D6.5 Intermediate communication, dissemination and standardisation activities report

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Contents

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List of Figures and Tables

1 Executive Summary

D6.5 reports on the DEMETER intermediate communication, dissemination, and standardisation activities in the period M1-M18 of the project. It reports on the overall achievements, reviews the strategic goals and KPIs and outlines the roadmap from M19-28.

The overarching objective of the communication and dissemination activities is to increase the awareness of the activities being undertaken in the project among the different stakeholder groups. Conducting a stakeholder analysis in August 2020 enabled a more streamlined and targeted communications and dissemination strategy identifying key messages and communication channels to reach the intended audiences.

However, the Covid-19 crisis has impacted many of the original plans in terms of physical events and conferences and resulted in much of the strategy moving to an online forum. Therefore, it is necessary to review the strategic goals and activities for the next 12 months, when it is likely that in-person events will be at a minimum. This intermediate evaluation enables us to refine the strategy and to plan the relevant actions needed to maximise the impact.

This document gives a detailed account of the communications and dissemination activities that have been conducted thus far. The content and the channel of communication has been adapted to reach the stakeholders outlined. The report also introduces the activities that will be carried out in the coming 12 months to meet the success criteria defined in the Communication Plan.

The main purpose of the Standardisation Framework is to support the uptake, use, adaptation, and impact on standards in DEMETER, and to provide support for data and service governance for the project, including the involvement with relevant standardisation and interest organisations and initiatives like the EU Multi-stakeholder standardisation group and the DT-ICT-13-2019: Digital Platforms/Pilots Horizontal Activities. The standardisation activities are summarised and outlined in this report also.

2 Acronyms & Abbreviations

AEF	Agricultural Industry Electronics Foundation
AI	Artificial Intelligence
AIM	Agricultural Information Model
AIOTI	Alliance for Internet of Things Innovation
AIS	Agricultural Interoperability Space
AR	Augmented Reality
CeBIT	Centrum für Büroautomation, Informationstechnologie und Telekommunikation
DEH	DEMETER Enabler Hub
EC	European Commission
ERP	Enterprise Resource Planning
EU	European Union
FAO	Food and Agriculture Organisation
FMIS	Farm Management Information Systems
ICT	Information and Communication Technologies
IEEE	Institute of Electrical and Electronics Engineers
IERC	IoT European Research Cluster
IoT	Internet of Things
KPI	Key Performance Indicator
MMA	Multi-Actor Approach
Mx	M1-M42. Month of the project schedule (from Sept 2019 to Mar 2023)
NIVA	A New IACS Vision in Action
SEO	Search Engine Optimisation
SM	Social Media
SME	Small and Medium Enterprises
SOCS	Stakeholder Open Collaboration Space
TSSG	Telecommunications Software & Systems Group
WFO	World Farmers Organisation
WIT	Waterford Institute of Technology
WoM	Word of Mouth
WP	Work Package

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4 Introduction

4.1 Scope and Objectives of the Deliverable

The purpose of this document is to report on the Communication, Dissemination and Standardisation activities of DEMETER for the period Sept 2019 – February 2021 and to update the strategy previously defined in D6.1. The document also sets out the plan for the coming 12 months.

The specific objectives of the DEMETER Communication and Dissemination plan are:

- to raise public awareness about the DEMETER project, its expected results and progress within defined target groups using effective communication means and tools.
- to recognise the consortium's total reach through pre-existing communication outlets and channels and establish new channels through which to advocate the project progress and results.
- to disseminate the fundamental knowledge, methodologies and technologies developed during the project.
- to pave the way for a successful commercial and non-commercial exploitation of the project outcomes.
- to make results of the project available publicly from the project website and usable for all who may benefit from them.

A three-phased strategy was designed to maximise the impact of the project:

- M1-15 focused on Market Awareness,
- M16-25 is centred on Market Positioning,
- M26-42 will focus on Market Outreach.

As the initial Communication and Dissemination strategy was developed before the impact of Covid-19 was felt, it was revised in September 2020 to ensure the necessary steps were taken to continue to engage stakeholders and disseminate materials effectively. This included a pivot to create more digital content and replace meetings and events with an online equivalent. This document reflects the change in strategy and details the revised activities and performance against the agreed KPIs.

4.2 Structure of the Document

The remainder of this document is divided into 7 sections (Sections 5-11) as follows:

- **Section 5**: Details the revised strategy for Communication and Dissemination and reviews the strategic goals outlined.
- **Section 6**: Focuses on how DEMETER stakeholders have been engaged to ensure a targeted Communication and Dissemination Strategy.
- **Section 7**: Reviews the communication activities and reports on the reach of social media, website, newsletter and digital activity.
- **Section 8**: Outlines the dissemination activities by reporting relevant events, presentations and publications. A review of KPIs is also included in this section.
- **Section 9:** Focuses on the standardisation activities within the project.
- **Section 10**: Defines a roadmap of actions for the next 12 months (M18-28). Although activities

are planned from M28 onwards, due to the situation of Covid-19, these are more fluid and therefore not included in this deliverable.

- **Section 11**: Draws the main conclusions within the document.

5 Strategy for Communication and Dissemination

The purpose of the initial 'Communication and Dissemination Strategy' was to outline an effective approach to dissemination plans for the DEMETER project and to communicate the project's respective activities. The strategy was updated in September 2020 to account for the impact of the Covid-19 pandemic and the need to adapt and create a more focused DEMETER strategy.

5.1 Review of Communication and Dissemination Goals

The Communication and Dissemination focus for M1-15 was centred around driving market awareness. The primary events were organised to generate interest in the DEMETER project and approach. The main objectives were to build integrated marketing communication collateral, encourage participation and collaboration and to communicate results of the project to the relevant target audiences mainly on communication activities through event organisation and participation, building a web presence and the maintenance of social media channels.

We are now into the Market Positioning Phase (M16-24) where the focus is on promoting the project outcomes, and the engagement of specific target groups. Activities include the publication of papers in scientific journals and conferences, and participation at project related events and workshops.

Phase 3, Market Outreach, will run from M25-42 to focus on promoting the project outcomes, and the engagement of specific target groups. Activities include the publication of papers in scientific journals and conferences, and participation at project related events and workshops. Due to the expected maturity of results at this stage, we will develop activities that will help and enhance the exploitation capabilities of the project.

This intermediate report draws on the lessons learned over the past year, including the impact of Covid-19 described above. Internally, WP6 and WP7 have combined the bi-weekly telco which has increased the flow of information and ensures that a MAA (multi actor approach) is being followed. WP6 and WP7 have also worked closely with WP5 in the preparation of a pilot booklet highlighting each of the pilots and also completing a farmer survey. WP2,3,4 have also contributed to the production of the newsletter and contributing social media posts to communicate the technical side of the project. Thus, collaboration with all the other activities in the project is key to ensure completeness and relevance of the digital content created by DEMETER and thus, to the success of WP6.

Overall, the Communication and Dissemination goals remain the same, however, it was evident that a more targeted approach was needed. The first step was the organisation of a stakeholder analysis workshop outlined in Section 6 and conducting interviews with key stakeholders to better understand their needs, interests and concerns. As part of this approach, new channels to communicate with the stakeholders were identified as illustrated in Table 1 and 2 and implemented into the strategy. For example, to reach more farmers, we have written two articles for the WFO organisation newsletter highlighting the project and the expected benefits for farmers. To reach the technical audience, we have presented at an AEF TechTalk on the DEMETER reference architecture. To reach farm advisors, we have liaised with the H2020 FairShare project and participated in workshops.

Table 1: Channels to reach farmers & farmers' organisations

How do farmers/orgs find out about DEMETER? (What channels are needed to reach them?)	
Larger & Smaller Scale Farms	• Farmer peer references through word of mouth (WOM). • Machinery and equipment providers. • Ag advisors. • Online agri-forums and boards. • Through farmers' organisations and associations. • Agri-media. • Digital (SEO and paid search, Social Media including advertising and promotional activities). • Events and Shows. • Ongoing blog and video testimonial service highlighting features and how to get the most out of the product.
Smaller/Local Farmer Purchasing & Producer Groups	• Group members • Farmer peer references through word of mouth (WOM). • Machinery and equipment providers. • Ag advisors. • Online agri-forums and boards. • Through farmers' organisations and associations. • Agri-media. • Digital (SEO and paid search, Social Media including advertising and promotional activities). • Events and Shows. • Ongoing blog and video testimonial service highlighting features and how to get the most out of the product.
Farmer Co-operatives & Farmer Organisations and Associations	• Farmer members. • Industry peer references through word of mouth (WOM). • Agri-media. • Industry publications. • Through farmers' organisations and associations. • Targeted direct marketing tailored to co-op requirements and use cases. • Events and Shows. • Ongoing blog and video testimonial service highlighting features and how to get the most out of the product.

Table 2: Channels to reach Software Providers, Hardware Providers and Advisory Services

	Software Provider	Hardware Provider	Advisory Services
How do they find out about DEMETER? **(What channels are needed to reach stakeholders?)**	Open-source code repositories (GitHub etc.) Technology forums and boards (Reddit, Stackoverflow, HackerNews and Product Hunt). Technology media inc. podcasts (TechCrunch, Register, Techmeme, Verge, HackerNews etc.) AgTech media (AgFunder, Food+Tech Connect, Digital (SEO and paid search, Social Media including advertising and promotional activities including LinkedIn). Trade events and shows. Additional open calls. Research papers and journals. Hackathons.	Open-source code repositories (GitHub etc.) Reference groups and standardisation committees and working groups (CeBIT, AIOTI). Technology forums and boards (Reddit, Stackoverflow, HackerNews and Product Hunt). Technology media inc. podcasts (TechCrunch, Register, Techmeme, Verge, HackerNews etc.) AgTech media (AgFunder, Food+Tech Connect, Digital (SEO and paid search, Social Media including advertising and promotional activities including LinkedIn). Trade events and shows. Additional open calls. Research papers and journals. Hackathons	Advisor peer references through word of mouth (WOM) regionally and inter-regionally. Online agri-forums and boards. Through farming organisations and associations. Reference groups and standardisation committees and working groups (EIP Agri, SCAR AKIS, UROP, EUFRAS). Through advisor driven H2020 projects i.e. https://www.h2020fairshare.eu Agri-media. Digital (SEO and paid search, Social Media including advertising and promotional activities). Events and Shows. Ongoing blog and video testimonial service highlighting features and how to get the most out of DEMETER

Targeted communication materials have been created such as developing the DEMETER website, the publication of the pilot booklet, creating targeted social media posts and targeted newsletters for example the farmer-focused third edition as well as participating in a wide range of events to reach various audiences.

Furthermore, it was recognised that there was a need to provide content in multiple languages other than English. This was highlighted during interviews conducted with several DEMETER farmers. Announcements of the first Open Call were translated into 8 languages approx., which resulted in wider outreach. The experience of selecting some partners to contribute to this effort has led DEMETER to set up a more ambitious multi-lingual strategy that has been incorporated into the Communication and Dissemination Plan. A translation team from WP6 has been created representing each of the 18 countries involved in the project. The first step was the creation of a DEMETER farmer

survey in all languages to better understand their needs, interests and concerns. Newsletters have been translated in several languages, but a more structured approach will be implemented starting with translation of the pilot booklet and followed by the translation of a subset of the website contents, so that "national" websites are available to communities in different Member States.

5.2 KPIs and Timelines

Table 3 outlines the Communication and Dissemination KPIs set out in the initial DEMETER plan. Section 8.3 summarises the performance against these KPIs and any corrective action which must be taken to achieve the project communication and dissemination goals.

Table 3: Communication and Dissemination KPIs

Action	Deliverable
Brochure	1 in Market Positioning Phase and 1 in Market Outreach Phase
Factsheet	1 in Market Positioning Phase and 1 in Market Outreach Phase
Newsletters	11 in total across >5,000 subscribers
Press Releases	50 targeted releases
Website	>300,000 website visitors across project duration
	Bounce Rate of 30%, Average visit duration: 2 min 45 sec
Social Media	Year 1: Twitter: 300+followers, LinkedIn: 100+members, Facebook: 300+ likes, YouTube: 1 video: 500+videos, SlideShare: 100 views
Publications	Number of articles: 88
	Number of conferences: 139
	Number of white papers: 75
External Events	EU Workshop/Speaker Events: Number of Engagements: 150 and Number of Contacts Generated >500
	National Level Events: 144 and Number of articles in press and social media: 432
	International Level Events: 48 and Number of articles in press and social media: 86
	Prototype Demonstrations for Industry at Events: 54 and Number of articles in press and social media: >500
DEMETER Events	At least 3 involvement workshops

6 Stakeholder Engagement

6.1 Stakeholder Analysis

A stakeholder engagement workshop was organised in association with WP 5&7 in August 2020 to fully identify the full range of target groups and individual stakeholders. This workshop enabled further segmentation of the 'farmer group' separating them by gender, farm size, farm type, and technology awareness. Each target group was also segmented further – for example, software providers were separated into Mobile/Web/AR/AI app providers, data management and visualisation tools providers, ERP providers, FMIS vendors, System integrators, SMEs in the Open Calls.

These stakeholders were mapped onto an 'Influence/Interest for Stakeholder Prioritisation' as implemented into the revised Communication and Dissemination Plan submitted in September 2020. It is recognised that stakeholders will move around the matrix over the lifetime of the project so a similar exercise will be conducted in 2021.

6.2 Understanding Stakeholder Needs & Concerns

The stakeholder analysis workshop identified the needs, interests and concerns of key target audiences. Following this, a survey was firstly conducted with DEMETER farmers to help rank each of these areas. The survey was developed in consultation with the WFO to ensure language familiar to farmers was used throughout. The survey was translated into the languages where all DEMETER pilots are operating. Key insights from the survey were

- 87% of respondents either agreed or strongly agreed that they understand what DEMETER is trying to achieve.
- 51% would like to see more information from DEMETER about the project and its goals.
- The top three needs were to increase yield quality, to have access to weather and climate information and to have access to feasible and affordable technology.
- The top three concerns were related to data privacy and sovereignty, investing in a technology that does not give a proper economic return and disclosing business data to competitors.

Following the insight that farmers would like to see more information from DEMETER, we will work with farmers' association such as WFO, Irish Farmers' Association, Georgian Farmers' Association, and the Romanian Maize Growers Association (APPR) to create more materials for the farmers participating in DEMETER. This will include sharing regular pilot updates as well as highlighting the overall vision for DEMETER both during and beyond the project completion date. Further workshops will be organised with farmers as part of the MAA on topics such as accessibility of both climate data and technology, as well as data security and sovereignty.

7 Review of DEMETER Communication activities

The objective of the communication activities is to engage the target audiences and demonstrate the impact and benefits of DEMETER. The focus is on informing the stakeholders about DEMETER and promoting its activities and successes.

Communication and dissemination, although separate activities, often overlap. Some of the communication tools outlined below provide a dissemination function also but are not listed separately in the Dissemination section.

7.1 Website

Populating the DEMETER website with relevant and interesting content was a considerable focus for M1-18. This included news, blogs, text interviews with farmers, as well as updated news regarding the technical activities of DEMETER. Interviews were conducted with each of the pilot leaders and shared on the website. Different guest authors from the pilot and technical side have written blog articles throughout M1-18.

All pilot projects are now listed on the website detailing their aims, objectives, approach and expected outcomes. An interactive map is also available where users can click on a country to learn more about the pilots running there.

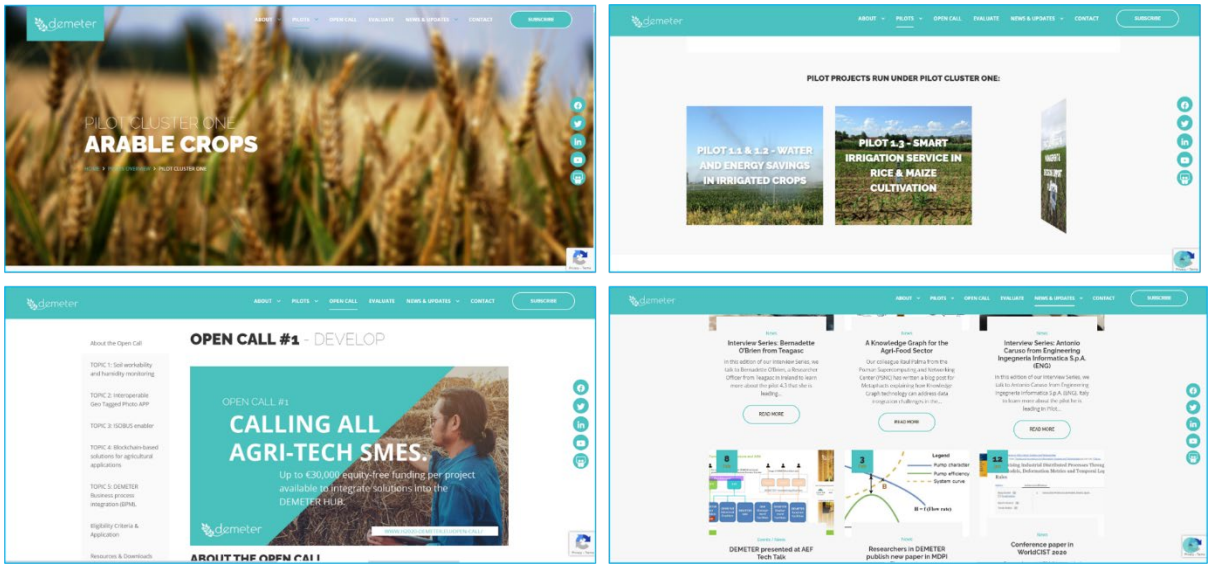

Figure 1: DEMETER website

Open Call materials such as information on the topics, the handbook, the webinar recordings and FAQ were also housed on the website in a separate Open Call section.

A separate dissemination section was created under News & Events detailing all DEMETER publications and conferences.

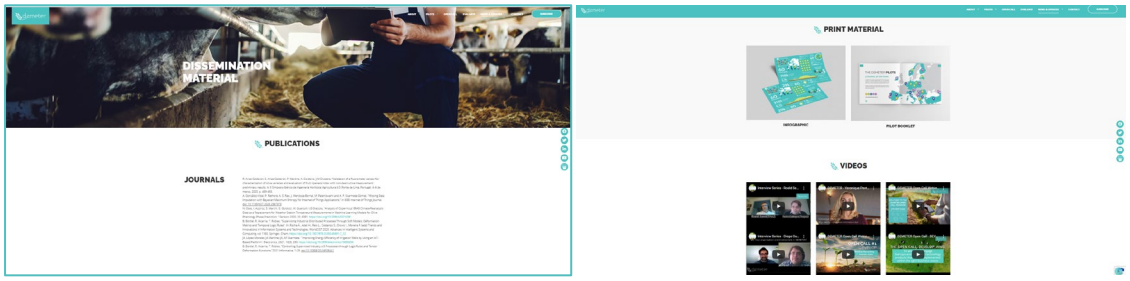

Figure 2: Dissemination Section on website

Website users and page views have grown consistently overtime, particularly since Sept 2020 as outlined in Figure 3. This coincides with the deadline for the Open Call and increased visibility for the project. Regarding website traffic 44% is direct, 37% through organic search, 10% by referral and 9% through social media activity. SEO has been implemented through having clear navigation on the site, relevant and regular content and internal linking etc.

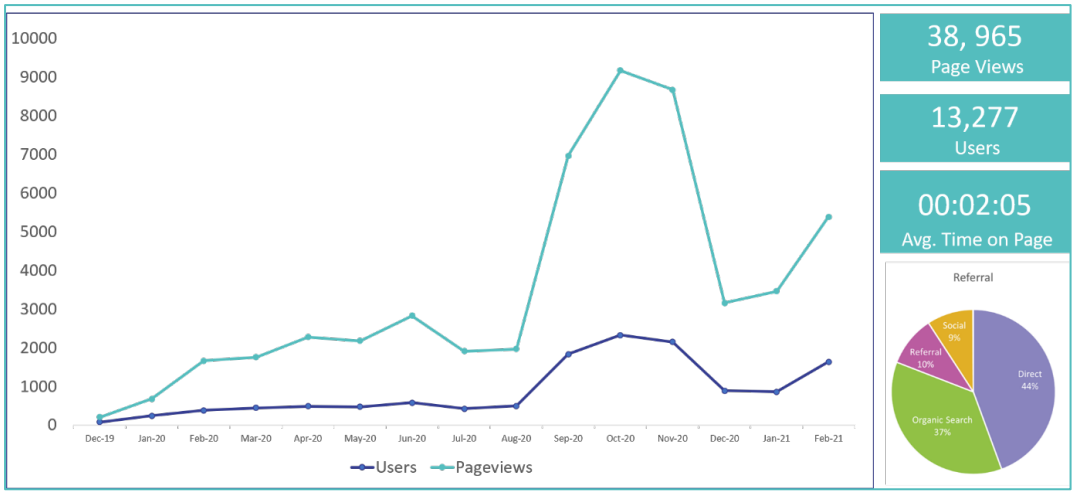

Figure 3: Website analytics

The most popular pages are the home page, Open Call section, the pilots and About DEMETER as outlined in Figure 4. Total page views now stand at 38,965 while the Average Time on Page is 00:02:05. The Bounce rate is at the end of Yr1 was 57.91%.

	Page	Pageviews	% Pageviews
1.	/	10,661	27.36%
2.	/open-call/	8,982	23.05%
3.	/pilots/	2,427	6.23%
4.	/about-demeter/	2,154	5.53%

Figure 4: Website popular pages

7.2 Social Media

DEMETER is active across Twitter, LinkedIn, Facebook, You Tube and Slideshare. The social media accounts are managed by the D6.1 leader and project coordinator. All project partners contribute content via these contacts. Partners' social media activity is tracked in the Publicity and Publications spreadsheet which monitors all communication and dissemination activities. Figure 5 outlines a sample of the partner social media activity either sharing DEMETER posts or creating their own content.

Project Partner	Person	Publication Type	URL
UDG	Tomo Popović	Social Media	https://www.linkedin.com/posts/universityofdonjagorica_udg-h202
Vicomtech	Ane Elizalde	Social Media	https://www.linkedin.com/feed/update/urn:li:activity:66659199077
ITC	Daniel Copot	Social Media	https://www.linkedin.com/feed/update/urn:li:activity:67373858150
DNET Labs	All	Social Media	https://drive.google.com/file/d/1Px0mq_Gry7k27tQ1VGghLPJE-pvv2
TRAGSA	Pablo Gallegos	Social Media	https://h2020-demeter.eu/
Coldiretti	Multiple- Press office o C	Social Media	https://twitter.com/coldiretti/status/1332254397540216834?s=20
ENG	Angelo Marguglio	Social Media	https://twitter.com/AngMarguglio/status/1273546712532094976/phc
INIAV	Rocío Arias Calderón	Social Media	https://twitter.com/Rocio_Arias_C/status/1349723207817949184?s=2
GFA	Irina Tkhelidze	Social Media	https://www.linkedin.com/feed/update/urn:li:activity:676452428975
IFA	Ethan Cleary	Social Media	https://www.facebook.com/IrishFarmersAssociation/posts/tomorro
TECNALIA	Ana Diaz De Zugazua	Social Media	https://twitter.com/tecnalia/status/1337317532726947841
Prospeh	OriginTrail (open-source	Social Media	https://twitter.com/origin_trail/status/1324248372300099584
Prospeh	Žiga Drev	Social Media	https://mobile.twitter.com/DrevZiga/status/1331914749731364865
SREM (partner 50) Uc	Slobodan Spasovski	Social Media	https://www.facebook.com/fruskagorawine/?view_public_for=2354
Fraunhofer FIT	Anja Linnemann	Social Media	https://twitter.com/Fraunhofer_FIT/status/1270715496518705154

Figure 5: Consortium social media activity

A social media calendar is used to organize and schedule relevant content and balancing the spread across the different stakeholders, farmers, academic, IT providers, general public etc. In light of the Covid-19 pandemic, considerable effort was made to increase the social media presence, with on average 2-3 posts shared per week across each platform.

Table 4 outlines the initial KPIs per social media channel and the performance at M12 and at M18.

Table 4: Social media performance

Platform	KPI	Performance (M12)	Performance (M18)
Twitter	300+ followers 100 Tweets	404 followers 300+ Tweets	542 followers 486 Tweets
LinkedIn	100+ members	361 members	526 members
Facebook	300+likes	115 likes	150 likes
YouTube	1 video, 500+views	1,100 views, 37 hours view time	883 views, 43.4 hours view time (M12-M18)
Slideshare	100 views	188 views	79 views (M12-M18)

All KPIs were met for Year 1 apart from Facebook, which proved difficult to engage with the relevant audience. Each social media channel performance is analysed separately.

7.2.1 Twitter

Twitter has been a very effective channel at reaching multiple target audiences such as the farming community, researchers, software and hardware providers and the general public. Posts have been targeted towards each audience firstly introducing DEMETER, the objectives, the pilot clusters and then moving towards including more specific information about the pilot projects, links to blog posts, papers written, and conferences presented at. As illustrated in Figure 6, the total number of followers at M18 is now at 542.

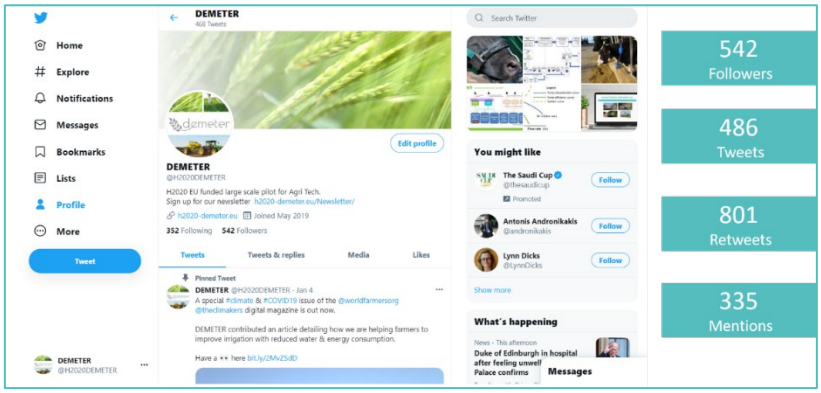

Figure 6: Twitter analytics

Impressions across Twitter have grown considerably, as outlined in Figure 7, peaking at key activities within the project such as the DEMETER/ATLAS webinar in June, Open Call launch date in September, the Digital Around the World Conference in October and the Open Call closing date in November.

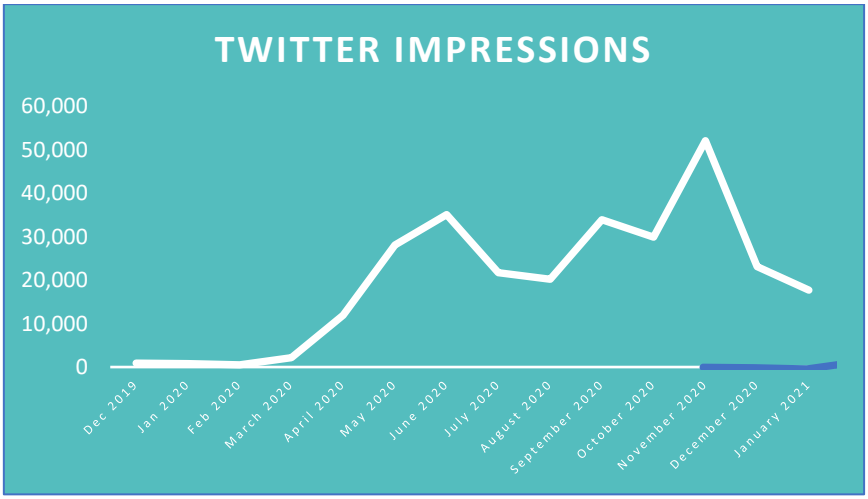

Figure 7: Twitter impressions

The top performing tweet announced the launch of the DEMETER Pilot Booklet generating 17K impressions alone.

7.2.2 LinkedIn

The LinkedIn community has grown considerably and is the second most popular DEMETER social media channel. It is used to engage all stakeholders except the general public. The impressions range from approx. 2K-4K each month while the engagement has ranged between 6-12% per month. Figure 8 outlines the overall impressions per month. The target for Year 2 was to grow the LinkedIn following to 300+ followers, as this has already been achieved, a new target of 800 followers has been set.

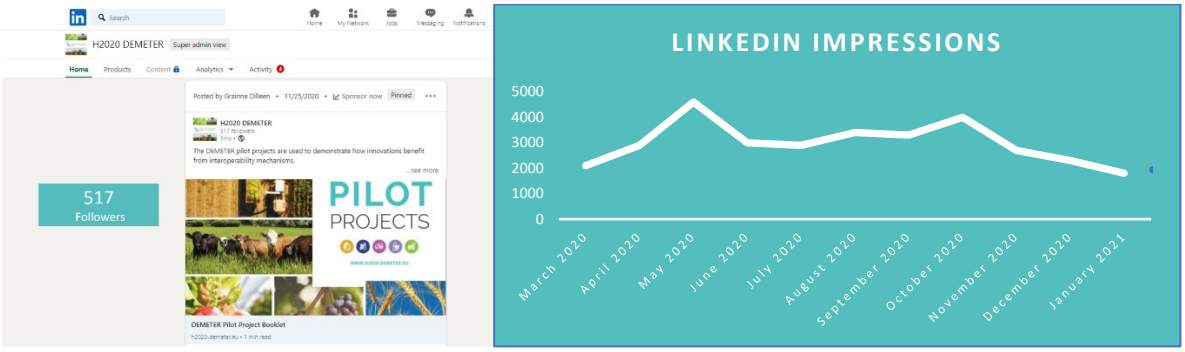

Figure 8: LinkedIn Impressions

7.2.3 Facebook

Facebook has the been the most difficult channel to grow an audience. At end of Month 12, the total number of followers was 115, which has now grown to 150 at the end of Month 18. Facebook groups of interest were joined such as the Sustainable Agriculture and Food Security Group and the FAO Food and Agriculture Organisation of Unity Nations, sharing DEMETER information. On average, the reach of Facebook posts can vary from 300-2K depending on the content. As the current figure for Facebook followers is considerably lower than the 1000+ likes outlined in the KPIs, this has now been revised for Year 2 at 300 likes.

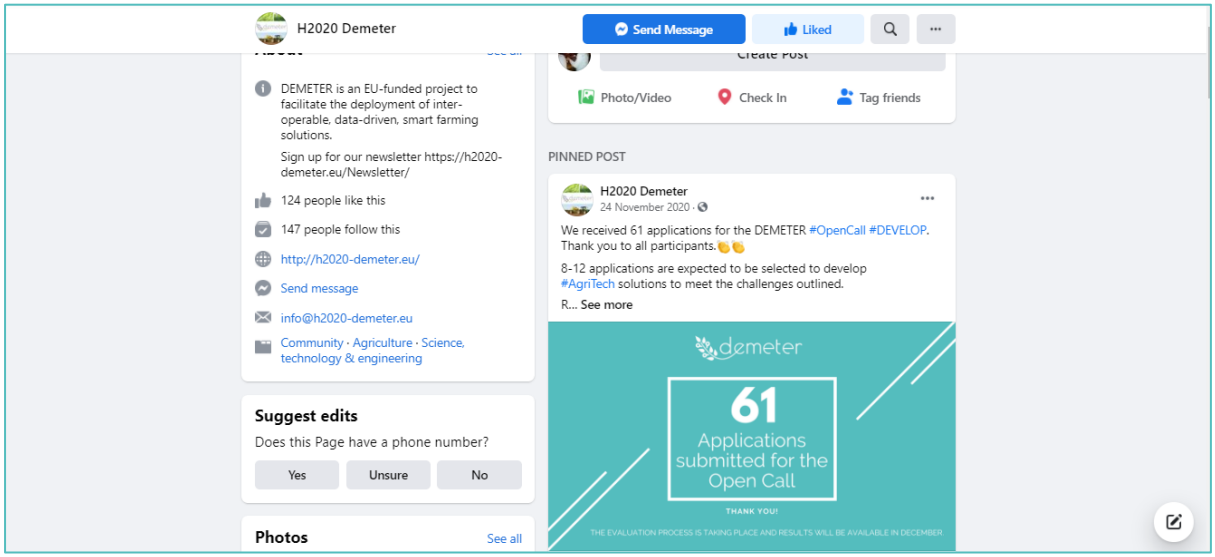

Figure 9: Facebook analytics

7.2.4 YouTube

YouTube has been an important channel to communicate the project objectives and progress. Again, with the onset of Covid-19, more video content has been created and shared on the channel. This started with short video snippets of WP leaders and Task Leaders describing their role and ambition for DEMETER. Next, a video interview with each pilot cluster leader was conducted online and shared. A short video explaining the first Open Call, DEVELOP, was created and shared on the website, via YouTube. The recording of the DEMETER/ATLAS webinar also drew considerable views, as did the recording of the two Open Call webinars conducted. In addition, Pilot 4.4 and Pilot 5.1 created short videos to explain in greater detail their pilots and the expected benefits. Work will start to create similar videos for all pilots to be complete by M24.

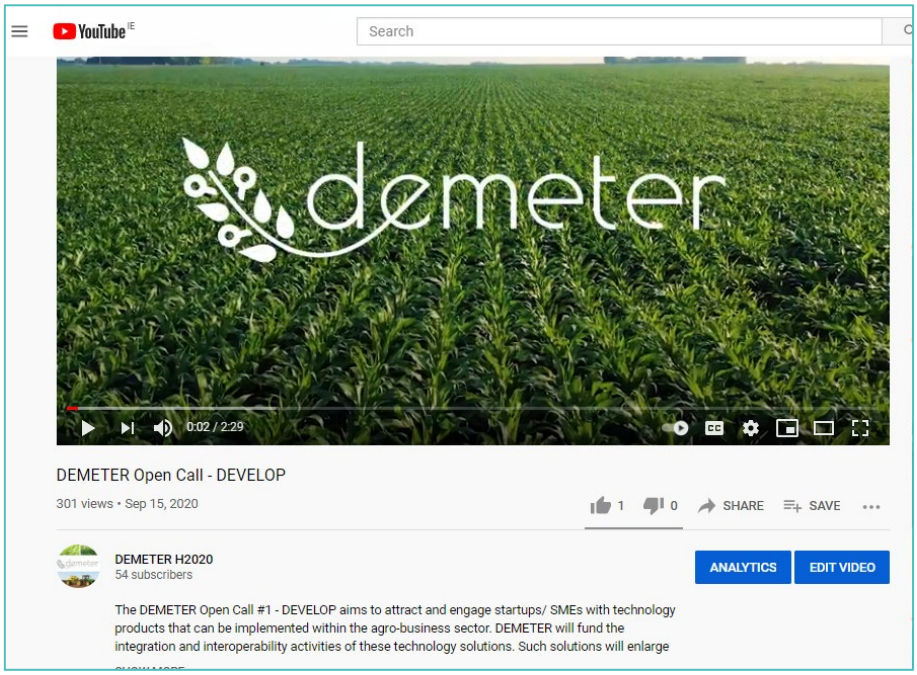

Figure 10: YouTube Channel

At M12, the total number of subscribers was 46, 15 videos created, with 1,100 views and 37 hours view time in total. Ongoing video interviews particularly with key stakeholders has been a focus for Year 2 and will continue. Increased pilot videos should also increase viewership.

7.2.5 SlideShare

Slideshare has been used to share presentations related to an overview of DEMETER, the reference architecture and other adhoc topics such as the use of AI in DEMETER. The KPI for Year 1 was met and SlideShare will continue to be used, albeit as a secondary channel to share project information.

7.3 Newsletter

Three editions of the DEMETER newsletter have been published and distributed using the Mail Chimp platform. A sign-up form was added to the website with past editions also available online. Social media prompts have also been used to encourage newsletter subscriptions. In Year 1, the frequency of the newsletter as bi-annually, for Year 2, this has progressed to quarterly.

Issue 1 was broadcast in April 2020 to a small audience of **27 recipients** with a total of 393 opens. The issue introduced DEMETER, its objectives, the pilot clusters, the work to date and featured an interview with a project partner.

Issue 2 was broadcast in November 2020 to an audience of **120 recipients.** The open rate was 61.3%. Content included a review of the DEMETER work to date, an overview of the pilot developments, Open Call #1 information, technical developments, a review of the DEMETER stakeholder workshop and introduced recent news and events.

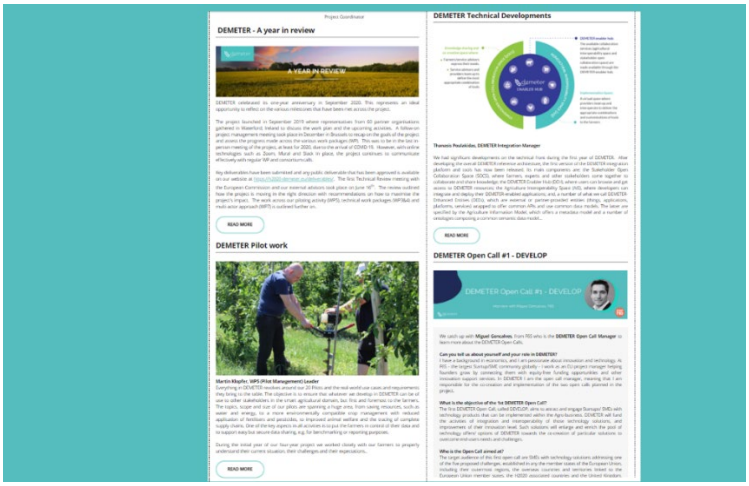

Figure 11: DEMETER newsletter

Issue 3 was sent out in late February 2021 to an audience of **188 recipients.** The open rate is currently at 47.3% which is expected to increase. This issue was farmer focused and featured the results of the DEMETER farmer survey, an interview with 2 farmers participating in DEMETER (ensuring diversity in size of farm and gender), an article from the WFO highlighting the barriers and incentives to farmers adopting technology. It also included an article from WP7 on the MAA and introduced the DEMETER Stakeholder Open Collaboration Space (SOCS) and how this will benefit farmers.

The DEMETER newsletters have been shared by many consortium members. For example, the APPR has translated all editions into Romanian and shared with all contacts in their database i.e., 920 people. Similarly, the Georgian Farmers' Association (GFA) have issued the translated newsletter to their stakeholders at a national level. The Irish Farmers' Association (IFA) have shared the newsletters on social media. The WFO issued the newsletter internally to WFO members which includes up to 250 players dealing with agriculture daily, coming from around 80 national farmers' organisations and agricultural cooperatives in more than 50 countries across the globe. A link to the newsletter is also shared in their digital magazine, F@rmletter, which is sent to 15,000 subscribers from multilateral organizations, governments, academia, NGOs, farmers' organizations and other stakeholders of the value chain at national, regional and global level

The KPI for the newsletter engagement is 11 newsletters in total across the project duration to >5,000 subscribers. Although the actual subscriber level is low at present, the outreach is very strong through the WFO, GFA, APPR etc. As the impact of DEMETER progresses and the project visibility continues to increase through events such as IoT 2021, it is expected the subscriber rate will grow considerably.

7.4 Promotional Material

The first promotional material created was an infographic to visually represent DEMETER and the project work, as outlined in Figure 12. This has been shared across the website, social media, presentations and in the pilot booklet.

Figure 12: DEMETER infographic

In November 2020, a pilot booklet outlined in Figure 13 was produced outlining each of the twenty pilots involved in DEMETER. Each use case outlined the challenges being addressed, the objective of the pilot, the approach being taken and the expected outcomes. The booklet is available on the website, on DEMETER social media channels and has been shared extensively by the consortium. A separate email was also sent to the Mail Chimp subscriber email listing. The KPI of creating 1 brochure in the Market Positioning Phase has been reached, but additional collateral outlining the project activities will be produced to compensate for the lack of presence at physical events.

Figure 13: DEMETER Pilot Booklet

For the launch of Open Call #1, DEVELOP, several communication materials were produced in association with WP7. These included a bank of social media graphics for the consortium to use to publicise the call. A soft copy open call brochure and flyer were developed and shared also on social media, the website and to those who expressed an interest in the call.

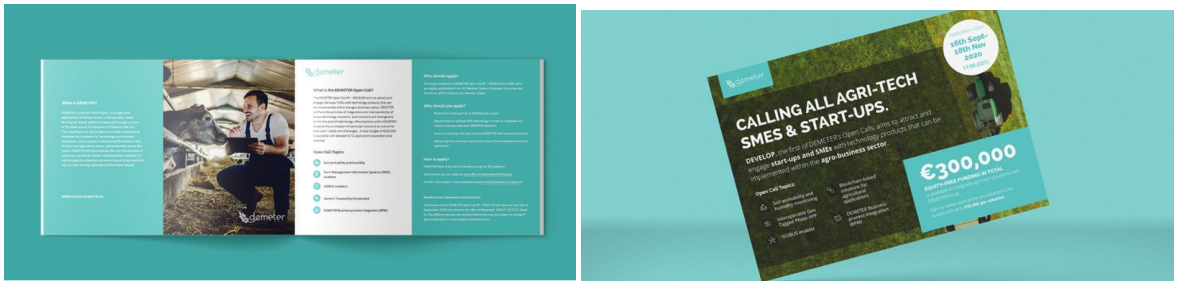

Figure 14: DEMETER Open Call material

Work is ongoing to create a full infographic showcasing the results of the farmer survey conducted in January 2021. This will be shared across the website and social media channels. Banner infographic is outlined in Figure 15.

Figure 15: DEMETER survey infographic

The production of roll up banners and printed posters have been postponed due to Covid-19 but will be reassessed and printed once physical events are back up and running. Work is also on-going in the creation of a DEMETER vision scenario video and short brochure carrying on from work conducted in WP7.

7.5 Press Releases

Periodic press releases (which coincide with major project meetings and events) were released to local, national and international media (online, newspapers, trade press and publications). The first press release gave an overview of DEMETER and its objectives and was released at the start of the project. The second press release coincided with the launch of the Open Calls and shared with consortium members to disseminate to their relevant network. This was distributed locally by project partners. A coordinated approach was also taken to translate the key messages into local languages. For the Market Positioning, work has started on creating a targeted press release by country detailing the pilots and work being undertaken in that specific region. A copy of the press releases is available in Annex A.

With this approach now been taken, the KPI of >50 targeted releases across the project duration is still the main aim.

7.6 Global Outreach

The World Farmers' Organisation's main role in the project is the global outreach of DEMETER results towards its farmers' members across the globe and the broader global farmers' community and international partners. WFO is leader of task 6.4 "Global Outreach". This task has helped with regard to DEMETER communication and dissemination activities. A specific section on the project has been created on the WFO website here and it is constantly updated. One piece on the DEMETER project has already been published in the June issue of the F@rmletter and one piece on the DEMETER pilot cases on efficient water management system was included in the Special "Climate" issue released in December. The WFO social media channels have been used extensively to promote the pilot booklet, newsletters, conferences, presentations, and interviews. WFO also contributed an article to the February 2021 newsletter outlining the barriers and incentives to farmers' adoption of digital technologies. As detailed previously, the DEMETER newsletter has been shared internally by WFO and highlighted on their digital magazine F@rmletter.

7.7 Cross Collaboration

DEMETER has worked closely with several other H2020 projects to communicate and disseminate the project's activities. Alongside our sister project, ATLAS, a joint webinar was organised, as outlined in Section 8. ATLAS also featured the pilot booklet in their newsletter and ATLAS social media posts have

been shared by DEMETER. Similarly, the pilot booklet is available on the SAH portal and information relating to the project and the Open Call have been shared on the platform.

Collaboration with other projects has also happened through the participation in joint sessions where different views have been shared by several projects and initiatives. For example, the session organized by DEMETER at the Digital Around the World event, where DEMETER shared *stage* with the IoF2020 project, or the session on "Data-driven innovation in the Agrifood sector" held at the last edition of the European Big Data Value Forum, where DEMETER discussed this topic with other relevant projects from outside the DEI program, like DataBio, NIVA or AI4EU, as well as with initiatives like *DjustConnect* pushed forward by ILVO and the Advanced Technologies for Industry (ATI) led by IDC. DEMETER also participated in other H2020 workshops such as the H2020 FairShare expert group and the H2020 Desira expert group and will continue to share information with these projects and equally promote their projects and outcomes.

DEMETER has also joined the Open DEI working group which met in January 2021 to ensure collaboration across communication and dissemination activities for several H2020 projects including ATLAS, AgROBOfood, SmartAgriHubs (SAH), IoF2020.

Finally, it is worth highlighting that several projects have identified the theme of semantic interoperability as a common challenge, which has triggered a joint activity looking at potential standardisation impact that is reported precisely in Section 9.

7.8 MultiActor Approach

DEMETER uses a multi-actor approach (MAA) which aims to make innovation fully demand-driven, involving various actors such as farmers/farmers' organisations, advisors, businesses, etc. during the whole cycle. Many of the MAA activities and findings have been communicated and disseminated across relevant channels. The pilot brochure included a section on the MAA and its importance to DEMETER. The stakeholder workshop was shared across social media and a short overview featured in the second edition of the newsletter. Findings from the workshop were shared internally across the entire consortium. The farmer survey concentrated on farmer's needs, interests and concerns and the findings were shared in the newsletter and the website. Farmer interviews have been conducted with the text or video results also published on the website and feedback has been taken into account to decide the next steps for stakeholder engagement and communication. WP6 has also supported the Open Call process which was developed using a MAA. As mentioned at the beginning of the document, WP6 and WP7 are working closely to ensure full integration and alignment of the activities, to the point that their internal follow-up calls have also been merged bringing all partners of WP6 and 7 together for a more coherent and efficient implementation.

8 Review of Dissemination activities

Dissemination includes publications (academic), presentations, events and webinars organised by DEMETER to give an overview of the projects and the findings to date.

8.1 Publications

Publications in academic journals and books are an essential element of H2020 dissemination of results. Unfortunately, during the Covid-19 pandemic, many physical events have been cancelled or postponed or replaced with online equivalent. Several conference organisers have published conference proceedings also. Table 5 lists the papers and book chapters accepted for publication. The dissemination section of the website lists all papers which have been published.

Table 5: DEMETER academic publications

Journal/Book Name	Authors	Affiliations	Title
Global IoT Summit (2019)	Ioanna Roussaki, ++, Kevin Doolin, Veronique Pevtschin, Angelo Marguglio	NTUA, TSSG, Engineering	A Multi-Actor Approach to promote the employment of IoT in Agriculture
Global IoT Summit (2020)	Juan Antonio Martinez, Juan A Lopez-Morales, Antonio Skarmeta	OdinS + UMU	Agri-food Research Centres as Drivers of Digital Transformation for Smart Agriculture
Global IoT Summit (2020)	Noelia Oses & others	Agricolus & Vicomtech	Machine Learning for olive phenology prediction and base temperature optimisation,
Sensors (2020)	Noelia Oses & others	Agricolus & Vicomtech	Analysis of Copernicus' ERA5 Climate Reanalysis Data as a Replacement for Weather Station Temperature Measurements in Machine Learning Models for Olive Phenology Phase Prediction†
IEEE Internet of Things Journal	Antonio F Skarmeta	UPM	Missing Data Imputation with Bayesian Maximum Entropy for Internet of Things Applications
WorldCist Conference 2020	Ramón Alcarria, Borja Bordel, Tomás Robles	UPM	Supervising Industrial Distributed Processes Through Soft Models, Deformation Metrics and Temporal Logic Rules
Electronics (2020)	Juan Antonio Martinez, Juan A Lopez-Morales, Antonio Skarmeta	OdinS + UMU	Improving Energy Efficiency of Irrigation Wells by Using an IoT-Based Platform
Conference Paper in proceedings Sibeh 2020	Rocío Arias Calderón, José Silvestre	INIAV	Validation of a fluorometer sensor for characterization of olive varieties and evaluation of fruit ripeness index with non-destructive measurement: preliminary results
Springer Book Chapter	Kevin D, Grainne Dilleen, Ioanna Roussaki, Ethan Cleary	TSSG, NTUA, IFA	Forthcoming
DCN Journal Paper	Kevin D, Grainne Dilleen, + others	TSSG	Forthcoming

Journal/Book Name	Authors	Affiliations	Title
Springer Book Chapter	Raul Palma, Ioanna Roussaki, Till Dilman, Rob, Atkinson, others	PSNC, NTUA _others	ICT in Agriculture, Springer - Agriculture Information Model (AIM)
WorldCist Conference 2021	Ramón Alcarria, Borja Bordel	UPM	Paper Accepted

As the project is now in the second year of activity, more academic papers are expected due to more data being available from the pilots that are ongoing.

In addition, DEMETER prepared a position paper for the Common European Agricultural Data Space workshop which took place in September 2020. Work is also ongoing on the completion of a white paper regarding the similarities and differences of the DEMETER and ATLAS reference architecture. Furthermore over 60+ online articles have appeared referencing DEMETER on news channels, agri websites and on partner websites. DEMETER also has a dedicated section in the WFO website which highlights the project and its expected outcome.

The original KPI of 300+ journal/magazines, book chapters, conferences and whitepaper publications (Number of articles: 88 / Number of Conferences: 139 / Number of White Papers: 75) across the agriculture and ICT disciplines does however seen unrealistic now, given the cancellation of many events and conferences. This has been revised to 150 but will be assessed regularly throughout the year.

8.2 Events

8.2.1 DEMETER ATLAS Webinar

DEMETER and ATLAS ran a joint webinar in June 2020 to promote both projects and engage the relevant target audience. This was necessary due to cancellation of many events such as the Global IoT Week and the SmartAgriHubs event in Bucharest. In total, 20 speakers participated in the webinar. The session was divided into three sessions beginning with an overview of emerging architectural approaches, implementation, and standardisation. Next, using a multi-actor approach to engage end users and stakeholders was discussed. Finally, opportunities for new partners to join these projects via cascade funding was outlined. In total, 365 people registered for the webinar, with 249 attending. A follow up email with a link to all presentations and to the YouTube recording was sent to all attendees.

8.2.2 Digital Around the World Conference

DEMETER sponsored the Agriculture session of the Digital Around the World Conference which took place in October 2020. The session organised by DEMETER consortium members looked at key challenges such as interoperability, connectivity, trust and transparency from various viewpoints. Different solutions and approaches proposed by relevant projects in the domain as well as use cases were shared and discussed openly with the audience.

8.2.3 AgriTech 4.0 Conference

DEMETER participated and sponsored the AgriTech 4.0 virtual conference which took place on January 29th and February 19th. The conference explored the wide range of opportunities available through programmes, development, support, and investment opportunities, and examined how new and

changing technologies will influence the agriculture environment over the next 25 years, providing sustainable food solutions. DEMETER presented on the second day of the conference (Feb 19th) where the main theme was centred on meeting the farms' needs for precision and smart technology. The project coordinator introduced DEMETER and outlined how the project is driving agricultural technology interoperability. In addition, DEMETER ran a virtual exhibitor booth on both days of the conference displaying relevant content material such as the pilot videos, the pilot booklet, video interviews as well as engaging with conference attendees. 41 people visited the DEMETER booth while 66 attendees were present at the DEMETER presentation during the conference.

8.2.4 DEMETER presentations

To date over 50+ presentations have been shared externally regarding the DEMETER project. These include events before Covid-19 and online webinars and meetings. A selection of these presentations is outlined in Table 6. All partners update the Publicity and Publications spreadsheet in Next Cloud to keep the document up to date.

Table 6: Selection of DEMETER presentations at external events

Project Partner	Publication Type	Publicity Type	Month
TSSG	Presentation	Presentation at European Big Data Value Forum	Oct-19
APPR	Presentation	Presentation at Indagra Fair Conference ' See the Future in Agriculture' in Bucharest, Romania	Oct-19
Prospeh	Presentation	Participation in REINVENTING AGRICULTURE AND FOOD INDUSTRY WITH BLOCKCHAIN PANEL at IoT Solutions World Congress, presenting DEMETER as one of the projects utilizing OriginTrail tech	Oct-19
SREM/ "Srem - Fruska gora"	Presentation	Presentation of DEMETER and AgroNET portal, presented by representatives of DNET to winemakers of our Association during the conference "Creative economy and digitalization i agriculture (29th March 2019)	Oct-19
INIAV	Presentation	Regional Innovation Workshop on Olive Growing	Nov-19
APPR	Presentation	Presentation at Annual Session of the Romanian National Institute of Agricultural Economics of the Romanian Academy	Dec-19
ITC	Presentation	Presenting DIH AGRIFOOD and DEMETER at the S3 Thematic Area HIGH TECH FARMING partnership (3.12.2019) and Digitalisation and New Technologies in Agri-food conference (4.12.2029) in Malaga	Dec-19
LESPROJEKT	Presentation	Workshop - Prague INSPIRE Hackathon 2020	Jan-20
UDG, DNET Labs	Presentation	Presenting DEMETER project IEEE IT2020 conference at Zabljak, Montenegro.	Feb-20
ITC	Presentation	Presenting DIH AGRIFOOD and DEMETER at the 7th Agrobiznis conference in Ljubljana	Feb-20
IFA	Presentation	Presentation on digital agricultural adoption and initiatives in Ireland including DEMETER at the EIP Agri Seminar 'New Skills for Digital Farming' in Madrid in February 2020	Feb-20

Project Partner	Publication Type	Publicity Type	Month
UDG, Plantaze, DNET	Presentation	Presentation on a Workshop Academy-Business Cooperation Introduction Workshop	Feb-20
TSSG	Presentation	Presenting DEMETER at Enterprise Week (Cork, Ireland)	Mar-20
INIAV	Presentation	Meeting of the National Rural Network innovation group (Portugal)	May-20
TSSG	Presentation	Representing DEMETER in EU/Brazil projects twinning webinar (May 22)	May-20
F6S	Presentation	Presenting DEMETER Open Call Opportunities at the Coimbra Sustainability Summit 2020 (May 29)	May-20
TSSG	Presentation	Presented DEMETER at WIT (Waterford Institute of Technology) webinar focused on research in agriculture	Jun-20
TSSG	Presentation (video)	Osservatorio Smart AgriFood (Italy) session	Jul-20
TSSG	Presentation	AIOTI Webinar	Jul-20
Fraunhofer FIT	Presentation	Presentation of Demeter Pilots and the MAA at Green Business School	Aug-20
Universidad de Murcia	Presentation	Presentation at Green Cities Event - digitalising the future of water	Sep-20
DNet Labs	Presentation	IX International Symposium on Agricultural Sciences	Sep-20
IDEATRONIK	Presentation	Presentation during the exhibition at the beekeeping fair in Przysiek (Poland) in September 2020.	Sep-20
ITC	Presentation	Presenting DIH AGRIFOOD and DEMETER at Tech Transfer Conference in Ljubljana	Oct-20
UDG	Presentation	Presentation at High Tech webinar on digital transformation	Oct-20
UDG, DNET, Plantaze	Presentation	Workshop organized by Erasmus Plus project called VIRAL	Oct-20
UDG, Plantaze	Presentation	Workshop organized by Centre of Excellence Food Hub at UDG	Oct-20
TSSG, Atos	Presentation	Digital Around the World Conference	Oct-20
TSSG	Presentation	Workshop ICT-AGRI-FOOD-FORUM	Nov-20
UDG, Plantaze, DNET	Presentation	European Researchers' Night 2020 (Montenegro) 12-hour virtual event	Nov-20
TSSG, Atos, Coldiretti, WFO	Presentation	European Big Data Value Forum	Nov-20
PSNC	Presentation	Presentation at the north east Europe event of SmartAgriHubs project	Nov-20
PSNC	Presentation	Presentation at the 5th Knowledge and Innovation Forum	Dec-20
PSNC	Presentation	Presentation at IoF2020 Workshop Standardization & Semantic Interoperability	Dec-20
PSNC	Presentation	Presentation at IoT for Agriculture Session on the OGC TC	Dec-20

Project Partner	Publication Type	Publicity Type	Month
TSSG	Presentation	Presented DEMETER overview at WIT Academic Postgrad conference	Jan-21
INIAV	Presentation	Meeting of the Terra Futura Agenda from Portuguese Ministry of Agriculture	Jan-21
TSSG	Presentation	Presentation at AEF Tech Talk	Feb-21
TSSG	Presentation	Presentation & sponsorship at AgriTech 4.0	Feb-21
UDG, Plantaze, DNET	Presentation	Presenting DEMETER at IEEE IT2021 Conference	Feb-21

8.3 KPI Summary

Table 7 summarises the performance to date against the agreed KPIs.

Table 7: KPI performance to date

Channel	Agreed KPI	Results achieved M18
Brochure	1 in Market Positioning Phase and 1 in Market Outreach Phase	1 Pilot Booklet brochure and 1 x Open Call brochure
Factsheet	1 in Market Positioning Phase and 1 in Market Outreach Phase	1 x Fact Sheet implemented into Pilot Brochure
Newsletters	11 in total across >5,000 subscribers	3 Newsletter editions sent to date (<200 subscribers at present but significant outreach through WFO, GFA, APPR)
Press Releases	50 targeted releases	2 releases to date
Website	>300,000 website visitors across project duration	38,965 page views
	Bounce Rate of 30%, Average visit duration: 2 min 45 sec	Bounce Rate of 57.91%, Average visit duration: 2 min 5 sec
Social Media	Year 1: Twitter: 300+followers, LinkedIn: 100+members, Facebook: 300+ likes,	Year 1: Twitter: 404 followers, LinkedIn: 361+members, Facebook: 115 likes,
	YouTube: 1 video: 500+videos, SlideShare: 100 views	YouTube: 1,100 views, 37 hours view time, Slideshare: 188 views
Publications	Number of articles: 88	12 academic publications, 1 white paper
	Number of conferences: 139	
	Number of white papers: 75	
External Events	EU Workshop/Speaker Events: Number of Engagements: 150	50+ presentations / 60+ online articles
	National Level Events: 144 and Number of articles in press and social media: 432	
	International Level Events: 48 and Number of articles in press and social media: 86	
DEMETER Events	At least 3 involvement workshops	1 DEMETER webinar

As outlined in Section 10, work is ongoing to ensure that the KPIs are achieved going forward. For example, to drive more traffic to the website, a multi-lingual strategy is being adopted to ensure content in each language where the pilots are operating is available. This will help to increase the number of visitors and page views, with a lower bounce rate.

The following changes to KPIs have however been made. First, lowering the number of Facebook likes to 300 by the end of Year 2, due to the difficulty in engaging the target audience on this channel. The number of publications (articles, conferences, and white papers) has been decreased from 300 to 150 due to the cancellation of many events in 2020/2021. However, this number will be reviewed consistently.

9 Standardisation

The main purpose of the Standardisation activities in DEMETER is to support the uptake, use, adaptation, and impact on standards in DEMETER, and to provide support for data and service governance for the project. This includes the involvement with relevant standardisation and interest organisations and cooperation in joint standardisation initiatives with other European projects and organisations/associations.

The following describes the standards/standard groups that we have identified a potential use and impact relationship for – from the perspective of the DEMETER technologies and pilots:

- ***Standards USE:***
  - ***Internet Interoperability Standards*** *(IETF, W3C, JSON, XML, …)*
  - ***Communication Infrastructure/Protocol Standards*** *(*OASIS – MQTT, NB-IoT, ISO 11783 – ISOBUS,)
  - ***Blockchain Standards*** *(ERC20, ERC275)*
  - ***Cloud Computing Standards*** *(ISO/IEC 19941:2017, …)*
  - ***Security Standards*** **-** Data Protection, Privacy, Traceability and Governance *(*OAuth 2.0, XACML,)
- ***Standards IMPACT:***
  - ***Geospatial / EO Interoperability Standards*** *(OGC APIs/Models + Agriculture WG, ISO/TC211)*
  - ***Environmental and Animal Welfare Standards,*** *ISO 14223 1-3 (Radio-id-animals,* ISO 21622 (Irrigation monitoring, .)
  - ***Consumer / Food Chain Transparency / Retail Standards*** *(GS1 EPCIS, CBV, IFS 2002,)*
  - ***AI, Machine Learning and Modelling Standards*** *(ISO SC 42 AI/BD), ISO SC41 IoT, …)*
  - ***Big Data and Data Platforms*** *(ISO SC42 AI/BD, IDSA/GAIA-X)*
  - ***Vocabularies, Ontologies, Data Exchange Standards (***Agriculture Information Model (AIM)-> ETSI IoT SmartM2M - SAREF Agri, INSPIRE, FAO AGROVOC, W3C, (FOODIE), OGC, …), AgGateway and AgroConnect, oneM2M, ETSI NGSI, IIC, Platform 4.0, and OPC Foundation, IDSA (with DIN standard) and GAIA-X, GoFair and Fairsharing.org, IEEE P3800 Standard for a data-trading system: overview, terminology, and reference model.

The following are further collaboration activities related to the DEMETER standards use and impact that have taken place during the last period.

9.1 Other Horizon 2020 projects and initiatives

During 2020 DEMETER has had collaboration activities related to Interoperability approaches and standards with a number of other Horizon 2020 projects and initiatives. Most notably with the Open DEI project " Aligning Reference Architectures, Open Platforms and Large-Scale Pilots in Digitising European Industry" – which included cooperation within the Agricultural domain with several H2020 projects including ATLAS, AgROBOfood, SmartAgriHubs (SAH) and IoF2020.

These collaborations have been extended during the fall of 2020 with an organised seminar series on the topic of Interoperability and Standards within Agriculture. This series was conducted in association with such projects as IoF2020, DEMETER, ATLAS and agri-related organisations and initiatives like AgGateway, AgroConnect and NIVA. This workshop series is continuing in the spring of 2021.

9.2 ICT related Standard coordination groups and events – BDVA/DAIRO and AIOTI

DEMETER has been involved with the standard groups of BDVA/DAIRO and AIOTI as follows:

BDVA Standardisation Group – during EBDVF 2019 and 2020 events and Activity Group meetings with the TF6 Technical priorities Task Force with the SG6 Standardisation group, led by DEMETER member Arne J. Berre (SINTEF) and related TF7 Agri group - https://www.bdva.eu/task-force-6

AIOTI IoT Standards Working group 3 on IoT related standards: - https://aioti.eu/aioti-wg03-reports-on-iot-standards/ - with regular meetings and sessions during the yearly IoT week – now also with virtual follow up activities.

DEMETER is further connecting to the new European ICT Standard support opportunities (starting in 2021) provided by the StandICT.eu 2023 project – and the related EUOS group activities – EU Observatory for ICT Standardisation, as a basis for further DEMETER impact activities on relevant standards.

9.3 Agri and GEO related Standard organisations and initiatives

The leading GEO/ICT standards organisation OGC – Open Geodata Consortium is a DEMETER project partner (OGC Europe). OGC is also an official ISO/TC211 (Geospatial data and services) liaison. In 2019 we contributed to establishing and further leading the Agriculture Domain Working Group (DWG) interest group in OGC[1] – co-led by Karel Charvat from the DEMETER project.

Agricultural information exchange standard alignment and harmonization between UN/CEFACT, ISO TC 23 Tractors and machinery for agriculture and forestry, ISOBus, AgroXML, OGC, W3C, etc.

AGROVOC – by UN FAO - The Food and Agriculture Organization (FAO). AGROVOC is the largest Linked Open Data set about agriculture available for public use and facilitates access and visibility of data across domains and languages. DEMETER is using AGROVOC as part of the vocabulary for the DEMETER AIM – Agriculture Information Model and follow up the evolution of this.

NCDX- Nordic Cattle Data eXchange – a shared standard for data transfer – now part of ICAR – The International Committee for Animal Recording (ICAR) – The Global Standard for Livestock Data, is currently being related to the DEMETER AIM model

SoilML / ISO 28258:2013 Soil quality, ESIP and RDA — Digital exchange of soil-related data and related standards. Coordination with the agricultural interest groups within ESIP - Earth Science Information Partners (ESIP) and RDA – Research Data Alliance – with their Agri interest groups.

Coordination and exchange with Agricultural data and service-related initiatives such as GEOSS, GODAN, CGIAR, GlobalGAP, Open Ag Data Alliance, is continuously being monitored.

<u>European Common Data Space for Agriculture</u>

DEMETER contributed with a position paper for the Expert Workshop on a Common European Agricultural Data Space arranged in September 2020, as depicted earlier in this document. This is now being followed up by joint work with other projects and initiatives for an extended white paper (planned for March 2021) on interoperability mechanisms and standards suitable for use within the forthcoming European Common Data Space for Agriculture.

[1] https://www.ogc.org/projects/groups/agriculturedwg

10 Roadmap for 2021

When outlining the next phase of communication and dissemination activities for DEMETER, we must be prepared to adapt our approach in order to maximise the impact of our outputs against the challenging backdrop of the Covid-19 pandemic.

In regards with the target audience of every project campaign planned to further exploit the results of the project, the contents and objectives will be oriented to the farmers and their groups and subgroups. In this sense, the more information DEMETER can collect from them, the more tailored the information can be, reacting to the insights obtained. As each of the pilots are running in different farm sectors, farm types and locations, local areas should be the spotlight of the communication materials. In this sense, the project communication management is considering this reality to develop activities with impact in the local areas where farmers are and work. Thus, DEMETER will put the focus on engaging farmers at a local level and ensure they have the opportunity to learn about DEMETER and the project would share and exchange information with them about their digitalisation needs. The farmer survey already shared with the DEMETER farmers will be shared to a much wider European and global network of farmers in 2021, facilitated by the WFO and other farmer organisations. Equally, local press releases will be developed by region highlighting the DEMETER activities currently underway.

There is a need to distribute relevant content to farmers and other stakeholder, but also to get closer to them to cooperate and even arrange joint actions. The achievement of a warm-stable relationship with them should lead DEMETER to firstly bear in mind the language of these audiences. As DEMETER pilots are active in several European countries, digital content and traditional publications in national or local areas must be delivered in their spoken language.

- **Website**: As aforementioned, the first step will consist of a group of translated pages in each language where DEMETER pilots are active, to communicate the aim and activities of DEMETER with the relevant target audience and stakeholders. This action is currently being discussed internally but it will lead to the development of landing pages in different languages to circulate in the countries of the project. In addition, a section showing the Open Call #1 winners will be developed on the website.
- **Social Media**: In this channel, the activity mainly consists of engaging the audience of the interest (stakeholders, farmers, initiatives, companies, research centres, events, fairs and consortium partners) to keep interacting with them all in seamless way. In this way, the social channels work as a potential showroom where other communication materials can be promoted (Press releases, GIF, infographics, pictures, or videos). Concretely it is necessary to create interesting social media posts using appealing messages including CTA (Call to action) elements. In addition, content will be shared by a pilot partner from each country taking over the social media feed for 1 week per month to tweet in the local language and English promoting the work being undertaken in that country.
- **Newsletter**: More digital and targeted content will be created, following the developments of the project with special issues devoted to concrete communities or themes as required. Translation of the newsletter articles will also occur.
- **Promotional Material**: The branding and promotional materials are key for the recognition of the project in different events, channels and talks. It includes at least the brochure, flyer, poster, roll up, video(s) and newsletter of the project. Furthermore, the promo pack works both in digital and traditional formats (printed versions of flyer, poster, roll up and brochure). In the following months, events & fairs will be deployed virtually although a few ones will likely

offer physical presence. At present, the contents shown in these elements are the project main objectives with some extra visual images and icons that are relevant for impacting the readers in a visual way but on demand, new and ad-hoc contents of any material could be developed. The pilot brochure will be translated in the relevant languages. In addition, following the DEMETER farmer survey, more collateral will be created for farmers explaining DEMETER, the pilots and the overall results. Pilot videos will also be created showing the work on each pilot.

- **Cross collaboration**: With regard to the collaboration efforts, the more the project is shown and interacting with the audience, the better collaborative results will be reached in this sense. In national and local areas of performance, webinars/podcast/workshops as many other activities will be arranged inviting experts in "*agritech*", public sector, journalists, or other sibling projects to share their knowledge/ expectations with DEMETER experts. Local press releases per region will drive this activity forward.

In the following lines, the next steps for the implementation of the dissemination strategy are listed and commented.

- **Publications**: This activity will target the agriculture community of experts, researchers, and regulatory bodies, among others. The evolution of the project will provide us with a more solid basis to generate content related to the evolution of the project from different viewpoints and regarding a varied number of challenges or technical aspects. More submissions of scientific papers, journal papers, etc are envisaged as the pilots progress.
- **Presentations & Events**: DEMETER will maximize the connections and channels of partners to intensify the awareness about DEMETER in different geographical areas. For this we will follow-up a strategy where we will measure the activity at national level and the number of connections generated out of those events and presentations. According to the work plan of the project, additional milestones will be achieved in the upcoming period and we expect to count on the availability of sound technical results (DEMETER digital platform), pilot development and initial results of the projects resulting from the open call to strengthen our positioning in a wide umbrella of events and conferences. The following list is a sample of some of the events where DEMETER expects to play a major role in 2021:
    - IoT Week[2] (August-September 2021): the 2020 edition was cancelled due to Covid-19, but an intermediate event was created by the same organiser, the IoT Forum, to ensure continuity of the IoT community under the label "Digital Around the World" (this one counted on the participation and sponsorship of DEMETER, as reported before). In 2021 the IoT week will be held again probably with a hybrid format. DEMETER has been given the responsibility of organizing a full track on the agri sector. IoT Week combines technology-oriented tracks with domain-related tracks. As such, it brings IoT experts that work close to both supply and demand, creating a very vibrant environment to foster IoT adoption and promotion of standards. For this work DEMETER will set up an organizing committee that will get in touch with major projects, initiatives, and organizations (both public and private) with the aim of co-create interesting and impactful sessions. It will be a great opportunity to showcase the results of our pilots and extend the potential impact of the project.

[2] https://iotweek.org/

- European Big Data Value Forum[3] (October or November 2021, TBC): BDVA, together with the EC (and so far, supported by the BDVe project) organize on an annual basis a reference event for the data community. In the last editions there has been an increasing focus on Artificial Intelligence; this is expected to continue looking at the new Partnership on AI, Data and Robotics. In 2017 the session on agrifood got a lot of success (supported by the IoF 2020 project); In 2019 a portfolio of agrifood projects in the data domain was presented in Helsinki and this year, turned into a virtual event, the session focused on agrifood repeated the same success (DEMETER was one of the contributors, as mentioned in previous sections of the document). DEMETER will take advantage of the tight links with BDVA (Atos leading the working group on agrifood, Sintef leading the Task Force on Technical aspects, etc) to position itself as a flagship project in the domain and foster additional links with data stakeholders.
- COP26 (November 2021): DEMETER is submitting a proposal for the United Nations Climate Change Conference also known as COP26. Individuals, organisations and businesses can get involved in managed spaces within both the Blue and Green Zones. DEMETER is proposing exhibiting together with the WFO in the Green Zone demonstrating how the pilot activities are using technology and innovation to drive change and combat climate change. Applications will be informed of their outcomes in May 2021.
- Besides the context provided by those frameworks, DEMETER will look at organizing several "own" events in 2021, starting with a welcome event for the startups and SMEs resulting from the first Open Call. The format, level of information and target audience (access level: private vs public) are still being analysed. This virtual event will be held in the first quarter of the year once all the contracts of the open call are signed. The promotion of Open Call #2 will start in autumn and webinars/events will be organised to explain the call process.

We expect 2021 to be a quite active year in terms of events. In the first half of the year, we expect them to happen in a virtual way, while the second half may bring some f2f encounters and physical -or more probable- hybrid events. DEMETER will be ready to react in all cases.

DEMETER will continue to work closely with WFO to ensure the global outreach of activities. The includes continuing to use WFO communications such as the newsletter, dedicated page in the WFO website and social media channels to give global visibility to the project and pilots. DEMETER will participate in internal WFO events such as the WFO General Assembly and external events such as the UN COP26 event highlighted previously. WFO have prepared a 2021 calendar of events where DEMETER can potentially be involved as outlined in Table 8 below.

Table 8: Events identified by WFO with potential involvement of DEMETER

Date 2021	Event	Location
19-22 April	Global Symposium on Soil Biodiversity	online
25-28 May	WEF Annual Forum	Singapore
11-13 May	LAC Regional Climate week (Virtual thematic session)	online
17-30 May TBC	COP 15 Biodiversity	Kunming, China
May TBC	G7 Youth Summit	UK

[3] https://www.european-big-data-value-forum.eu/

Date 2021	Event	Location
24-28 May	88th World Assembly of OIE Delegates	online
4 June	CFS48	Rome
11-13 June	G7	Carbis Bay, UK
15-18 June	Africa Climate week (Virtual Thematic session)	online
July TBC	UNDRR LAC Regional Platform	online
19 July TBC	Pre-UNFSS	Rome TBC
6-15 July	HLPF	New York, USA
6-9 July	Asia Pacific Regional Climate week (Virtual thematic Session)	online
19-23 July	Youth G20 Summit	Milan and Bergamo, Italy
9-10 August	Africa Regional Climate week	Uganda
23-25 August	LAC Regional Climate week	Dominican Republic
6-7 September	Asia Pacific Regional Climate week	Japan
14-21 September	UNGA	New York, USA
28-30 September	Youth 4Climate	Milan, Italy
September 30 - October 2	Pre-COP26	Milan, Italy
September/October TBC	UN FSS Food System Summit	New York, USA
September / October TBC	WTO Public Forum	Geneva
16 October	World Food day	Rome
30-31 October	G20	Rome
1-12 November	COP 26	Glasgow, UK
24-26 November	UNDRR European Regional Platform	Matosinhos Portugal
December TBC	Global Nutrition Summit	Tokyo

Some of the channels that will be analysed to disseminate DEMETER include (not an exhaustive list, just a reference):

- Other webinars and events organized by BDVA and related projects, for example, the Data Week that will be led by EUHubs4Data project[4], to be held in Spring 2021.
- OPEN DEI facilitated events- OPEN DEI is the CSA supporting and coordinating the program of Digital Platforms and Pilot projects, such as DEMETER. As such, it should bring opportunities at cross-sector level (with a focus on technical and non-technical aspects like data sovereignty, data sharing, edge vs cloud usage, etc) and domain-level (bringing the different projects in agrifood together for a diverse number of activities). In this respect one event on the Food Value Chain has been informed as target in March 2021.

[4] https://euhubs4data.eu/

- Next Generation IoT or NGIoT is the CSA focused on IoT road mapping. In an attempt to understand requirements, needs, challenges and priorities it is running a series of workshops and webinars on different topics of interest to DEMETER. A list of events for 2021 is presented on their webpage[5].
- EU-IoT project, the Coordination and Support Action funded by the European Commission to support the Next Generation IoT initiative (NGIoT) has just started but will provide an additional series of workshops and webinars that will be analysed by DEMETER in order to widespread its results and discuss collaboration opportunities.
- Domain-related events. The number of events devoted to the digital transformation of the Food industry is growing exponentially. The investment required to participate in some of them is quite big (not only financially but also in terms of organizational resources). That is why DEMETER did not prioritize them until now and postponed these actions till more outcomes are available. 2021-2022 seems the right period to work on some of them. Some examples of events that will be taken as reference and will be analysed for their upcoming editions are the SmartAgrifood Summit[6] or DatAgri[7]. This will be complemented by other domain-focus activities organized at EU level by DG CNECT and DG AGRI. We expect an increased number of those as a result of the momentum around topics like Agriculture Data Spaces.
- DEMETER will also collaborate with its "brother" and" sister" projects in their events, as it will happen with the final event of IoF2020.

With respect to standardisation activities:

- Join standardisation and interoperability workshops – planned with IoF2020 and with OASC-Agri-Rural community (including ATLAS project) in March and April 2021 – further follow up on MIMS – Minimum Interoperability Mechanisms in the context of DEMETER, with the writing of a joint White Paper on Interoperability and Standards.
- Follow up with workshops/discussions related to relevant standards and technologies for the Common European Agricultural Data Space – including interactions with IDSA and GAIA-X.
- Follow up on the possible use and impact on standards in the DEMETER technical WPs and among the pilots with a focus on identifying further standardisation area priorities.
- Follow up with the objective of having AIM impact on relevant AgriFood oriented standardisation organisations.
- Interaction with the AIOTI WG03 Standardisation group and the SG06 AgriFood group related to IoT, CyberSecurity and 5G standards.
- Interaction with the BDVA/DAIRO TF6 SG6 Standardisation group and the TF7 AgriFood group related to standards on Big Data and AI for AgriFood.
- Follow up with ongoing standardisation activities through StandICT.eu 2023 – and the new EUOS group activities – EU Observatory for ICT Standardisation – groups for AI, Big Data, Blockchain, Digitising European Landscape, Risk Management, Data and Robotics, Data Interoperability, Cybersecurity and Digital Twin – with the DEMETER Agricultural perspective in this context – and activate impact on relevant standardisation organisations.
- Taking advantage of the EUOS Standards Repository – radar tool that monitors the status of ICT standards at the international level – with mappings to relevant ICT interoperability areas.

[5] https://www.ngiot.eu/events/
[6] https://smartagrifoodsummit.com/?lang=es
[7] https://www.datagri.org/

- Ensuring further use of and impact on relevant standards in DEMETER pilots and for further technology development.
- The priority focus on standards impact from DEMETER will be first on Information Models and Ontologies for Agriculture with a basis in the DEMETER Agricultural Information Model (AIM) approach of combining multiple models, and also on the DEMETER experiences related to The DEMETER Agricultural Interoperability Space (AIS), which focuses on delivering a full set of interoperability mechanisms to actually deploy the solution. This is now being discussed with the IoF2020 and ATLAS projects in order to identify potential joint impact opportunities for relevant standards.
- Further experiences from the DEMETER Enabler HUB (DEH), which centralises the full description of all the components, devices, services, data sources, platforms, etc. that are accessible for use and deployment – is also relevant for ongoing discussions among projects and standards organisations - in particular the area of federated catalogues of data and services, also related to marketplaces. This also has relevance to technologies such as GAIA-X and IDS and the impact on the European Agricultural Data Space, and relevant standards impact related to this.

11 Conclusion

This document presents the DEMETER communication, dissemination and standardisation activities that have been performed from M1-M18. These activities ensures that DEMETER connects with the identified target audiences such as farmers (segregated by gender, farm type, farm size), farmers' organisations, advisors, businesses, agricultural consultants, technology providers, research communities, IT and/or Service Providers for the Agri-food Sector, local public and EU authorities/policy makers and the general public with relevant and targeted messages.

DEMETER partners have made a considerable effort to communicate and disseminate the DEMETER project objectives and project results. The intermediate evaluation demonstrates that the project is on track to meet the KPIs across social media, website performance, newsletters, and the creation of marketing collateral. The development of a multi-lingual strategy and the website development should drive further engagement with our target audience. A key social media push will be implemented to increase the newsletter subscriptions, with the sign-up form also being mentioned and shared at events.

The scientific dissemination is producing reasonable results. However, as the pilots are now up and running and as the project progresses it is expected that the number of papers, conferences and white papers will increase considerably to meet the new KPI. Dissemination at events and through online publications have also been satisfactory, but with an increase in the number of press releases, specific to each country, these numbers are also expected to lead to new dissemination possibilities. Covid-19 has impacted the number of events and conferences, however, with the hope of in-person events returning towards the end of 2021/2022, every effort will be made to increase the dissemination activities. Online webinars and events will however still be maintained and organised. DEMETER's participation at major events such as the IoT week and working alongside the WFO on events such as COP 26 – UN Climate Change Conference of the Parties, will increase visibility and dissemination opportunities.

The standardisation activities within DEMETER support the uptake, use, adaptation, and impact of standards and provide support for data and service governance. DEMETER has worked closely with other H2020 projects and standard coordination groups and events to ensure a collaborative effort in terms of interoperability approaches. Work is ongoing to deliver joint standardisation and interoperability workshops and to ensure continued interaction with several standardisation groups. Furthermore, the use of standards in the DEMETER pilots and discussions regarding the DEMETER AIM, AIS are ongoing to identify potential joint impact opportunities for relevant standards.

Annex A

A.1. DEMETER project aims to digitally transform Europe's agri-food sector

Agricultural technology experts, farmers and farmers' organisations are pooling their talents, expertise and resources in a ground-breaking and results-driven project, called DEMETER. The project aims to digitally transform Europe's agri-food sector, with global scalability and replicability, ensuring its long-term viability and sustainability.

The €17 million project, funded by the European Commission under Horizon 2020 involves 25 deployment sites, 6,000 farmers and over 38,000 devices and sensors being deployed, spanning 318,000 hectares in 18 countries. It includes 60 partners and together, they will run 20 different pilot programmes across five agricultural sectors.

DEMETER will showcase how technologies such as field and plant sensors, weather stations, monitoring and control devices can help support sustainable and resilient food systems, and food production systems. Through its multi-actor approach, bringing together scientific knowledge and practical experience from living and working on the land, the project is also set to improve farmer wellbeing and generally support farmers in precision decision making.

According to DEMETER project co-ordinator, Kevin Doolin, Director of Innovation at the Telecommunications, Software and Systems Group (TSSG) at Waterford Institute of Technology, "*DEMETER will demonstrate the real-life potential of advanced interoperability in the Internet of Things (IoT) technologies across the value chain in multiple agri-food operational environments".*

DEMETER will monitor both plant and animal products during their life cycle from farm to fork, increasing on-farm profitability, resilience, lowering farming's ecological footprint and decreasing the use of inputs while preserving natural resources. Participants involved come from different production sectors including dairy, meat, vegetables, fruit and arable crops. The project also includes different production systems, conventional and organic, and various farm sizes and types, optimising the data analysis obtained across multiple farms.

Data gleaned will be shared, thus supporting new business opportunities for viable, sustainable rural communities. Project co-ordinator, Kevin Doolin explains that "*DEMETER displays how an integrated approach to business, behaviour and technology can support farmers and the sector. It provides further opportunities, including new business models on the farm and in the wider agri-food economy, while also helping to safeguard Europe's precious natural resources*."

Two open calls for interested farmers, technology solution providers and other interested parties will launch in September 2020 and June 2021 with a budget of €1 million.

More information on DEMETER can be found at https://h2020-demeter.eu/

[Ends]

About DEMETER

The DEMETER project is a large-scale deployment of farmer-driven, interoperable smart farming-IoT (Internet of Things) based platforms, delivered through a series of 20 pilots across 18 countries (15 EU countries). Involving 60 partners, DEMETER adopts a multi-actor approach across the value chain (demand and supply), with 25 deployment sites, 6,000 farmers and over 38,000 devices and sensors being deployed.

Project Start Date: 01/09/2019

Project Duration: 42 months

More information on DEMETER can be found at https://h2020-demeter.eu/ and across social media channels @H2020DEMETER on Twitter, LinkedIn and Facebook.

For additional information please contact the Project Coordinator, Kevin Doolin, at info@h2020-demeter.eu or +353 (0)5130 2920

A.2. H2020 AGRI-TECH PROJECT, DEMETER, ANNOUNCES 1st OPEN CALL FOR INNOVATIVE SOLUTIONS

The Horizon 2020 project, DEMETER, has announced the launch of its 1st Open Call, DEVELOP on 16th September, with a total budget of €300,000 available to SMEs. DEMETER aims to lead the digital transformation of Europe's agri-food sector through the rapid adoption of advanced Internet of Things (IoT) technologies, data science and smart farming ensuring the industry's long-term viability and sustainability.

DEVELOP, the first of two Open Calls in the DEMETER project, aims to attract and engage start-ups and SMEs with technology products that can be implemented within the agro-business sector. DEMETER will provide equity-free funding to support the integration and interoperability of these technology solutions into the DEMETER Hub. The DEMETER Hub centralises the full description of all the components, devices, services, data sources, platforms that are accessible for deployment. The successful solutions funded within this Open Call will enlarge and enrich the pool of technology offers and options within DEMETER. This will enable the co-creation of particular solutions to overcome end-users' needs and challenges. The proposed projects should be built on the DEMETER platform and extend the use cases carried out within the project. Twenty pilot projects are currently running in DEMETER to demonstrate and evaluate how innovations and extended capabilities benefit from the interoperability mechanisms. These pilots cover a wide spectrum of sub-sectors: arable crops, irrigated crops, fruit production and livestock (poultry, dairy, animal welfare). Eight to twelve applications are expected to be funded in the Open Call with up to €30,000 per solution.

Applications for the first of the DEMETER Open Calls must address one of the following challenges:

Topic 1: Soil workability and humidity monitoring

Topic 2: Interoperable Geo Tagged Photo APP

Topic 3: ISOBUS enabler

Topic 4: Blockchain-based solutions for agricultural applications

Topic 5: DEMETER Business process integration

SMEs and start-ups who are legally established and based in one of the EU Member States or an H2020 associated country (as defined in the H2020 rules of participation) are welcome to apply.

The DEVELOP Open Call opens on 16th of September 2020 and closes on the **18th of November 2020 (17.00 CET).**

More information on the Open Calls and how to apply is available at https://h2020-demeter.eu/open-call/. Applications can be made via the F6S platform at https://www.f6s.com/demeterh2020/apply

[Ends]

About DEMETER

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For additional information on DEMETER please contact the Project Coordinator, Kevin Doolin, at info@h2020-demeter.eu

For additional information on the DEMETER Open Calls, please contact Miguel Goncalves at opencalls@h2020-demeter.eu

About F6S

F6S is a European based entity that has become the largest Startup/SME community globally with over 1.5 million Startups/SMEs and 2.0 million entrepreneurs. F6S delivers more than €2 billion every year to Startups and SMEs with leading CRM for deal flow, corporate challenges, structured programs, startup services, corporate partnering, recruiting, government grants and free startup resources.