Brussels, 27 May 2022

COST 072/22

DECISION

Subject: Memorandum of Understanding for the implementation of the COST Action “Enhancing Small-Medium IsLands resilience by securing the sustainability of Ecosystem Services” (SMILES) CA21158

The COST Member Countries will find attached the Memorandum of Understanding for the COST Action Enhancing Small-Medium IsLands resilience by securing the sustainability of Ecosystem Services approved by the Committee of Senior Officials through written procedure on 27 May 2022.

MEMORANDUM OF UNDERSTANDING

For the implementation of a COST Action designated as

COST Action CA21158
ENHANCING SMALL-MEDIUM ISLANDS RESILIENCE BY SECURING THE SUSTAINABILITY OF ECOSYSTEM SERVICES (SMILES)

The COST Members through the present Memorandum of Understanding (MoU) wish to undertake joint activities of mutual interest and declare their common intention to participate in the COST Action, referred to above and described in the Technical Annex of this MoU.

The Action will be carried out in accordance with the set of COST Implementation Rules approved by the Committee of Senior Officials (CSO), or any document amending or replacing them.

The main aim and objective of the Action is to CHALLENGE 1: Integrated assessments of island-related ecosystem services remain scarce
CHALLENGE 2: local specificities and needs are ignored on policy objectives. CHALLENGE 3: islands face the development or sustainability dilemma - the need of Nature-based Solutions.. This will be achieved through the specific objectives detailed in the Technical Annex.

The present MoU enters into force on the date of the approval of the COST Action by the CSO.

OVERVIEW

Summary
European islands are hotspots of biological and cultural diversity, which, compared to mainland, are more vulnerable to climate change, tourism development, uncontrolled land use changes and financial crisis. These factors have increasingly resulted in severe impacts on socio-economic and environmental services. Projected climate and land use change will impact on islands' biodiversity but also on ecosystem services and in turn on the quality of life of island inhabitants. Even if the existing techniques can adequately predict climate-induced ecological changes of the larger islands, this is not the case for small and medium size islands where there is a need for refinement.

Although ecosystem services (ES) assessments have been carried out worldwide in different geographical areas, islands are still underrepresented. Despite the islands's importance and vulnerability, efforts to date have focused solely on the pressures they face. Still we know little about ES supplies, flows and demands and their spatio-temporal variability, whilst integrated approaches that consider ES cross island realms (terrestrial, marine and their interface) remain scarce. Moreover, the current conceptual approaches guiding ES mapping and assessment need further refinement to account for the complex manifestations of nature and culture arising from peoples' interaction with island spaces.

The aim of this action is to provide a platform for coordinated interdisciplinary research on several aspects of mapping and assessment of ES in small and medium European Islands in order to synthesize and strengthen the knowledge base for conservation of island realms and contribute to their sustainable development.

Areas of Expertise Relevant for the Action	**Keywords**
● Earth and related Environmental sciences: Terrestrial ecology, land cover change ● Agriculture, Forestry, and Fisheries: Conservation biology, ecology, genetics ● Social and economic geography: Spatial development, land use, regional planning	● islands ● ecosystem services ● resilience ● landscapes ● seascapes

Specific Objectives
To achieve the main objective described in this MoU, the following specific objectives shall be accomplished:

Research Coordination
● Synthesise current knowledge of the role of islands as ES suppliers
● Convey and share knowledge among scientists, policy makers and stakeholders
● Develop an integrated framework to support the holistic assessment of ecosystem services in islands
● Support Science-Policy-Society (SPS) based best practices
● Employ participatory processes
● Generate proposals with simulated outputs on concrete applications of nature-based solutions

Capacity Building
● The creation of a collaborative network of science and policy experts
● Facilitation of a cross-disciplinary research network that will integrate social and ecological disciplines

- Generating new career opportunities
- Provide training for European researchers
- Provide a platform for collaboration and knowledge exchange
- Provide a platform for collaboration and knowledge exchange

TECHNICAL ANNEX

1. S&T EXCELLENCE

1.1. SOUNDNESS OF THE CHALLENGE

1.1.1. DESCRIPTION OF THE STATE OF THE ART

European islands are hotspots of biological and cultural diversity, which, compared to their mainland counterparts, are more vulnerable to climate change, intense human activities, uncontrolled land use changes and financial crisis (Balzan et al. 2018; IPCC 2019). Beyond Europe, the United Nations since 1992, acknowledged the social, economic and environmental vulnerabilities of all small islands (OHRLLS - UN, 2018) and also the fact that they might face the consequences of the constantly emerging changes 'with a limited coping capacity" (World Bank, 2017). These factors have increasingly resulted in severe impacts on social, economic, and environmental services and in turn on sustainability. Island regions i.e. those entirely made up of islands, are recognised as NUTS3 regions by EUROSTAT on the basis of surface, distance from mainland and population size. Small islands in particular (those with an area < 10,000 km^2 and < 500,000 inhabitants), but even medium sized sparsely populated ones, experience greater difficulty in achieving a comparable level of development and standard of living when compared to the European mainland (EESC, 2003). Article 174 of the European Treaty has recognized that many of the European islands are suffering from structural handicaps, leading to limited economic activity due to their small size, population reduction and landscape degradation. Despite their importance and vulnerability, the biodiversity and ecosystem services management in islands is challenging for both the administrators, usually a mainland state, and the islanders themselves (Mercer et al., 2012). The range of contributions delivered to human societies by nature so-called "ecosystem services" (ES) have received increased attention during the last 15 years (MEA 2005; TEEB 2007; Haines-Young & Potschin 2018; Maes et al. 2014; IPBES- Diaz et al. 2015). Worldwide islands greatly depend on ES supplied by their land (e.g. freshwater provisioning, pollination) or the surrounding marine and coastal areas (e.g. food provision through fisheries) and supply important services that benefit society beyond their boundaries (e.g. lifecycle maintenance, recreation and tourism) (MEA 2005). Small physical size, limited natural resources i.e. freshwater, relative isolation and openness of their economies (highly sensitive to external shocks), limit the capacity of small island to supply the required goods and services and meet domestic and external needs, thus the islands become dependent on imports and exports. Space constraint, impacts not just agricultural production but also housing, infrastructure, waste disposal, industrial development, and ultimately biodiversity conservation. Although the presence of resources on islands is constrained by their physical setting, the use of these resources is influenced mainly by political decision-making. Therefore, it becomes increasingly important for islands to be aware of their natural capital and how it may be threatened by changes due to internal or external biophysical and socio-economic drivers. For decision-makers and islanders alike, tourism is often seen as the core activity capable of reviving and sustaining local economies (Dorta Antequera et al., 2021; Singh et al. 2021). This also appears to be reflected in the scientific literature (Mazzola et al 2019) where most studies on island ecosystems and their services have focused on the management of island tourism or the environmental impacts of mass tourism and other human activities (Balzan et al. 2018) with limited attention to other ecosystem services. However, the sophistication of tourists' demands increases and access is required to non-material characteristics of the environment i.e. nature, archaeology, good

water quality, fresh food and aesthetic environments, so called cultural ES (CICES). Therefore, nature and/or cultural conservation is not an impediment to tourism development (Baldacchino 2015) but a means to promote an island's identity to visitors. In addition, new technologies are opening up new possibilities and solutions for more sustainable lifestyles and land and sea management. This may result in improved preservation of environmental quality under proper planning and active management for which a prerequisite is the assessment of ES provided by islands to put an end to the dilemma faced by the communities, i.e. tourism or abandonment. The recent crises, such as the COVID-19 pandemic, extreme events like fires in Mediterranean islands, or volcanic eruptions in the Canary Islands in Spain, showcased once more, the high social, economic, and especially environmental vulnerabilities facing these regions. The ongoing environmental change has revealed the fragility of all social-ecological assets of these regions related to food security, education, diversity, health and digital infrastructure (Veron et al. 2019). On the other hand, the contribution of the island territories to the countries they are part of, is important through the provision of ecosystem services such as recreation and tourism, renewable energy, fisheries, agriculture and raw materials, contributing substantially to the gross domestic product i.e. an island is a resource itself for a mainland state which needs to be safeguarded as such.

A commonly accepted framework of ES assessment is now at hand for Europe (CICES), which may underpin economic, social and biophysical valuation of the Ecosystem Services provided by **Small and Medium IsLandS** (SMILES). But if a case is to be made for those islands, the drivers which affect ES provision should be addressed, since their demise might be closer than their assessment. Two of the most important drivers are land use and climate changes. On one hand islands are faced with new demands on land or sea (e.g. from energy or tourism) and on the other hand abandonment which often leads to a polarisation effect in land uses i.e. tourism/urbanisation vs rewilding (Tzanopoulos and Vogiatzakis 2011; Garcia-Nieto et al. 2018). At the same time climate, change impacts on islands will be disproportionate to their size and their “contribution” to CO_2 emissions, as has been documented in various global scale assessments (MEA 2005, IPPC 2019). Extreme weather events such as Medicanes (Mediterranean tropical-like cyclones), flooding and the increase in wildfires which have been intensified the past five years will undoubtedly affect islanders and the use of resources, calling for an increased effort to increase island community resilience. Already the documented shift in populations due to rural push and urban pull factors, results in island abandonment since traditional jobs such as those linked with agriculture are eschewed and in turn loss of associated cultural practices, a key to the maintenance of many species and habitats of conservation importance. Thus, there is a documented need towards a better balanced national and regional development, which recognizes the value of insular geographical areas and strengthens their economic, social and territorial cohesion (ESPON BRIDGES 2019).

1.1.2. DESCRIPTION OF THE CHALLENGE (MAIN AIM)

CHALLENGE 1: **Integrated assessments of island-related ecosystem services remain scarce**
Although ES assessments have been carried out worldwide in different geographical areas, islands are still underrepresented (Aretano et al., 2013). Even if the existing methods can adequately predict climate-induced ecological changes to the ecology of the larger islands, this is not the case for the majority of small and medium size islands where **refinement and standardization of the existing techniques and datasets is necessary** (Vogiatzakis et al. 2016). Despite the recognized island importance and vulnerability, research on the ES identification and supply in islands remains limited. To date scientific research has mainly focused on ecological pressures island ecosystems are facing (e.g. Medail 2017) or their ecological and social vulnerability (e.g, Veron et al 2019) but concrete and documented information on the benefits supplied, flowing or demanded by islands as well as their

spatial and temporal variability is still very scarce (Balzan et al. 2018**). Integrated approaches that consider the wide range of island-related terrestrial, freshwater, coastal and marine ecosystem services remain scarce** (Vogiatzakis et al. 2020a).

CHALLENGE 2: **local specificities and needs are ignored on policy objectives.** Another challenge faced by islands is that **their natural resources are managed to a large extent, based on policy objectives that are designed nationally, regionally or even globally, often ignoring local specificities and needs.** European islands need to also report on policy objectives related to European Directives such as the Water Framework Directive, the Marine Strategy Framework Directive, or the Habitats and Birds Directive. At the same time, they need to address global Sustainable Development Goals (SDGs), or most importantly local priorities, which in most cases are vital for the well-being of island systems. Achieving all of those simultaneously is challenging, as it requires that conceptual and methodological approaches guiding e.g., Mapping and Assessment of Ecosystem Services (MAES) in Europe, **are adapted locally to include local specificities of nature and culture** arising from peoples' interactions with island spaces. Recent examples from Mediterranean islands (Vogiatzakis et al. 2020b) point to a series of obstacles in carrying out island-based assessments conceptually and methodologically (in terms of data, mapping and stakeholder engagement).

CHALLENGE 3: **development or sustainability dilemma -the need of Nature-based Solutions.** The new EU Green Deal sets priorities for achieving transformative change in societies and nature, towards a more sustainable future. Providing tools but also supporting policies which address resilience in islands is paramount to decision making and requires a sound evidence base on the state of natural resources as well as the ability to predict future changes to these resources. Nature-based Solutions (NbS) can address societal challenges sustainably whilst providing multiple benefits. However, **their uptake in policy and planning in island environments remains limited** (Grace et al., 2021) whilst the perspectives of stakeholders are often lacking from current research on nature-based solutions (Hanson et al., 2019). Recent work has identified greater clarity about the scope of the NbS concept, and the development of knowledge about their effectiveness. The costs and benefits associated with NbS implementation are key priorities to improve their uptake in islands (Grace et al., 2021).

To address those challenges SMILES Action follows a two point- intervention.

1) a **multidisciplinary perspective in understanding** drivers of change, assessing impacts, and designing ways of mitigation, adaptation and management options, through the prism of social-ecological systems and ecosystem services.

2) a **research-policy interface** to better assess the strengths and weaknesses/ vulnerabilities of islands under global change, so as to reassess the vision for islands' future development. This will be achieved through the creation of a network, willing to share knowledge and experience across researchers, decision-makers, civil society organizations and citizens, who will work towards a better understanding of the drivers of change in islands, setting priorities for a more resilient/ sustainable future.

1.2. PROGRESS BEYOND THE STATE OF THE ART

1.2.1. APPROACH TO THE CHALLENGE AND PROGRESS BEYOND THE STATE OF THE ART

SMILES will address gaps in knowledge sharing and promote concerted efforts on small-medium island protection and development, by providing a platform for knowledge transfer and collaboration among scientists, practitioners and citizens living or working on islands across Europe, and also those with expertise that might help disentangle the conundrum faced by management of island biodiversity and ESS. This will be achieved by four main actions:

(1) Establishment of a concrete interdisciplinary network among scientists across Europe and beyond and providing a forum for an open collaborative dialogue with researchers and practitioners on island spaces; Given the importance of small-medium islands and their vulnerability to externalities, they are currently many different aspects, published in outlets/conferences of several distinct disciplines. Efforts are fragmented and sectorial while a common platform for sharing and integrating experiences is lacking. Moreover, there have been few arenas where scientists and practitioners across Europe have had opportunities to meet and interact, and these rarely include a specific focus on peripheral areas or island environments. The amount and diversity of previous work is an opportunity: by creating a **network of academics and practitioners working** with islands across Europe, sharing of knowledge will become more effective, allowing novel methods and good practices to be more widely applicable. Within SMILES we will follow a participatory process that will allow for an open dialogue among different disciplines working on island spaces. The backbone of this network will be the creation of an ontological basis, following the structural and methodological principles of the Linked Open Data framework that will allow different disciplines to share a common island vocabulary.

(2) An open knowledge exchange, dialogue and capacity building platform in Europe and beyond, directed at social awareness of the importance of small-medium islands; An open knowledge exchange, dialogue and capacity building within and between a number of stakeholder groups. among geographic areas across geographic regions, will allow for the representation of varying drivers of change, governance and socio-economic contexts, and ecological processes. SMILES will develop multi-level approaches to assess and predict the impacts of cumulative and interactive global and local stressors, such as climate and land-use change, on island ecosystem services in the EU and Near Neighbour Countries (NNC) within diverse bio-regions. Also share experiences and practices about risk assessments and local adaptation responses.

(3) Evaluation and assessment of the efficiency of the developed methodologies for assessing and mapping ES indicators and drivers of change in supply, flow or demand, emphasizing on required adaptations for island realities; Networking developed by the SMILES, will also result in rapid scientific progress and more effective management, as island decision makers are exposed to new methods and ideas. SMILES will review the state of small-medium islands ES and related pressures as reported in the scientific literature and through targeted case studies. This will provide understanding of variation in pressures against small-medium islands across geographic regions, and how their state is affected by the variation and diversity of pressures (including land use and climate changes). In addition, the role of those islands in national but also EU policy and legislation will be analysed, which may underpin effective management and conservation. The overall aim will be **to build up on existing methodologies to assess and map ES, adapting them to the specificities and needs of small and medium islands,** thus developing a new framework (i.e. methods, guidelines, tools) for ES assessment and mapping in islands.

(**4) Co-design of alternative futures** for island development based on nature based solutions (NbS), which can be designed and tested by the network. **Nature Based Solutions (NbS) – a paradigm shift:** Planetary change and global crises (e.g., climate change, the Covid-19 pandemic) have severely affected island economies (tourism, the cost of imported products, transportation etc) worldwide but recent UNWTO reports suggest a recovery or improvement of fragile island ecosystems (previously degraded by tourism). These recent crises, indicated once again the need for transformative change towards sustainable development in island regions. By using evidence-based implementation of NbS as an umbrella concept for different ecosystem and nature options to mitigate and adapt to change (Ecosystem-based Adaptation and Mitigation, ES, Ecological Engineering, Green and Blue Infrastructure, Ecological/Landscape Restoration), SMILES will facilitate the transition to sustainable future and enhanced benefits to human well-being. Focus on pathways and solutions for sustainable futures based on NbS in different contexts supported by scenarios, state-of-the-art methods and interdisciplinary knowledge brokering with stakeholder engagement will be key in the project.

1.2.2. OBJECTIVES

The overall aim of this COST Action is to create a **science-practice-society European network** for the consolidation of knowledge on small-medium islands' natural capital. SMILES Action will thus facilitate island development and ecosystem management by adopting **nature based solutions (NbS)** following a new framework (i.e. methods, guidelines, tools) for **natural capital assessmen**t tailored to small-medium islands across geographical areas within EU.

1.2.2.1 Research Coordination Objectives

The Action's principal research coordination objectives are to:

RCO1. Synthesise current knowledge of the role of islands as ES suppliers by facilitating a critical assessment of our current knowledge (RCO3) and understanding of island ecosystems services; capacities, flows, and sustainability of ecosystem services use; and their future trends.

RCO2. Convey and share knowledge among scientists, policy makers and stakeholders from different scientific disciplines, geographical regions and management contexts to understand the role of islands ecosystems services

RCO3. Develop an integrated framework (including methods, guidelines, tools) to support the holistic assessment of ecosystem services in islands (RCO2)

RCO4.Support Science-Policy-Society (SPS) based best practices Improve understanding through cross-country and cross-sector knowledge integration towards **a set of best practices to better evaluate** the effects of cumulative stressors in island systems, such as climate and land use changes;

RCO5. Employ participatory processes, in order to adapt, use and validate indicators and identify tipping points of island systems to be used by policy makers in local, national or international regulations about ecosystem services on small-medium islands;

RCO6. Generate proposals with **simulated outputs on concrete applications of nature-based solutions** for the sustainable development of selected islands (case studies).

1.2.2.2 Capacity-building Objectives

The capacity-building objectives of this COST Action include:

CBO1. The creation of a **collaborative network of science and policy experts** that can integrate scientific knowledge and policy experience in small-medium island conservation and sustainable development;

CBO2. Facilitation of a cross-disciplinary research network that will integrate social and ecological disciplines aimed at scientific knowledge exchange and integration with the aim to achieve breakthroughs in island conservation and sustainable development;

CBO3. Generating new career opportunities, especially for ECIs and spawn new networks; ECIs will be actively involved in all activities by taking leading roles and through STRMs.

CBO4. Provide training for European researchers, in particular graduate students and ECIs, on relevant novel tools and methodologies on assessing and mapping ES in islands;

CBO5. Provide a **platform for collaboration and knowledge exchange** between communities of research-practice-society that will allow for inter-sectoral feedback related to the state and the future development of small-medium islands in Europe and beyond;

CBO6. Develop campaigns for raising societal awareness on the network outcomes and the importance of islands across different age groups, from students to all members of society.

In reaching these objectives, SMILES Action will strive also to:

Promote geographical balance by increasing the access of ITCs to international expertise and funding, identifying and promoting excellence in island science and management across Europe and encouraging ITC researchers and institutions to lead important roles in the Action.

Promote age and gender balance throughout the network activities. SMILES aims to exceed 40% female representation in composition and 50% in Training Schools, and will positively select women for leadership roles to complement scientific quality and geographic balance. Its Gender Action Plan will be part of the Action's Dissemination and Exploitation Plan. SMILES will ensure that ECIs play important proactive roles in network activities (CB03).

2. NETWORKING EXCELLENCE

2.1. ADDED VALUE OF NETWORKING IN S&T EXCELLENCE

2.1.1. ADDED VALUE IN RELATION TO EXISTING EFFORTS AT EUROPEAN AND/OR INTERNATIONAL LEVEL

At the global level, Small Island Developing States (SIDS) were recognized as a distinct group of developing countries facing specific social, economic and environmental vulnerabilities at the 1992 Earth Summit (Agenda 21 (Chapter 17 G). As a result, SIDS have received attention both in the MEA

(2005) and IPCC (2014; 2019) reports. The IPCC and MEA reports, although addressing the challenges islands will face, fall short of proposing an evaluation and action framework to improve on these. More recently, the UN Sustainable Development Goals (2015), have given special emphasis on the importance of SIDS and emphasized on a group of SDGs that are imperative to be achieved if society wants to preserve these states (SDGs 2, 5, 6, 7, 12, 13, 14, 15, 17); these reports clearly recognize the need for a multi-dimensional approach for islands and island states. They have thus proposed the use of a multi-dimensional vulnerability index valid for those nations (report to be published), recognizing the need for a cross-sectoral, cross-scalar and cross-disciplinary approach. However, to date there is no specific scientific task force for islands in Europe or its associated regions and territories. SMILES in line with these initiatives as well as EU and other global initiatives targeting directly island sustainable development (https://europeansmallislands.com, http://www.globalislands.net/, https://cpmrislands. org/who-we-are/, http://smartislandsinitiative.eu/. http://www.smilo-program.org/en/about-us, https://www.aosis.org/.), will contribute to reaching global and regional objectives on the preservation and sustainability of island communities. The action will also create synergies with the Island ecosystem specialist group of the IUCN and IUCN Resolution 5.115 on Strengthening biocultural diversity and traditional ecological knowledge in the Asia-Pacific island region (Hong et al. 2013; 2014). SMILES will capitalise on the results of the MOVE project (moveproject.eu), the ESMERALDA network (esmeralda-project.eu) on ES assessments and ReNature (http://renature-project.eu/) project on NbS research strategies. It will benefit from (and feed back to) the LUCAS CORDEX FPS (https://www.hzg.de/ms/cordex_fps_lucas/index.php.en), on linking land use and climate change scales and SOCLIMPACT (https://soclimpact.net/) on downscaling climate impacts. In addition, the activities of the action are complementary to the MAES and Natural capital accounting initiatives at the European Level, and will contribute to the new EU Biodiversity Strategy for 2030, the European Green Deal and the EU strategy on adaptation to climate change. In line with current Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) efforts towards **achieving transformative change for society and nature**, SMILES will work on understanding the **social-ecological interactions** within **island spaces** and help **set priorities** for achieving transformative change in islands. This will give **an added value** to the already planned assessment by looking into transformative change from the prism of island social-ecological systems with limited area. Using the networking and experience of consortium members, the outcomes of the project will be shared and included in futures IPBES assessment reports. At the same time, within the project dissemination activities, exchange between SMILES and IPBES will be also a priority. The Action contributes directly to EU Territorial Cohesion Policy as well as the UN SDGs by supporting planning and policy formulation which are island sensitive. Moreover, it will contribute to the EU Research and Innovation agenda on NbS aiming to position the EU as a leader in 'Innovating with nature' for more sustainable and resilient societies. Also through its networking and outreach activities, it will give input to the activities of the UN Decade of ocean science for sustainable development and the UN Decade for Ecological Restoration, especially with regards to islands and island states.

2.2. ADDED VALUE OF NETWORKING IN IMPACT

2.2.1. SECURING THE CRITICAL MASS AND EXPERTISE

A European Research Action (ERA) for small-medium islands requires the development of a scientific approach which will rely on a **multidisciplinary and intersectorial group** of actors. This can be addressed by building a **collaborative network** of local stakeholders from island regions and

universities as well as research institutes throughout Europe in order to identify local priorities for MAES and work towards the development of case studies to address these priorities. Therefore, the network of proposers was assembled to provide the critical number of experts required to address all the relevant fields necessary to design a complete ERA strategy for SMILES. Expertise include geography, ecology (marine, aquatic, terrestrial), environmental science, fisheries, socioeconomics, planning, tourism studies, cultural heritage, deep learning, mostly from academic entities but also from governmental, private and international organisations. The network of proposers has 39 experts (including 7 ECIs and a few students close to finalising their PhDs and eventually becoming ECIs before or shortly after the beginning of the action), is gender-balanced (c.40% of females), and represents 31 entities from 22 different countries, of which 11 are ITCs comprising 43% of the experts and 56% of the institutions. It includes one international organization (e.g., CSIRO) which aims to enhance the dissemination strategy of the network and ensuring that SMILES outputs will flow to such organizations.

2.2.2. INVOLVEMENT OF STAKEHOLDERS

The relevant key stakeholders associated with the challenges addressed in SMILES fall into three major groups and will be engaged early on in the project:

Direct Contributors: those who will contribute and may directly affect the objectives of the project, most of which are represented by Academic, Research Institutions and also SMEs.

Interested parties with the capacity to assist (Assisting contributor) by engaging the critical mass of expertise consisting mainly of NGOs, scientific associations and civil society organizations, with interests in island conservation and development.

Interested parties which can contribute to the sustainability and transferability (Interested contributor) of the project's outcomes (Added value). These include EU authorities with specific interests such as the JRC Biodiversity Knowledge Platform and the EEA, particularly the European Topic Centres on Biological Diversity (ETC/BD), Climate Change Impacts, Vulnerability and Adaptation (ETC/CCA), Inland, Coastal and Marine Waters (ETC/ICM). The project will also communicate and involve international organisations such as WWF, Birdlife, the IUCN and UNESCO, the Euro-Mediterranean Network for Climate change, MedECC (medecc.org) and structures/ initiatives which focus exclusively on island-related issues in Europe, such as the European Small Islands Federation, the CPMR Islands Commission, but also beyond (e.g. the Small Island State Initiative. Alliance of Small Island States). The project through planned activities of active and passive participation (e.g. training, common workshops, case studies) will also seek to engage relevant national or regional authorities many of whom have expressed preliminary interest (in writing) to follow and contribute to the activities of the Action. These activities will facilitate co-production of knowledge, through knowledge exchange exercises, post-normal science practices and the use of multi-actor approaches. The action will follow the COST Guidelines for the Communication, Dissemination and Exploitation to establish interaction channels between stakeholders on the basis of a multi stakeholder dissemination and communication strategy. The first level of stakeholder participation will happen through their involvement in the **scientific** aspect of the project. Stakeholders will participate in the co-design of the ecosystem service assessments in island spaces, as well as the design of nature-based solutions. The project scientific aspect is directed to the relevant stakeholders, through a “user-oriented” approach. All stakeholders will be asked to provide input to the design of the project outputs, ensuring that what is produced is following a user-centered design, which allows for relevant

stakeholders to participate not only at the beginning or/and end of the project, but throughout. That will happen at many levels for instance, the design of the shared integrated vocabulary, or the integration of heterogeneous data in order to produce the final ES maps. ES maps and indicators will also be designed and defined based on stakeholder input, to ensure their usability. Three rounds of participatory modelling workshops will be organized in each selected areas. The project will also develop the **SMILES virtual knowledge exchange platform (SMILESvKEP).** The virtual knowledge exchange platform will be comprised of a web-based application, which will allow for all three types of users to participate in the SMILES project. The platform will have a dual function, allowing users depending on their profile to either contribute with input to the project, or to use the platform to retrieve information on the project outputs. The table below specifies the type of interaction that users might have with the platform depending on their profile.

Stakeholder group	**Information flow type**	**Definition of information flow type**	**Platform**
Direct contributor	Input	Use platform to network and to upload/exchange data and information.	Web App
Assisting contributor	Input -output	Use platform to provide input data e.g., on expert opinion, but also to be informed about project outputs and use for decision-making	Web App
Interested contributor	Output	Use platform to retrieve information on ES data and indicators	Web App

Integrated to the Action's website, a component of the platform will allow stakeholders (assisting and contributor) to make a few virtual decisions and through "serious games" to visualize the future state of the island spaces they intend to manage. That is a very visual approach which allows any user and stakeholder irrelevant of their scientific expertise to imagine the consequences of management choices and has proven to be able to facilitate decision-making. To conclude, the project outputs will be summarized to a proposal for a new ERA strategy for small- medium islands (receptor: contributing stakeholders and EU agencies), the formation of consortia to elaborate project proposals to address knowledge gaps on islands research, liaise with Near Neighbour or International Partner Countries (NNC or IPC) to assist them with the development of a similar strategy and influence policymakers to incorporate the results of the project at the EU and national policies. Targeted Papers and Policy briefs produced by the Action will reach scientific and policy audiences.

MUTUAL BENEFITS OF THE INVOLVEMENT OF SECONDARY PROPOSERS FROM NEAR NEIGHBOUR OR INTERNATIONAL PARTNER COUNTRIES OR INTERNATIONAL ORGANISATIONS

With 286 island territories belonging to eleven countries of the European Union, the immediate extent of SMILES is European. Nevertheless, the three main challenges of SMILES are relevant for many non- EU coastal or oceanic countries and thus the exchange of experience and knowledge, and the development of a wider international network will provide common benefits to all partners. Many of the non-EU COST Countries (one of which is involved in the proposal), as well as some NNC are directly affected by similar issues and therefore can readily adapt methodologies and strategies developed in this action to their own geographical and socio-economic **context i.e. transposing results to regions**

outside the European Research Area but also provide inputs and case studies based on their national contexts. In this respect, a strategy for involvement of NNC and IPC has been included in the dissemination and communication strategy (see section 3.2.2). At the beginning of the Action, scientists from selected NNC, IPC countries related to island territories (e.g. Hawaiian Islands, Kuril Islands) and international organizations (e.g., EC-JRC, IUCN, UNEP, FAO) will be invited to join the Network.

3. IMPACT

3.1. IMPACT TO SCIENCE, SOCIETY AND COMPETITIVENESS, AND POTENTIAL FOR INNOVATION/BREAKTHROUGHS

3.1.1. SCIENTIFIC, TECHNOLOGICAL, AND/OR SOCIOECONOMIC IMPACTS (INCLUDING POTENTIAL INNOVATIONS AND/OR BREAKTHROUGHS)

SMILES impact is threefold across three core domains: in science, policy and society.

Science: It will **use**, **test** and **validate** existing methodologies generated internationally and regionally for the assessment of ecosystem services in islands, including the newly released Ecosystem Services Valuation Database (ESVD – esvd.net). This will allow for these methodologies to be adapted and downscaled to island systems. It will also use **novel technologies** for participation and co-design of scientific methodologies through **participatory processes** and **innovative systems** such as “serious games” that allow for non-scientific participants to understand, use and interpret scientific knowledge for their own needs. State of the art machine learning and data analytics will be used to identify areas with fast rate of change, which might need further action.

Policy: SMILES will assess policy objectives and use expert input through a series of participatory processes to allow for a tested and validated set of objectives adequate to “island realities”. A major challenge decision-makers are facing in island regions is the need to comply with strategies that are designed for larger scales, while ensuring that the local priorities are also taken into account. These challenges lead to constantly emerging conflicts, which hinder a complete management approach in islands. Within SMILES we will develop a **science-policy-society forum** which will allow for a continuous and participatory dialogue among representatives from all these sectors. The backbone of this will be the development of a **shared vocabulary** i.e., an island ontology, which will allow for a basis to be established in this dialogue. The involvement and inclusion of **policy objectives** in the design of all methods for the assessment of ES as well as proposed management actions will be achieved through the integration of available information and knowledge with expert input with the use of the Bay platform capitalizing on the outcomes of the past ECOPOTENTIAL H2020 project.

Society: Active participation will be achieved through the representation of civil society organizations in the network and stakeholder platforms. Such organizations will have the chance to participate in focus groups with other stakeholders whose objectives might be conflicting, but with the aim to seek for an optimal solution for all interested parties. Society will also be involved through the reception of all dissemination materials, reaching out to all age groups. This will happen through a series of actions, of global (e.g., integration of the outcomes with the UNESCO Literacy Campaign on Oceans) to local magnitude (short videos, museum design, radio shows, public press articles) which will raise awareness about island specificities in research and policy agendas. The ultimate goal is to

enhance small-medium islands as unique ES spaces which contribute to the well-being of local communities and beyond.

Innovation: Islands have been biological and cultural laboratories for centuries, aspects which have been usually studied separately. The approach in SMILES will use islands as models of intensely coupled human–environmental systems. In addition, the action will adopt an integrated approach to ES assessment by sharing experiences from research on marine and coastal realms and their interfaces. Such assessments are needed to integrate these two domains for effective land use/coastal zone planning, for islands or small island developing states. This will be facilitated in the action by using islandscapes as the mesh of terrestrial, marine and coastal interfaces. The Action will foster innovation projects involving authorities, NGOs and SMEs focusing on NbS to address societal challenges on islands providing environmental, socio-economic benefits and help improve their resilience.

SMILES short term impacts at the scientific and technology levels will be i) consolidating existing knowledge, ii) mapping research gaps and priorities over EU and beyond, iii) providing common research standards and a framework for island socio-ecological assessments.

Socio-economic impacts in the short-term include: (i) opening communication channels for participation of academy, industry and NGOs in decision making relative to environmental and social policies specific to small-medium islands; ii) promoting **adaptive management** with a view to build resilience in island systems by assessing socio-ecological vulnerability to climate and land use change; and iii) increasing Socio Economic Pathways (**SSP) interface** and develop towards an alternative sustainable development model for small-medium islands. SMILES will assess ecosystems and produce state-of-the-art evaluation of conservation area capacities at EU level and Green Infrastructure at the island level.

Long term impacts at the S & T level: The Action will establish for the first time a dedicated research network which will bring together interdisciplinary island research and enhance coordinated research on island ES leading to the consolidation of island studies as a discipline. Synergies are expected from emerging interactions among researchers from different countries, sectors and disciplines, which will enhance understanding of the complexities involved in island systems between nature and culture. It is anticipated that newly generated knowledge will promote innovative integrated approaches to adaptive management at island scale. Establishing a common framework from island ecosystem assessments and related research will formulate a research agenda on the road to 2030 (EU Biodiversity Strategy). SMILES will trigger future joint research proposals that would not have been possible without this Action.

The socioeconomic impacts over the long term will be i) focusing to halt island ecosystems degradation and biodiversity loss (in line with EU Biodiversity Strategy to 2030); ii) enhancing resilience of socio-ecological systems; iii) propose a new development paradigm for small-medium islands by adopting and promoting NbS as an alternative to the “business-as-usual” development model, which is over reliant on tourism. It will provide tested and peer-reviewed guidance that fits a range of existing NbS being utilised in emerging networks of NbS practitioners. Based on a multidisciplinary approach SMILES will identify effective NbS for adaptation and mitigation in different social-ecological contexts, aiming to provide solutions for stakeholders and public policies; iv) introducing changes in philosophy, modus operandi of government structures in small islands and by demonstrating/promoting NbS; and v) lessons from EU experience will be translated and disseminated outside the EU through via IPCs.

3.2 MEASURES TO MAXIMISE IMPACT

3.1.2. KNOWLEDGE CREATION, TRANSFER OF KNOWLEDGE AND CAREER DEVELOPMENT

The Action stands to simultaneously benefit a variety of stakeholders while learning from and engaging with various target groups. SMILES will contribute to knowledge development by interdisciplinary cross boundary approaches which will achieve progress on the topics by interacting with a range of stakeholders necessary to accomplish a full ERA scheme for European islands. The interaction of the scientific fields involved in the Action provides potential for breaking through the limits of traditional disciplines. Information will be reviewed and elaborated from published science and also from networking activities focused on generation of specific outputs. In addition to **Transfer of Knowledge (ToK)** by means of 'traditional' dissemination activities, the interaction among stakeholders and the promotion of NbS will increase **ToK**, within but in particular beyond the network to practitioners and policy makers. The proposed networking is, given its diversity, strong in capacity building, with potential for consolidating knowledge on the role of European islands to Biodiversity D, ES and society and establishing a critical mass of scientists from different disciplines which will create synergies and take its activities beyond the duration of this action. In this way a long lasting interdisciplinary field of studies, which is envisaged to be embraced at the national administrative level, will increase opportunities for **career development** of young scientists, who will work together with experts in relevant fields, establish links with potential employers from academia, and also government and relevant private business. SMILES will actively support and pave the way for a long term impact through an ambitious programme for training (**Objective CBO3**) ECIs and young researchers in the last stages of their PhD, some of whom are already part of this network and would become ECIs during the initial stages of Action implementation. These young researchers will be actively encouraged to participate in all networking activities, where they can connect with professionals of the different sectors, and motivated to take an active role as paper authors as well as integrated in new project proposals.

3.1.3. PLAN FOR DISSEMINATION AND/OR EXPLOITATION AND DIALOGUE WITH THE GENERAL PUBLIC OR POLICY

Dissemination Emphasis will be on disseminating high quality, comprehensive information to a wide variety of audiences and users through dedicate Working Group (WG7). A **multi-faceted project communication toolkit** (e.g. website, social media, workshops, final conference) will be tailored to target a range of audiences, i.e. (1) national, regional, European, global case-study stakeholders (NNCs and IPCs), (2) general public, and (3) the scientific community. The web platform set-up will be used for compilation, synthesis, and dissemination of main results of the project. Several communication outputs will be targeted to the general public, e.g. a short video about key research findings will be developed and broadcasted on social media. Graphical dissemination through animated maps, graphical abstracts and media releases targeting general audiences will be developed. Main findings will be communicated via fine art work/ comics by professional artists targeting the general public and children. **An early and open sharing research strategy** will be followed. Results will be published as open-access publications in high profile international scientific journals but also as pre-prints on public available servers. Following publications all data including any software and code produced will be also open access. In addition, the action will produce leaflets, brochures and recommendations, which "translate" the academic language to that of the layman while a final conference with sections for all user groups will be held.

Training: SMILES will provide training for stakeholders of different administrative levels and NGOs, and across sectors on Mapping and Assessment of ES and NbS, science-policy interface. Organizing regionspecific workshops and forums will provide several opportunities dedicated to knowledge transfer among stakeholders. In addition, a forum and communication platform for PhD students and PostDocs will be established and relevant training schools offered.

Science Policy Interface: The Action will build on strong links between the consortium and a number of national and international organisations and networks in the science-policy interface. At the European level, science-policy interface mechanisms will involve key policy-makers and other stakeholders, especially DG ENVIRONMENT, DG MARE, DG AGRI, DG CLIMA, and JRC. Tools that can support science-policy interfacing for research projects will be used to assist engagement with policy stakeholders and dissemination. Specifically, SMILES will use Oppla (https://oppla.eu/), which helps disseminating research outputs and information through its 'marketplace'. ThinkNature a platform that supports the understanding and promotion of NbS will also be used (https://platform.think-nature.eu/), SMILES will take part in the forums organized by ThinkNature on ecosystem restoration, climate change adaptation and mitigation, risk management and resilience, and will be included in ThinkNature's interactive maps of case studies and projects involved in NbS.

4. IMPLEMENTATION

4.1. COHERENCE AND EFFECTIVENESS OF THE WORKPLAN

4.1.1. DESCRIPTION OF WORKING GROUPS, TASKS AND ACTIVITIES

The overall approach will be based on the well-established DPSIR conceptual framework which has been applied with success in (similar) socio-ecological systems (Balzan et al. 2018).

Working Group 1 (WG1): Small-medium island ecosystems: natural capital assessment: This WG will evaluate the relation between biodiversity and natural capital on small-medium islands. This will be achieved by: i) building a database on presence, abundance and distribution of insular biodiversity in Europe (habitats and taxonomic groups); ii) building a database with direct and indirect current and future threats for islands' natural capital; and iii) performing an assessment of natural assets on islands.

Task 1.1 Building a dataset of small- medium islands natural capital (stocks, flows and dependencies). Following established Natural Capital Protocols, the task will identify primary data (collected internally or from existing data sources), and secondary data (derived from peer reviewed publications or grey literature, past estimates, or using modelling techniques).
Task 1.2 Will perform a systematic baseline assessment of the extent, condition and benefits of natural assets on small- medium islands in Europe. Task 1.2 will rely on 1.1 in order to propose a methodology (including indicators) to assess the "properties" of natural assets. This will be based on targeted literature reviews which will inform an expert's workshop (with consortium members and stakeholders).

Working Group 2 (WG2): Ecosystem Services of Small-medium islands: This WG will provide an overview of the status of and trends in European island ecosystem services, accounting for all three environments (terrestrial, freshwater, marine), by: (i) compiling existing data on the biophysical and socio-economic value of ecosystem services, (ii) identifying the key drivers of change for services, (iii)

exploring future threats and opportunities to service supply, and (iv) developing sustainable strategies to protect and enhance ecosystem services linked to human well-being.

Task 2.1: A systematic review of methodological approaches to assess ES, with special focus on islands. The aim of this task is to distil methodologies with high applicability in small-medium islands.

Task 2.2: Develop a framework (including indicators) for assessing and mapping regulating and provisioning ES of high relevance for small-medium islands. This task through participatory modelling will analyse data demands, assess available and develop new tools, and identify challenges for holistic assessments covering all three environments in islands (terrestrial, freshwater, marine).

Task 2.3. Defining a conceptual framework for cultural ES on small-medium Islands; by identifying the context for which cultural values, spaces of services, cultural practices and benefits are used/perceived at an island level.

Task 2.4. Undertaking a quantitative analysis of well-being and practices in environmental spaces (land, sea and interface) by developing a common protocol to collect data, when these are unavailable.

Task 2.5. Applying the framework in a number of small-medium islands (case studies). Mapping ES at the lowest administrative level and testing participatory and interpretive approaches to ES (synergies with ongoing national and international projects will be pursued).

Working Group 3 (WG3): Effects of Land use and climate changes (LU/CC) on ES. LU/CC are the main drivers on island environments. In close collaboration with other WGs, WG3 will assess projected global change impacts on European islands. Its objectives are to (1) perform an integrated LU/CC assessment on European islands (Tasks 3.1– 3.3) and (2) evaluate the relationship between LU & CC interaction and ES provision in European islands (Tasks 3.3). These activities will benefit from (and feed into) the LUCAS CORDEX FPS (https://www.hzg.de/ms/cordex_fps_lucas/index.php.en),

Task 3.1. (i) a review existing CC projections (and datasets) for the European Islands; (ii) interpret these scenarios including consideration of the H2020 SOCLIMPACT outcomes relevant to islands, iii) interact with stakeholders (workshop), to identify suitable content and format to facilitate perception of the climate related information and iv) downscale regional models to generate climate information of high spatial precision relevant to small-medium islands

Task 3.2. Review of existing land use change projections and construct island specific Shared Socio Economic Pathways (SSP), following interaction with island stakeholders through structured workshops in EU island regions.

Task 3.3. Perform an integrated assessment of projected global change impacts on ES, by using i) Bayesian Belief Networks to model the relationship between LU/CC scenarios and ES provision, and ii) state of the art machine learning and data analytics methods to identify areas with fast rate of change which might need further action.

Working Group 4 (WG4): Nature-based solutions (NbS) for safeguarding ES of small-medium islands. The challenge of pursuing economic development whilst providing co-benefits to biodiversity and people is particularly felt in islands, which depend on external markets and tourism and are susceptible to natural disasters and climate change whilst having a constrained adaptation capacity.

NbS can be used to tackle key societal challenges whilst avoiding or mitigating the negative impacts of local and global stressors that threaten ES of small-medium islands.

Task 4.1. Through participatory work involving the action parties and their extended network of practitioners and stakeholders, case-studies of effective implementation of NbS in small-medium islands will be identified and existing data on the effectiveness and co-benefits arising from these NbS collated.

Task 4.2. The dataset in T4.1. will be used to (i) create an open access inventory of NbS with environmental and socio-economic benefits, and (ii) evaluate the effectiveness, feasibility, acceptance, and cost and benefits of NbS in small-medium islands. The inventory contributes to the goal of making open-access information about NbS and corresponding scientific data available to practitioners, who are often faced with making complex forward-looking decisions for which future impacts are difficult to predict, particularly when working at local scales having low data availability.

Task 4.3. To tackle this rather common issue of open-access information when working on island ES, SMILES will carry out a well-established participatory technique (Delphi method) to allow practitioners worldwide to collaboratively assess the co-benefits arising from NbS implementation in islands.

Working Group 5 (WG5) Policy and Governance of Small-Medium Islands for ES provision: This WG will identify key aspects of major policy instruments (at EU and national levels) that reflect island sensitivity and contribute to building future island resilience. Based on this evaluation, it will provide recommendations on policy instruments improvement with special emphasis on the interaction of policies across and within different administrative levels and sectors (multi-governance approach).

Task 5.1: EU policies this task will analyse EU policy frames and assess the merits and drawbacks of EU-level instruments. The first sub-task is to understand the relevant policy trends and constraints (including trends concerning regulation policy, governance structures, sectoral institutions, and budget constraints) as well as the EU legal framework relevant for the formation of island –related policies.

Task 5.2: National policies. The Task will identify and evaluate the effectiveness of relevant policy instruments in terms of their potential to mitigate undesirable impacts of land use and climate change from selected case studies within the EU (i.e. different geopolitically and biogeographically examples).

Task 5.3: Innovative Instruments This task aims to identify, analyze, and propose promising policy instruments and institutional mechanisms (e.g. improved application and/or modification of the existing instruments, as well as design of new instruments) to address island-related resilience issues.

Working Group 6 (WG6) Dissemination, Participatory and user-centered design processes: This WG is dedicated to the successful communication and dissemination of the findings of the other WGs by promoting an effective transfer of existing knowledge and practices and facilitate a better communication among research-policy-public sectors which is a core objective of SMILES Action. The aim of this WG is to ensure that all the deliverables and project outputs produced in WGs 1-5 are relevant for the stakeholders involved in this project and beyond, through continuous participation in project activities. Specific attention will be paid (1) to develop a **tailored communication strategy** which will fit to the target groups (scientific community, policy makers and different stakeholders and general public), (2) to fill in the communication gaps among target groups by promoting a common “language” (by promoting and translating the incorporating vocabulary on ES developed in WG 6 in at least 6 EU languages; and (3) enhance and increase accessibility to the scientific knowledge related to natural capital and management in small-medium islands by developing and implementing a research strategy. The final conference will engage different stakeholders by providing a suitable

venue for scientific presentations, but also forums and artistic expressions (see description of the plan in 3.2.2). The individual activities that will comprise this task are:

Task 6.1. Development of a science-policy-society collaborative network. Project partners representing the three types of actors, will work together towards the development of an integrated and interoperable vocabulary incorporating vocabulary on ecosystem services, nature-based solutions, policy obligations and non-scientific jargon. This will be achieved through a series of workshops; one with each group of scientists, policy makers and civil society organizations and two joint workshops in which the groups will interact and commonly agree upon a shared vocabulary.

Task 6.2.Development of the SMILES virtual Knowledge Exchange Platform (SMILES-vKEP) on the Action's website. vKEP will integrate outputs from WGs 1-5 will be used to allow for users of the project outputs on ecosystem services and nature-based solutions to upload and download information.

Task 6.3. Development of a recommendation paper for a new ERA strategy for small and medium islands. The project outputs will be summarized to a proposal for a new ERA strategy for small medium islands for contributing stakeholders and EU agencies. Project partners will produce scientific publications which will be translated into Policy briefs to reach scientific and policy audiences. Engaging with these agencies is not straightforward, which is why within this network, they will be involved since the beginning of the project, through the activities mentioned above.

Task 6.4. **Build a multi-faceted project communication toolkit framework** tailored to target a range of audiences, i.e. (1) national, regional, European, global case-study stakeholders, 2) general public, and (3) scientific community, 4) policy makers.

Task 6.5. Design, implement, promote and feed a website and social media accounts (facebook and twitter)

Task 6.6 Build sharing research strategy. Results will be published as open-access publications in high profile international scientific journals but also as pre-prints on public available servers.

Task 6.7 Organise the final conference

4.1.2. DESCRIPTION OF DELIVERABLES AND TIMEFRAME

The list of expected deliverables to monitor WG and task progress is shown in Table 1. Progress reviews and the final achievement report will be presented as established in COST rules. Minutes of all Meetings (MCM and WGM) will be presented immediately after the end of each Meeting and will have some additional documentation attached. The Chart is section 4.1.4 refers to Meetings frequency.

Table 1. SMILES Milestones and Deliverables

Code	Description	Month
WG1 Milestones		
M 1.1	Release of the inventory on islands natural capital	6

M 1.2	Framework for natural assets assessment	15
WG1 Deliverables		
D1.1.	Small-medium island inventory on natural capital	12
D1.2	Published paper on the assessment of biodiversity and natural capital	36
D1.3	A short cartoon on small-medium islands natural capital	36
WG2 Milestones		
M2.1	Workshop to specify the methodology for the systematic review	3
M2.2	Workshop on the development of the framework for assessing ES in islands	15
M2.3	Workshop to develop an island specific framework for cultural ES	27
M2.4	Workshop to organize case studies for implementation of the framework	27
M2.5	Training course on methods for Mapping and Assessment of ES	33
WG2 Deliverables		
D2.1	Paper on global systematic review of ES methodological approaches	15
D2.2	A paper on the proposed framework for assessing ES	24
D2.3	Case study papers (at least 4) implementing the developed framework	45
D2.4	Policy brief of the proposed methodology and the main outputs/conclusions	48
WG3 Milestones		
M3.1	Workshop on methods and tools for communicating climate change scenarios	6
M3.2	Workshop with partners and stakeholders on land use scenarios and SSP	21
M3.3	Training course on climate change (CC) models and land use scenarios	21
WG3 Deliverables		
D3.1	Paper on challenges and perspectives of CC projections for islands	21
D3.2	Paper on SSPs for small, medium islands	33
D3.3	Paper on Integrated Assessment of global change on ES supply	45
WG4 Milestones		
M4.1	Workshop for designing online, open access inventory of NbS	24
M4.2	Training course on NbS development	24
M4.3	e-workshop to define the participatory scoring of co-benefits arising from NbS	30
WG4 Deliverables		
D4.1	Paper presenting methodology and results from NbS inventory	24
D4.2	Paper assessing co-benefits arising from NbS implementation in small islands	45
WG5 Milestones		
M5.1	Workshop on policy instruments, drivers of changes on small-medium islands	6
M5.2	Workshop on case studies development	18
M5.3	Workshop on innovative instruments for island-related resilience policies	33
M5.4	Training course on communicating science to policy makers	33
WG5 Deliverables		
D5.1	Report of EU policy assessment	24
D5.2	At least 3 Papers on selected case studies	30
D5.3	Review article on innovative instruments for island-related resilience through policy building	45
WG6 Milestones		
M6.1	Dissemination framework	4
M6.2	Launching the website	6
M6.3	Release of web application	12
M6.4	ERA strategy framework	42
M6.5	Training School	45

WG6 Deliverables		
D6.1	A short video presenting the SMILES results for the wider public	1-48
D6.2	Web Exchange Platform	12-18
D6.3	Policy briefs on novel island-related policy instruments	48
D6.4	Translated version of core documents in at least 6 languages	48
D6.5	A series of videos, Graphical dissemination, art work and comics	6-48
D6.6	Website (access to all reports, documents, etc)	6-48
D6.7	Final conference proceedings and videos	45-48

4.1.3 RISK ANALYSIS AND CONTINGENCY PLANS

The primary risk to all forms of Networks is bringing together credible partners for the successful completion of the aims of the action. Many of the proposers of this COST Action have previously worked together in various international projects. This has built trust and reciprocity on which all successful networks are based. Integrating the different ongoing projects will not only reduce redundancy but also enable further cooperation between research groups. This action will build upon these previously successful ventures helping to formalise the relationships between researchers and institutions. Logistically bringing together researchers can be a problem. The open nature of the action means that risks are reduced and contingencies are built into the wide network of expertise available to the action. There will be a large pool of credible partners available to work in the WGs, working in the knowledge that the action will provide relevant and timely outputs for the development of policies in the region. The major potential risks for the action and the devised countermeasures are:

1. Poor management and administration: mitigated by the experience of several Action participants in managing large, international and multidisciplinary projects, and/or other COST Actions.

2. Scarce availability/ease of gathering data: proposers already agree on sharing the vast amount of data and experience gathered in many years of research in the relevant fields; the inclusion of stakeholders from government will ensure access to other primary data.

3. Failure of the network to achieve a sufficient critical mass and impact: proposers and their large associated network will act as a leverage multiplier.

4. Risk of not achieving inclusion goals: inclusion goals have been taken care at the proposal preparation stage by including partners from many ITCs, including ECIs. Specific targets for the participation of ITCs, ECIs and gender balance will be set throughout the Action.

5. COVID-19 pandemic: the proposal is written during COVID-19 times, therefore it is expected that at least for the first year, if successful, travel will be limited. A range of technological options are at hand, already tested successful, which will be used to organise virtual/ hybrid meetings and workshops. Other activities such as STSMs will be organized in a flexible manner according to the epidemiological state of countries involved, and in accordance to COST principles, rules and guidelines.

GANTT DIAGRAM

The COST Action will run for four years, according to the following GANTT Diagram.

	Year 1				Year 2				Year 3				Year 4			
Month	3	6	9	12	15	18	21	24	27	30	33	36	39	42	45	48
MC meetings																
STSMs																
Final Conference																
Website launched																
Working Group 1 Small-medium island ecosystems: natural capital assessment																
T1.1		M1.1		D1.1												
T1.2					M1.2							D1.2, D1.3				
Working Group 2: Ecosystem Services of Small-medium islands																
T2.1	M2.1				D2.1											
T2.2					M2.2			D2.2	M2.3, M2.4		M2.5				D2.3	D2.4
T2.3																
T2.4																
T2.5																
Working Group 3: Effects of Land use and climate changes (LU/CC) on ES																
T3.1		M3.1					D3.1									
T3.2							M3.2,M3.3									
T3.3															D3.2	
Working Group 4:Nature-based solutions (NbS) for safeguarding ES of small-medium islands																
T4.1								M4.1, D4.1								
T4.2								M4.2		M4.3						
T4.3															D4.2	
Working Group WG5: Policy and Governance of Small Islands for ES provision																
T5.1		M5.1														
T5.2						M5.2					M5.3					
T5.3											M5.4			M5.5		
Working Group 6 Participatory and user-centered design processes & SMILES virtual Knowledge Exchange Platform																
T6.1		M6.1														D6.1
T6.2		M6.2				D6.2										
T6.3				M6.3												D6.3
T6.4														M6.4		D6.4
T6.5															M6.5	
T6.5		D6.5				D6.5		D6.5			D6.5					D6.5
T6.6																D6.6
T6.7											Organizing final conference					D6.7

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