Deliverable 1.1: REAMIT Communication Strategy document – April 2023

Improving Resources Efficiency of Agribusiness supply chains by Minimizing waste using Internet of Things sensors (REAMIT)

Project partners

REAMIT team	Abbreviation	Country
University of Bedfordshire	BED	UK
Images & Réseaux I&R	I&R	FR
National University of Ireland, Dublin, University College Dublin	UCD	IE
Université de Nantes	UoN	FR
Levstone Ltd	Levstone	UK
Nottingham Trent University	NTU	UK
Whysor	Whysor	NL
Munster Technological University	MTU	IE
SenX	SenX	FR
Ulster University	UU	UK
WD Meats	WD	UK
Associate partner added in 2021: University of Essex	UoE	UK

Contents

REAMIT communication strategy is devised to reach wide spectrum of stakeholders located in North West Europe to influence agri-businesses to reduce amount of food waste at least by 10% by 2023. Every partner in REAMIT will create awareness among local businesses and society independently and collectively with the project team. Each partner will have local specific communication plan in line with their organisation objectives and project activities. These communication plans will be monitored and evaluated periodically.

1. REAMIT overview

The REAMIT project proposes to adapt and apply existing innovative technology to food supply chains in North West Europe (NEW) to reduce food waste and hence improve resource efficiency. Reducing food waste is of highest priority for the EU (88Mt or € 143B wasted per year). The EU has committed to halving food waste by 2030 by focusing on all stages in the supply chain. 35% of food waste in EU-28 has occurred in supply chains in 2012. Though technologies exist to reduce food waste, they have not been applied to food supply chains.

REAMIT will focus on fruits, vegetables, meat and fish as these are wasted in large quantities. The supply chain includes farms, packaging sites, food processors, distribution, logistics, wholesalers and retailers. The project will be carried out in Ireland, Germany, France, UK and the Netherlands due to the amount of interconnected food supply chains and huge food waste in these countries.

REAMIT will adapt existing Internet of Things and Big Data technologies to best fit the needs of the food supply chain management system in NWE. Through testing and adaptation, these technologies will be enabled to continuously monitor and record food quality and signal potential food quality issues. Through analytics, owners of 'food to be at risk of becoming waste' will be provided with decision support options to minimise food waste including redistribution to nearby customers.

REAMIT project will save 1.8Mt of food waste or €3B per year in NWE, avoid 5.5Mt/yr of CO_2 emissions, test and operationalise 8 solutions, and, support 20 enterprises. The technologies will be self-sustaining at the end of the project. They will be made available to the public via REAMIT website and social media.

The long-term effects of REAMIT will be optimising (re)use of food and natural resources in NWE economies and a consortium capable of jointly addressing the challenges in food sector.

1.1. REAMIT objectives

REAMIT aims to support improvements in resource use efficiency by reducing food waste in supply chains for fruits, vegetables, meat and/or fish. Existing technologies (Big Data and IoT sensors) will be adapted and tested in supply chain companies to monitor food quality, share information and provide decision support to make rapid decisions to save food. Partners will demonstrate significant waste reduction in food supply chains and roll this out to other companies and sectors across NWE.

2. Main objectives of REAMIT Communication

REAMIT will influence agribusinesses to decrease amount of food waste in food supply chains by 10% by 2023. Dissemination of REAMIT results and displaying outputs to wide group of stakeholders will raise awareness of the potential from combined technologies to save food from waste. REAMIT will make effective communications through network events, online publications, newsletters and regular updates in social media. These communications will convince agribusiness users of the value of REAMIT's technologies (aimed at reducing Risk) and increase knowledge and practice. Creating awareness among local businesses and society to reduce waste through demonstrable IoT use in fresh food supply chain is one of the important aims of REAMIT to achieve high dissemination and to reduce food waste. At the end of the project, fundamental approach to food supply chain can be changed with REAMIT knowledge using IoT and big data. We position our communication objectives as follows:

Communication objective 1: To create awareness among business and society to reduce food waste through pilot testing and proof by example

Communication objective 2: To influence attitude of agribusiness to reduce food waste in mainly meat, fish, fresh fruit & vegetables

Communication objectives 3: To change the behaviour and fundamental approach to food supply chain using IoT sensor technology and Big Data infrastructure through pilot testing.

Communications objective 4: To increase knowledge of food waste reduce through pilot testing with local society and supply chains.

REAMIT communication strategy will be reviewed annually.

2.1. Strategy in *Dissemination* and communication of REAMIT

- **Creating awareness** of REAMIT among locals, stakeholders, target groups and all possible businesses in NWE region using pilot testing and dissemination. By communicating various use of IoT in food supply chain, REAMIT will highlight different IoT technology and sensors to use in fresh food sector to avoid waste and add value.
- **Creating high impact project:** REAMIT is trying to make impact in food supply chains by reducing waste at least 10% at the end of the project and more in later years. REAMIT communication will ensure achieving this objective by vital and impactful communication through social media awareness.
- **Update and inform progress**: Advancement in REAMIT progress will be communicated to all stakeholders on time.
- **Inspire and change behavior of supply chain through IoT use:**
  - REAMIT newsletters, brochure and video related to pilot test and other activities will be published to promote awareness and knowledge
- **Increase knowledge, skills and investment in REAMIT technology:**
  - Reflect through short news on best practices and success stories
- Pilot tests and big data infrastructure will bring REAMIT technology closer to market. These are communicated with REAMIT website. Specific audience such as technology companies and agri-businesses are contacted via email with newsletters and pilot tests information.

2.2 REAMIT's target group

REAMIT communications will facilitate both external and internal (within our project team) communication to inform REAMIT outcomes and activities to all stakeholders. This will benefit businesses and community alike in the region of North West Europe. The target groups are (i) actors in the food supply chain (e.g. food producers, food distribution & logistic companies, retailers and wholesalers),

(ii) policy and support agencies (e.g. local authority, business support organizations, policy makers), and (iii) knowledge institutions and technology firms (e.g. laboratories, universities, firms that develop IoT and big data technologies).(iv) technology partners (v) pilot testing partners and end users.

Target Group	Description	Target Value
Local public authority	Reducing food waste will be of interest to local public authorities and hence REAMIT will target approaching them for support in networking events and for dissemination. All local authorities in the locations of REAMIT partners will be approached.	5-10
Regional public authority	Reducing food waste will be of interest to regional public authorities and hence REAMIT will target approaching them for support in networking events and for dissemination. All regional authorities in the locations of REAMIT partners will be approached.	5
National public authority	Reducing food waste will be of interest to national public authorities and hence REAMIT will target approaching them for support in networking events and for dissemination. All national authorities in the locations of REAMIT partners will be approached.	5
Interest groups including NGOs	Several NGOs engaged in minimising food waste and donating to charity will be approached. The charity Foodcloud is working with REAMIT partner UCD.	5
Higher education and research	Research articles prepared using results of REAMIT will be shared with higher education and research institutions using three	20

	conferences, and similar networking events.	
enterprise, excluding SME	The dissemination materials and publications of the REAMIT project will be made available to agribusiness enterprises o show case the usefulness of IoT sensor and Big Data technologies for agribusiness supply chains in reducing food waste.	10
SMEs	The dissemination materials and publications of the REAMIT project will be made available to agribusiness and technology SMEs to show case the usefulness of IoT sensor and Big Data technologies for agribusiness supply chains in reducing food waste.	10
Business support organizations	The dissemination materials and publications of the REAMIT project will be made available to business support organisations to show case the usefulness of IoT sensor and Big Data technologies for agribusiness supply chains in reducing food waste.	5
Sectoral agency	Partners will work with national level food sector agencies, e.g. Institute for food science & technology, Fresh Produce Consortium and Food Storage & Distribution Federation (UK), Cerafel and Chambers of agriculture in France.	5

2.3 Role of communication with external stakeholders

Communication team will be coordinating the process of designing the project's dissemination in close cooperation with Lead Partner and project partners. All online pages will be updated periodically with progress of the project, outputs and results.

- Managing REAMIT's web page and social media to reach out many end users, target groups and stakeholders

- Liaising with JS on project/programme communication.

- Several ways of communication will be used in engaging the target groups:

    ✓ Designing project posters, banners and signboard

    ✓ Managing Project web page with updated information on open challenge call, events, pilot studies, results and outputs.

    ✓ Discussion forum in websites and social media – to connect industries with academics and general public (optional)

    ✓ Exhibitions, flyers and posters in Industrial and academic events – to reach wider community with results and relevant materials

    ✓ Press & media (Newsletter, TV programmes, Journal articles)

    ✓ Annual conference and events in partnering countries

2.4 Social media presence

We use reamit4nwe@gmail.com as a repository for important communication in the project. This email will be used for external communication as well. We are present on the following social media platforms:

- REAMIT webpage: www.reamit.eu

    www.nweurope.eu/reamit

- Twitter: @reamit4nwe with hashtag #reamit4nwe

- Facebook: https://www.facebook.com/reamit4nwe

- Linkedin: https://www.linkedin.com/company/reamit/
- Youtube:https://www.youtube.com/channel/UCICQNOCu9cwa_bEK gZkEjig/featured
- Instagram: https://www.instagram.com/reamit4nwe

3. REAMIT partners' role in communication

All partners including LP and PPs, sub-partners will participate in dissemination of results and contribute to communicate with target groups, pilot tests, adaption of technology throughout the life of the project.

- Record all communications between partners and external stakeholders: It is important to keep record of emails and relevant documents on correspondence as proof of engagement with stakeholders. Some of this information will be needed for REAMIT reporting and also for creating network for project partners' events and act as a positive progress towards project objectives. All partners will inform the Project Lead (University of Bedfordshire) and Communication partner (Nottingham Trent University) of any dissemination activities for reporting purposes.
- Identifying and communicating with key partners – it is responsibility of all partners to identify end users for pilot testing and dissemination. Communication manager can support any further communication by sharing documents such as newsletter and webpage information.
- Important messages such as open challenge call responses including positive partnership (end user agreement) to be shared with LP and also send a copy to reamit4nwe@gmail.com
- Provide input to communication action plans and help others to identify end users and stakeholders
- Support communication and developing impactful materials through sharing photos, videos, writing blogs, attending conferences and events from REAMIT and other projects, video preparation.
- Respond to email seeking suggestions and comments on time
- Update communication team with photos, videos and knowledge gained from dissemination events or interaction with stakeholders: ensure that all partners capture videos and photos to gather evidence of success of the project. Any photos and videos that we capture can be used for marketing communications and establishing partner networks of REAMIT.
- Support dissemination to reach high number of end users and stakeholders

- Prepare reports for distribution among stakeholders to have wider dissemination, in REAMIT template
- Network meetings: support the dissemination of project information, progress and impact
- Ensure REAMIT project is promoted in the place of work and location via poster, roll-ups and partner websites
- Provide access to an online Sharepoint as a central storage cloud for REAMIT partners to access and share files internally

3.1. REAMIT communication lead

NTU is leading the communication work package; Prof Usha Ramanathan is the communication lead from NTU. Usha will coordinate all communication activities in cooperation with other project partners. NTU Communication Manager (appointed staff of NTU) should be informed of any proposed plans of marketing/publicity/dissemination activity by project partners in advance. The communication manger will:

- Manage the communication action plan and its progress
- Keep records of all dissemination activities for REAMIT project reporting
- Regularly updating dissemination targets based on information collected from other partners.
- Manage public dissemination activities such as press releases, marketing material, banners, newsletters. Project partners will be given opportunity to share their views and feedback before the communication document becomes public.
- Inform the project partners' timescale of communication activities and importance of Project partners feedback. It is responsibility of all partners to provide feedback on time.
- In case of no response received from the project partner(s) within the specified time period, the communication manger will assume the draft as read and approved by non-responsive partners.
- Lead workshops on social media and effective communication for project partners
- Create a Sharepoint site which gives access to all partners to store internal REAMIT documents

4. REAMIT Brand – guidelines

REAMIT will have a template to be used for purpose of communication with external partners and stakeholders. Presentation template, Document template and folders template will be used as agreed within the communication strategy plan.

4.1. *logos and signs to be used in REAMIT communication materials*

4.2. REAMIT Network events planned until 2023 (updates are available in www.reamit.eu)

Event	Date and place	Arrangement
Kick-off meeting	May 2019, Luton, UK	BED
RAC+RSC+WP	Sep. 2019 Luton, UK	BED
Symposium	Jan. 2020, Nottingham, UK	NTU
RAC+RSC+WP	Jan. 2020, Rennes, France	I&R
RAC+RSC+WP	July 2020, Netherlands (online)	Whysor
Symposium	Nov 2020, Nantes, France (online)	Valorial/I&R
RAC+RSC+WP	January 2021, Dublin, Ireland (online)	UCD
RAC+RSC+WP	July 2021, Nottingham, UK	NTU
Symposium	Dec 2021, Dublin, Ireland	UCD
RAC+RSC+WP	January 2022 Northern Ireland	Ulster University
RAC+RSC+WP	July 2022, Venlo, The Netherlands – hybrid event	Whysor
Symposium	December 2022, Nantes, France	Valorial/I&R
RAC+RSC+WP	January 2023, Dublin, Ireland	UCD
RAC+RSC+WP	March 2023, Essex, UK	UoE

4.3. Expected impact of REAMIT communication

We try to encourage high level of participation through websites, tweets, LinkedIn, Youtube and circulation of newsletters.

We calculate REAMIT communication impact through number of visits such as:

- Website visits
- Tweets and retweets
- Increase of LinkedIn contacts
- Newsletter views
- Social media interaction
- Youtube Views

5. REAMIT Branding

With reference to Interreg NWE programme manual, Page 110, Section 5.8.6.,

"All information and communication measures implemented by partners must acknowledge and promote the ERDF support received from the Interreg NWE Programme."

During and after implementation of the project

I. *Project information in project **partners' websites:** Project partners must publish information about their projects on their websites, where such websites exist. This should include, at least, the following:*
  - *the EU emblem together with reference to the European Union and the relevant EU fund.*
  - *a brief description of the project, its objectives, results and information on EU financial assistance.*

II. *Project partners must place at least **one poster** with information about the project (minimum size A3), including the financial support from the European Union, at a location readily visible to the public, such as the entrance area of a building (e.g. the institution's headquarters).*

III. *During **activities** such as training sessions, conferences, work sessions, specific training courses, trade fairs, exhibitions, etc. beneficiaries should ensure that all stakeholders are provided with information about the EU funding for the project by displaying the emblem together with reference to the European Union and the relevant EU fund at a location (for example in front of the premises) where the project operation/ event is implemented. It is appropriate to use easily movable, folding banners (if possible it is advisable to enclose photographs of such banners in project documentation).*

6.   Communication activities plans

The communication language will be mainly in local language along with English. The project dissemination will be in five partnering countries (UK, Ireland, France, the Netherlands, Germany).

6.1. Conference and events

REAMIT project partners regularly making presentations at industry and academic conferences as appropriate for whole duration of the project. All information will be sent to communication manager on conference attendance to enable reporting.

Conference/Event-Name and weblink	Location and date	Types of attendees	Number of attendees (as reported)	Main objective of attendance
Interreg NWE	Lille,France April 2019	Interreg officials, project leads, partners,	150	Start of the project and agreement handover
IoFT conference	Lincoln, UK, September 2019	Project lead, partners, Agri and technology companies, practitioners, academics	100	Dissemination event
N8 Agrifood Conference: Celebrating N8 AgriFood Creating solutions for a sustainable food system	York, UK October 2019	Academics, Practioners, Agri-Food businesses Researchers	300	Exhibition and Conference
IQRF Conference	London, UK November 2019	Big data & IOT Technology practioners	200	Meet up/ Networking Conference
Interreg NWE Impact event	Lille, France December 2019	Interreg project members, partners, government bodies from across NWE	400	Impact event for all Interreg Projects
Fast Forward 2030: Food Waste	London, UK February 2020	Food businesses, Food logistics companies, food Tech companies	100	Networking event
Online webinar: "Smart Cities and Resilience"	London, UK May 2020		100	Onine webinar
Online webinar: Good Food Business – building resilience by adapting to Covid-19	London, UK May 2020	Food businesses, Food logistics companies, food Tech companies	100	Online Webinar
Agri-Tech Start-up services	Webinar	Practitioners and Academics	100+	Online webinar
Smart Food Matters Conference (presented)	London, UK June 2020	Academics, Food owners, Food businesses		Exhibition and Conference

3rd International Conference on Industrial Engineering Operation and Research (presented)	Istanbul, Turkey June 2020	Academics, Science & Tech committee Researchers		Exhibition and Conference
Smart Food Factory Online Conference & Exhibition (presented)	September 2020, Online	Academics, Researchers, Food businesses		Exhibition and Conference (online)
World Agri-Tech Innovation Summit - Virtual	September 2020 (Online)	Agri-tech businesses		Online conference
KP @ 85 Festschrift Conference (Presented)	September 2020 (Online)	Academics		Online conferene
H2020 Green deal webinare (Presented)	Nov 2020	Academics and Industries from EU and India		Presentation from four members of REAMIT
Chartered ABS's Annual Research Conference & Exhibition 2020	Nottingham UK November 2020	Academics, Business School Leads		Exhibition and Conference
FoodWasteFest 2020	9 December 2020	Academics, food businesses	600	Online webinar
International Conference on Applications of A.I. & Computational Mathematics (Presented)	Bangalore (online) December 2020)	Academics		Online conference - Presentation by REAMIT Partner
53rd Annual convention of the Operational Research Society of India (Presented)	(online, 17-20 December 2020)	Academics		Online conference - Presentation by REAMIT Partners
Annual Research Conference of the Business & Management Research Institute	(Online, 12 January 2021)	Academics		Online conference – Presentation by Prof. Ram Ramanathan of BED (Lead Partner)
IOFT Lunchtime Talks	(Online, 22 January 2021)	Academics, Industry professionals		Online networking event and seminar – Presentation by Prof. Ram Ramanathan of BED (Lead Partner)
Agribusiness and REAMIT talk at IIPMB, Bangalore, India	(Online, 2nd February 2021)	Academics		Online talk- Presentation by Prof. Usha Ramanathan of NTU

Food Processing and Internet of Things, organised by Amity School of Engineering & Technology.	(Online, 3 February 2021	Academics		Online conference – Presentation by Prof. Ram Ramanathan of BED (Lead Partner)
Using IOT & Big Data for minimising food waste in agri-business supply chains at IIM in Tiruchirappalli	(Online, 5 February 2021	Academics		Online seminar – Presentation by Prof. Ram Ramanathan of BED (Lead Partner)
Achieving Sustainability in Food Production	(online, 3 March 2021	Academics		Online Conference-Presentation by Fionnuala Murphy of UCD (REAMIT Partner)
Manufacturing &Supply Chain Expo	(online 18 March 2021)	Academics		Online Conference-Presentation by Dr Pat Doody of MTU (REAMIT Parner)
Greener NWE (Interreg North-West Europe)	(Online - 20 May 2021)	Partners, Sub partners of Interreg North-West Europe projects		Networking Event -Presentation by REAMIT Partners
International Conference on Intelligent Agriculture (ICIA2021)	(Online, 20-22 May 2021)	Academics		Online Conference – Presentation by Yanqing DAN of BED (Lead Partner)
2nd International Conference of Climate Change	(Online, 25 May 2021)	Academics		Online conference – Presentation by Prof. Ram Ramanathan of BED (Lead Partner)
The Sustainable Food and Food Security Symposium	(Online – 27 May 2021)	Academics of Nottingham Trent University		Online conference- Presentation by Prof. Usha Ramanathan of NTU
Operational Research Society of India (ORSI)	(Online, 12 June 2021)			Online Conference-Presentation by REAMIT Partners
Innovative and inclusive North-West Europe	(Online, June 22 2021)	Partners, Sub partners of Interreg North-West Europe projects		Online networking event
29th EurOMA Conference	Online, 1 - 6 July 2021	Academics		Online conference, presentations by Prof. Usha Ramanathan of NTU and other REAMIT partners
International Workshop on Recent Advancements in Data Envelopment Analysis and Applications	Online, 10-11 July 2021	academics		Online conference – Presentation by Prof. Ram Ramanathan of BED (Lead Partner)

Virtual Faculty Development Program (FDP) on Business Analytics for Food and Agriculture Sector (Python and Case Study Approach)	Online, July 26th – 30th, 2021.	Academics		Online conference – Presentation by Dr Lohit Maiyar
SPIN Conference	Online, 26 August 2021	Academics		Online conference, presentations by REAMIT patners
Global Conference on Manufacture and Industrial Engineering (GCMIE-2021)	(Online, 13-15 September 2021)	Academics		Online conference – Presentation by Prof. Ram Ramanathan of BED (Lead Partner)
Yumchop's Food Factory Launch	Towcester, UK 3 September 2021	Academics, local authority, food and drink businesses, local business support enterprise	Approx. 30	Launch event and networking – Attended by Prof. Ram Ramanathan of BED and Sasha Bennett of NTU
Make UK Meet the Buyer – Food & Drink Supply Chain	5 October 2021	Food manufacturers, academics		Online event, presentation by Katarzyna Pelc of BED
19th Annual World Food Innovate Virtual Summit 2021	18 October 2021	Academics		Online event, presentation by Dr Tahmina Ajmal of BED
13th International Conference on Decision and Data Envelopment Analysis (DDEA)	Online, 27 – 28 October 2021	Academics		Online conference – Presentation by Prof. Ram Ramanathan of BED (Lead Partner)
NTU ARES Research Seminar	10 November 2021	Academics	30	Online conference, presentation by Prof. Usha Ramanathan of NTU
A Circular & Sustainable Food System in Ireland	20 November 2021	Academics, food and drink companies, local enterprise in Ireland		Online event, attended by REAMIT partners from UCD and NTU
ICIRST International Conference on Innovative Research in Science and Technology Conference 2021	26-27 November 2021	Academics		Online conference, presentation by Dr Tahmina Ajmal of BED
Trace + Trust Network event	13 December 2021	Academics, members of the Trace and Trust Network in Germany and NWE		Online event, presentation by Katarzyna Pelc of BED
"International Conference on Science, Engineering & Technology (ICSET-2022), Singapore, Online.	28 and 29th January 2022			Professor Ram Ramanathan of Uni of Essex was keynote speaker – topic: "How can technology support

				sustainability – the case of European food sector".
International Conference on "Biotechnological Interventions to Overcome the Challenges of Covid/Post-Covid Era (BIOCoPE-2022)" (On-line Mode),	24-25 March 2022			Presentation by Professor Ram Ramanathan of Uni of Essex. Topic: "Food Waste Management in Agribusiness Supply Chains using Internet of Things sensors and Big Data Analytics",
Mayor's Climate Action Event - Residents' Fair	26 March 2022	Local businesses in Bedfordshire		Attended by partners from BED Lead partner
How can data help agrifood businesses improve performance of their supply chain?", 26 April, 2022.	26 April 2022			Presentations by Ramakrishnan Ramanathan and James Gillespie (from Ulster University)
Food Waste Fest 2022	11-12 May 2022	Academics, other Interreg projects, food and drink businesses		Online event, attended by REAMIT partners from BED and NTU
"The role of food waste in improving sustainability of food supply chain"	18 May 2022	Academics and food businesses		Presentations by Prof. Ram Ramanathan and Abi Adefisan (from Yumchop foods),
the Research Day of College of Business Administration in Ajman University, UAE	25 May 2022	Academics		Conference, presentation by Prof Usha Ramanathan of NTU
20th Annual World Food Innovate Summit	14- 15 June 2022	Academics		Attended by Dr. Tahmina Ajmal and Prof. Yanqing Duan of BED
Big Data Analytics Conference, the Millennium Gloucester Hotel London Kensington.	16 June 2022			Presentation by Prof. Ram Ramanathan of Uni of Essex
The University of Bedfordshire's Annual Research Conference 2022, 17 June 2022	17 June 2022	Academics		Professor Yanqing Duan, Project Manager Katarzyna Pelc and Research Fellow Dr Sahar Ahmadzadeh of BED
Race to Zero - Decarbonisation Conference for Food and Drink Manufacturing	21 June 2022	Academcics, researchers, local food and drink businesses within Nottinghamshire and Derbyshire		Attended by Sasha Bennett of NTU
EUROMA22 Conference, Berlin	4 July 2022	Academics across Europe		Presented by Prof. Usha Ramanathan of NTU
36th EFFoST conference 2022 (The European Federation of Food Science	7-9 November 2022	Academics		Presented by Dr James Gillespie of Ulster University, titled 'Real Time Anomaly

and Technology, Dublin, 7-9 November 2022.				Detection in Cold Chain Transportation using IoT Technology'
UN75+2 Future Mobility Workshop	22 November 2022	Academics worldwide	Approx. 36	Hosted by NTU, Presented by Prof. Usha Ramanathan of NTU
International Conference on Advanced Enterprise Information System (AEIS 2022)	2-4 December 2022	Academics		Keynote presentation by Professor Yanqing Duan of BED - REAMIT Project Experience on Preventing Food Waste'.
POMS India international conference	21-23 December 2022	Academics		Presentation and panel discussion by Prof. Usha Ramanathan of NTU - Reimagine Role of Operations Management for Sustainable Solution in New Normal
Annual Conference of the Business and Management Research Institute at the University of Bedfordshire	18 January 2023	Academics		Professor Yanqing Duan and Katarzyna Pelc of BED both presented the REAMIT project
Advancing Women in Agri-Food Rural Environments' (AWARE) event	27 February 2023	Academics		Katarzyna Pelc of BED, presented the REAMIT project
GLOPSCO RIG Research Talk, Northumbria University, UK	16 March 2023	Academics		Prof Usha Ramanathan of NTU presented REAMIT case studies- "Role of IoT in food supply chains for quality assurance"
EurOMA Sustainable Operations and Supply Chains Forum 2023	20-23 March 2023	Academics		A conference paper has been submitted by REAMIT Project Lead, Prof. Ram Ramanathan, Prof. Yanqing Duan, Dr Tahmina Ajmal and Katarzyna Pelc, titled 'Food waste reduction using IoT-Big Data technology demonstrations in the food sector North West Europe and learnings for use in other sectors'.
CABS Annual Research Conference 2023	23 March 2023	Academics		Keynote Panel discussion by Prof. Ram Ramanathan of Uni of Essex
IntraLogisteX Conference 2023	28 – 29 March 2023	Academics		Prof Ram Ramanathan of Uni of Essex presented the REAMIT Project
SETAC Europe33rd Annual Meeting	30 April–4 May 2023	Academics		Dr Tamiris Da Costa of UCD has submitted a conference paper titled 'Life cycle analysis to determine the trade-offs between food waste reduction

				and the implementation of monitoring technologies'.
Business School End of Year Showcase / Expo	15 June 2023	Academics		Professor Yanqing Duan, Katarzyna Pelc and Tahmina Ajmal at BED – lead partner will be showcasing REAMIT during this exhibition

6.2. Published report

REAMIT results and outcomes will be disseminated to wide audience in the field of supply chain, IoT, data analytics, sensors, practitioners and academics.

All the intellectual properties developed by REAMIT project are free to use as agreed on the partnership agreement and as regulated by the subsidy contract.

The outputs and results (referred to as 'foreground Intellectual Property'1) must therefore be owned by the entire partnership.

Any report as part of the REAMIT project will use REAMIT report format which will be available for partners from the Communication Manager.

Majority of the reports will be available via REAMIT official webpage (www.reamit.eu). Some reports that are not suitable for external dissemination will be circulated for partners use.

All project partners must inform the REAMIT Project Manager and Communication Manager of any reports that are being produced. Any possible IP issues could be avoided if target audience are considered into account.

6.3. Press releases

All press release for the project will be done mainly by lead partner. BED has published a press release in August 2019. REAMIT webpage has been populated. A press release was made by REAMIT Communication partner, NTU in Dec. 2019 to promote the REAMIT Networking Symposium in Jan 2020. A press release has been published and published and promoted by University of Essex, to announce the REAMIT project extension until 2023.

A new press release from NTU will be published in January 2023, in relation to the new REAMIT documentary film and will focus on the journey of the project.

6.4. *Scientific journals and research publications*

REAMIT white paper is being prepared by Ulster University. This is jointly supported with other partners in the team. ICT 2022 onference paper on REAMIT has been accepted in June 2022. A special issue has been arranged for 'Sustainability Journal', From 2022-23, all REAMIT related articles are published in this journal:
https://www.mdpi.com/journal/sustainability/special_issues/waste_food_approach

6.5. *Marketing materials*

REAMIT brochure and other marketing materials have been developed by NTU. Newsletters, brochure and leaflet will be circulated along with Symposium in NTU in Jan. 2020. REAMIT Roll up banners have been made by each project partner and placed publicly in their local offices.

In Feb 2020, REAMIT branded vehicle magnets have been developed by NTU, for use on trucks during pilot tests.

Every partner has created specific webpages in their business place to showcase the REAMIT activities and to improve its impact.

Can include previous videos as well as this document is for the whole period.

Regular releases of REAMIT Newsletters are being published every 2-3 months. There will be a total of 4 newsletters produced each year, with the likeliness of additional newsletters being created for special events.

In the second half of 2020, REAMIT has launched two promotional marketing videos urging companies to take part in REAMIT technology demonstrations. These videos were launched on the youtube platform and also published on the Interreg NWE Youtube channel.

Five videos created in 2022, filmed from the REAMIT pilot tests, were published in youtube along with the REAMIT documentary video. These are available to view: https://www.reamit.eu/media-and-publications

In 2022, 6 posters and a new logo banner was developed and shared with partners due to the addition of Essex University as a new sub-partner. A REAMIT documentary video is being Filmed by Type40 Creative Ltd and directed by the

communication team at NTU. Along with this video, there are 5 individual pilot test videos that were created and will be uploaded to the REAMIT youtube channel.

In the second half of 2022, A new interactive inforgraphic focusing on the journey of REAMIT from 2019-2023 has been developed for the REAMIT website.

A new REAMIT brochure has been created in December 2022, from modifying the previous version of the REAMIT brochure from Feb 2021. This new brochure was embedded on the REAMIT website and distributed at the final REAMIT Symposium in December 2022 in Nantes France. From January 2023, two newsletters were published. All these articles are published and ready to view: https://www.reamit.eu/newsandblogs

6.6. Evaluation

All events run by REAMIT will have an evaluation form circulated among participants to know its impact of dissemination.

7. REAMIT communication implementation plan

7.1. REAMIT partners communication about REAMIT in local media channels

Below is the list of common objectives of REAMIT partners' communication through local media channels:

1. To inform the local public/organisations/actors in our neighbourhoods, towns, cities and regions about the REAMIT project and the positive impact/effects of the REAMIT project and approach on agri-food supply chains, mainly through reducing food waste. REAMIT pilot tests conducted by Whysor with local retail partner Picnic is given in the news https://mailchi.mp/12613607a095/25mtb3bpw6-4066937

2. To reach out to as many agri-food companies as possible, hoping they will also benefit from the REAMIT approach and technology by becoming pilot test partners. Pilot test partners of Ulster University, WD Meats is trying to prevent the spread of bacteria spread in meat produce using REAMIT

technologies namely, BPS prevention trial and Dry-aging trial. Similarly, pilot-test partners of Whysor, Picnic is using REAMIT sensors to reduce food waste in their logistics. There are many agri-food businesses in the various REAMIT partner local regions that can be contacted to be potential partners of the project. With the reputation of all REAMIT organisations, with universities such as Nottingham Trent University, Ulster University, University of Bedfordshire, University of Nantes, University College Dublin and Munster Technological University having impact on local businesses and local communities, we have the advantage of contacting these local media outlets to communicate the story of REAMIT to local audiences.

3. To inform about the ambition of the REAMIT project partnership to contribute to reducing food waste and increase resources used to produce food (specify); and following this ambition we see the REAMIT project as a platform for new cooperation with actors in NWE region (and beyond) engaged in reducing food waste.

4. To promote European territorial cooperation co-funded by the EU Cohesion Policy Interreg NWE Programme.

7.2. How will we use local media to create impact?

Interviews will be arranged with pilot partners through local news outlets. For example, Nottingham Trent University will use local network such as the Nottingham City Council and D2N2 Growth Hub; University of Bedfordshire will use Bedfordshire County Council to disseminate the impact of REAMIT. We will arrange for a senior member of the REAMIT team to be interviewed and demonstrate the benefits and impacts of joining REAMIT. Similar interviews can be published in local news outlets through press/marketing team from all our partners in all NWE region. We will send out weekly updates and regular news updates.

We will promote REAMIT most effectively by discussing the following:
1. Challenges addressed by REAMIT (specify challenges based on REAMIT pilot tests)
2. Type of companies that can be pilot test partners in REAMIT
3. Benefits of the REAMIT approach and technology to agri-food companies (specify based on REAMIT pilot tests)

Once we have concrete results from pilot tests, we will demonstrate the successes of pilots in those local regions. For example, the team at Whysor can release a

publication on the successes with their pilot partner, Picnic in the local regions in the Netherlands.

Specific tools of communication to reach local media would be through:
Video (www.reamit.eu)
Posters of Pilot Tests (WD Meats, Whysor, Picnic and others)
Infographic Images on the benefits (specify the title of REAMIT infographics)
Articles and Publications by REAMIT Academics (Journals and conferences)
Press Releases (Bedfordshire marketing team and Nottingham Trent University)
Interviews of key REAMIT members (Prof Ram Ramanathan)
Testimonials from pilot partner companies (TBC)

7.3. *Multi-lingual promotional materials*

Posters
REAMIT posters and promotional materials such as video and newsletter will be translated in local language in partering countries. Help will be extended from REAMIT partners who are conversant with French, Dutch and German to create translations in these 3 languages, as and when required.

This strategy will allow REAMIT team to broaden our communication to partners in various countries, without having language barriers. We also publish local news from all partners that is present in REAMIT social media in English. We follow a regular template to support production of news by our project partners from different countries.

Posters and promotional materials are being sent to local media outlets in our region through NTU's Press team and REAMIT's communication team. This helps us to reach local society and SMEs and also motivate project partners to publish REAMIT materials through their local networks.
So far, the REAMIT benefits infographic has been translated to French and German and uploaded on REAMIT website in January 2022. 6 new posters have been created in 2022, for Yumchop, Biogros, Burns Farm Meats, Picnic, Musgrave, Yumchop and Human Milk Foundation.

REAMIT Storyboard
The collation of stories from across North-west Europe will be a good tool to show that REAMIT is a solution for many problems related to food waste faced across the entire region, not just a UK solution. Stories in the local language will depict the real problems of food waste and possible solutions such as IoT and Big Data to know quality of the food through REAMIT technology.

For instance, the story board developed by NTU has stories from multiple regions, this can be used locally by NWE partners.
https://www.nweurope.eu/projects/project-search/reamit-improving-resource-efficiency-of-agribusiness-supply-chains-by-minimising-waste-using-big-data-and-internet-of-things-sensors/news-blogs/food-waste-stories-from-around-the-world/
Some weblinks embedded within the storyboard have translation options, this option can help showcasing the role of REAMIT in waste reduction.

Regular News Updates with Pilot-test partners in different Regions
REAMIT regularly post news updates on the pilot tests in each region to demonstrate the impact these pilots are having in their respective countries. We also feature a monthly update on the News and Blogs section of the REAMIT site featuring an update from a pilot in each country, to keep it as varied as possible.

Communication partner will update website with information from pilot partner in each region. This will be done through a series of questions to be asked to pilot partners and uploaded as a news article.

Partner logo banner
We will regularly encourage all our partners to actively use the REAMIT partner logo banner more frequently in communication and through our online communication channels to emphasise the collective efforts of the entire REAMIT Consortium. This logo banner is regularly updated with new logos when partners are added or have any changes. The most recent logo banner was updated in JUNE 2022, with the addition of University of Essex and Nottingham Business School's new logo.

Social media
Encourage social media participation from all partners and sub partners. Tweets and retweets will help to take the REAMIT idea to wider communities.

7.4. Some examples of local media in REAMIT partner countries/regions and mode of communications (will be updated periodically)

Local media channels in the regions of the REAMIT partners include local radio stations, local television stations, local magazine and other publications. We use these local media to reach out to SMEs, local businesses and society.
Examples of local media channels in REAMIT partners' regions and Mode of Communication are included in the following table:

REAMIT Partner	Local radio stations and local TV stations	Local magazine publications	Other communications
Nottingham Trent University, UK	BBC Radio Nottingham, Capital East Midlands, Kemet FM. Notts TV, ITV Central, BBC East Midlands	Left Lion Magazine, Nottinghamshire Live D2N2 Growing Nottingham NG Magazine	Interviews, Press releases, Videos on Pilot tests, Social Media Posts, NTU Marketing team to create press releases
University of Bedfordshire, UK	3 Counties Radio, BED also has a dedicated radio station. National TVs (BBC, ITV) BBC Look East	• Bedfordshire Times & Citizen • Beds Bulletin • Bedford Today • Bedford Independent • Business MK • Dunstable Gazette • Wiltshire Gazette and Herald • This Is Wiltshire • Wiltshire Times	Social Media Public Engagements
Ulster University, UK	BBC Radio Foyle Downtown radio Drive 105, UTV	Derry Journal Belfast telegraph Tyrone Herald Ballymena chronicle	Social Media, University' s Website UU Website - https://www.ulster.ac.uk/ Facebook - https://www.facebook.com/UlsterUniComputingEngineeringIntelligentSystems NIFDA - https://nifda.co.uk/ LinkedIn and Twitter Ulster University's website, shared news articles to the UU school of computing, engineering and intelligent systems Facebook page. The Ulster team have also reached out to companies through email and phone, and more recently through NIFDA in the search for additional pilot tests.
University of Nantes, FR		Newsletter of IUT de la Roche sur Yon. https://iutlaroche.univ-nantes.fr/	Website of the Gepea: https://www.gepea.fr/

		Le journal du pays-yonnais : https://actu.fr/le-journal-du-pays-yonnais/	
UCD, IE			UCD Food Eng Twitter and Linkedin pages
MTU, IE	MTU, IE Radio Kerry Virgin Media TV, RTE TV	Kerry's Eye, The Kerryman (newspaper	Personal Facebook, Twitter and LinkedIn accounts Social Media platforms for MTU, MTU Communications dept, and local media.
Levstone, UK	Radio: MKFM https://www.mkfm.com/news/local-news/ Also BBC: 3 Counties radio available in the MK area	MKNews: https://media.info/newspapers/titles/mk-news MKCitizen Business MK https://www.pulsemagazine.co.uk/our-magazines/	
Whysor, NL		Kiem Punt Linburg- an Agrofood network in the Netherlands (Newsletter and web article released for REAMIT)	Twitter, LinkedIn, local Dutch company's newsletters and websites, Whysor website
I&R, France			I&R Website, Linkedin and Twitter page
SenX, France			Social Media (Twitter mainly), Public Events

8. Annexture (Explanation of events attended and presented by REAMIT team)

A) Presentations from the REAMIT team
REAMIT Symposium (9th January 2020, Nottingham, UK)

A symposium organised by NTU, More than ten presentations made by NTU and their industry partners. External presenters and attendees made the event successful. This event attracted more than 60 attendees to Nottingham, UK. Full report is available in www.reamit.eu. This symposium created a platform for the REAMIT team to connect with other partners within the REAMIT team and also with any other businesses and academics.

REAMIT Symposium November 2020, France (Online web-event)

On November 5th and 6th 2020, we held the 2nd REAMIT Sympsoium hosted by our French project partners Valorial, in association with Images and Reseaux. We saw a total of 167 registered, with a final 121 participants actually attending the Symposium. There were B2B meetings also held throughout the 2 days, 20 out of the 72 meetings were transnational meetings.

REAMIT Social media training session- (Online- December 2020)

This session was led by Sasha Bennett of Nottingham Trent University.NTU held a Social Media training session for partners who wanted to develop their social media skills & to use social media more frequently to promote REAMIT project activities as well as their organisations. The team explored the benefits of using various platforms such as Twitter, Linkedin and Facebook

H2020 Green deal webinar (Nov 2020)

This webinar was arranged by H2020 team in collaboration with Indian counter part. Ram Ramanathan, Lohithaksha Maiyar and Tahmina Ajmal presented the REAMIT work from University of Bedordshire. Usha Ramanathan from Nottingham Trent University presented her projects along with REAMIT results. Follow up of this webinar created a discussion forum to develop a green deal partnership with EU and Indian partners.

Annual Research Conference of the Business & Management Research Institute (Online – 12th January 2021)

Professor Ram Ramanathan of the University of Bedfordshire presented the REAMIT project presented at the Annual Research Conference of the BMRI at the University of Bedfordshire, lead partner. This event was held online.

IOFT Lunchtime Talks (Online - 22nd January 2021)

Professor Ram Ramanathan of the University of Bedfordshire presented the REAMIT project at the Internet of Food Things (IoFT) Lunchtime talk on 22 January 2021.

Agribusiness and REAMIT talk at IIPMB, Bangalore, India (Online, 2ⁿᵈ February 2021)

Prof Usha Ramanathan delivered a Special Talk for the benefit of students and faculty of IIPMB, Bangalore, India. 2nd February (Tuesday) 2021 at 10.00 am UK time (3.30 pm IST-India Time). She discussed current agri-business and REAMIT project.

IIPM Bangalore is an autonomous organization of the Ministry of Commerce & Industry, Government of India, established to facilitate management education, research, training and consultancy for agri & food business, commodities, plantations and associated sectors. The institute has educational membership with the international accreditation agencies viz. AACSB-USA & EFMD-Brussels and Permanent Accreditation from HLACT-USA. IIPMB has been recognized as a technical institution by AICTE-MHRD-GoI. The institute has been recognized as "Technical Institution" under AICTE-MHRD-GoI, New Delhi; obtained accreditation from NBA-New Delhi and MBA Equivalence from AIU-New Delhi. The institute has been presented with numerous awards for its outstanding contribution to the "Cause of Education Excellence and Best Training to Working Professionals".

Food Processing and Internet of Things, organised by Amity School of Engineering & Technology (Online – 3ʳᵈ February 2021)

Prof. Ram Ramanathan was the distinguished speaker at the "Technology based Entrepreneurship Development Programme" on Food Processing and Internet of Things, Amity University, Uttar Pradesh, India on 3 February 2021.

Using IOT & Big Data for minimising food waste in agri-business supply chains at IIM in Tiruchirappalli (Online – 5ᵗʰ February 2021)

Prof. Ram Ramanathan delivered a research seminar on the REAMIT project at the Indian Institute of Management, Tiruchirappalli, India on 5 February 2021.

Achieving Sustainability in Food Production (Online- 3ʳᵈ March 2021)

REAMIT partner, Dr. Fionnuala Murphy of the University College Dublin gave a presentation at a research seminar on Achieving Sustainability in Food Production at a seminar series hosted by BMRI at the University of Bedfordshire.

Manufacturing &Supply Chain Expo (Online – 18th March 2021)

Dr. Pat Doody, Co-founder and Director of the IMaR Research Centre, Munster Technological University, Ireland, presented the REAMIT project at the Enterprise Ireland Technology Gateways online event on 18th of March 2021. In his presentation titled 'The Future of Food', Pat presented how Internet of Things and Big Data technologies (which are the core of the REAMIT project) can help reduce food waste in agri-food supply chains.

Greener NWE (Interreg North-West Europe) (Online – 20th May 2021)

Interreg North-West Europe hosted an interactive online networking event for partners of NWE Projects. REAMIT project partners presented at this event.

International Conference on Intelligent Agriculture (ICIA2021) (Online – 20- 22nd May 2021)

Professor Yanqing Duan from the University of Bedfordshire, Business School, has been invited to give an online presentation of the REAMIT project at the International Conference on Intelligent Agriculture (ICIA2021), taking place at Tianjin, China on 20-22 May 2021. The focus of Yan's presentation will be on demonstrating the applications and benefits of using Big Data and IoT sensors for reducing food waste in food supply chains based on REAMIT experience, therefore it will help to prompt the exploration of new applications and wider adoption of emerging digital technologies in food supply chains. Presenting the REAMIT project at this international conference will be an excellent opportunity to reach new stakeholders and attract new research collaborations in China and beyond, who are also involved in reducing food waste.

2nd International Conference of Climate Change (Online- 25th May 2021)

REAMIT Project lead, Prof. Ram Ramanathan was keynote speaker at the 2nd International Conference in the field of Climate Change Impact on 25th May 2021, Kuala Lumpur, Malaysia. Prof. Ramanathan highlighted the REAMIT project and its role within climate change. This event was held online due to the COVID-19 pandemic.

The Sustainable Food and Food Security Symposium (Online - 27th May 2021)

Prof. Usha Ramanathan presented 'Overview of the REAMIT applications to reduce food waste: Use of IoT sensors and Data analysis in Decision making of Agri-food supply chains' at the Cross Research Theme Research Symposium – Sustainable Food and Food Security on 27th May 2021, hosted online by Nottingham Trent University.

Operational Research Society of India (ORSI) (Online – 12th June 2021)

This online seminar and presentation inspired by the REAMIT project, to be hosted on Saturday 12th of June 2021 at 6 PM (India time) which is 13.30 (GMT).

The presentation will focus on the application of IoT and Big Data technologies in reducing food waste in Europe, and will be delivered by Ram Ramanathan and Lohithaksha Maiyar of the University of Bedfordshire, lead partner of the REAMIT Project.

Innovative and inclusive North-West Europe (Online- 22nd June 2021)

The second Interreg North-West Europe online networking event will be organised on 22 June 2021. In an innovative and interactive format, REAMIT Partners will attend and meet other project leads and partners from other Interreg North-West Europe projects.

29th EurOMA Conference   Online, 1 - 6 July 2021

Professor Usha Ramanathan, of Nottingham Business School and other REAMIT partners spoke at the EUROMA conference in July 2021. This was event was originally set to be held in Berlin but was online.

International Workshop on Recent Advancements in Data Envelopment Analysis and Applications   Online, 10-11 July 2021

Prof. Ram Ramanathan of University of Bedfordshire spoke on REAMIT and how we can use data from Life Cycle Analysis for conducting Data Envelope Analysis, at the International Workshop on Recent Advancements in Data Envelopment Analysis and Applications on 10-11 July, 2021

Virtual Faculty Development Program (FDP) on Business Analytics for Food and Agriculture Sector (Python and Case Study Approach) Online, July 26th – 30th, 2021.

Dr Lohit Maiyar gave a presentation of the REAMIT project at the Indian Institute of Plantation Management, Bengaluru (IIPMB) and ATAL Academy AICTE, New Delhi, Five Days Virtual Faculty Development Program (FDP) on Business Analytics for Food and Agriculture Sector (Python and Case Study Approach) during July 26th – 30th, 2021.

SPIN Conference Online, 26 August 2021

Prof. Ram Ramanathan of BED and Prof. Usha Ramanathan of NTU presented at the 8th International Conference on Signal Processing and Integrated Networks (SPIN 2021) on the 26 August 2021.

Global Conference on Manufacture and Industrial Engineering (GCMIE-2021) (Online, 13-15 September 2021)

Postponed til 2022

Yumchop's Food Factory Launch - Towcester, UK - 3 September 2021

Prof. Ram Ramanathan of University of Bedfordshire, Lead Partner, accompanied by Sasha Bennett of Nottingham Trent University, Communication Manager of the REAMIT Project visited the site of Yumchop on their Factory Launch Event on the 3rd September 2021.

During the visit to Yumchop, Michael and Abi Adefisan gave presentations on the history of Yumchop. Yumchop supplies nutritious, African inspired frozen ready meals through a vending machine, which is then heated in a built-in microwave and served instantly to customers. Abi informed us that since September 2020, they are currently distributing their vending machines to several NHS hospitals. They have now branched out to supply educational institutions such as Milton Keynes College and Imperial College London. Now they have launched this purpose-built factory in Northamptonshire, which has the operational facilities to produce and distribute thousands of meals per day, thus allowing them to branch out to more universities, colleges and hospitals across London and opening to the wider UK.

Make UK Meet the Buyer – Food & Drink Supply Chain – Online, 5 October 2021

REAMIT partners attended an online event 'Meet the Buyer for the Food and Drink Supply Chain!' organised by Make UK which took place on 5 October 2021. Make UK is an organisation, which represents manufacturers in the United Kingdom.

19th Annual World Food Innovate Virtual Summit 2021 – Online, 18 October 2021

Dr Tahmina Ajmal was invited to speak at 19th Annual World Food Innovate Virtual Summit 2021 (www.foodinnovatworld.com). Her session was based on REAMIT project.

Presentation Title: Disruptive Innovations in Food Supply Chain

Brief Abstract: We discuss the transformation of food supply chains using disruptive innovations in REAMIT project. This project is currently running several technology demonstrations across Europe in various sections of the food supply chain. Main technologies used include off-the-shelf sensors together with big data analytics. Initial results and response from businesses is very encouraging. We share our initial findings and learning so far.

13th International Conference on Decision and Data Envelopment Analysis (DDEA) , Online - 27 – 28 October 2021

REAMIT Project lead, Prof Ram Ramanathan has delivered a key note speech titled "Some use of Data Envelopment Analysis (DEA) in measuring and reducing food waste" at the 13th International Conference on Decision and Data Envelopment Analysis (DDEA) organised by the Iranian Data Envelopment Analysis Society (https://www.dea13.iran-deasociety.ir/en/home) on 27-28 October 2021.

NTU ARES Research Seminar- Online, 10 November 2021

Professor Usha Ramanathan, Professor of Sustainability and Supply Chains in Nottingham Business School has delivered a guest lecture for audience from School of Animal Rural and Environmental Sciences of Nottingham Trent University. Topic of her talk was "REAMIT applications to reduce food waste: Use of IoT sensors and Low-cost solutions to Low/Middle income countries.'

A Circular & Sustainable Food System in Ireland- Online, 20 November 2021

This event was a discussion and learning session with practitioners working on the ground implementing food waste measurement, prevention and utilisation. This was attended by partners at UCD and NTU. Dr Colum Gibson was one of the guest speakers which the team at UCD have subsequently been in touch with and agreed to be guest speaker at the REAMIT Symposium event on 8-9 December 2021, hosted by UCD.

ICIRST International Conference on Innovative Research in Science and Technology Conference 2021, Online- 26-27 November 2021

The International Conference on Innovative Research in Science and Technology (ICIRST-2021 was held on the 26th and 27th of November 2021. This conference was themed around the numerous outstanding results and new difficulties in the applied sciences, engineering, technology as well as management sectors.

Dr. Tahmina Ajmal of the University of Bedfordshire, lead partner of the REAMIT project has presented at this conference.

Trace + Trust Network event - Online, 13 December 2021

On 14th of December 2021, Katarzyna Pelc, Project Manager of the REAMIT project, presented the REAMIT project at an online meeting of Trace+Trust Network – International Innovation Network funded by the German Government.

The aim of the Trace+Trust Network is to develop innovative products and processes that show the authenticity of food products and participating companies (producers, processors, sellers) in an unforgeable and trustworthy way. This is done on the basis of sustainability and digitalization.

As a follow up of this presentation, bilateral meetings between REAMIT and Trace+Trust Network partners have been agreed to explore synergies and possibilities for cooperation, in the scope of constant monitoring and tracing of conditions in which food is stored and transported with the aim to reduce food waste**.**

International Conference on Science, Engineering & Technology (ICSET-2022), 28th & 29th January, 2022 in Singapore

Professor Ram Ramanathan (2022) was keynote speaker (Virtual) at the "International Conference on Science, Engineering & Technology (ICSET-2022), 28th & 29th January, 2022 in Singapore. His topic was "How can technology support sustainability – the case of European food sector".

International Conference on "Biotechnological Interventions to Overcome the Challenges of Covid/Post-Covid Era (BIOCoPE-2022)" (On-line Mode), 24-25 March 2022

Professor Ram Ramanathan (2022), "Food Waste Management in Agribusiness Supply Chains using Internet of Things sensors and Big Data Analytics", Invited speaker at the International Conference on "Biotechnological Interventions to Overcome the Challenges of Covid/Post-Covid Era (BIOCoPE-2022)" (On-line Mode), 24-25 March 2022.

Mayor's Climate Action Event - Residents' Fair, Bedfordshire – 26 March 2022

On Saturday 26th March 2022 Bedford Borough Council hosted the Residents' Fair as part of the Mayor's Climate Action Event where you can find out how to take steps to reduce your household's carbon emissions.

The event featured a range of stalls held by local organisations and businesses that have a commitment to reach Net-Zero.

How can data help agrifood businesses improve performance of their supply chain?", 26 April, 2022.

Prof. Ram Ramanathan and James Gillespie (from Ulster University), presented on "How can data help agrifood businesses improve performance of their supply chain?", 26 April, 2022.

Food Waste Fest, online- 11 -12 May 2022

The Foodwaste Fest is an annual conference organised by Foodwin and Food Heroes, a previous Interreg Project. Partners from NTU and BED attended, had the chance to network with other food and drink businesses and similar initiatives such as REAMIT.

Seminar: The role of food waste in improving sustainability of food supply chain", 18th May, 2022, Online.

Prof. Ram Ramanathan and Abi Adefisan (from Yumchop foods), presented on "The role of food waste in improving sustainability of food supply chain", 18th May, 2022.

The Research Day of College of Business Administration in Ajman University, UAE – 25 May 2022

This event took place in UAE, a talk on REAMIT presented by Prof. Usha Ramanathan of NTU.

20th Annual World Food Innovate Summit – Milan Italy, 14-15 June 2022

The 20th Annual World Food Innovate Summit which takes place on the 14th-15th June in Milan, Italy. Members of the REAMIT Project will attend this 2-day event.

Big Data Analytics Conference took place on 16/06/2022 at the Millennium Gloucester Hotel London Kensington.

A day long conference with attendees of over 100 from IT industries and businesses involved in Big Data Analytics. Prof Ram Ramanathan and Prof Usha Ramanathan attended this event to represent and showcase the REAMIT.

The University of Bedfordshire's Annual Research Conference 2022, 17 June 2022

On 17 June 2022, three staff members from the REAMIT project at the University of Bedfordshire – Professor Yanqing Duan, Project Manager Katarzyna Pelc and Research Fellow Dr Sahar Ahmadzadeh, presented the REAMIT project at the University of Bedfordshire Annual Research Conference 2022, which took place in Luton, UK.

Race to Zero -Decarbonisation Conference for Food and Drink Manufacturing, Nottinghamshire UK, 21 June 2022.

A day event for Nottinghamshire, Derbyshire or Leicestershire Food or Drink business, hosted at the School of Artisan Food, Welbeck, Nottinghamshire. This event will be attended by partners at NTU.

EUROMA22 Conference, Berlin, 4 July 2022

Prof. Usha Ramanathan of Nottingham Trent University, presented REAMIT at EUROMA22, to various academics across Europe.

36th EFFoST conference 2022 (The European Federation of Food Science and Technology, Dublin, 7-9 November 2022.

Dr James Gillespie of Ulster University, gave a presentation at the 36th EFFoST conference 2022 (The European Federation of Food Science and Technology, (https://effostconference.com). The title of this presentation is 'Real Time Anomaly Detection in Cold Chain Transportation using IoT Technology'. The conference shall take place in Dublin, 7-9 November 2022.

UN75+2 Future Mobility Workshop, 22 November 2022, Nottingham Trent University (Virtual).

This prestigious conference received a presentation by Prof. Usha Ramanathan of Nottingham Trent University on Supply Chain Sustainability, where REAMIT was presented. This conference saw 42 registered and 36 attendees online.

International Conference on Advanced Enterprise Information System (AEIS 2022) , 2-4 December 2022

Professor Yanqing Duan gave a keynote presentation on "Improving Resource Efficiency in Food Enterprises Using Internet of Things Sensors - REAMIT Project Experience on Preventing Food Waste" in 2022 2nd International Conference on Advanced Enterprise Information System (AEIS 2022) online on 3rd December 2022.

POMS India international conference, 21-23 December 2022

Prof Usha Ramanathan of Nottingham Business School delivered a keynote speech at the POMS India international conference in December 2023, where she discussed the role of IoT in food supply chains for avoiding waste and achieving zero-waste. Usha shared stories from the pilot-tests conducted by REAMIT project (www.reamit.eu), funded by Interreg North-West Europe) and from her other GCRF_QR projects funded by Nottingham Trent University, UK. Top motivation of this keynote speech was derived by impactful results of these Sustainability related projects. Usha has discussed (a) How IoT sensors are used in food supply chains effectively to avoid any waste? This was discussed with an example of a frozen meals company Yumchop, UK. (b) What social impact can IoT technology bring in the operations of the Human Milk foundation, UK to ensure quality of the milk being distributed to the babies in need. (c) How can we create value from house-hold plastic wastes? This work was based on work in a project carried out with PSGR Krishnammal College for Women, Coimbatore India.

Annual Conference of the Business and Management Research Institute at the University of Bedfordshire, 18 January 2023

Professor Yanqing Duan and Katarzyna Pelc of BED both presented the REAMIT project.

Advancing Women in Agri-Food Rural Environments' (AWARE) event , 27 February 2023

Katarzyna (Kate) Pelc, Project Manager of the REAMIT project, presented REAMIT at the multiplier event of AWARE* project, on 27 February 2023 at the University of Bedfordshire, UK. The theme of the event was "Training and Mentoring Women Entrepreneurs in Europe's Agri Food". Kate's presentation focused on her experience and insights from managing a transnational European Territorial Cooperation project, REAMIT and the consortium of partners from academia, agri food and modern digital technologies companies, and business support organisations in North West Europe.

GLOPSCO RIG Research Talk, Northumbria University, UK , 16 March 2023

On the 16 March 2023, Professor Usha Ramanathan of Nottingham Trent University, UK and the communication lead of the REAMIT project, gave a presentation where she discussed UK based case studies of the REAMIT Project. This event was organised by Dr Alireza Shokri and his team from Northumbria University, UK to discuss research ideas in GLOPSCO RIG research talk, 'Role of IoT in Food supply chains for quality assurance'.

EurOMA Sustainable Operations and Supply Chains Forum 2023 , 20-23 March 2023

A conference paper has been submitted by REAMIT Project Lead, Prof. Ram Ramanathan, Prof. Yanqing Duan, Dr Tahmina Ajmal and Katarzyna Pelc, titled 'Food waste reduction using IoT-Big Data technology demonstrations in the food sector North West Europe and learnings for use in other sectors'.

CABS Annual Research Conference 2023, 23 March 2023

Professor Ram Ramanathan of the University of Essex, UK and the PI of the REAMIT project shared his views on research funding for Business Schools during the keynote panel discussion at the Chartered Association of Business Schools Annual Research Conference 2023.

IntraLogisteX Conference 2023 , 28 – 29 March 2023

Professor Ram Ramanathan from the University of Essex, UK and the PI of the REAMIT project presented the REAMIT Project at the IntraLogisteX Exhibition 28th & 29th March 2023, at the National Exhibition Centre, Birmingham, UK. The exhibition was attended by over 250 companies in the

UK. By delivering a lecture on the project, a number of these participating companies have been reached.

SETAC Europe33rd Annual Meeting , 30 April–4 May 2023

Dr Tamiris Da Costa of UCD has submitted a conference paper titled 'Life cycle analysis to determine the trade-offs between food waste reduction and the implementation of monitoring technologies'.

Business School End of Year Showcase / Expo , 15 June 2023

The University of Bedfordshire will be hosting their End of Year showcase. Professor Yanqing Duan, Katarzyna Pelc and Tahmina Ajmal at BED – lead partner will be showcasing REAMIT during this exhibition.

B) Sample of some events attended by REAMIT team (2019-2021)

REAMIT team attended several events in the first two years of the project to understand the UK and European food sector and also to get connected to as many stakeholders as possible. Attendance to the following events helped the team to gain Networking opportunity and also to reach to potential pilot-test companies.

a) Events attending by NTU, communication

Internet of Food Things Conference (17- 18th September 2019, Lincoln UK) Attended by Prof Usha Ramanathan and Sasha Bennett

In September 2019, The Internet of Food Things Conference in Lincoln arranged by The University of Lincoln, Lincoln Institute of Agri-food Technology. This event was attended by Prof. Usha Ramanathan and Sasha Bennett, both representing Nottingham Trent University, as Communication partners of REAMIT. Through this, REAMIT made connections with the Science and Technology Facilitation Group (STFC) , N8 Agrifood contacts, TFC group including contacts from the University of Nottingham, HMRC innovation lead and food & drink companies.

Through the contacts we made at this 2-day conference, this provided us with some key influential contacts that we later on invited as speakers at our

REAMIT Networking Symposium. We were introduced to contacts such as Dermot Lynch from ABB Robotics, who is also an NTU Alumni. There we connected with Caroline Wilcock from the N8 Agrifood network who has since invited us to their annual N8 Agrifood conference. One of NTU Business School's very own, Donna Champion connected with us there, after she presented on behalf of the STFC Sandpit event.

A highlight for us was witnessing a keynote speech from Judith Batchelar, Director of Sainsburys brand (supermarket chain), as she discussed the challenges and implementations larger supermarkets such as Sainsburys have to tackle when it comes to issues like sustainable packaging and food waste. The most important message we took away from this event was the importance of the mesh between digital technologies that enable digitalisation of the food production supply chain.

The N8 Agrifood Conference (22nd – 23rd October 2019, York, UK)
Attended by Sasha Bennett
In Oct 2019, Sasha Bennett of Nottingham Trent University attended a conference arranged by the N8 Agrifood network in York. This event was held at the prestigious Principle Hotel in York, followed by a networking dinner at the Railway Museum in York. This event was looking at the challenges facing food system and created a platform to contribute to issues in the food system. The most influential contacts met were Agrimax and Biovale and also the contacts in the N8 Agrifood contacts from N8 group. Agrimax is a project very much similar to REAMIT, tackling issues in the agri-food supply chain. Some of the contacts we had previously met at the IOFT conference, so it was a great chance to re-connect and further expand our networks.

On the second day of this conference, parallel sessions were conducted in several topics. We attended a session entitled 'Smart agriculture, supply chain resilience and new technologies: Industry 4.0' which was the session that stood out the most, with its relevance to REAMIT technologies. This session focused on the applications of technologies across Agrifood systems – from field to fork and the role they play in decision-making. What makes a technology successful in Agrifood.

We have since invited all of these contacts, some of these have been invited and will be attending our REAMIT Networking Symposium in Nottingham, January 2020. The N8 Agrifood conference was quite inspirational as it focused on the global impact on the UK food system, which gave us a

wider understanding on what UK national organisations such as N8 are doing to make effective and sustainable changes in the food system.

IQRF Conference (27th November 2019, London UK)

Attended by Sasha Bennett

In November 2019, Sasha Bennett of NTU attended the IQRF conference at tech giant UK headquarters, IBM. This event was hosted by the CEO of IQRF, Simon Chudoba whom we had met at the previous REAMIT Steering Committee meeting. We then stayed in touch and was invited to this IQRF Conference. This event was an opportunity for members and partners, in the field of IoT, of the IQRF Alliance to present their projects on which they work alone or in collaboration with other members. It was also an opportunity for newcomers to be introduced to IQRF wireless technology.

Towards the end of the event, Simon Chudoba gave an introduction to the REAMIT project. Using this opportunity NTU announced the upcoming REAMIT Networking Symposium and explained the importance of opportunity for tech companies to exhibit their products. This led to further contacts from quite a few tech companies who were interested in collaborating, exhibiting or presenting at the REAMIT Symposium.

Many of these contacts that were made, have even more connections in the agrifood sector, as well as within health and pharmaceuticals; all using different forms of IoT and sensors. This event was well worth attending and was very effective for REAMIT, as we were presented and networked with relevant connections within the field of IoT and Big data technology.

Fast Forward 2030: Food Waste (25th February 2020, London UK)

Attended by Sasha Bennett

In February 2020, Sasha Bennett of NTU attended the Fast Forward 2030: Food Waste networking evening in London. Fast Forward 2030 is a progressive network of transformative entrepreneurs hosted by the Institute for Global Prosperity (IGP) at University College London. This event was an opportunity for networking and chatting with speakers, and the board members of Fast Forward 2030. A nice aspect of the event was that they supplied free sustainably sourced food & drinks including delicious canapés made from food surplus by Elysia Catering, wine and beer made from surplus bread by Toast Ale.

The event was chaired by Solveiga Pakstaite, who is the founder at Mimica. Mimica is developing a temperature-sensitive indicator cap or label for food freshness. It reduces food waste by showing you when your food actually spoils, rather than relying on the wasteful worst-case scenario expiry date.

There were some great speakers such as Winnow, who detects food waste through AI tech software called winnow vision. The software recognizes what's going in the bin and how much is being wasted. Uploading data analytics into the cloud, thus avoiding the cost of food wastage – similar to REAMIT technologies. Resulting in 40 million dollars a year in customer savings. They highlighted that the more suppliers spend on sourcing food, the more they will find this resource beneficial, especially when mainly used in the restaurant chain.

Another excellent speaker, Ed Grimes is Business Development Director UK at Wasteless. Wasteless are helping food retailers and suppliers recapture the full value of their perishable products and reduce food waste through AI-powered dynamic pricing. Increasing revenue while reducing food waste which is another excellent solution for supermarkets. REAMIT could benefit from the contacts met at this networking event.

This event introduced us to some useful technology, called Karma. With the Karma App, you can find surplus food from restaurants, cafes and grocery stores to enjoy at half the regular price. With the Karma app, you:

1. Upload your food to the platform

2. Sell your food

3. Hand out your food

By the end of the end, I had made many interesting contacts such as the founder of Elysia, supplying surplus foods and the founder of Mimica. These are all contacts who I have been in touch with and will contact for possible future collaboration & pilot testing our technology.

b) Events attended by Ulster University (Project Partner)

DEARA (8th November 2019, Coleraine, United Kingdom) -Attended by William Duffy

A member of DEARA (Department of Agriculture, Environment and Rural Affairs) reached out to the Ulster University REAMIT team to talk meet and talk about potential collaboration. The DEARA supply chain project seeks to promote co-operation and sustainability in local agri-food businesses.

The connections made during this meeting are hoped to open link to any producers within the beefmeat sector in Northern Ireland who are using interested in utilizing innovate technologies to solve food waste and business value problems.

Transforming Food Production Briefing Event (28th November 2019, Cookstown, UK)

A member of the REAMIT Ulster University team attended a knowledge transfer network on transforming food production. The objectives of this briefing including driving agriculture towards net-zero emissions by using approaches from research and businesses.

NWE Making an Impact! (4-5th December 2019, Tourcoing France)

A member of the Ulster University REAMIT team attended this event along with members of the wider REAMIT team. A stand was set-up to present details on the different trials occurring within the REAMIT team, including the a poster presenting the Dunbia/Ulster University trial. The main idea behind this event was to help similar NWE projects network and share ideas and experiences.

The members of the REAMIT team connected with several other projects including Food Heroes and Fabulous Farmers.

HerdInsights (2nd February 2020, Webcall)

Members of the REAMIT team connected with a company called HerdInsights to learn more about their technology solutions. HerdInsights provide a collar based recognition system which can detect certain gestures that cattle perform.

The Ulster team were interested in making this connection as it could potentially be used to solve a food waste problem by detecting stress in cattle and potentially reducing the likelihood of the cattle producing dark-cutter beef.

WD Meats (3rd March 2020, Coleraine, United Kingdom)

In order to gain more knowledge of the problems faced within the supply chain and potentially engage in further trials, members of the Ulster University team met with WD Meats staff for a tour of the facilities and meeting.

The connections made here produced a lot of useful information and the promise of beginning two trials in the near future.

Parliament for COVID-19 Webinar (28th April 2020, Webinar)

A member of the Ulster team attended a webinar on the COVID-19 where insights on the COVID-19 crisis were provided from a government perspective.

c) Events attended by multiple REAMIT partners

NWE Making an Impact! (4-5th December 2019, Tourcoing France)
Attended by REAMIT team

In Dec 2019, NTU attended the NWE IMPACT event, hosted by Interreg North West Europe, held at La Chaufferie in Tourcoing, France. This event was attended by 4 of our REAMIT partners, including Katarzyna Pelc (Project Manager) of lead partner, University of Bedfordshire (UK), Sasha Bennett of Nottingham Trent University (UK), Marcel Steegh of Whysor (Netherlands) and William Duffy of Ulster University (Northern Ireland).

This was a very large and well attended event by 83 Interreg NWE projects from across North West Europe. Each project will fit into 1 of 3 thematic priorities: Low Carbon, Innovation & Resource and Materials efficiency. REAMIT was set up in the exhibition space alongside QCAP, FABulous Farmers and FoodHeroes, as our projects all fit into the Resource & Materials efficiency category.

Participants who visited our REAMIT stand were very interested in Raman Spectroscopy and the idea of having an APP connecting all crucial links in food supply chains necessary for quick decision making and redirecting food. There was one expression of interest in collaboration with REAMIT partner responsible for Raman Spectroscopy research. We have exchanged business cards and the guest took a photograph of the poster from University of Nantes .

We believe there is potential for REAMIT to initiate building some kind of exchange platform (also on smaller scale within NEW region), where approved Interreg NEW projects meet and exchange and brainstorm about future/working together in the future. Often people from Interreg projects don't know what other projects across NEW region do. The outlook for the future post 2020 programming period: key words mentioned were clustering and working closer with other projects/programmes addressing the same themes.

Agri-Tech start-up services (21 April 2020 Webinar)

Attended by Ramanathan, Yanqing, Tahmina, Usha (REAMIT team)

Four companies presented their technology solution for Agri-food production, distribution and quality assurance.

AGNEXT suggested Computer vision as trade parameter, Spectral Analytics for safety, IoT for overall technology implementation.

AgTrace Solinftec suggested blockchain solutions and Internet of Things for improved traceability.

Arugga AI Farming company in collaboration with Israel companies developed advanced technology to avoid spreading of viruses among plants. Fixing cameras in agri-farms have been discussed as one of the options.

Augmenta has redefined Agriculture through precision farming to improve its efficiency.

Good Food Business – building resilience by adapting to Covid-19 (7th May 2020, Online webinar)

This online webinar was attended by Sasha Bennett of Nottingham Trent University and Katarzyna Pelc of the University of Bedfordshire. This online webinar was hosted by Sustainable Food Places, Food Coops and London Food Link networks, which are all relevant networks for REAMIT. This event looked at how 'ordinary' food supply chains have been turned on their heads over the past weeks during the COVID-19 pandemic. So many small enterprises have had to change tack to adapt to a changing market.

This webinar was able to show case several food organisations who have responded quickly to the changing environment and new consumers, where speakers talked about how they have adapted to the changing food environment, what has and hasn't gone well and what practicalities enabled the shift in models (online platforms, delivery services, payment systems, etc.)

It was excellent to hear from food businesses who have adapted their operations to cope with changing supply and demand including some of the online platforms that have been helping them on the way.

Speakers included Growing Communities, Open Food Network, Awesome Wales Zero Waste Shop and Elysia Catering who we had previously met at the

Fast Forward 2030 Food waste event in February, so it was excellent to see how they have developed and adapted from before the pandemic to now.

FoodwasteFest 2020, Belgium (online event – December 2020)

This online webinar was attended by Sasha Bennett of Nottingham Trent University and Katarzyna Pelc of the University of Bedfordshire. This was a 2 day event hosted by Food Heroes -An Interreg North-west Europe project with a similar focus on reducing food waste. A speaker which we had previously met at the NWE Impact Event in Lille last year was also one of the keynote speakers for this event. This was Marjon Krol from ZLTO and Project Manager of Food heroes, discussing the great efforts in reducing food waste through their project, sharing their achievements over the year. We also heard from the CEO of Toast ale, a brewery using surplus bread to create sustainable beer. This was a very inspiring two day event which opened much room for discussion in how we can collectively work harder in the efforts of food waste reduction. Further details are available in the REAMIT webpage:
https://www.reamit.eu/newsandblogs