

The scope of the call covers **Sustainable management of water resources in agriculture, forestry and freshwater aquaculture sectors by:**

Challenge-1) Increasing the efficiency and resilience of water uses;

Challenge-2) Monitoring and reducing soil and water pollution;

Challenge-3) Integrating social and economic dimensions into the sustainable management and governance of water resources

Proposals have to cover at least one of the subtopics described below:

Challenge-1) Increasing the efficiency and resilience of water uses

Sub-topic-1.a. Efficiency issues including the development of:

- Innovative water use systems and practices, including precision irrigation technologies (e.g. models, sensors, ICT);
- Water-efficient and/or drought-tolerant and/or salinity-tolerant crops and forestry species/varieties, including an analysis of the effects of such crops and species on the environments;
- Water reuse and water recycling technologies in the agriculture and aquaculture sectors;
- Optimisation of the Water – Energy nexus in these sectors (e.g. improving energy efficiency)

Sub-topic-1.b. Resilience to climatic variability includes:

- i. Development of water-conserving farming and forestry practices as a way to improve the management of water and to improve soil properties related to water;
- ii. Increasing the resilience of farming and forestry systems and landscape management in a context of highly variability of water availability due to climate trends, climate variability and extreme events (floods and droughts);
- iii. Implementation of innovative technologies for the monitoring of surface and groundwater bodies for effective integrated water management (including water abstraction) in agricultural and forestry sectors;

Challenge-2) Monitoring and reducing soil and water pollution

Sub-topic-2.a. Optimising fertiliser application to reduce over fertilisation to better accommodate crop requirements while avoiding nitrogen and phosphorus losses to surface water and groundwater;

Sub-topic-2.b. Assessment and development of monitoring schemes and indicators, for agricultural catchments to identify, quantify and minimize pollution sources and to reduce impacts on drinking water quality, caused by agrochemicals, mineral fertilizers, crops residues, manure and digestates;

Sub-topic-2.c. Modelling and assessing the nitrate and phosphorus loads from agriculture, forestry and aquaculture sectors to avoid risks of eutrophication of rivers and lakes, and propose management approaches for reducing impacts on ecosystem biodiversity and economic sectors;

Sub-topic-2.d. Understanding and decreasing the combined environmental risks from agriculture, forestry and aquaculture to human health (environmental exposure from water uses and food).

Challenge-3) Integrating social and economic dimensions into the sustainable management and governance of water resources

Sub-topic-3.a. In the context of increased risks (droughts and floods) and competition for water uses, development of new approaches and models for integrated management and governance of land, soil and water targeting the optimum use of resources (water quantity and quality issues at catchment or river basin scales);

Sub-topic-3.b. Set-up of water-valuing schemes based upon the establishment of new criteria for water valuation in agriculture, forestry or freshwater fisheries and the estimation of associated costs with a sustainability perspective including social, economic and ecological pillars;

Sub-topic-3.c. Developing participatory approaches and assessing barriers (social, cultural, psychological and economic barriers) at catchment level for better implementation of policies and uptake of existing and breakthrough knowledge (e.g. ICT technologies).