



AGRI RESEARCH FACTSHEET WATER, NUTRIENTS AND WASTE

Why do research and innovation on water, nutrients and waste matter?

Agriculture and forestry heavily depend on the availability and quality of natural resources such as land, nutrients or water. At the same time primary production impacts directly and indirectly on the integrity of these resources and contributes to their depletion. Natural resources are under further pressure from increased environmental variations linked to climate change, to which agriculture in particular is also contributing. The European Commission communication 'Closing the loop – An EU action plan for the Circular Economy' lays the

foundations of an economy where the value of resources is maintained for as long as possible, and the generation of waste is minimised. In agriculture, this translates mainly in the recycling of nutrients, the reuse of treated wastewater, or the valorisation of waste in the context of the bioeconomy. Research and innovation have a key role to play in enabling developing solutions that will help strike a proper balance between productivity and environmental goals in agriculture and forestry.

Water, nutrients and waste under Horizon 2020 Societal challenge 2



26

Projects or expected grants



182 M€

EU contribution 2014-2020



284

Participations in selected projects

Key themes

Water management – nutrient recycling
– fertigation – waste valorisation –
bioeconomy



Water, nutrients and waste under EIP-AGRI activities

Focus groups: “Circular horticulture”, “Nutrient recycling”, “Water and agriculture”, “Renewable energy on the farm”

bit.ly/2tPxcLj

Workshops: “Connecting innovative projects: Water & Agriculture”, “Opportunities for Agriculture and Forestry in the Circular Economy”

bit.ly/2GJ4l2u

Operational Groups: many deal with water (e.g. “Saving water in rice cultivation through the introduction of innovative agronomic techniques”, Catalunya), nutrients (e.g. “Nutrient Management in Grasslands”, Schleswig-Holstein) or agricultural waste (e.g. “Vegetable wastes: energetic and reuse opportunities”, Emilia-Romagna).

bit.ly/2J5826i

SC2 collaborative projects - Water, nutrients and waste

FERTINNOWA

www.fertinnowa.com

Total cost: 3 M€

EC contribution: 3 M€

Coordinator: Proefstation Voor De Groenteteelt

Jan. 2016 – Dec. 2018

FERTINNOWA addresses fertigation of horticultural crops. It aims at creating a database and best practice guide of innovative technologies and practices, to build a knowledge exchange platform, and to ensure wide dissemination to all stakeholders involved of the most promising technologies and best practices. A multi-actor approach will be followed involving the relevant stakeholders.

FATIMA

fatima-h2020.eu

Total cost: 8 M€

EC contribution: 8 M€

Coordinator: Universidad de Castilla – La Mancha

Mar. 2015 – Feb. 2018

FATIMA has developed capacities that help the intensive farm sector optimize their external input (nutrients, water) management and use. FATIMA addresses and works with user communities at different geographical scales, providing them with tools and information for sustainable crop management.

AGRIFORVALOR

www.agriforvalor.eu

Total cost: 2 M€

EC contribution: 2 M€

Coordinator: Steinbeis Zi GmbH

Mar 2016 – Aug. 2018

AGRIFORVALOR aims at closing the research and innovation divide by connecting practitioners from agriculture and forestry with academia, associations and clusters, bio - industry, policy makers, innovation agencies, technology transfer intermediaries, etc., in multi-actor innovation partnership networks, to valorise and exploit side stream biomass resources from agriculture and forestry.

AGROCYCLE

www.agrocycle.eu

Total cost: 7.7 M€

EC contribution: 7 M€

Coordinator: University College Dublin

Jun. 2016 – May 2019

AGROCYCLE takes a holistic approach to understanding and addressing the operational efficiency and how to make best use of the full range of waste streams associated with the agri-food industry along the full value chain. The consortium comprises 26 partners from EU, China and Hong Kong. It will deliver a protocol for reducing food waste according to EU political targets, and to address increasing sustainability requirements in China.

NoAW

www.noaw2020.eu

Total cost: 7.8 M€

EC contribution: 6.9 M€

Coordinator: INRA

Oct. 2016 – Sep. 2020

NoAW deals with innovative approaches to turn agricultural waste into an asset, in a circular economy approach, on a territorial and seasonal scale. For this purpose, NoAW intends to explore the potential of agro-waste and urban waste to be converted into a portfolio of eco-efficient products. The consortium comprises 26 partners from EU, China, Taiwan and Hong Kong.

SolACEwww.solace-eu.net

Total cost: 7.2 M€

EC contribution: 6 M€

Coordinator: INRA

May 2017 to Apr. 2022

SolACE aims to help European agriculture face the challenge of more frequent combined limitations of water and nutrients in the coming decades, through the design of novel crop genotypes and agroecosystem management innovations to improve water and nutrient use efficiency.

FAIRWAYwww.fairway-project.eu

Total cost: 5 M€

EC contribution: 5 M€

Coordinator: Wageningen Research

Jun. 2017 – May 2021

FAIRWAY aims to review policy, governance and farm management approaches to protect drinking water resources in the EU against nitrate and pesticides pollution, and to identify and further develop approaches for a more effective drinking water protection. FAIRWAY uses a multi-actor approach to facilitate effective cooperation between actors of different sectors and levels.

TomResbit.ly/2lbtR9

Total cost: 6 M€

EC contribution: 6 M€

Coordinator: U di Torino

Jun. 2017 to Nov. 2020

TOMRES will select tomato rootstocks and scions tolerating combined stress, while retaining fruit quality and yield, taking advantage of innovative screening approaches. It will test and optimize sustainable crop management strategies and the use of rootstocks more suited to water and nutrient uptake from the soil.

WATERPROTECTwater-protect.eu

Total cost: 5 M€

EC contribution: 5 M€

Coordinator: Vlaamse Instelling voor Technologisch Onderzoek

Jun. 2017 – May 2020

WATERPROTECT aims at the uptake and realisation of management practices and mitigation measures to protect drinking water resources. It will create an integrative multi-actor participatory framework including innovative instruments enabling actors to monitor, finance and implement management practices and measures for the protection of water sources.

Other interesting activities under other Horizon 2020

The **Bio-Based Industries Joint Undertaking** (BBI JU), a public-private partnership co-financed by Horizon 2020, supports many projects related to water, nutrient recycling or agricultural waste valorisation such as:

- **AGRIMAX**: agriculture and food waste valorisation co-ops (agrimax-project.eu, EC contribution: 12.5M€)
- **NEWFERT**: nutrient recovery from bio-based waste for fertilizer production (www.newfert.org, EC contribution: 1.2M€)
- **FUNGUSCHAIN**: Valorisation of mushroom agrowastes to obtain high value products (funguschain.eu, EC contribution: 5.7M€)

Marie Skłodowska-Curie Actions provide fellowships for individual researchers, innovative training networks and research and innovation staff exchange, some of which are directly related to water, nutrients and/or waste such as RURECO 'Institutions for Resilient Groundwater Dependent Rural Economies' (bit.ly/2E81W1o - EC contribution: 0.2 M€).

Many projects have also been funded selected the call for projects dedicated to water from Societal challenge Climate action and environment. An example is the ERA-NET '**WaterWorks 2015**' which supports the **Joint Programming initiative on Water** and focuses on sustainable water use in agriculture (Jan. 2016 to Dec. 2020 – Total costs: 30.4 M€ - EC contribution: 9.5 M€).

More information on JPI Water: www.waterjpi.eu

In the pipeline – 7 projects to start under 2017 and 2018 SC2 calls (49,5 M€)

Closing loops at farm and regional levels to mitigate GHG emissions and environmental contamination, focus on carbon, nitrogen and phosphorus cycling	(2 projects, 14 M€)
Management of soil water resources in the EU and China	(1 projects, 2,5 M€)
Climate-smart and resilient farming. A. Micro-climate management	(1 project, 7M€)
Integrated system innovation in valorising urban biowaste	(2 projects, 20 M€)
Closing nutrient cycles (scope A)	(1 project, 6 M€)

Funding opportunities - Open SC2 calls for 2019 (47 M€) - 2020

SFS-23-2019: Integrated water management in small agricultural catchments	(2 projects, 14 M€)
CE-RUR-08-2018-2019-2020: Closing nutrient cycles	
B. (2019) Bio-based fertilisers from animal manure	(1 project, 8M€)
C. (2020) Bio-based fertilisers from other by-products of the agro-food, fisheries, aquaculture or forestry sectors	
CE-RUR-10-2019: Circular bio-based business models for rural communities	(2 projects, 20 M€)
CE-SFS-39-2019: High-quality organic fertilisers from biogas digestate	(1 project, 5 M€)
CE-SFS-36-2020 - Diversifying farmers' income through small bio-based concepts	

Agriculture and sustainable water management in the EU

In its staff working document 'Agriculture and Sustainable Water Management in the EU' (bit.ly/2J7wVyD), adopted in April 2017, the European Commission recognises '*the sustainable management of water and other precious natural resources as one of the defining challenges of our time*'. It further says: '*Water is a vital resource in the EU, not only for agriculture but for human health, energy production, nature conservation, and transport, to name but a few policy areas. The multiple benefits that agriculture provides to society depend on the long term sustainable management of natural resources, including water. However a number of current pressures are affecting the quantity and quality of our water supply, affecting its current and future sustainability.*'

The document further highlight the vital role that research and innovation plays in enhancing sustainable water management in the agricultural sector, highlighting the contribution of European research and innovation programmes. It recommends setting up knowledge and information support systems which allow the seamless sharing of data among public administrations and policy makers. It also recommends providing user-friendly and effective decision-support tools to farmers and water stakeholders. Significant added value could be provided by European Innovation Partnerships working in synergy.

European Innovation Partnership on Water:
www.eip-water.eu

