ENOUGH

EUROPEAN FOOD CHAIN SUPPLY TO REDUCE GHG EMISSIONS BY 2050

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PROJECT COORDINATOR	SINTEF OCEAN
PROJECT DURATION	2021-2025

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Practice abstract on synergy exploitation with other projects

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EXECUTIVE SUMMARY

This report gives an overview of the work of WP11 (Cooperation with the European Commission) regarding practice abstracts of the ENOUGH project. The objective of this task is to share the main project results of ongoing experiments to EU. To ensure this, resulting knowledge from the project will be fed into the EIP-AGRI (The Agricultural European Innovation Partnership) for dissemination to practitioners in several rounds.

This report provides the outcome of the practice abstracts published in the ENOUGH project, including the third one on **synergy exploitation with other projects** submitted to the EU Common Agricultural Policy (CAP) Network using the EIP-AGRI common format.

Deliverable 11.2

1 INTRODUTION

This document provides the practice abstracts published in the ENOUGH project, including the newest one on synergy exploitation with other projects, published through the EIP-AGRI common format. The report is a deliverable (D11.2, Practice abstract on synergy exploitation with other projects) in Work Package 11 (Cooperation with the European Commission), task 11.2 (Practice abstracts).

2 PRACTICE ABSTRACTS

2.1 EIP-AGRI and EU CAP Network

The European Innovation Partnership for Agricultural productivity and Sustainability (EIP-AGRI) was a partnership launched by the European Commission to promote innovative projects in the agricultural sector and provide a closer relationship between research and practice. The EIP-AGRI Network became a part of the EU Common Agricultural Policy (CAP) Network in 2023. The EU CAP Network is about optimising the flow of information about agriculture and rural policy within the EU.

The EIP-AGRI common format was one of the actions of the EIP-AGRI, enabling sharing knowledge, solutions and research results in a standarised way to make it available and more easily to be put into practice ("practice abstracts"). Earlier this was done through the EIP-AGRI website, but this action is now moved to the EU CAP network website. It still follows the EIP-AGRI common format consisting of:

1) Obligatory elements
    - Project information (title, period, budget, etc.)
    - Objective of the project: what problems/opportunities does the project address that are relevant for the practitioner/end-user, and how will they be solved? (300-600 characters, word count – no spaces)
    - **Practice abstract (short summary for practitioners)**. The core of the submission. Summary on the (final or expected) outcomes (1000-1500 characters, word count – no spaces). The summary should contain information about (1) the main results/outcomes

of the activity (expected or final), and (2) the main practical recommendation(s) (how to make use of the results, and what is the main added value to the end-user if making use of them). The text should be interesting, using a clear and easy language, underlining elements of particular relevance for the practitioners.

2) Recommended elements
   - **Description of project activities** (max. 600 characters, word count – no spaces)
   - Audiovisual material (e.g. videos)
   - Project website: https://enough-emissions.eu/publications-2/#1645630534877-2-8
   - Link to other informative websites
3) Optional elements
   - Additional field for the practice abstract: short summary according to the guidance in the text box above (max. 1500 characters, word count – no spaces)
   - Description of the context of the project
   - Additional information (if required by specific guidance at national/regional level
   - Additional comments

The website of EIP-AGRI is no longer updated after 1 April 2023, but remains available in a static form as a reference of all previous EIP-AGRI activities. All the new and up-to-date information is now found on the EU CAP Network website.

2.2 Administrating the practice abstracts

Practice abstracts are submittet through an Excel file. Gidelines for the submission are available through the websites of EIP-AGRI. The submitted texts are provided below. One of the obligatory elements to fill out in the Excel sheet is the list of partners with including contact person and email address/phone. After dialogue with the Project Officer, it was decided to keep the personal data of the partner contacts out of the submission for the first round of abstracts.

The Excel file was sent to AGRI-EIP-PRACTICE-ABSTRACT@ec.europa.eu with Project officer and Policy officer on copy. The same Excel file will be updated and used for future submissions.

2.3 Project details

2.3.1 Objective of the project

The following text was sent in as the ENOUGH objectives in the first rounds of abstracts:

The ENOUGH project will provide technologies, tools and methods to contribute to the EU Farm to Fork strategy to achieve climate neutral food businesses. The ENOUGH objectives are: 1) Reducing greenhouse gas (GHG) emissions by at least 50% by 2050; 2) Reducing energy use and increasing energy efficiency; 3) Increasing the overall sustainability of food systems; 4) Providing selected innovative technological solutions and their potential for uptake at EU.

After updated objectives in Amendment, the following text was added in the abstracts for 2025:

The ENOUGH project will provide technologies, tools and methods to contribute to the EU Farm to Fork strategy to achieve climate neutral food businesses. The project will identify how the food industry can 1) Reduce GHG-emissions by at least 55% by 2030 compared with 1990 levels. 2) Achieve climate neutrality for food businesses by reducing energy use and increasing energy efficiency by 2050. 3) Improve the overall integrated sustainability of food systems whilst at the same time meeting societal goals. 4) Increase awareness among stakeholders and citizens of selected innovative systemic solutions and their potential for uptake at EU scale.

2.3.2 Project activities

Project activities are not obligatory, but recommended. Due to the wide variety of activities in the ENOUGH project, it was chosen to fill out a short text about project activities:

For the first time emissions from food production, processing and packaging, transportation, storage, retail display, catering and home consumption will be assessed as separate groups to identify where the greatest potential for emissions reduction and mitigation action can be applied. Strategic maps, digital tools and smart data will be developed and used to explore possible solutions. At the core of the ENOUGH project is the demonstration of technologies to reduce emissions. Their potential will be qualified and quantified in real life situations, and the most promising technologies will be widely communicated to the food industry.

2.4 First practice abstract: About the ENOUGH project

Food systems are globally responsible for around a third of total greenhouse gas (GHG) emissions. These numbers are poorly quantified and lack detail for specific sectors and food groups. The food industry has made significant efforts to reduce emissions already with simple optimisation procedures and changes, so further reduction will require advanced technology.

The ENOUGH project (enough-emissions.eu) brings research, universities and industry together to tackle these challenges. We will generate new information on emissions from the food chain, develop strategic road maps (technical, political and financial), develop digital tools and smart data analysis methods to quantify and benchmark energy use and emissions in the food chain.

Promising decarbonisation technologies in real food industry environment will be demonstrated to provide European food companies tools and quantified information on the benefits and financial paybacks of low emission technologies. The technologies will be tested with regards to identified key products (meat, fish, dairy and fruit and vegetables) and opportunities for cross sector applicability. The focus will be thermal processes as the key products are perishable and require thermal processes throughout their life. Some key technologies are high temperature heat pumps (HTHPs) working with natural refrigerants and processes related to energy efficiency of cooling, freezing, heating and storage of food. Several demonstrations are also planned to generate hot water and steam in real life situations. Another important sector identified is transport, including for example home delivery. The outputs will be widely communicated to relevant food companies, policy makers and interested groups.

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Practice Abstract 1
2023

Practice Abstract 1

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Figure 1 Practice Abstract 1

2.5 Second practice abstract: Mapping the GHG emissions of the European food supply chain

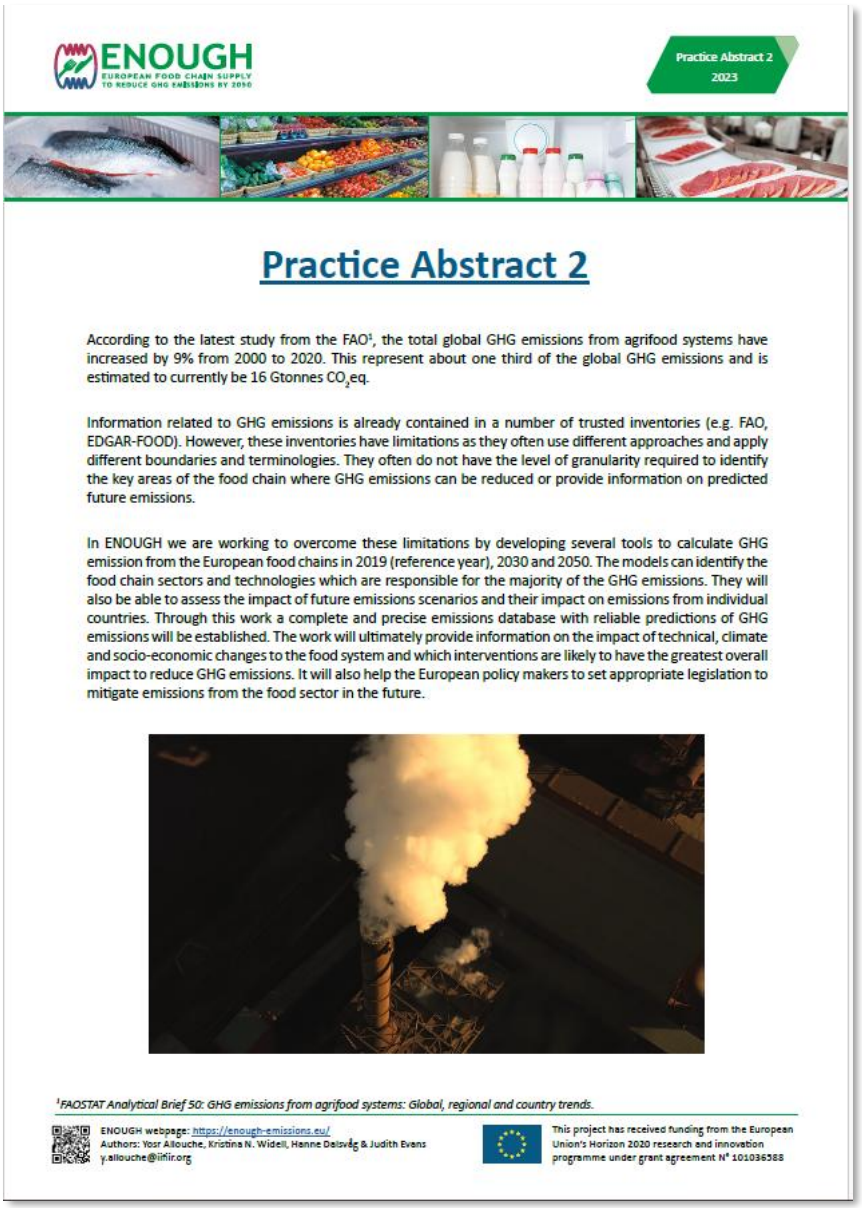
According to the latest study from the FAO[1], the total global GHG emissions from agrifood systems have increased by 9% from 2000 to 2020. This represent about one third of the global GHG emissions and is estimated to currently be 16 Gtonnes CO2eq.

Information related to GHG emissions is already contained in a number of trusted inventories (e.g. FAO, EDGAR-FOOD). However, these inventories have limitations as they often use different

[1] FAOSTAT Analytical Brief 50: GHG emissions from agrifood systems: Global, regional and country trends.

approaches and apply different boundaries and terminologies. They often do not have the level of granularity required to identify the key areas of the food chain where GHG emissions can be reduced or provide information on predicted future emissions.

In ENOUGH we are working to overcome these limitations by developing several tools to calculate GHG emission from the European food chains in 2019 (reference year), 2030 and 2050. The models can identify the food chain sectors and technologies which are responsible for the majority of the GHG emissions. They will also be able to assess the impact of future emissions scenarios and their impact on emissions from individual countries. Through this work a complete and precise emissions database with reliable predictions of GHG emissions will be established. The work will ultimately provide information on the impact of technical, climate and socio-economic changes to the food system and which interventions are likely to have the greatest overall impact to reduce GHG emissions. It will also help the European policy makers to set appropriate legislation to mitigate emissions from the food sector in the future.



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Practice Abstract 2
2023

Practice Abstract 2

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ENOUGH webpage: https://enough-emissions.eu/
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Figure 2 Practice Abstract 2

2.6 Third practice abstract: Synergy exploitation with other projects

Collaboration with other project is essential to foster synergies, increase outreach and access expertise and results. In the ENOUGH project, synergy exploitation with other project has been reached in several ways.

*The **green deal support office (GDSO)** was established to assist projects funded within the green deal (GD) with collaboration and links to other relevant programmes. They have divided the projects into groups for the different sectors, and ENOUGH belongs to the **food working group (WG)** together with 8 other projects; Ago2Circular, EcoeFISHent, NeoGiANT, SchoolFood4Change, ClieNFarms, PestNu, ZeroW, SISTERS. Together we cover the whole food value chain.*

The food working group is organised with an action plan, and the main areas of collaboration are 1) policy, 2) dissemination of results, 3) events, and 4) technical, operational and research cooperation. The working group has published Joint policy recommendations, created a common plan for dissemination and communication, done stakeholder mapping and mapping of events to look for possibilities to organise joint events. ENOUGH has also used the GDSO platform to publish two success stories from the project.

In addition to GDSO initiatives, ENOUGH have identified key topics within the project that overlap with other initiatives (including controlling storage conditions for fruits, vegetables, and other food products; climate-neutral packaging; fresh and sustainable food transport; thermal energy storage; and reducing food loss and waste). Projects of the food working group and other relevant projects identified have been invited to ENOUGH events like demonstrator workshop (September 2024), retail workshop (May 2025), and a policy event (June 2025).

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Practice abstract 3
2025

Practice abstract 3

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Figure 3 Practice abstract 3

3 CONCLUSIONS AND FURTHER STEPS

At least three practice abstracts were foreseen in the ENOUGH project. A final practice abstract will be published at the end of the project (September 2025). In addition to the practice abstracts, several factsheets have been published on the ENOUGH webpage. All partners are invited to prepare factsheets with information about our project activities, results, and other relevant information. These factsheets have its own ENOUGH template. The practice abstracts will also be made into factsheets, so they can be found in the ENOUGH webpage (see Figure 4) in addition to the CAP Network platform.

Figure 4 List of factsheets and practice abstracts on the ENOUGH website

enough-emissions.eu

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