as the project advances, the ecosystem will grow, welcoming more external stakeholders. Of course, the content of the strategy will adapt according to the network's growth.

4. STAKEHOLDER AND SWOT ANALYSIS

This chapter opens with an insight into the overall stakeholder scenario within which SmartAgriHubs will act in its ecosystem building strategy. This is an initial stakeholder mapping which is not exhaustive: a more thorough and detailed analysis will follow in the coming months. The second subchapter provides an overview of the weak and strong points of the project by means of a SWOT analysis.

4.1 STAKEHOLDER ANALYSIS

The stakeholder analysis aims to highlight the most relevant stakeholders for SAH and map them according to their “power vs interest” relation. Figure 4 below depicts the target groups already identified in the communication strategy.

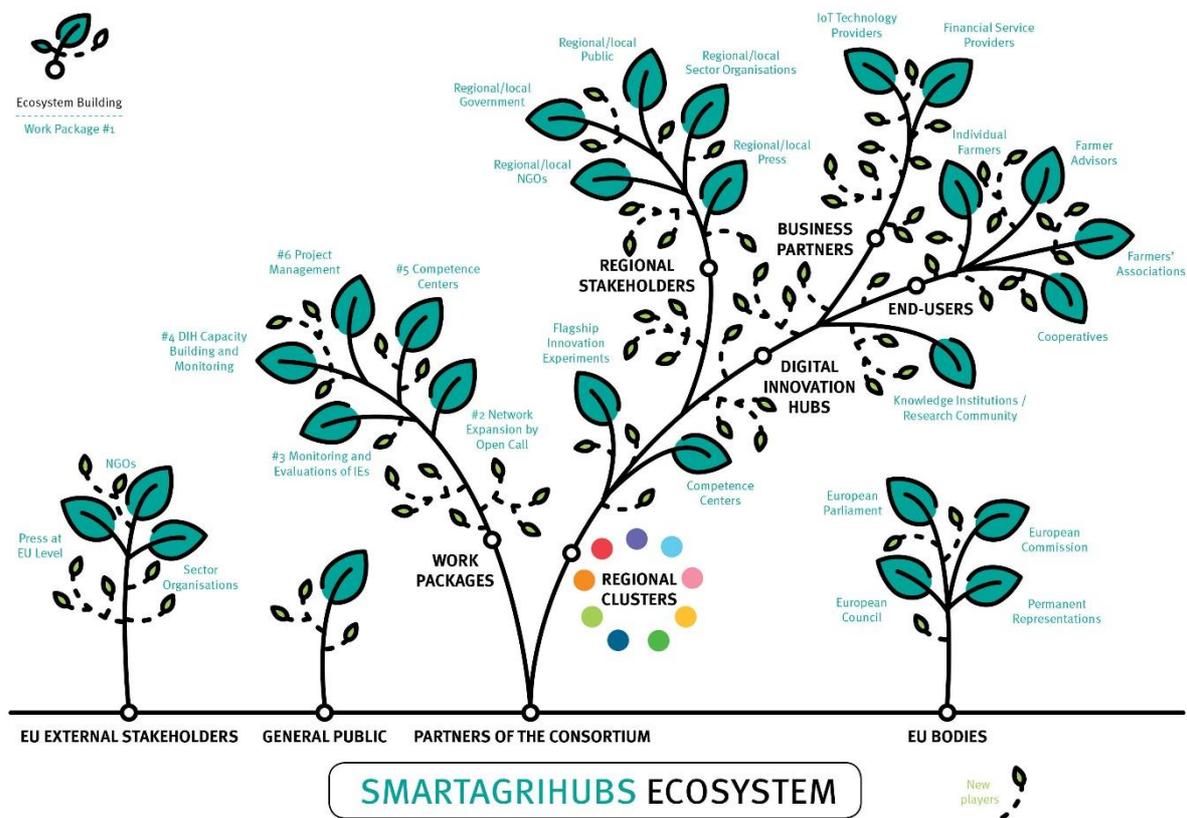


Figure 4 Overview of the main stakeholders' groups part of the SAH Ecosystem

The same stakeholders can be classified according to the interest/power matrix developed by Ackerman & Eden³. The underlying principle of this theory argues that, having a clear strategic goal, stakeholders should be distinguished according to their interest in reaching

³ Ackermann, F., & Eden, C. (2001). Stakeholders Matter: Techniques for their identification and management. *Department of Management Science, University of Strathclyde*.

such goal as well as the influence they can exert on the goal. In SmartAgriHubs, the strategic goal is *the establishment of an inclusive and vigorous Pan-European ecosystem of Agri DIHs*. The power/interest categorization helps to explain the role, the behaviour and the suitable approach towards the different stakeholder groups. Table 1 below schematises the classification:

		POWER	
		-	+
I N T E R E S T	+	Subjects	Players
		Business partners (SMEs, Start-ups and mid-caps) Technology providers Digital Innovation Hubs Competence Centers Innovation Experiments	Relevant EU decision makers Work Packages/ Consortium partners
	-	Crowd	Context setters
		End user/ Farmers Knowledge institutions/research community Financial service providers General Public	National governments Interest organisations and NGOs Media

Table 1 Interest/power matrix of the SAH target groups

Subjects

Subjects are those stakeholders with a high stake but little influence on the goal. Actors belonging to this category are not hard to involve, but one must empower them with the necessary means to realise their full potential. However, a monitoring system over such actors must be in place, since the risk is that they might focus on their own interests at the cost of the bigger picture.

Within the SAH ecosystem, the DIHs, business partners, technology providers, Competence Centres, and the Innovations Experiments have a strong drive in realising a solid ecosystem. The network would bring them substantial added value in terms of funding, new business and/or legitimisation of their work. However, they cannot influence an overarching ecosystem, they can only control their own share. Ways to better involve such actors encompass cooperation and coalition building, to increase their overall power.

Crowd

Actors with both less stake and power in the goal belong to the **Crowd** group. This is the hardest group to engage, since the reason for their low interest can be diverse. Finding the hook to raise their engagement is key to get them on board.

In SAH, this group has less interest in realising a solid ecosystem and has little individual power to build it. Nevertheless, the stakeholders in this group are very important. This primarily concerns the European farmers, the ultimate target group of SAH, who might not immediately see the added value of the project. The ecosystem building activities should then address this issue by providing farmers with the tools and knowledge they need to understand the advantages of joining such a multi-layered network, and by involving them within DIHs.

In addition, knowledge institutions and financial service providers also belong to this group, since they are not necessarily dependent on an ecosystem. However, they are crucial to its establishment. Likewise, the general public might have a strong interest in the end-result (sustainable and safe food), but it doesn't question whether this happens through a solid

ecosystem or not. The strategy to enhance their engagement should focus on identifying the catch to sensitise them on the importance of an ecosystem. Once they become part of the "Subject" category, cooperation and coalition building activities can be put forward to increase their influence.

Context Setters

The **context setters** are the third group in the matrix. They do not have a direct interest in reaching the goal, but they possess more power than the previous groups. If adequately involved, they can substantially influence future developments. Catching their interest and directing it to the benefit of the strategic goal represents the most useful strategy to approach this category.

Within SAH, national governments and NGOs could greatly influence the SAH ecosystem by either cooperating or hindering its development. However, there is not an obvious link between their stake and the network SAH aspires to create. Indeed, common grounds can be found (for instance, an environmental NGO can look at the SAH ecosystem as a way to enhance the quality of food and lower its impact on the planet), yet they are not self-evident. It is up to the ecosystem building strategy, then, to elaborate ways to get to these precious stakeholders, involving them and taking advantage of their influence to promote the ecosystem. On a similar note, the same can be said about the media, which has a huge potential to expand the network through dissemination. Catching its attention will be strategically crucial.

Players

The last category of stakeholders is embodied by the **players**, who have a strong interest and power. They are the actors who take the initiative to engage the rest of the categories, as they are the main advocates of the goal at issue.

The partners of the consortium are clearly the main players within the SAH ecosystem: they have the strongest interest as they represent the project and its objectives, and a substantial power in shaping the network. Other important actors are EU decision makers. They enable SAHs' existence by providing the funding, and they hold the project accountable when good quality results are not delivered. They also explicitly advocate for the digitisation of agriculture, being one of the main supporters of the concept of "ecosystem of ecosystems" envisaged by SAH. Building a strong identity, and a common group goal imbued with a sense of belonging to the SAH community is crucial in this group in order to enable further development of the project.

4.2 SWOT ANALYSIS

The SWOT analysis presents an overview of the project's Strengths, Weaknesses, Opportunities and Obstacles in relation to the ecosystem building.

Table 2 points out the main elements of the analysis. The vertical axis separates the internal and external factors that are considered important in developing the ecosystem. The horizontal axis shows whether these factors are positive or negative.

	Positive	Negative
External	<p>Opportunities</p> <ul style="list-style-type: none"> • Common Agricultural Policy revision • Digitisation of agriculture as a policy trend 	<p>Threats</p> <ul style="list-style-type: none"> • Brexit • Common Agricultural Policy revision which might imply legislative obstacles

	<ul style="list-style-type: none"> • Demands on sustainability where IoT plays an important role • Increase in demand of IoT technologies by end-users • Subsidies to increase the use of IoT tools in agriculture 	<ul style="list-style-type: none"> • Data ownership, sharing and management: GDPR • Conservative farmers, farmers with little financial leeway
Internal	Strengths	Weaknesses
	<ul style="list-style-type: none"> • Building on existing network (IoF2020) • Regional cluster approach • Thematic approach • Local reach of DIHs • Consortium of highly experienced project partners 	<ul style="list-style-type: none"> • Language barriers • Time-limited EU funded project • Complex multi-stakeholder landscape with differences in ecosystem approach • Lack of knowledge

Table 2 SWOT analysis

Opportunities

Opportunities represent the positive external factors that can influence the building of the ecosystem. The opportunities identified go from top-down incentives (legislation revisions, subsidies) to bottom-up drivers (increase in demand by farmers).

Threats

Threats are external factors that might have negative implications for the ecosystem building. An example is the uncertainty surrounding Brexit. What will Brexit imply for the Regional Cluster UK & Ireland, and for the project's other British partners? Another threat to a strong ecosystem originates from the end-user. Farmers are not necessarily inclined to implement new technologies, because of a lack of financial means, for poor knowledge or for mere disinterest. Another great hurdle concerns data ownership, management and sharing, in the light of the new GDPR policy. Given that the foreseen ecosystem building tools -e.g. the Innovation Portal – rely on an abundant amount of information that could be deemed as personal, the new legislation might create an extra obstacle in obtaining the necessary data.

Weaknesses

Internal negative factors are the **weaknesses** of the SAH ecosystem. The structural complexity of the project is one major vulnerable aspect. The language barrier, for instance, is a direct consequence of the wide geographical span of SAH. A strong network depends upon solid communication: hence, when different parties of the ecosystem have difficulty in understanding each other, cooperation becomes less efficient. Another weakness is the limited time horizon of the EU funding, that makes it essential to secure a long-term legal structure by the end of the 4 years. In addition, the complex multi-stakeholder landscape makes it difficult to meet all the actors' needs and interests simultaneously.

Strengths

SAH multi-stakeholder network represents a big **strength** for the future Agri DIHs ecosystem, since it builds on existing agri-food networks such as the IoF2020 one. Therefore, it is not just another novel agri-food network, but it falls under an umbrella of existing agri-tech innovation projects.

Another remarkable asset of the project lies on the cluster and thematic approaches, which favour cross-regional cooperation. Through their RCs, local DIHs have access to expertise on

the local, national and European level, so that the knowledge gaps existing in one region can be addressed by best practices from another region. Through clustering by theme, different actors are enabled to find each other easily and create synergies.

Finally, SAH's consortium partners are widely acknowledged experts in their respective field and have extensive network. By leveraging their expertise, they will help the realisation of an inclusive ecosystem.

In conclusion, the SWOT analysis highlights that there are many opportunities that can be capitalised on in order to enlarge the SAH ecosystem. During the development and implementation of the ecosystem building strategy, the results of the SWOT analysis will be taken into consideration in the appropriate phases and at the adequate levels. This approach will enable to take action in the appropriate context and towards the right target group.

Nevertheless, the SWOT analysis is a dynamic document that is revisited on an ongoing basis to capture new opportunities that might arise or determine new threats that might appear.

5. SMARTAGRIHUBS ECOSYSTEM BUILDING

In this chapter we will integrate the methodology and the information obtained from the stakeholder and SWOT analysis into a structured strategy, divided in three phases with their corresponding ecosystem levels. Each level will encompass the focus and the main target groups addressed, setting the frame for the elaboration of concrete activities, which will be based on their *functionality towards achieving the goal of building the ecosystem*. All these activities should contribute to the consolidation and enlargement of the SAH ecosystem by 2022 and ensure it will become a self-sustainable network once EU funding is over.

The SAH ecosystem should not be regarded as an isolated ecosystem but rather as a dynamic network that will leverage existing legal frameworks such as the Common Agricultural Policy (CAP), EIP-AGRI, and similar functioning ecosystems. In the same way, SAH will interconnect with recognised actors and renowned institutions in the agri-tech field, such as:

- IoF2020. IoF2020 is an H2020 project that accelerates the uptake of IoT technologies in the European farming and food chains;
- EIP-Agri. The agricultural European Innovation Partnership works to foster competitive and sustainable farming and forestry all around Europe;
- CEMA. The European Agricultural Machinery Association aims at advancing agricultural machinery and solutions for sustainable farming in Europe;
- Copa-Cogeca, which represents the united voice of farmers and their cooperatives in Europe;
- CEJA. The European Council of Young Farmers acts as a forum for communication and dialogue between young farmers and European decision makers.

Nevertheless, this is not an exhaustive list: the project will involve and create synergies with as many relevant actors/ecosystems as possible throughout its duration.

5.1 PHASE I – SOWING

In this phase, the focus will be on raising awareness and developing the right tools to promote the project and to inform stakeholders, from technology developers to farmers, about its objectives and goals. A wide and heterogeneous ecosystem like the SAH consortium should pay special attention to the sense of community formed between the initial stakeholders. This common identity is key and a unique selling point to attract new stakeholders.

Within DIHs

Focus: To foster a common identity and inform partners of the consortium about the advantages of being part of SAH.

Main target groups: RCs and DIHs (and their partners).

Activities proposed to consolidate and expand the ecosystem:

- Develop the Visual Identity of the project;
- Organise meetings in every RCs and at national level to get acquainted with the internal structure of the project;
- Develop basic communication material in line with the visual identity to showcase the integration with the project.

Between DIHs

Focus: Generate a flow of exchange among the partners of the consortium and the DIHs. Establish the dynamics of communication and collaboration within the project. Inform about existing good practices and the work of the first Innovation Experiments.

Main target groups: RCs, DIHs, CCs, IEs and the consortium partners.

Activities proposed to consolidate and expand the ecosystem:

- Preliminary stakeholder analysis;
- Develop an efficient communication method among WPs and with RCs representatives to be able to keep track of the multitude of actors involved in the project;
- Develop the SAH Website where basic information on the project is provided;
- Kick-off event for the partners of the consortium, which represents a first encounter for all the stakeholders in the initial ecosystem;
- Quarterly newsletter to communicate and inform stakeholders on the project's updates;
- Online communication such as social media channels to reach out to stakeholders in all 28 member states;

Beyond SmartAgriHubs

Focus: Position SAH not as any another Horizon2020 project but as one of the most outstanding projects in the European agri-tech sector.

Main target groups: European Commission and other relevant networks.

Activities proposed to consolidate and expand the ecosystem:

- Building media relations;
- Participation in agri-food and IoT related events at EU level;
- Foster synergies with other existing Horizon2020 projects;
- Establish connections with DG AGRI and DG Connect policy makers;
- Video contest for DIHs, CCs, IEs (and their members like: SMEs, farmers, start-ups etc.);
- Reach out to farmer communities in the RCs by targeted communication products;
- Organise jointly with Copa-Cogeca and the RCs information days for farmers and webinars on how to join and use the Innovation Portal.

LEARN FROM PROJECTS OUTSIDE THE EU AND INITIATE COLLABORATION WITH THEM.

5.2 PHASE II – FLOWERING

The Flowering phase actively opens up the network to include new stakeholders. It begins with the launch of the most important tool for the ecosystem building: the Innovation Portal. The Portal is the online platform where interactions among the ecosystem take place, and where stakeholders can find trainings, information, opportunity for networking, and so on. It is a tool that cross-cuts the different levels.

Within DIHs

Focus: Giving DIHs and RCs the tools to effectively display their work achievements and results, in correspondence with the launch of the innovation portal and of the open calls of

the project. Welcoming the new IEs and giving them wide appeal and outreach within the ecosystem.

Main target groups: RCs, DIHs (and their partners), Flagship Innovation Experiments and new Innovation Experiments, technology providers, start-ups and farmers.

Activities proposed to consolidate and expand the ecosystem:

- E-learning tools tailored to DIHs' needs on the Portal;
- Matchmaking and networking opportunities on the Portal;
- Information kit on the open calls;
- Feature regular news on the Portal/ website from the DIH members (like start-ups, research centres, CCs, farmers and technology providers).

Between DIHs

Focus: Strengthening DIHs' relationship within and beyond the corresponding Regional Clusters, fostering synergies and cross-regional activities, also by positioning the new IEs within the ecosystem.

Main target groups: Digital Innovation Hubs and the Partners in the consortium (especially RCs and FIEs).

Activities proposed to consolidate and expand the ecosystem:

- Capacity building measures;
- Video testimonials;
- Best practices;
- Newsletter with targeted interviews on our main stakeholders' groups: DIHs, CCs, IEs start-ups and farmers;
- Online communication;
- Launch of the Innovation portal;
- How to become an IE, CC and DIH, or how to register your farmer association, start-up company etc. section in the portal;

Beyond SmartAgriHubs

Focus: Improve the image and perception of SmartAgriHubs at the EU level and among other relevant networks. Create the linkages between the results of the IEs, DIHs and the European policy of agri-tech and a favourable environment to the digitisation of the agricultural sector. Therefore, also by reaching out to farmers.

Main target groups: European Commission, farmers, and other relevant networks identified at EU scale.

Activities proposed to consolidate and expand the ecosystem:

- Organise events and workshop for the different EU institutions to position the project as a reference in the agri-digital sector;
- Organise events and workshops for agricultural stakeholders, such as farmers, who have much to gain from digitalisation.
- Co-organise workshops and events with Ceja (the European Council of Young Farmers) on the cooperation between young farmers and IEs, together with DIHs and start-ups.

5.3 PHASE III – HARVESTING

In the harvesting phase, the results coming from the FIEs and the new IEs are used to showcase and reinforce the standing of the SAH ecosystem at all levels. At the same time, the ecosystem is almost ready to become a self-sustainable legal entity.

Within DIHs

Focus: Display and promote best practices and successful results of the DIHs, FIEs and IEs at national and regional level.

Main target groups: DIHs, National/Regional Government, farmers, and the general public.

Activities proposed to consolidate and expand the ecosystem:

- Regional clusters events;
- Inventory of best practices on the Innovation Portal;
- Open days type of events organised for farmers and the general public in every Regional Cluster;
- Communication materials such as leaflets, guides on how to transfer knowledge and experience to interested stakeholders.

Between DIHs

Focus: Highlight the connections and synergies created as well as the collaboration reached among the DIHs.

Main target groups: Digital Innovation Hubs and the Partners in the consortium.

Activities proposed to consolidate and expand the ecosystem:

- Site visits to the IEs for the end users;
- Promote best practices of cross regional collaboration among DIHs and IEs.

Beyond SmartAgriHubs

Focus: Consolidate the SAH branding and ensure viability of the project is foreseen after the timespan of the EU funding.

Main target groups: General public, farmers, decision makers and other relevant stakeholders.

Activities proposed to consolidate and expand the ecosystem:

- Policy recommendations;
- Focus groups and meetings on the legal status of SAH beyond 2022.

6. LEGAL STRUCTURE (SUSTAINABILITY PLAN)

Looking beyond the project's timeframe, SmartAgriHubs aims to be a self-sustaining network. To achieve this goal, SmartAgriHubs needs to obtain a legal structure. This task will be coordinated by WP1 and will involve all the other WPs. The partners will investigate the different options that would provide a suitable structure for SmartAgriHubs. Part of this structure will include the governance model with the appropriate business format and the official status of the different project partners of SAH.

6.1 TIMELINE

A sustainable plan for the SAH ecosystem beyond 2022 requires adequate strategic thinking and an interactive and inclusive process involving the consortium partners. This complex procedure will start in 2019 with desk research and several WP meetings. At the end of the year WP1 aims to present a proposal on the approach to the consortium partners. Based on the initial draft, further discussions will take place in 2020, with the aim to identify three different scenarios for the future of SmartAgriHubs. These scenarios will be presented and discussed with all partners of SmartAgriHubs during focus groups, workshops and working sessions in 2021 across the EU. The most suitable structure will be selected and a plan for its implementation will be designed. By 2022 the new legal structure should be established, and a transition period will be agreed by the partners.

2019	Legal structure to be discussed and a proposal to be drafted by WP1
2020	Identify 3 suitable scenarios of the SAH legal status
2021	The fine-tuned proposal to be circulated among the partners which will select the most fitting scenario. A series of workshops and meetings are proposed to consult all the partners in the consortium.
2022	Implementing the selected scenario

7. PLANNING AND TIMELINE

This Chapter tackles the planning of the main activities previously explained in the strategy chapter.

Phase	Activity	Monitoring tool	Timeline
Sowing M01-09	Monthly meetings with RCs	# meetings/events minutes of the meetings/ event report	Ongoing M04 M04
	Partner event	# participants in the SAH event	
	Launch of the Website	website analytics	
	Maintenance and update of the website	# news, articles, events, new sections	Ongoing
	Participation in external events/conferences/fairs RCs	Event reports, # new contacts in SAH database, # booths organised	Ongoing
Flowering M06-M36	Launch of the Innovation Portal	Portal analytics	M09
	Maintenance and update of the Innovation Portal	# news, articles, events, new sections, new stakeholders/ companies added	Ongoing
	Open Calls	# applications received	TBD
	Brainstorming session with WP leaders	# sessions organised	M14
	Video testimonials	# of videos produced YouTube analytics of the SAH videos	From M10 onwards
	How to become an IEs, CCs, DIHs	# requests received # templates filled in by new stakeholders	Ongoing
Harvesting M24-M48	Open days for general public (organised by RCs)	# open days # people attending	From M24 onwards
	Site visits for the farmers (organised by the IEs)	# site visits # IEs organising the site visits # participants	From M24 onwards
	Policy recommendations	# contributions to agricultural policy debate in the EU	From M24 onwards
	Focus groups and meetings on the legal status of SAH beyond 2022	# focus groups and meeting organised minutes of the meetings	From M14 onwards

Table 3 Planning and timeline of the activities foreseen for the ecosystem building strategy

7.1 KPIS

The following Key Performance Indicators were established in the Grant Agreement and are meant to assess the success and monitoring of the activities in relation to the ecosystem building.

Project Objectives	Target outcomes	KPI's	Target values	Responsible
O1	Large network of Agri DIHs in Europe	Number of Agri DIHs in Europe	400	All WPs
	Complete EU network coverage	At least one validated Ag DIH in each member state	28	
O2	Involvement of end-users	Number of farms involved	2M	WP1, WP3, WP5
O3	Successful open calls	Number of new IEs	70	WP2
	Additional funding	Attract additional types of financing	6M/12M/12M	
O4	Long-term sustainability of Agri DIH network	Validated business plans for the network of Ag DIHs in Europe	TRUE	WP2, WP4, WP6
O5	Expansion of DIHs	Number of new DIHs	200	WP2, WP4, WP5
	Expansion of CCs	Number of new CCs	2000	
	Innovation Acceleration Potential	Successful connections of CCs with IEs in DIHs	20.000	
	DIH Capacity Building	Number of train-the-trainer trainings Number of trainers trained	40 800	

Table 4 KPIs of the ecosystem building

8. CONCLUSION

In order to set the foundation of a solid ecosystem and foster its expansion in time as described in the previous sections, SmartAgriHubs aims to build a pan European community by using a multi-stakeholder innovation approach around the network of Digital Innovation Hubs.

In compliance with this approach, the ecosystem will be built in a three-tiered scheme in line with the communication strategy. This implies that specific activities and actions are foreseen in each phase: sowing, flowering and harvesting so as to correspond with the objectives, target groups and goals of strengthening and expanding the ecosystem.

The SAH strategy to enlarge the ecosystem will involve three ecosystem levels: *Within Digital Innovation Hubs*; *Between DIHs* and *Beyond SmartAgriHubs* that will be the cornerstone in defining the suitable activities for each stakeholder group.

As an overall objective, the SAH ecosystem will remain open and flexible in attracting and engaging new stakeholders from all over the world. This entails comprehensive actions at local, regional, European and International level.

SmartAgriHubs is an innovative ecosystem of ecosystems, which implies dealing with different stakeholders, different challenges and different interests. To build a self-sustainable ecosystem, WP1 will engage in close coordination and collaboration with the other Work Packages to align their positions and unite them in a SAH community. This approach will set the foundation for a stable, self-sustaining network of DIHs that will carry on even after the project has finished and establish itself as an independent legal entity.

ANNEX I – COMMUNICATION STRATEGY

INTRODUCTION

The Communication and Dissemination Strategy plays an essential role in connecting the existing dots in the agritech network and building the ecosystem of SmartAgriHubs.

The SAH communications strategy is a 'living document', enriched and improved as the project unfolds and progresses. It is necessary to review the strategy periodically (at least once a year) to see what has worked, and what did not, what we should do more of or less of. The strategy should address the communication needs of all the partners and facilitate the flow of information among them.

Figure 1 outlines the main pillars of the SmartAgriHubs communication strategy: a solid internal communication structure; the focus on enhancing the project's visibility; the sustainability of the ecosystem in the longer-term; constant dissemination activities.

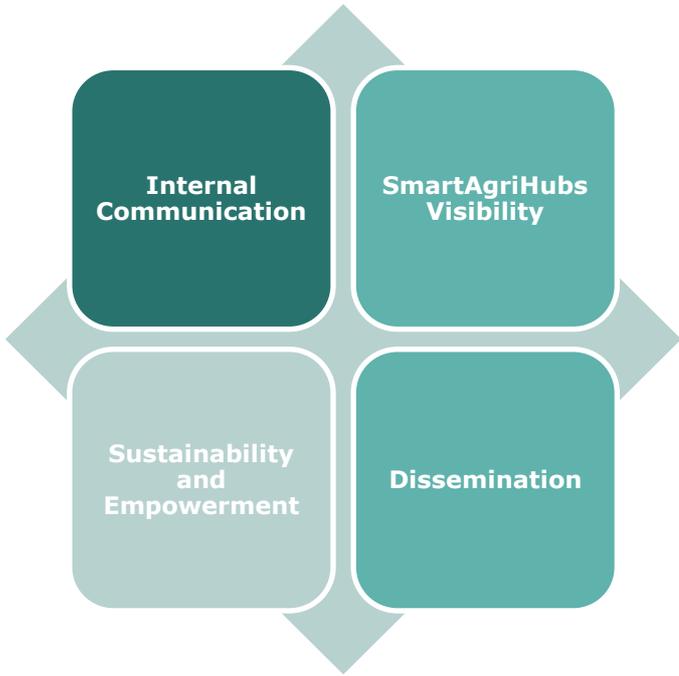


Figure 5 The four key aspects of the SmartAgriHubs' communication and dissemination strategy

GENERAL GOALS

The primary goal of the communication and dissemination strategy is to influence the knowledge, attitude and behaviour of the defined target groups towards the digital transformation of the agri-food sector. To reach this overall objective, the activities implemented within the strategy will aim to:

- **raise awareness** about the project and its activities;

- **inform** the audience about the outcomes and results of the project;
- **promote** the uptake of the outcomes and results to the key stakeholders within and beyond the scope of the project;
- **engage** with partners and stakeholders to (continue to) collaborate with one another and to contribute to the project's goals and activities.

These concepts are visualized in **Fout! Verwijzingsbron niet gevonden.** below:

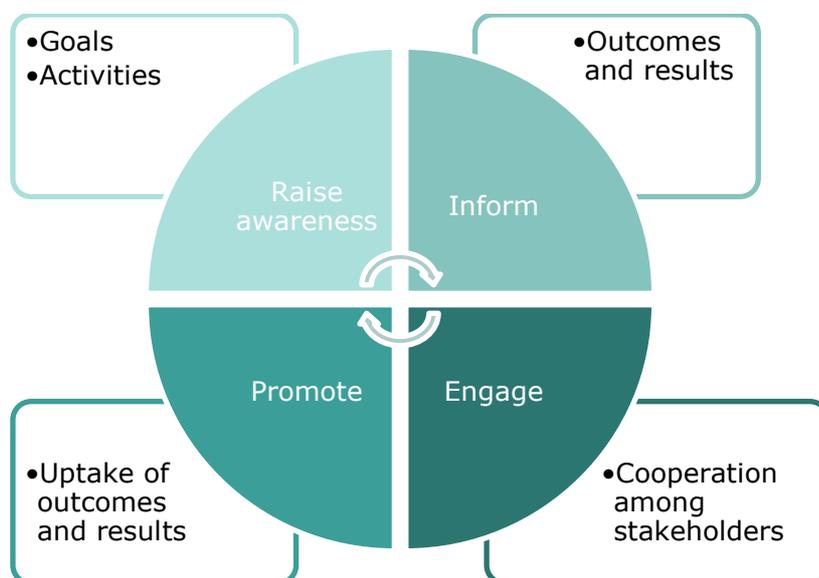


Figure 6 The general goals of the communication and dissemination strategy

STRUCTURE OF THE REPORT

The communication and dissemination strategy report is organized in the following chapters:

- Chapter 1 introduces the main ideas and objectives behind the strategy;
- Chapter 2 digs into the methodology used to structure the report;
- Chapter 3 defines the main stakeholders targeted in the communication strategy along with their respective tailored key messages;
- Chapter 4 illustrates the strategy carried out in phase I;
- Chapter 5 illustrates the strategy carried out in phase II;
- Chapter 6 illustrates the strategy carried out in phase III;
- Chapter 7 encompasses a thorough communication plan, describing the tools used to practically implement the strategy;
- Chapter 8 lays down the social media strategy and implementation.

METHODOLOGY

The structure of the SmartAgriHubs communication and dissemination strategy follows the overall multi-level project's approach, based on ecosystem phases and ecosystem levels as visualized in *Figure 7*. For each level within a phase, the main focus, messages and target audience are identified. The communication plan will feature the communication tools used to implement these three key strategic concepts.

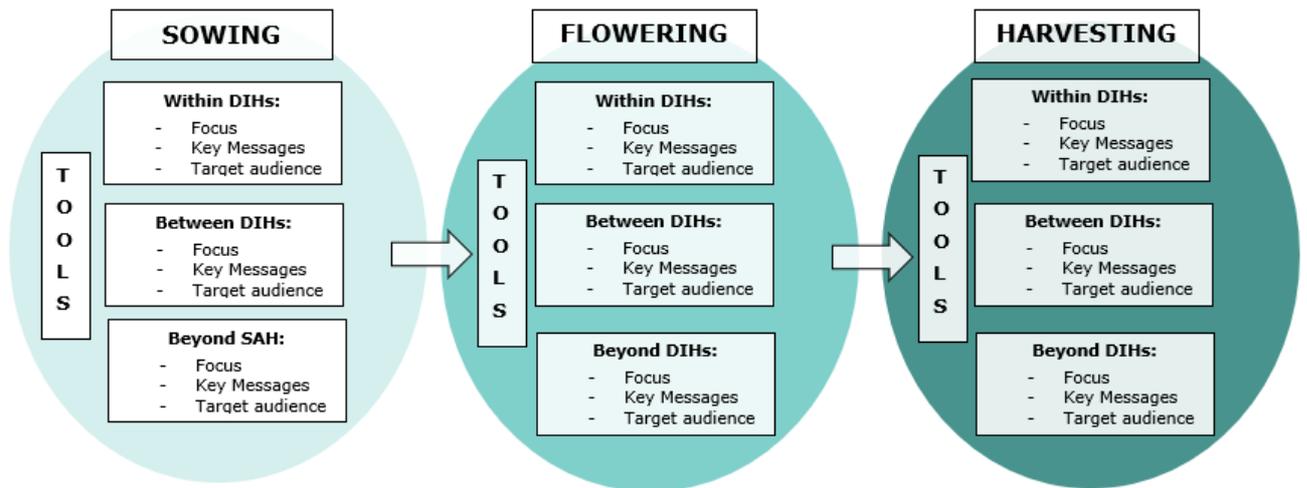


Figure 7 The multi-phases and multi-levels structure of the strategy

The current communication strategy was prepared based on inputs from the WP1 members as well as consultations with partners of the consortium, especially with the Regional Clusters. In fact, during the regular monthly telco we had with them, we assessed their communication needs and expectations as well as the implications for an efficient implementation on the ground. Due to the complex structure of the project, several factors (previous experiences with multi-stakeholders' communication activities) and their implication for the implementation of the communication were considered.

Moreover, the following communication strategy is also based on the experience accumulated with the IoF2020 project that follows the same communication phases concepts namely sowing, flowering and harvesting.⁴

ECOSYSTEM PHASES

Along its 4-year timespan, SmartAgriHubs will extend and broaden, providing new, different objectives and challenges for which a diverse strategic approach will be needed. The ecosystem phases respond to this issue by structuring the projects' activities in three subsequent periods:

- Sowing (M01-M09);
- Flowering (M06-M36);
- Harvesting (M24-M48).

Following the natural development of SmartAgriHubs, the end of a period and the beginning of the following one overlaps; hence, there are no rigorous borders between one phase and another. The communication strategy should mirror this approach by foreseeing activities and tools that are progressive as well as smoothly adaptable to an ever-changing context.

⁴ https://www.iof2020.eu/deliverables/d5.3_iof2020_ecosystem-building-strategy.pdf

The **sowing phase** represents the initial nine months of the project, and aims to build up a coherent, unique and recognizable structure of SmartAgriHubs. Given the wide and diverse consortium, the activities performed during the sowing phase are critical to make a good start and help to pave the way for the success of the following phases. Communication will focus on setting up the identity of the project, involving all partners under a common language and giving them the appropriate tools to externally promote SmartAgriHubs.

Once the basic foundations have been established, it is time to build up robust walls that can support the DIHs and favour the development of successful results. The **flowering phase** focuses on strengthening the DIH network and ecosystem. In the light of the distinct stakeholders involved within DIHs, communications activities will aim at developing tools – including educational ones – to foster knowledge exchange and collaboration between and within DIHs.

The **harvesting phase** encompasses the last period of the SmartAgriHubs project. The first results coming from IEs and DIHs will provide valuable content for the dissemination activities, which will extend towards a greater audience.

ECOSYSTEM LEVELS

Alongside the time-related ecosystem phases, SmartAgriHubs' activities also need to be tailored according to their geographical extent. In communication, this requires the elaboration of different strategies, focus, key messages and target groups. The project wants to create impactful results at three different levels, referred to as "ecosystem levels":

- Within DIHs;
- Between DIHs;
- Beyond SmartAgriHubs.

Strengthening expertise and capabilities **within DIHs** constitutes the backbone of a solid ecosystem network. Partners in each DIH, being business providers, technology experts, researchers, financial investors and end-users need to cooperate to make the uptake of digitisation in the agri-food sector possible. The communication and dissemination activities carried out at this level will support the development of strong and mature hubs in which all relevant stakeholders collaborate efficiently. Communication activities at this stage will be focused on helping each and every DIH in the network.

Based on a cluster approach, the relationship **between DIHs** will be enhanced by fostering collaboration among the nine Regional Clusters. Cross-country and interregional cooperation among DIHs will be promoted by SmartAgriHubs' communication and dissemination actions, allowing knowledge exchange to unfold and to support the creation of a self-sustainable network.

Alongside the two more local levels, WP1 will carry out communication activities targeting networks and entities **beyond SmartAgriHubs**, ensuring a widespread connection to other, non-sectorial audiences, giving the project a more robust and global reach.

TARGET AUDIENCE & KEY MESSAGES

The implementation of the communication and dissemination activities of SmartAgriHubs will be tailored according to key target groups identified in each phase and at every ecosystem level. As a result, the audience will be aligned with the focus and key messages. Such groups are broadly divided according to the direct and indirect relationship established by WP1:

Direct stakeholders are represented by the partners of the consortium (especially WP leaders and the Regional Clusters), but also by actors identified at a wider European scale by WP1 like the European Institutions, pan-European NGOs, and European Associations or Organisations. SmartAgriHubs WP members (e.g. Copa-Cogeca, IFOAM-EU) will help the dissemination through their wide network of associates.

Indirect stakeholders are identified at a local level by DIHs through RCs and are subject to a more territory specific communication activity.

The direct and indirect stakeholders represent the backbone of the communication and dissemination strategy (Figure 8) and are explained in more detail below together with their corresponding key message.

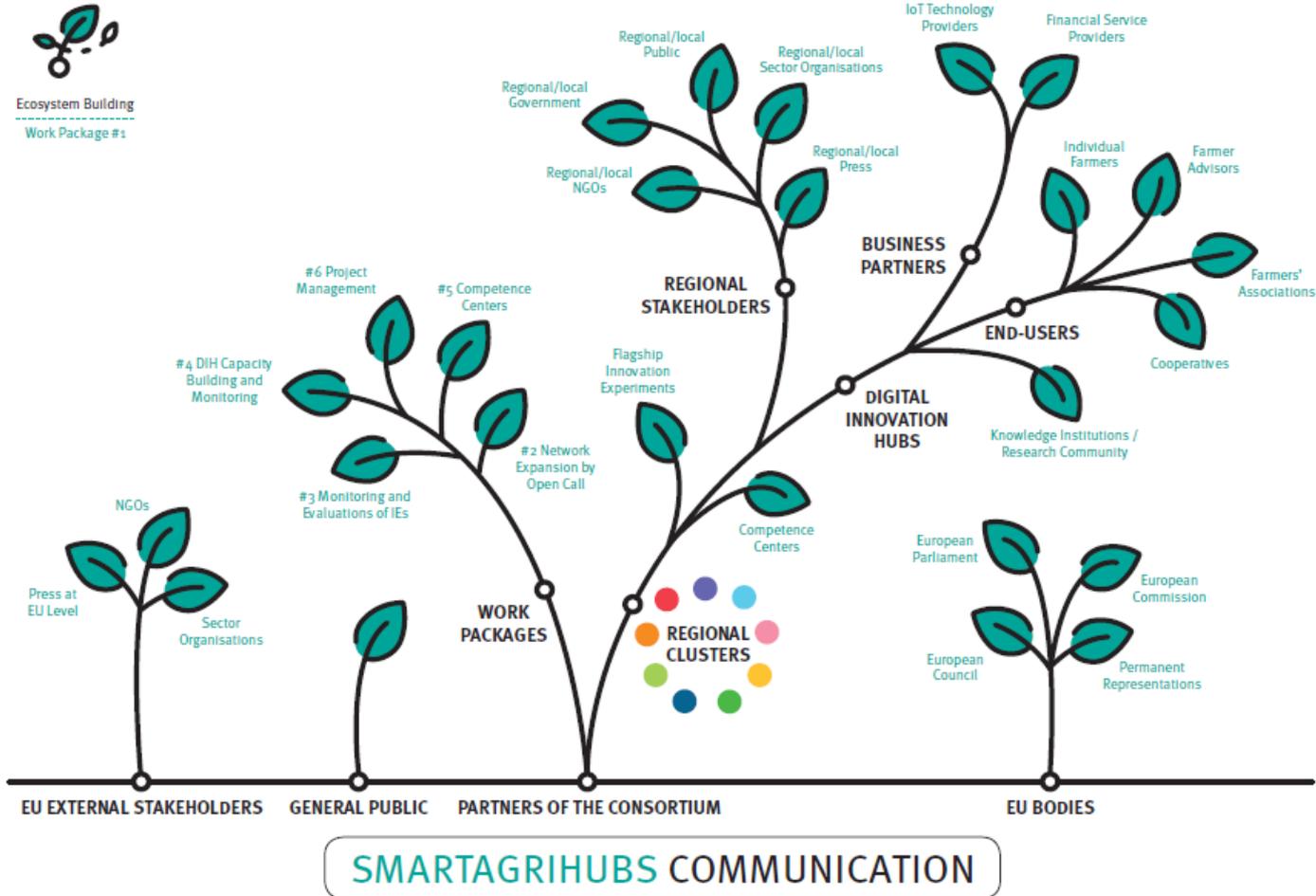


Figure 8 Visual representation of the direct and indirect stakeholders addressed in the strategy

PARTNERS OF THE CONSORTIUM

Before starting to communicate externally about SmartAgriHubs, it is necessary to strengthen the communication within the consortium. Therefore, the partners are an important target audience since they will be the ones spreading the word about the project in their own area and to their related network. Three points are worth being considered:

- **Internal communication.** SmartAgriHubs has a SharePoint cloud platform dedicated to store internal communication documents. At the beginning, partners of the consortium will be provided with the essential communication tools needed to get to know the project and to identify themselves as part of it. They will use such tools in their own communications on behalf of SAH.
- **WP cooperation.** Cooperation among partners is foreseen when collaborating among WPs. Along the various phases and ecosystem levels, WP1 will cooperate with all WPs. For instance, WP1 and WP2 will collaborate to carry out a regional stakeholder analysis tackling the extent of each DIHs network. WP1 will also work in close collaboration with WP4 to identify the needs for support, organise trainings, and develop communication materials. Furthermore, WP1 will coordinate with WP5 to develop the capacities of CCs.
- **The role of Regional Clusters.** RCs constitute the key communication and dissemination intermediary between WP1 and DIHs. Through the RCs, WP1 will provide the DIHs with the right tools to develop strategies, activities and plans to establish regional collaboration and to reach their target audiences. Regional Clusters are the key link to the territory, connecting local and regional layers and informing the rest of the partners on the situation on the ground. They are pivotal in facilitating the information flow between DIHs, CCs, FIEs and the rest of the targeted audience.

Key messages to promote the partners of the Consortium

- SmartAgriHubs' vast & extensive consortium (varying from research institutions, SMEs, public institutions and private companies) is a unique branding quality;
- Regional Clusters are central nodes to the communication activities in the territory;
- Work packages are the main motors of the flow of information in the consortium.

DIGITAL INNOVATION HUBS

Digital Innovation Hubs are at the core of SmartAgriHubs' communication and dissemination activities. They have a very important role in establishing and pursuing communication with all local and regional stakeholders, such as IEs, CCs, business partners, technology providers, research institutes, press, general public, farming communities, scientific communities, local and regional governments, and so on. Being at the heart of the innovation chain, they will be able to provide feedback to WP1 through RCs on what is needed or missing within the project and what is successful.

Key messages to promote Agritech Digital Innovation Hubs

- Digital Innovation Hubs are at the heart of SmartAgriHubs and form a local one-stop-shop for digital innovation in a region;

- The project starts off with group of 140 DIHs spread across Europe;
- SmartAgriHubs aspires to set-up another 260 similar entities so that there will be a DIH in the proximity of each farmer and other stakeholders;

DIHs are the driving force behind unleashing the digital potential in each territory. DIHs encompass the following key target groups.

Knowledge institutions/research community

Research Institutes mostly represent the “incubators” of new technologies; hence they constitute the perfect environment around which DIHs can successfully develop. Being the catalyst and the forerunner of change, the research community in the agri-tech sector should already be quite aware of the need to strengthen the web of Agri DIHs around Europe. It will then serve as a solid ally to attract those target groups which are generally more reluctant to innovation. WP1 will show its support by providing DIHs the means through which to spread the information within their network.

Key messages to institutions/research community

- SmartAgriHubs fosters a network of agricultural DIHs that are orchestrators of innovation experiments that will require research as input;
- SmartAgriHubs as a network will form the basis for strategic research agenda’s for the digital transformation of the agri-food sector;
- Scientific publications are an influential part of SmartAgriHubs’ communication activities and serve as evidence for the future public affairs actions of the project.

Business partners (SMEs, start-ups and mid-caps)

Providing relevant business models is key to scale up the digitisation of agriculture. Addressing business partners in a way that can highlight the multifaceted added value of being part of a DIH in the SmartAgriHubs network will be the strategy used in approaching such stakeholders. We can distinguish two main groups of business partners: technology providers and financial service providers.

Technology providers

Technology and innovation are at the base of the development of DIHs. Technology providers need to be aware of the advantages they would enjoy by joining a DIH, ranging from financial support to practical help in proposal writing, partner matching and so on. WP1 and RCs will work to intercept their interests and guide them towards DIHs.

Key messages to technology providers

- DIHs can help to develop ideas, scale-up and expand your market by setting-up and facilitating innovation experiments;
- Close cooperation between business partners and DIHs, develop tailored made support for technology innovation;
- Sharing of robust experience and knowledge embedded in the services provided by the DIHs across Europe;
- SmartAgriHubs provides useful, practical information and support at local and regional level through the RCs;

Financial service providers

Technologies and Innovation Experiments could never flourish without the appropriate financial support. There is often a misalignment between private and public funding, that hinders brilliant and promising ideas from finding appropriate financial means for their development. Communication activities aim at bridging the existing gap and attracting Financial Service Providers towards DIHs.

Key messages to financial service providers

- The DIHs in SmartAgriHubs are a breeding ground for innovation experiments with technology providers that need financing;
- DIHs and CCs can support in technology and market assessments;
- SmartAgriHubs' ecosystem forms the gateway to agritech innovations in Europe;
- SmartAgriHubs is a solid project with reliable partners and front-runner initiatives;
- Large-scale uptake of digital solutions in the agritech sectors is possible by closing the gap between private investors and public funding.

End-users/farming community

The growth and expansion of the European network of DIHs should be demand-driven by end-users. Therefore, targeting their interests is of primary importance for WP1. Again, RCs will play an essential role in conveying the key messages to the local stakeholders, being individual farmers or local farmers' associations. At a wider scale, WP1 can weave the web through European Agriculture associations (e.g. CEMA, IFOAM-EU, Copa-Cogeca) and keep the attention high among their members. The farming community is represented by:

- individual farmers;
- farmer advisors;
- farmers' associations (EU and regional/local);
- cooperatives.

Key messages to end-users/farming community

- We place the farming community first and value their opinions;
- SmartAgriHubs works with trustworthy and reliable DIHs;
- We will link the farming community with the innovation actors;
- Farmers are the main users of agricultural innovations; therefore, their contribution is vital towards the transformation of the sector into a high-tech industry;
- DIHs will provide the right tools to engage farmers in the co-creation of IEs in their territories.

COMPETENCES CENTRES

Competences centres (CCs) form the backbone of SmartAgriHubs. They provide technical expertise and infrastructure (e.g. scientific and technical facilities) to realise Innovation Experiments. SmartAgriHubs aims at expanding the network of CCs within and outside the

agricultural sector, in order to promote cross-fertilisation and to stimulate even more knowledge exchange and the development of out-of-the box innovation ideas. Communication and dissemination activities will therefore address the diversity of CCs always through RCs, and in cooperation with WP5.

Key messages to Competences Centres

- Competences Centres are intertwined with DIHs in offering the best solutions for an accelerated development of agritech initiatives;
- The project will increase the number of Competence Centre throughout the project according to the needed technical expertise;
- Through CCs stakeholders will get access to the latest knowledge and information on digital technologies.

INNOVATION EXPERIMENTS

Innovation Experiments represent a central element to be addressed by WP1 communication and dissemination activities, since they are key to the enlargement of the networks of DIHs. In the first phase, attention will be put on promoting the already identified virtuous examples of IEs, the Flagship Innovation Experiments (FIEs). Later on, WP1 will cooperate with WP2 and focus on the Open Call as the main driver to attract the interest of new IEs.

Key messages to promote FIEs:

- The Flagship Innovation Experiments represent an excellent example of a diverse, innovative and successful application of cutting-edge technologies in agriculture, with the involvement of many stakeholders, including end-users;
- SmartAgriHubs aims at advancing IEs to reach the same maturity stage as the FIEs.

Key messages to (external) IEs:

- SmartAgriHubs has the inclusive vision of enlarging the Pan-European Network of DIH. IEs will be at the forefront of this expansion.
- The project will allocate €6 million and attract up to €30 million to launch Open Calls mainly targeting SMEs, with the goal of involving 70 new Innovation Experiments.

POLITICAL DECISION-MAKERS

Legislation needs to support innovation and facilitate its development. Although the contact with relevant decision-makers will get tighter at a later stage of the project, it is important to already highlight their relevance as a target audience. In fact, the success of SmartAgriHubs also relies on the outreach it gets by engaging with different levels of governance.

National governments

Involving regional and local governments will be a principal task of RCs and DIHs in their specific areas.

Key messages to National Governments:

- National legislation in EU members is crucial for the easy adoption of IoT solutions;

- SmartAgriHubs is an important player in the field with a strong and well-respected network at the EU level;
- Accomplishments of Flagship Innovation Experiments and DIHs take place in a national member state and enhance its reputation across borders.

Relevant EU decision-makers

Thanks to its wide European network built on the success of previous projects such as IoF2020, SmartAgriHubs already starts with a very good contact base. This web will be kept alive and enlarged along the course of the project, especially in the light of the upcoming European elections which might reshuffle the high-level political scenario.

- European Commission, mainly DG Agri and DG Connect;
- European Parliament (Agri Committee and Digital Committee);
- Council of the European Union;
- Permanent Representations of the EU Member States;
- Other relevant EU bodies.

Key messages to EU decision-makers

- The EU institutions work together to boost and facilitate the uptake of innovative solutions in Europe;
- SmartAgriHubs is a Flagship project for the adoption of ICT solutions in agriculture in Europe;
- The project inspires a true EU spirit fostering cooperation and digital synergies among multi-level stakeholders across 28 Member states and 5 non-EU countries;
- SmartAgriHubs is the network of renowned and mixed experts from all fields and sectors that can shape the future agricultural policy and drive the uptake of digital innovation in Europe.

INTEREST ORGANISATIONS AND NGOS

SmartAgriHubs carries on commitments and claims strictly related to the environment, economy and society. In fact, the ultimate goal of the project is to enlarge the European network of agritech innovators to respond to agricultural challenges, including energy efficiency, productivity, climate change, the role of farmers in the supply chain, and so on. Such claims can perfectly match those of targeted NGOs and interest organisations. Their support would help SmartAgriHubs to widen its outreach beyond sector-specific stakeholders, thereby giving the project a global voice and stand.

Key messages to Interest organisations and NGOs

- Sustainability is one of the key drivers of the project;
- SmartAgriHubs is a multifaceted project supporting digital transformation, and amongst other goals facilitates adequate food for future generations, while also fostering both sustainable production and fair prices for the farmers' community;

- Any climate related disturbance is a factor to be considered in the development of new technologies in the livestock, arable, aquaculture, vegetables and fruits sectors to provide solutions to any food shortages.

Press

Public relations are pivotal for dissemination purposes, and the press represents a privileged stakeholder to target. The “press” means every source of news which is not directly related to the project and its members, and which broadcasts news through all different channels. For outreach reasons, online press will be prioritised over other mediums like TV, radio or paper. The press does not necessarily have to come from a recognised newspaper website, but it can be sourced from any website of relevance for the agritech sector, being associations, cooperatives, companies, and so on. WP1 will be in charge of the widespread, overall press relations, while local and regional press contacts will be kept by RCs.

- Press at EU level;
- Press at local level.

Key messages to EU press

- SAH has an extensive network and significant impact on the EU market;
- EU funded project with €20 million to foster the uptake of digital solutions in the agritech sector
- The project will provide results and achievements to revolutionise the agricultural sector;
- SmartAgriHubs will connect the existing dots in the digital innovation related to the agricultural sector in Europe.

GENERAL PUBLIC

In the light of its inclusive and engaging vision, the last, big part of SmartAgriHubs’ target audience is represented by the general public, meaning the audience that is not necessarily related to the previous stakeholder groups and whose interest is not necessarily agritech. An example could be, for instance, consumers, who are affected by agritech innovations but do not experience it in the first place. Reaching this type of target will require the translation of the complex, technical language into a more simple and usable language, suitable for a broader range of people. This can be achieved by using different and interactive communication tools (social media, videos, slogans) as well as by leaning on specific organisations that are used to convey messages to that audience (in this case, for instance, consumer organizations).

Key messages to general public

- SAH will explain technological innovation to the larger audience;
- Vast network with numerous partners anchored at the local level through DIHs and RCs;
- People are more and more engaged and actively participating in shaping policies and co-deciding in matters of common interest for them;

- SmartAgriHubs is accessible at different layers for different stakeholders;
- Results provided in accessible language and without a need for prior savvy technology background;
- Innovation Experiments will happen all over Europe and are an easy entrance point for regular people.

PHASE I: SOWING

WITHIN DIHS

Focus

The aim is to support RCs in building up their communication strategies together with the ones of the DIHs, provide personalised support to those RCs and DIHs that already have a communication strategy in place and help align it to the SAH project.

Key messages

- RCs: Build a coherent communication strategy in tone with the visual identity of SAH and follow the guideline of the project's overall communication strategy;
- DIHs: Use the communication strategy to attract new partners in their hub, and present the advantages of being part of such a pan-European network;
- Partners of the DIHs: Shape their own identity in the SAH community.

Target audience

The RCs and DIHs (and their partners).

BETWEEN DIHS

Focus

The sowing phase sets the stones for a solid collaboration among the RCs, DIHs and FIEs by making use of online as well as offline communication means. This stage represents the foundation to enlarge the network and generate a flow of exchanges on good practices and innovative results.

Key messages

- Regional Clusters: Provide the environment and framework for such cooperation to take place (e.g. organisation of local events, thematic workshops and joint conferences with other RCs). Building trust among the DIHs in the territory and across regions is a first step to a prosperous web of connections;
- DIHs: Share experiences with other DIHs about the advantages of the SAH community, disseminate the benefits of a multi-level stakeholder network - this connection could take place in the digital market of the Innovation Portal;
- FIEs: Share their experiences and endorse them as a benchmark suitable for widespread adoption, increase exchanges and access to success stories through the Innovation Portal, and act like role-models for newcomer Innovation Experiments;
- Partners in the consortium: Facilitate cooperation at WP level as well as in the territory

Target audience

RCs, Digital Innovation Hubs, FIEs and the Partners in the consortium

BEYOND SMARTAGRIHUBS

Focus

The visual identity is at the heart of establishing a coherent and consistent image for the whole project.

Key messages

- Towards the European Commission: Position SmartAgriHubs as the new agritech network;
- Towards other relevant networks: Publicise the scope and goal of SAH, find synergies and a common aim for future joint collaborations.

Target audience

- European Commission and other relevant networks, e.g.: IoF2020.

PHASE II: FLOWERING

WITHIN DIHS

Focus

SmartAgriHubs will provide tailor-made training and capacity building for DIHs and FIEs in communication and dissemination activities. At this stage the focus is on improving the capabilities of the different actors in the DIHs and RCs to allow them to communicate effectively about their work and results. Subject to their needs and requirements different packages of training will be designed to ensure all communication skills are covered. This period will coincide with the period of the open calls of the project, and special communication activities will be put in place to highlight access to the financial aid.

Key messages

- Digital Innovation Hubs: Improve flow of information within the hub, providing access to latest knowledge and developments;
- Flagship Innovation Experiments: Activate promotional campaigns to bring communication to the next level;
- Regional Clusters: Develop the trainers program communication wise, ensure RCs receive adequate training to transform them into the messengers in their respective territory. Specific trainings could consist of branding your product/activity, how to write a stakeholder engagement, start a good communication campaign on social media etc.

Target audience

RCs, DIH and their partners and Flagship Innovation Experiments.

BETWEEN DIHS

Focus

Foster cooperation and encourage a fruitful collaboration among the partners. A special focus should be given to IEs able to share results and exchange lessons. At the same time, continued interaction among DIHs should be cultivated in order to connect and promote good practices around Europe. This phase corresponds to the boom of the Innovation Portal. Seen as a digital market place it will allow for immediate interaction among the users. In this portal, DIHs and their partners will benefit from extensive search tools tailor-made to key words and concepts. The innovation portal will also function as an educative platform where further support will be offered to DIHs and RCs for their communications and dissemination activities.

Key messages

- Innovation Experiments: Storytelling on their results, their challenges, achievements and performances;

- Digital Innovation Hubs: Share success stories and transferable good practices with other Agri DIHs in Europe;
- Partners in the Consortium: Identify best practices and innovative actions.

Target audience

Digital Innovation Hubs and the Partners in the consortium (especially RCs and FIEs).

BEYOND SMARTAGRIHUBS

Focus

Strengthen the image and perception of SmartAgriHubs among other relevant networks. Attain an easily recognisable image outside the partners of the network and position the project as a reference in the agri-digital sector.

Key messages

- European Commission: Promotion of the ecosystem built with the project;
- Other relevant networks: Foster collaboration activities, and the continuous enlargement of the network and its ecosystem.

Target audience

- European Commission and other relevant networks identified at EU scale, e.g.: IoF2020

PHASE III: HARVESTING

WITHIN DIHS

Focus

Promote and disseminate best practices and successful results of the DIHs, FIEs and IEs at national and regional level.

Key messages

- National/Regional Government: Raising awareness of these innovative actions taking place in their territory and the impact achieved locally;
- General Public: Promotion towards a larger audience on the overall results of the project and main achievements like improved productivity in the agricultural sector, environmental and societal benefits from the digitisation of agriculture and its food chain in Europe.

Target audience

National/Regional Government, and the general public.

BETWEEN DIHS

Focus

Showcase the synergies created and the collaboration reached among the DIHs. SmartAgriHubs is defined by the ongoing activity of its DIHs and the interconnectivity of its members.

Key messages

- Digital Innovation Hubs: Progress is achieved through the cooperation and sharing of knowledge and experiences. Cross country and interregional cooperation are flourishing and will be maximised to promote the diverse identity of the project;
- Partners in the Consortium: Fortify the brand and the image of SAH network based on concrete accomplishments of the DIHs and FIEs.

Target audience

Digital Innovation Hubs and the Partners in the consortium.

BEYOND SMARTAGRIHUBS

Focus

Activate and consolidate a network of Agri DIHs is a continuous task. Keeping the branding in line with its purpose and meaningful in the context of future movements in the European market is the main objective. Acknowledged recognition should be achieved at all levels of communication in this phase.

Key messages

- General public: Endorse the main achievements and the positive impact of agri innovation in the daily lives of the citizens across Europe;
- Decision makers and other relevant stakeholders: Consider SmartAgriHubs as a legitimate interlocutor for agricultural innovations at EU level. Involve the network in the making of the next Agri policy in Europe. Replicate the success of such a network in other non-EU countries with similar conditions.

Target audience

General public, decision makers and other relevant stakeholders.

Table 5 gives an overview of the three phases and their focus, key messages, target audiences and the instruments used to achieve their aims:

<i>Ecosystem phases</i>	<i>Ecosystem levels</i>	<i>Focus</i>	<i>Key messages</i>	<i>Target audience</i>	<i>Instruments (communication plan)</i>
Phase I - Sowing	<i>Within DIHs</i>	Support DIHs in developing or enhancing their own communication strategies	<p>RCs: Build a coherent communication strategy in tone with the visual identity of SAH;</p> <p>DIHs: Use the communication strategy to attract new partners in their hub;</p> <p>Partners of the DIHs: Shape their own identity in the SAH community.</p>	Partners in DIHs	Visual identity; Comm toolbox
	<i>Between DIH</i>	Build a basis for collaboration between the DIHs, both online (innovation portal) and offline (kick-off event)	<p>RCs: Provide the environment and framework for a fruitful cooperation. Build trust among the DIHs in the territory and across regions;</p> <p>DIHs: Share experiences with other DIHs about the advantages of the SAH community and the benefits of a multi-level stakeholder network;</p> <p>FIEs: Share their experiences and endorse them as a benchmark suitable for widespread adoption for newcomer Innovation Experiments;</p> <p>Partners in the consortium: Facilitate cooperation at WP level as well as in the territory</p>	DIHs; Partners of the consortium	Kick-off event; Newsletter; Innovation Portal; Comm toolbox
	<i>Beyond SmartAgriHubs</i>	Develop a coherent visual identity for the project as a whole	<p>Towards the EC: Position SmartAgriHubs as the new agritech network;</p> <p>Towards other relevant networks: Publicise the scope and goal of SAH, find synergies and a common aim for future joint collaborations.</p>	EC; relevant networks	Visual Identity; Kick-off event; Newsletter; Social media
Phase II - Flowering	<i>Within DIHs</i>	Support capacity building of DIHs (WP4) with trainings and how-to documents.	<p>DIHs: Improve flow of information within the hub, providing access to latest knowledge and developments;</p> <p>FIEs: Activate promotional campaigns to bring</p>	Partners in DIHs	Feedback and guidance; Publications

			communication to the next level; RCs: Ensure RCs receive adequate training to transform them into the messengers in their respective territory.		
	<i>Between DIH</i>	Actively share IE results and best practices between DIHs. Stimulate collaboration	IEs: Storytelling on their results, challenges, achievements and performances; DIHs: Share success stories and transferable good practices with other Agri DIHs in Europe; Partners in the Consortium: Identify best practices and innovative actions.	DIHs; Partners of the consortium	Trainings (webinars, online courses); Newsletter; Best practices via innovation portal; Site visits; Publications; Press kit
	<i>Beyond SmartAgriHubs</i>	Expand the reach of the project by connecting to relevant networks.	EC: Promotion of the ecosystem built with the project; Other relevant networks: Foster collaboration activities, and the continuous enlargement of the network and its ecosystem.	EC; relevant networks	Regular event attendance; Newsletter; Website; Social media; Publications; Press kit
Phase III - Harvesting	<i>Within DIHs</i>	Support DIHs in disseminating their success stories and best practices at a regional level	National/Regional Government: Raising awareness of innovative actions taking place in the territory and the impact achieved locally; General Public: Promotion towards a larger audience on the overall results of the project and main achievements.	Regional government; General public	Template for final report
	<i>Between DIH</i>	Confirm collaboration between DIHs with a final report and closing event.	DIHs: Cross country and interregional cooperation are flourishing and will be maximised to promote the diverse identity of the project; Partners in the Consortium: Fortify the brand and the image of SAH network based on	DIHs; Partners of the consortium	Newsletter; Best practices via innovation portal; Final report

			concrete accomplishments of the DIHs and FIEs.		
	<i>Beyond SmartAgriHubs</i>	Disseminate success stories to a wider audience with a targeted public affairs and media outreach	<p>General public: Endorse the main achievements and the positive impact of agri innovation in the daily lives of the citizens across Europe;</p> <p>Decision makers and other relevant stakeholders: Consider SmartAgriHubs as a legitimate interlocutor for agricultural innovations at EU level.</p>	General public; external stakeholders; decision-makers	<p>Public affairs; Media packages; Scientific publications; Targeted media outreach;</p> <p>Final report; Closing event</p>

Table 5 Overview of the communication and dissemination strategy