Horizon Europe Funding Opportunities – 2021-2022

D.1 - Biodiversity and ecosystems services

ISERD is the interface between the Israeli government and the European Union, encouraging Israeli entities to participate in funding opportunities, and assisting in the process. ISERD holds events, information days, and monthly Orientation Presentations to give more information about funding opportunities

Horizon Europe -

Horizon Europe is a 95 billion euro funding programme for innovation and research, that covers all major scientific and technological disciplines, and encourages collaborative projects (consortium) for a joint goal.

- Consortium –
  - ✓ At least 3 partners from 3 different countries participating in the programme
  - ✓ Out of the 3, at least one partner must be from an EU country
  - ✓ A partner can be any legal entity – University, company, agency, organisation, etc…
- Funding Tools –

Action	Funding*	Main Characteristics
RIA – **Research & Innovation Action**	100% + 25%	Basic and applied **research**, technology development and integration, **testing** and validation - small-scale prototype in laboratory or simulated environment
IA – **Innovation Action**	70% + 25%	**Prototyping**, testing, demonstrating, piloting, large-scale product validation and **market replication**
CSA - **Coordination & Support Action**	100% + 25%	**Networking**, coordination or **support services**, policy dialogues and mutual learning exercises and studies

* Non profit – always 100%

ההשתתפות תלויה בחתימת מדינת ישראל על הסכם אסוציאציה לפני חתימה על הסכם הפרויקט

Partner Search | Full Work Programme | Previous Winning Projects | Additional Funding Opportunities

DISCLAIMER - The participation of Israeli entities, as associated country members in Horizon Europe projects is subject to the signing of the 'Association Agreement' to the programme between Israel and the EU.

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Destination 1 – Biodiversity and Ecosystem Services						
Biodiversity and Ecosystem Services						
Code	**Topic**	**Budget per project in M€**	**Deadline**	**No. of Projects (total budget in M€)**	**Type**	**TRL to achieve**
HORIZON-CL6-2021-BIODIV-01-01	European participation in global biodiversity genomics endeavours aimed at identifying all biodiversity on Earth	10-20	06/10/2021	2 (20M)	RIA	

- **Set up European hubs for iBoL and/or EBP,** to advance completion of the barcoding and/or sequencing of European biodiversity, taking advantage of existing networks, infrastructures and expertise.
- **Prioritise species with ecological or economic importance**, such as pollinators, mycorrhizal fungi, invasive species or disease vectors.
- Plan barcoding effort to maximise possible applications, such as:
  - registering patterns of biodiversity across ecoregions to forecast changes in response to anthropogenic drivers of biodiversity loss;
  - discovering new species;
  - tracking invasive alien species by metabarcoding forest soil samples, freshwaters or coastal waters;
  - revealing symbiomes and trophic chains, etc.
- Develop **sample collection standards and protocols**.
- **Engage citizens and other non-professional-taxonomist** stakeholders at different stages of the activities.
- Data, results and methodologies should contribute to the European Knowledge Centre for Biodiversity and be **permanently and openly accessible** in any relevant repositories.

HORIZON-CL6-2021-BIODIV-01-02	Data and technologies for the inventory, fast identification and monitoring of endangered wildlife and other species groups	3-5	06/10/2021	2 (10M)	RIA	

- **Develop, test and implement tools**, technologies and fast identification methodologies **to produce and integrate data, knowledge and models on the conservation status of species and habitats**, with a focus on those covered by the Birds and Habitats Directives.
- Help develop an integrated **European biodiversity monitoring system**, collaborating with other initiatives & projects. Regard EU Biodiversity Strategy prioritized species and habitats, such as pollinators, sea birds, marine mammals, invertebrates, amphibians, reptiles, bats, mosses, lichens, wetlands, coastal and marine areas, grasslands, etc.
- In the case the proposal decides to address the expected pollinator-related outcomes, projects should produce an inventory of pollinator species through integrative taxonomy, and bridge taxonomic gaps by developing tools (field

	guides, identification keys, national reference collections and checklists, European online ID platform, image recognition/apps, digitalized collections, etc.) regarding bees, butterflies, moths and hoverflies.					
HORIZON-CL6-2021-BIODIV-01-03	Understanding and valuing coastal and marine biodiversity and ecosystems services	16	06/10/2021	1 (16M)	RIA	4-5
• **Understand the dynamics of marine biodiversity and ecosystems processes and functioning (incl. primary production, food webs and biogeochemical cycles) in Europe, including its Outermost Regions and Overseas Countries and Territories, for which the participation is encouraged, and in areas beyond national jurisdictions.** • **Integrate new and existing biodiversity data and knowledge** from other EU, international and national projects and Research Infrastructure on species, biotopes and ecosystems processes, incl. new modelling & scenario approaches. • **Improve biodiversity monitoring, fast identification & inventory using genomics and taxonomic technologies** from microbes to apex predators, generating reference datasets from identified voucher specimens and novel methods. • **Understand how input from freshwater systems influence coastal marine communities & ecosystem.** • **Use acoustic and non-invasive monitoring as an integral component of any marine exploration and assessment.** • **Develop methods & indicators for assessments of the state/health of marine biodiversity and its key ecosystem services, in the EU and Associated countries.** • Contribution to the Global Taxonomy Initiative of the CBD and Global Biodiversity Information Facility. • Contribute to public understanding of the link between biodiversity and ecosystem functioning through education and training (school & ocean literacy, art and citizen science platforms).						
HORIZON-CL6-2021-BIODIV-01-04	Assess and predict integrated impacts of cumulative direct and indirect stressors on coastal and marine biodiversity, ecosystems and their services	10	06/10/2021	1 (10M)	RIA	4-5
• **Characterise, measure, and understand the combined impact of different pressures (chemicals and energy pollution, invasive species, inflows of sediments & nutrients, hypoxia, pH, warming, etc.) on coastal and marine biodiversity and ecosystems condition** (biotic communities, structure, biotope, and functions) and services (from food to human health), from small cells to large ecosystems cells, and assess their state /"health" and resilience to pressures. • **Consider sex segregation of species determined by environmental parameters, incl. estimates of the extinction risks** of species and structures, which play key roles in the functioning of an ecosystem and marine biodiversity conservation. • **Understand the biomechanisms that determine the response of organisms and ecosystems to environmental changes** (resistance, resilience and recovery), and limits of their response adaptation capacity (tipping points), and the implications for the **management of aquatic areas, habitats and species.** • Use state of the art **bio-logging and molecular technologies**, to understand the effects of agents of change on ecology.						

- Rationalise and advance strategies for **monitoring European populations of marine species at the top of food chains,** indicating changes in the oceanic environment, and especially susceptible to change.
- **Develop technologies, methods and models that can quantify and forecast how cumulative anthropogenic perturbations can affect ecosystem's sustainability, productivity and resilience against environmental stressors.**

HORIZON-CL6-2021-BIODIV-01-05	The economics of nature-based solutions: cost-benefit analysis, market development and funding	5	06/10/2021	1 (5M)	RIA	
A successful proposal will support the development of policies, business models and market conditions to scale up and speed up the implementation of nature-based solutions (NBS). It will contribute to the wider deployment of NBS and to fully reaping their economic, social and environmental benefits in order to build a competitive sustainability in Europe and to tackle climate change.						
HORIZON-CL6-2021-BIODIV-01-06	Nature-based solutions, prevention and reduction of risks and the insurance sector	4	06/10/2021	1 (4M)	CSA	
Proposals should contribute to all following expected outcomes: • More robust and integrated NBS for climate change adaptation and disaster risk reduction at local, regional, national and European level • Wider recognition and implementation of NBS as their benefits are fully recognized when compared to the costs of inaction, thus contributing to greater resilience and competitiveness of the economy and society. • Greater engagement of the insurance sector in NBS markets and NBS funding.						
HORIZON-CL6-2021-BIODIV-01-07	Ecosystems and their services for an evidence-based policy and decision-making	13	06/10/2021	1 (13M)	RIA	
• Cover knowledge gaps and improve the assessment of the condition of ecosystems and provide uptake of the assessment's outcomes in policy. • Develop minimum criteria, reference levels to define good ecosystem condition of protected areas, forests, agroecosystems, urban areas, soil ecosystems, wetlands, fresh water, and marine ecosystems. • Investigate how good ecosystem condition is related to the capacity of ecosystems to deliver ecosystem services and focus on quantification of ecosystem services and on data derived from biodiversity and ecosystem monitoring • Develop and test methods and tools (for natural capital accounting) to report ecosystem data at EU MS & AC level, to assess the pressures and condition of ecosystems, dynamics, trends and changes over time.						
HORIZON-CL6-2021-BIODIV-01-08	Supporting the development of a coherent and resilient Trans-European Nature Network	10	06/10/2021	1 (10M)	IA	

- **Set up a strategic plan to support national authorities in identifying and selecting the relevant priority areas for EU land protection and the set-up of ecological corridors, built on the existing EU network of protected areas and EU Biodiversity Strategy for 2030.**
- **Consider various climate change scenarios, propose solutions for strengthening ecological connectivity under these different scenarios, through additional protected areas and ecological corridors.** In this context, it should also consider the role of Green Urban Spaces and intensively managed ecosystems.
- Promote, support and demonstrate innovative and replicable **financing solutions and cooperation across borders** among Member States on different levels involving a wide range of stakeholders across sectors.
- Set a plan to collaborate with numerous stakeholders, running and future projects, infrastructures initiatives.

HORIZON-CL6-2021-BIODIV-01-09	Assessing and consolidating recent scientific advances on freshwater ecosystem restoration.	0.5	06/10/2021	1 (0.5M)	CSA	

HORIZON-CL6-2021-BIODIV-01-10	Demonstration of measures and management for coastal and marine ecosystems restoration and resilience in simplified socio-ecological systems.	10	06/10/2021	1 (10M)	IA	6-7

- **Address simplified socio-ecological systems where socio-economic activities, governance levels and range of ecosystems diversity allow for the experiment to be conducted within project duration and funding available.**
- Include already **existing area based management tools to allow a quick start of the project's testing approaches**, e.g:
  - The systems composed by Azores, Madeira, Canary Islands and Capo Verde (Macaronesia), Tuscan Archipelago,.
  - Greenland- Iceland region Arctic site, to identify solutions for management under rapid climate change.
- **Implement social innovation and co-creation of the solutions by involving: science & innovation, economy & finance, individual & collective action and governance, in local communities to enable societally acceptable interventions.**
- Use innovative approaches and lessons learnt for **upscaling measures and holistic socio-ecological management**.

HORIZON-CL6-2021-BIODIV-01-11	What else is out there? Exploring the connection between biodiversity, ecosystems services, pandemics and epidemic risk	4-6	06/10/2021	2 (12M)	RIA	3-5

- Recover biodiversity and ecosystems services whilst **predicting and preventing future pandemics & epidemic outbreaks, especially in tropical areas and biodiversity hotspots**.
- **Map, identify and characterise (e.g. with molecular techniques) potential emerging pathogens and their hosts/vectors in both carefully selected natural and human-modified areas**, explore the relationship of biodiversity and ecosystems dynamics with microbiomes' evolution and spread, within the broader context of socio-economic driving forces, climate change, public health and animal health.
- **Develop pathogen discovery, profilaxis & operational surveillance strategies**. Build risk maps and predictive models based on development trends, probable host species and environmental & socio-economic factors.

- Ecologists, infectious-disease researchers, medical doctors, veterinarians, environmental, public-health and animal-health experts, socio-economic stakeholders and the private sector, particularly SMEs, authorities, civil and political entities, should contribute to **devise an early warning mechanism, track environmental change, assess the risk of pathogens crossing over and reduce risky human activities.**
- Efforts to preserve/restore biodiversity should address the economic and socio-cultural factors that drive natural habitat alteration and the rural dependency on hunting and trading wild animals.

International cooperation with non-EU countries where new pathogens have emerged is encouraged.

HORIZON-CL6-2021-BIODIV-01-12	Improved science based maritime spatial planning and identification of marine protected areas	3-4	06/10/2021	2 (7M)	RIA	4-5

- Design of ad hoc innovative flexible socio-ecological management to cope with a rapidly changing environment for coastal, offshore and deep-sea marine ecosystems, considering their connectivity, including through deep-sea migratory species, and the need to preserve their inherent natural dynamics.
- Links to and use Copernicus, Group on Earth Observations (GEO) and the Global Earth Observation System of Systems (GEOSS)
- Provide approaches for greater policy coherence between the Water Framework Directive, Marine Strategy Framework Directive, Maritime Spatial Planning and the EU biodiversity strategy for 2030 and how these policies can better assist in the preservation of inherently and spatially dynamic systems.

Managing biodiversity in primary production

Code	Topic	Budget per project in M€	Deadline	No. of Projects (total budget in M€)	Type	TRL to achieve
HORIZON-CL6-2021-BIODIV-01-13	Breeding for resilience: focus on root-based traits	7	06/10/2021	2 (16M)	RIA	

- **Identify root traits that enhance resource efficiency** in different environments, consider plant – microbe interactions and restitution of plant-fixed carbon to the soil;
- **Increase our knowledge on the (molecular and biochemical) plasticity of root responses and their metabolic mechanisms to environmental cues**;
- **Improve existing and/or develop new root phenotyping tools** (including image analysis protocols) in controlled and on-field conditions, thereby overcoming the root data bottleneck;
- **Develop strategies to implement "root breeding"**, i.e. select for desirable root characteristics and exploit the genetic variation in root traits.
- Activities should be carried out in a **range of agronomically relevant soil conditions**.

HORIZON-CL6-2021-BIODIV-01-14	Fostering organic crop breeding	5	06/10/2021	2 (10M)	IA	6-7

- Improve the **availability & quality of plant reproductive material** & select varieties suited to organic farming conditions.
- Implement **'multi-actor approach',** open to all types of **organic farming systems** in various geographical conditions.
- Develop new relevant methods to **preserve genetic resources, pre-breeding & breeding activities and seed sourcing.**
- **Develop specific protocols for testing new organic varieties**, considering adaptability to different climatic conditions, resistance to pests and diseases, crop stability, productivity and nutritional content, to promote competitiveness.
- The potential of **OHM** (Organic Heterogenous Material) to foster and improve the use of **traditional material in organic crop farming should be analysed**.

Enabling transformative change on biodiversity

Code	Topic	Budget per project in M€	Deadline	No. of Projects (total budget in M€)	Type	TRL to achieve
HORIZON-CL6-2021-BIODIV-01-15	Quantify impacts of the trade in raw and processed biomass on ecosystems, for offering new leverage points for biodiversity conservation, along supply chains, to reduce leakage effects	2-3	06/10/2021	4 (10M)	RIA	
HORIZON-CL6-2021-BIODIV-01-16	Biodiversity, water, food, energy, transport, climate and health nexus in the context of transformative change	5	06/10/2021	1 (5M)	RIA	
HORIZON-CL6-2021-BIODIV-01-17	Policy mixes, governance (including financing) and decision-making tools for transformative action on biodiversity	2-3	06/10/2021	3 (8M)	RIA	

HORIZON-CL6-2021-BIODIV-01-18	Understanding the impacts of and the opportunities offered by digital transformation, new emerging technologies and social innovation on biodiversity	2-3	06/10/2021	2 (6M)	RIA	

Interconnecting biodiversity research and supporting policies						
Code	**Topic**	**Budget per project in M€**	**Deadline**	**No. of Projects (total budget in M€)**	**Type**	**TRL to achieve**
HORIZON-CL6-2021-BIODIV-01-19	A mechanism for science to inform implementation, monitoring, review and ratcheting up of the new EU biodiversity strategy for 2030 ('Science Service').	11-13	06/10/2021	1 (13M)	CSA	
HORIZON-CL6-2021-BIODIV-01-20	Support to processes triggered by IPBES and IPCC	5	06/10/2021	1 (5M)	CSA	
HORIZON-CL6-2021-BIODIV-01-21	Impact and dependence of business on biodiversity	2-3	06/10/2021	2 (5M)	RIA	

- **Identify criteria & indicators AND develop a toolbox to measure, assess & monitor dependence, impact & contribution to biodiversity recovery & ecosystem services; incl. indirect impacts through trade and supply chains.**
- **Develop methods to reduce adverse impacts and related reputational risks.**
- **Develop methods** for long-term sustainability, for business sectors beyond forestry, agriculture and fisheries, tourism, energy and mining, infrastructure and manufacturing and processing (directly dependent upon ecosystem services).
- **Collation of targets and regulations (at any level within the EU and AC) that stimulate innovations with positive impact on biodiversity** and on the decoupling of environmental pressures from growth in output.
- Promotion of:
  I. business cases contributing to the conservation, restoration and sustainable use of biodiversity and ecosystem services
  II. public accountability, informing regulatory agencies, guiding financial investments, influencing producer, retailer and consumer behaviour.
- Analyse the value of creating a HEU prize for innovative businesses improving biodiversity & ecosystem services.

Destination 1 – Biodiversity and Ecosystem Services						
Biodiversity and Ecosystem Services						
Code	**Topic**	**Budget per project in M€**	**Deadline**	**No. of Projects (total budget in M€)**	**Type**	**TRL to achieve**
HORIZON-CL6-2022-BIODIV-01-01	Observing and mapping biodiversity and ecosystems, with particular focus on coastal and marine ecosystems	4-14	15.2.22	2 (14M)	RIA	4-5
Proposals should contribute to better understand biodiversity decline, its main direct drivers and their interrelations.						
HORIZON-CL6-2022-BIODIV-01-02	Building taxonomic research capacity near biodiversity hotspots and for protected areas by networking natural history museums and other taxonomic facilities	6	15.2.22	1 (6M)	IA	
• Increased local taxonomic knowledge and expertise • Better taxonomic research capacity and reinforced digital networking • New taxonomy methods and technologies are put in use and tested in situ Strategic opportunities to promote integrative taxonomy in professional careers and academic curricula are identified.						
HORIZON-CL6-2022-BIODIV-01-03	Network for nature: multi-stakeholder dialogue platform to promote nature-based solutions	6	15.2.22	1 (6M)	CSA	
• Broad and effective community of innovators, practitioners and developers of NBS • Further developed and self-sustained platform for NBS • Improved cooperation and synergies with key strategic international partners Consolidation of NBS knowledge across sectors and disciplines						
HORIZON-CL6-2022-BIODIV-01-04	Natural capital accounting: Measuring the biodiversity footprint of products and organizations	10	15.2.22	1 (10M)	IA	
HORIZON-CL6-2022-BIODIV-01-05	Intercropping – understanding and using the benefits of complexity in farming and value chains	8	15.2.22	2 (16M)	RIA	

HORIZON-CL6-2022-BIODIV-01-06	Monitoring and effective measures for agrobiodiversity	8	15.2.22	1 (8M)	RIA	
HORIZON-CL6-2022-BIODIV-01-07	Protection and sustainable management of forest genetic resources of high interest for biodiversity, climate change adaptation, and forest reproductive materials	8	15.2.22	1 (8M)	RIA	
HORIZON-CL6-2022-BIODIV-01-08	Assessing the nexus of extraction, production, consumption, trade and behaviour patterns and of climate change action on biodiversity in the context of transformative change	3	15.2.22	4 (12M)	RIA	
HORIZON-CL6-2022-BIODIV-01-09	Understanding the role of behaviour, gender specifics, lifestyle, religious and cultural values, and addressing the role of enabling players (civil society, policy makers, financing and business leaders, retailers) in decision making	3-4	15.2.22	3 (10M)	RIA	
HORIZON-CL6-2022-BIODIV-01-10	Cooperation with the Convention on Biological Diversity	5	15.2.22	1 (5M)	CSA	

Destination 1 – Biodiversity and Ecosystem Services

Managing biodiversity in primary production

Code	Topic	Budget (M€)	Deadline	No. of Projects (total budget)	Type	TRL to achieve
HORIZON-CL6-2022-BIODIV-02-01-two-stage	Maintaining and restoring pollinators and pollination services in European agricultural landscapes	6-10	15.2.22 1.9.22	3 (20M)	IA	6-8

Demonstrate measures to diversify large-scale farming systems and the resulting feeding resources and habitats of pollinators in agricultural lands, grasslands and semi-natural areas, through agro-ecological practices, including organic farming and agroforestry, as well as through home gardens, and forestry systems where relevant to the restored landscapes, with a view to ensure heterogeneous habitats formed by native species that offer diversified floral and nesting resources for pollinators;

Create set-asides for nature, such as uncultivated patches of vegetation, to enhance floral diversity, and to ensure native, diverse, abundant and continuous floral resources for pollinator across time and space;

Code	Topic	Budget (M€)	Deadline	No. of Projects (total budget)	Type	TRL to achieve
HORIZON-CL6-2022-BIODIV-02-02-two-stage	Boosting breeding for a sustainable, resilient and competitive European legume sector	7	15.2.22 1.9.22	2 (14M)	IA	6-7

- Develop a catalogue of legume species and varieties and desired characteristics driven by demands in EU and AC.
- Develop measures for higher and stable yields, tolerance to abiotic and biotic stresses, resource efficiency, increased nitrogen-fixing capacity, and nutritional quality, food and feed processing, etc., through pre-breeding and breeding activities and tapping into local and traditional varieties where relevant.
- Improve screening techniques to better understand genetic relationships, origin and susceptibility to specific attributes. Build an open repository of breeding methods and breeding research outcomes for different attributes.
- Analyse the cost-effectiveness of legume breeding methods and identify the best varieties suited for given uses (e.g. crop rotation, extensive agricultural livestock systems, etc.).
- Analyes Case studies of innovative engagement of value chain partners in legume breeding initiatives and identify key factors of success.
- Develop governance and financial models to support legume breeding initiatives inclusive for all actors in the value chain, to strengthening legume demand.
- Design training packages tailored to the specific needs of different actors in the legume breeding and seed business to strengthen their capacities to achieve breeding gains.
- Set up a transdisciplinary EU and Associated Countries wide platform to facilitate trans-national and trans-regional knowledge and best practices sharing in legume breeding, including facilitating cross-regional testing of varieties.
- Foster demonstration and testing of legume breeding in different regions, especially where the sector is less developed.

HORIZON-CL6-2022-BIODIV-02-03-two-stage	Resilient beekeeping	6	15.2.22 1.9.22	2 (12M)	RIA	

- Develop technologies and strategies for beekeepers to adapt to climate change and possibly contribute to mitigate climate change, including the design of novel beehives equipment, technologies and management protocols;
- Perform baseline studies on immunity, health, nutrition, and genetic diversity and resistance of honeybees in line with their biological performance;
- Develop tools for assessing potential impacts of beekeeping on wild pollinators at landscape scale, strategies for mitigating those impacts, and tools tailored to public authorities for planning and decision-making with regard to optimal deployment of bee hives at local or regional level, taking into account among others nutrition requirements and landscape factors;
- Address at least Varroa destructor and possibly other honeybee mites, as well as Aethina tumida
- Review the key biological mechanisms of Varroa destructor, which determine its multiplication in a hive, including its potential connection with other pathogens, and identify possible novel areas to target with potential new control methods, including bee genetic resistance, especially in light of the experience and limitations of the attempts to fight it in Europe;
- Assess the vulnerability and preparedness of the EU honeybee-keeping sector in relation to Aethina tumida and Tropilaelaps spp. Identify successful practices and suggest mitigation strategies for and by the beekeepers to live with these pathogens.
- Include, if appropriate, a genetic component, looking at both the diversity of honeybee populations and the possibility of breeding and conservation approaches to address the identified challenge.