

# ECPGR Activity Grant Scheme Proposal Form

## Sixth Call – Phase X (2019-2023)

### Activity Proposal

Activity	
Full title	<b>Fostering the need of implementation of the ECPGR European Evaluation Network (EVA) on Grain legumes</b>
Acronym (or short title)	<b>ForEVA,</b>
Duration of Activity (in months)	14
Start date – End date <i>Please indicate start date not earlier than 3 months after deadline of Call</i>	March 1 <sup>st</sup> 2023 – 30 <sup>th</sup> April 2024

### Applying Working Group(s)

	Working Group	Indicate name and surname of Working Group Chair
1.	Grain Legumes	Creola BREZEANU

### Activity Coordinator

Activity Coordinator	
Name and Surname	Creola Brezeanu
Working Group	Grain Legumes
Nationality	Romanian
Current position	Chair of Grain Legume WG
Institute	Vegetable Research and Development Station Bacau
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### Activity Partners (ECPGR-funded)

Please note that each partner needs to be a member of an ECPGR Working Group to be eligible for funding. For self-funded partners please use the separate box below.

Partner ID No.	Name and Surname	Institute	Country
1	Ms Ulrike Lohwasser	Leibniz Institute of Plant Genetics and Crop Plant Research (IPK)	Germany
2	Ms Aleksandra Ilić (Savić)	Institute of field and vegetable crops	Serbia
3	Dalibor Živanov (on behalf)	Institute of field and vegetable crops	Serbia
4	Ms Sofiya Dimitrova Petrova	Institute of Plant Genetic Resources "K.Malkov"	Bulgaria
5	Ms Aina Kokare	State Priekuli Plant Breeding Institute	Latvia
6	Ms Lea Narits	Estonian Crop Research Institute (ECRI)	Estonia
7	Mr Nigel Maxted	University of Birmingham	United Kingdom
8	Ms Creola Brezeanu	Vegetable Research and Development Station, Bacau	Romania
9	Ms Ana Devidze Tamar Jinjikhadze	Scientific Research Center of Agriculture (SRCA)	Georgia
10	Ms Penelope Bebeli	Agricultural University of Athens	Greece
11	Barbara Pipan (on behalf)	Agricultural Institute of Slovenia	Slovenia
12	Ms Madalena Vaz	Banco Português de Germoplasma Vegetal	Portugal
13	Mr. Antonio M de Ron	Mision Biologica de Galicia (MBG) Spanish National Research Council (CSIG)	Spain
14	Ms Angela Piergiovanni/ Wilma Sabetta	Institute of Biosciences and Bioresources - National Research Council	Italy
15	Ms Ulrika Carlson-Nilsson	Nordic Genetic Resource Center	Sweden
16	Ms Schierscher Beate	Agroscope Research Department in Arable Crop Plant Breeding and Genetic Resources	Switzerland
17	Ms Paula Galan	Suceava Genebank (Banca de Resurse Genetice Vegetale Suceava)	Romania

18	Mr Charles-Henry Duval	Groupe d'Étude et de contrôle des Variétés Et des Semences (GEVES) - Unité expérimentale de Brion	France
19	Ms Erika Zetochová	National Agricultural and Food Centre Research, Institute of Plant Production	Slovakia
20	Ms Lucía De la Rosa Fernandez	Centro Nacional de Recursos Fitogenéticos/Dpto Medio Ambiente, INIA-CSIC  Former Centro Nacional de Recursos Fitogenéticos (CRF) Instituto Nacional de Investigación y Tecnología Agraria y Alimentaria (INIA) as on ECPGR site	Spain
21	Ms Sheila Alves	Teagasc	Ireland

*Self-funded partners*

Partner No.	Name and Surname	Institute	Country
1	Ms Sandra Goritschnig	ECPGR	International
2	Ms Marina Antić	Genetic Resources Institute University of Banja Luka	Bosnia and Herzegovina
3	Ms Elena Bitocchi & Mr Roberto Papa	UNIVPM	Italy

## Description of Activity (suggested max. 1000 words)

Please address the following aspects:

– **Background:** Explain the **context behind the choice of this Activity**, e.g. why this has been prioritized or selected. If this is the continuation of a preceding Activity, please indicate how and why the new Activity will build on previous results/experiences.

Alternative plant proteins for food are highly demanded (1). EU devotes only 3% of its arable land to protein crops, and imports more than 75% of its plant protein (2), despite the complementary and additional nutritional, agronomic and environmental benefits of legume crop cultivation. The low level of European plant protein self-sufficiency is due to: the *lack of breeding resources and knowledge gaps* (low agronomic expertise, insufficient cooperation between stakeholders, non-competitive management of PGR), *poor adaptation* of protein plant cultivars in Europe (3). EU planned to stimulate friendly improved cropping systems, and the GrainLeg GenRes play a significant role (4).

**Status:** The gene banks hold valuable PGR that need multiplication, regeneration and proper evaluation to encourage use in breeding programs and cultivar testing by farmers in different cropping systems. Moreover, there are significant advanced materials and available data from different projects and activities that could be integrated and widely shared to stakeholders along European agri-food chain.

**The challenge:** optimization of the exploitation of GenRes in legumes breeding. Creating availability and access to well-described and well-managed GrainLeg GeneRes collections (according to ECPGR objectives O1, O2, O5 and PGR Strategy for Europe Objectives table 5). Capturing the full diversity of GrainLeg will be paramount to advance legume crops and to reach a competitive level in the EU regarding agronomic performance and sustainability.

**The initiative:** to speed up the breeding gains, ForEVA is a preparatory action towards the establishment of an EVA-legume network, which will eventually ensure **comprehensive characterization and evaluation**, of legume germplasm using a **multiactor approach**. These activities will enable the preparatory steps to obtain valuable PGR in enough **quantities of seeds** to be distributed and tested in different locations for jointly agreed attributes as performance under variable biotic and abiotic pressures. At the end of the Activity, the Network will have the elements in place to swiftly operate as an EVA-legume network, provided necessary funds are identified, including through the lobbying effort that this Activity will exercise.

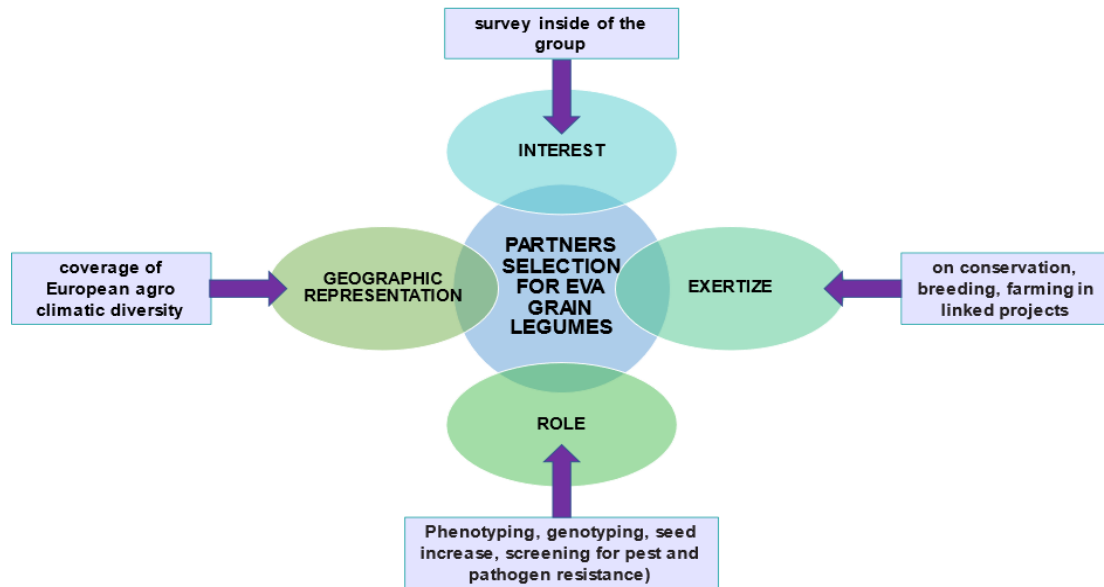
– **Justification:** Explain why this Activity is justified in terms of making progress towards achieving the ECPGR objectives.

A lack of breeding resources and knowledge gaps (low agronomic expertise, insufficient cooperation between researchers, breeders, farmers, and other actors, etc.) justify the importance and the impact of the Activity. ForEVA creates a proper framework for private public partnerships between stakeholders to enhance the conservation, the access, and the use of GrainLeg GenRes. By ForEVA implementation, breeding gains will be speed up with support of active stakeholders' involvement.

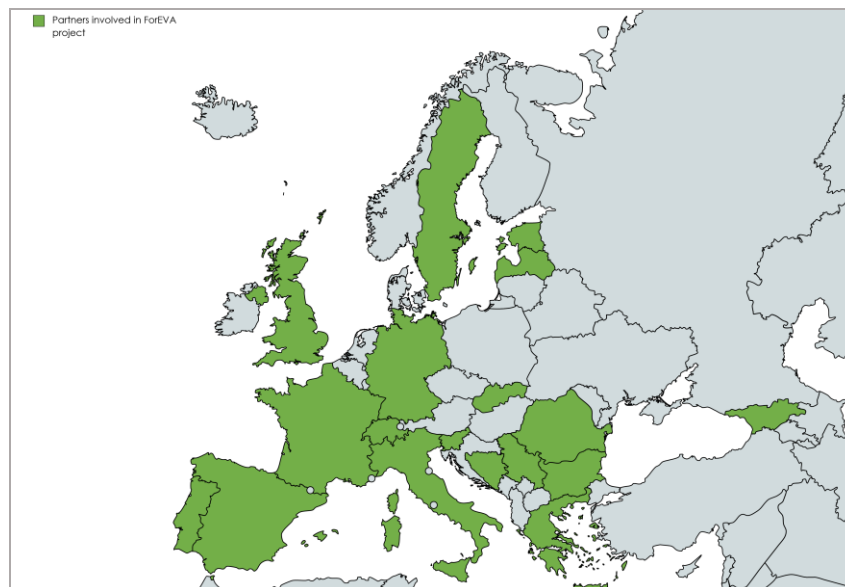
– **Rationale for the choice of partners:** Explain why the selected partners are the most suitable to carry out the proposed Activity and briefly describe their respective roles in the Activity.

The Activity is designed to involve multiactor participation, to facilitate a multi approach work to maximise efficiency and effectiveness and achieve full value for many impact. The network will involve diverse expertise and stakeholders in terms of conservation, breeding, farming. The partners

were selected based on a survey on GrainLeg WG members related to: interest and availabilities of seeds, potential to support different tasks on these materials, implication in projects with linked topic, assumption of the role in present Activity, and geographic representation.



**Figure 1 Criteria for choosing the partners of ForEVA proposal**



**Figure 2 Geographical distribution of partners involved in ForEVA**

– *Methodology or Approach:* Explain how the partners will operate. Clearly explain who is expected to do what. Also explain the rationale of meeting (or not) as part of the Activity. Include a Gantt Chart, to illustrate the work breakdown structure of the project.

The Activity is designed to involve multiactor participation, to facilitate a comprehensive approach work to achieve a multi-levelled impact. The network will involve diverse expertise in terms of conservation, breeding, farming. The activity is planned as **preparatory phase of EVA GrainLeg implementation**. Its goals are creating an EVA consortium, a feasible **work plan strongly related with funding sources** identified for this initiative and a clear workflow for PGR and data, considering the

multitude of GrainLeg species, and agro-climatic factors where EVA will be implemented. Each member will be involved in all actions, the leaders of actions will be confirmed at the first meeting. Duration and deliverables (D) are listed for each Action:

**Action 1. Survey for PGR national inventory and networking M1- M4**

*D1.1 List of GrainLeg GenRes proposed for EVA network; D1.2 List of stakeholders that intend to support the EVA implementation (letters of commitment)*

Partners will prioritise inclusion of accessions of GrainLeg (with breeding value and need of multiplication and/or evaluation) in EVA. The survey will cover all GrainLeg species. Gene banks will propose materials and will agree on providing a minimum quantity of seeds to be multiplied by the research institutes in EVA GrainLeg as necessary. The diversity of crops will require different experimental protocols, for diverse taxa to be considered.

The accession prioritisation will also consider materials and results from previous projects to ensure complementarity and to build the Activity on the existing evidence base. Partners of Activity having a large cooperation and access to intra and inter GrainLeg species diversity will speed up the process of identification of materials and will provide all necessary support.

Stakeholders (such as breeding companies, farmers, team leaders of different ongoing or implemented projects) will be approached, informed about the purpose of Activity, and invited to join this Activity and future EVA GrainLeg consortium, based on interest in GrainLeg GenRes, specific traits (mainly related productivity and ability to perform in adverse conditions and with minimal input), cropping system (intercropping, crop rotation). Stakeholders will confirm their interest in joining an EVA legumes network by signing a Letter of Commitment and will be involved in Actions 2-5 as consortium partners.

**Action 2. Development of PGR collections, traits selection, protocols for investigation, EVA ID implementation M4 – M9**

*D2.1 Set of EVA materials (selected from D1.1) – EVA-ID assigned; D2.2 Sets of traits prioritized D2.3 Sets of harmonized protocols for phenotyping and genotyping for all species included in D2.1*

Based on (D1.1), in accordance with the allocated budget, the size and the structure of collection permanently adjusted. The sets of accessions will be compiled in common templates updated and harmonized for each species and will include the data related amount of seeds available, passport data and if phenotypic and genotypic data available, specific features (already detected or susceptible, as yield potential, specific pest or disease resistance/ tolerance, etc). Partners will agree on common templates for evaluation and will prioritize traits for each species. EVA-ID will be assigned and linked to the original accession ID and its DOI, where available. This will clarify and simplify the seed exchanges, the identification, the progress of assessments and traceability

**Action 3. Design of experiments, plans for data collection and integration M4 – M11**

*D. 3.1 Comprehensive list of locations and experiments*

The experiments will be planned, having as main purpose: seed increase, development of SSD lines, phenotyping, genotyping, ability to perform in different climate conditions. The roles of partners within the EVA GrainLeg would be in accordance with the budget of the network. During the meeting the role will be discussed and agreed, the stakeholders will be actively involved:

*gene banks:* will propose and provide minimum quantities of seeds to be multiplied by research institutes and will evaluate potential recommendations related long term conservation materials resulted from EVA and from other projects.

*public research institutes:* will focus on: phenotyping and genotyping, seed increase cycles – MFL experiments to assess yield and quality performance in different (a)biotic contexts and cropping suitability for different schemes as intercropping or crop rotation.

*the breeding companies:* will act as self-funded members. Their role will be in multi-location evaluation, based on standardized protocols, of a defined set of materials at their own cost. They will participate in identifying the most suitable and useful traits, such as disease resistance.

*farmers:* will receive accessions for tests in their own fields along usually cultivated materials. Their feedback will be systematized collected to facilitate the data integration and to prioritize their selection criteria. They will use the accessions in their own cultivation scheme to identify capabilities and performances of investigated materials. Moreover, will interact with farmers involved in EVA network.

#### Action 4. Plans for seed exchange and distribution, SMTA M4 – M12

##### D4.1 Plan and workflow to ensure necessities in terms of seeds

Workflow considering the different calendar of cropping according to the climatic conditions will be decided. During the planned in person meeting in M7 the partners will decide related the assumption of responsibility of seed increase (phenotyping during seed increase if the case) and distribution based on the calendar of each location. Partners will consider climatic particularities of each location established for field investigations, related to Action 3.

#### Action 5. Management Dissemination Communication Stakeholder engagement M1 -M14

##### D5.1 Work plan, D5.2 List of recommendation, D5.3 Publishing strategy (protocols, survey), D5.4 Template for an EVA-legume Consortium Agreement finalized and agreed by partners and private stakeholders

The project coordinator with support of each Action's leaders and all partners will ensure smooth development of activities. Two online meetings and one in person are planned. Partners will work together to promote the Activity developing short announcements, press releases (in English and in the languages of participants). Updates will be distributed on partners institutional social media channels. Action 5 leader will be responsible for this plan. At the meeting, partners will analyze the opportunity of a publication strategy (including surveys, recommendations developed). 'Letters of Commitment' to join EVA and template for an EVA-legume Consortium Agreement will also be introduced by the ECPGR EVA Coordinator, with the aim to consolidate a consensus document by the end of the activity. A budget for the activities of the EVA consortium will be developed and funding sources for necessary budget items identified.

Action	Activity duration	2023												2024	
	month	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Ian	Febr	March	April
	month of the project	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11	M12	M13	M14
1	Survey for PGR national inventory and networking	Virtual meeting			D1.1 D1.2										
2	Development of PGR collections, traits selection, protocols for investigation,							Meeting			D2.1 D2.2 D2.3				
3	Design of experiments, plans for data collection and integration											D3.1			
4	Plans for seed exchange and distribution, SMTA												D4.1		
5	Management Dissemination Communication Stakeholder engagement													D5.1, D5.2, D5.3, D5.4, D5.5 Final virtual	Final report

– *Description of genetic material:* If your Activity is focusing on genetic material, please describe in detail, as far as possible, who is providing this genetic material, its status and the number of accessions under investigation (for example: *This Activity aims at molecularly*

*analysing / safety-duplicating / evaluating / collecting XY accessions (listed) of “Genus species”, provided by genebank Z/ farmers in country W /to be collected in country P..., etc.).*

No material will be field investigated on this Activity. Screening and survey of existing material is planned as it was presented in Methodology and Approach section.

Considering the current funding scheme of EVA, the Activity will act as a support and will speed up the implementation on EVA Grain Legume, in an organized frame.

– **Expected impact.** Clearly specify the expected impact from this Activity for the respective ECPGR objective(s), compared to the current state of progress of those same objectives. Explain how the impact will be obtained.

This Activity (as preparatory phase of EVA implementation) will support the **increase of the use of crop genetic diversity and the diversity of stakeholders.** By creating **functional public - private partnerships**, to speed up the breeding gains **the access and sustainable use of GrainLeg GenRes will be increased.** These will be feasible through

- Participatory approaches: researchers, breeders and farmers will contribute to conservation, evaluation, and breeding of food legume GenRes.
- Creation an operational EVA Legumes network with public and private partners.
- Developing protocols for phenotyping and genotyping, including prioritized traits.
- Harmonizing precise and high quality genotypic and phenotypic information along with validated passport data.
- Plan for sharing data and GenRes along stakeholders as breeding companies and farmers (self-funded members of EVA)
- Plan for integration of PGR, solutions and practices developed in similar initiatives.

Related ECPGR objective	Created impact: <b>increasing the use of crop genetic diversity and the diversity of stakeholders in plant breeding</b>	Actions* and deliverable* of current Activity aimed to create impact
<b>O1</b>	Increasing the percentage of the national collection analyzed for eligible accessions to be included into AEGIS	Action 1, D1.2
	Recommendations made by GL WG	Action 5, D5.2
	Published survey and recommendation results	Action 5, D5.3
	Number of new or updated crop-specific standards, traits.	Action 2, D 2.2
	Number of AEGIS accessions selected for characterization/evaluation	Action 2, D 2.1,
	Identification of traits of interest (by breeding sector and farmers)	Action 2, D 2.2,
<b>O2</b>	Number of descriptors updated for data quality improvement (including taxonomic data)	Action 2, D2.2
	Number of accessions with DOI	Action 2, D2.1
	Number of European accessions with C&E data in EURISCO	Action 2, D2.1 Action 1, D1.1
	Number of respondents to surveys (stakeholder to join the Activity)	Action 1, D1.2 Action 5, D5.3
<b>O5</b>	Establishment of GrainLeg European Evaluation Programme	Action 1-5, all deliverables
	Number of crops and accessions proposed to be evaluated	Action 2 D2.1

\*Actions and deliverable – as presented at **Methodology or Approach section**



– **Links with other non-ECPGR projects or individuals:** If applicable, clearly explain the objectives of the linked projects and the reasons for complementarity with the ECPGR Activity.

Legumes have been the subject of research projects at different scales. Building on previous projects tackling breeding issues related to (a)biotic stresses, food/feed uses and environmental assets of legumes, the on-going H2020 projects and different national projects are looking at transition paths to sustainable and competitive legume-based production systems and value chains in the EU, as well as breeding strategies and food characteristics. (details on linked projects at Additional remarks)

Partners are experienced and have background in

- **management of significant volumes** of phenotyping and genotyping data for a large variety of species as bean, cicer, lentil pea, , lathyrus, lupinus and pea (INCREASE, BRESOV, CiLaKlima, PreLuteus, SPITFIRE) – this will have a positive impact on development of Actions 1, 2, 4.
- **screening for different traits** with breeding value (BRESOV, CiLaKlima, PreLuteus, SPITFIRE) related to performance in low input conditions and different tolerance and resistance – linked to Action 1, 2, 3
- expertise and background to **support and to improve diversity** (CROPDIVA, BRESOV, EUCLEG, INCREASE) – linked to Actions 2, 3, 4, 5.
- practices to stimulate **the use and the multiple benefits** of GrainLeg in agri food chains (LEGATO, EUCLEG, BRESOV, INCREASE) – linked to Action 1 and Action 5.
- **capacity for networking** involving large variety of stakeholders (EUCLEG, INCREASE).

## Expected products and related ECPGR Objectives

List concrete products and results that are obtained by the Activity and the corresponding number(s) of the ECPGR Outcome(s) and/or Output(s) and/or Activities to which each product/result will contribute.

	Expected products/results	Corresponding ECPGR output, activity
1	Establishment of a functional multi actor participatory network	Output 5.1 European Evaluation Network for PGRFA developed Act 5.1.1 Survey of existing national evaluation programmes (research partnerships between genebanks, researchers, breeders; e.g. public private partnerships) Act 5.1.2 Development of a concept for an European Evaluation Programme
2	Set of prioritized PGR (species and materials as varieties, local population, lines) to be multiplied and investigated	Output 1.2 European Collection represents the European ex situ PGR diversity Act 1.2.2 Verification of the European Collection by crops in terms of representation of the ex situ PGR diversity Output 2.1 Update national ex situ inventories effectively and timely Act 2.1.1 Identification of National Inventory (NI) PGRFA accessions to be included in EURISCO Act 2.1.2 Improving quality of data in EURISCO (including coverage and precision of descriptors; inclusion of DOIs)
3	Set of traits of interest (according to the breeder and farmer needs) and updated, harmonized	Output 1.4 Issues limiting access to material explored and addressed Act 1.4.1 Survey of issues impacting on the possibility to access material Act 1.4.2 Investigate ways to improve access to material subject to prior identified issues Output 1.10 AEGIS system evaluated

	protocols for investigation	Act 1.10.1 Develop a questionnaire together with users for feedback from users Output 2.4 Users' expectations explored and functionalities of EURISCO increased 2.4.1 Perform users' surveys; analyse results and formulate recommendations for improvements
5	List of multilocation field experiments to assess productivity under different (a)biotic pressures	Output 4.3 Good practices for on-farm management and conservation and adding value promoted Act 4.3.1 Provision of store of knowledge and evidence based practices, related to successful experiences of conservation and sustainable use of landraces and other heterogeneous genetic resources in Europe Output 4.4 Definition of Most Appropriate Areas (MAPAs) sites of on farm cultivated plant diversity discussed and implemented Act 4.4.2 Identification of MAPA sites for recognition at National /European level

## Workplan for the proposed period of the Activity

Brief description of meetings and/or main actions of the Activity.

	Type of Action (indicate if "meeting" or "other action")
1	"Meeting" <b>On-line meeting (kick off meeting)</b> – discussions related actions, focus on Action 1 and Action 5
2	<b>Meeting</b> - The proposal envisages the organization of a workshop towards the implementation of the ECPGR European Evaluation Network (EVA) on Grain legumes. The project is designed as a preparatory phase for establishment of EVA Legume Network.
2.1	"Other action" <b>Preparatory phase of the meeting</b> a. Survey of national collections in order to identify and to propose the most suitable PGR to be included in evaluation/ multiplication for EVA – <i>responsibility of each partner</i> b. The approach of representative stakeholders (as breeding companies, farmers, team leaders of different ongoing or implemented projects) with the purpose of Activity promotion and to address the official invitation to join Activity based on interest in specific PGR, grain legume species, specific traits (mainly related productivity and ability to perform in adverse conditions and with minimal input), cropping system (intercropping, crop rotation) – <i>responsibility of each partner</i>
2.2	"Meeting" <b>Workshop</b> - partners will meet to work and decide on a. Material to evaluate and traits b. Experimental, characterization and evaluation protocols, – eventually the strategy of protocols publication c. Definition of tasks, deadlines and responsibilities (multiplication, evaluation, characterization, SSD development, designing of multi field locations experiments) d. Adoption of SMTA and EVA-ID, linked to the original accession ID and its DOI, where available for distribution of material e. Deciding of embargo period before the data are made public outside the cooperation f. Promoting private public partnerships for the increased use of Plant Genetic Resources

	for Food and Agriculture (PGRFA) in European collections, in strong relation with O5 promote use of PGRFA
2.3	<p><b>“other action”</b></p> <p><b>Post workshop</b></p> <p>a. Report of the workshop</p> <p>b. Funding identification in close relation with Secretariat</p> <p>c. Advancement of proposal</p>
3	<p><b>“Meeting”</b></p> <p><b>Final meeting – on line. Final report</b></p>

## Additional remarks

Indicate any additional remark(s) that is/are important for the evaluation/implementation of the proposed Activity

Remarks:
<p>The increase of sustainability is an imperative and in case of agri-food chains, especially in the current pandemic and war context. According to the GrainLeg biological and nutritional profile, these species are crucial to solve key agriculture-related societal challenges, such as agrobiodiversity conservation, sustainable agriculture, food security and human health.</p> <p>Understanding the value of availability and access to well-described and well-managed GrainLeg GenRes, <b>ForEVA partners offer in-kind work</b> to develop a proper frame for GenRes selection, feasible plans for harmonized investigations, meant to increase the use of PGR ensuring in this manner long term economic, environmental, climatic and socio-economic benefits.</p> <p>One of significant challenge remains the identification of proper funding to stimulate the sustainability of the network.</p> <p style="text-align: right;"><b>Annex 1</b></p> <p><b>Bibliography</b></p> <ol style="list-style-type: none"> <li>1. European Commission, Directorate-General for Agriculture and Rural Development, <i>EU agricultural outlook for markets and income 2019-2030</i>, Publications Office, 2020, <a href="https://data.europa.eu/doi/10.2762/904294">https://data.europa.eu/doi/10.2762/904294</a></li> <li>2. EC Report A8-0121/2018, REPORT on a European strategy for the promotion of protein crops – encouraging the production of protein and leguminous plants in the European agriculture sector   A8-0121/2018   European Parliament (europa.eu)</li> <li>3. COPA-COGECA report, GOL (18)585 “Encouraging the production of oilseeds, protein crops and fodder legumes in the European Union: recommendations for a European plant protein plan”</li> <li>4. Regulation (EU) 2018/848 New EU Organic Regulation</li> <li>5. The Plant Genetic Resources Strategy for Europe, ECPGR, 2021 Objectives and targets of PGR Strategy for Europe and associated priorities for ECPGR Phase XI (272,6 KB)(Annex 3 of the report of the 16th ECPGR Steering Committee meeting)</li> <li>6. Objectives of ECPGR for Phase X (2019-2023) (agreed at the 15th Steering Committee meeting, May 2018) (264,3 KB)</li> </ol> <p style="text-align: right;"><b>Annex 2</b></p> <p><b>List of abbreviation</b></p> <ol style="list-style-type: none"> <li>1. GenRes genetic resources</li> </ol>

2. GrainLeg grain legumes
3. PGR plant genetic resources

Annex 3

List of linked projects developed by partners, and details about the complementarity

Partner name	Project name, acronym	Funded by	How these projects are linked with EVA implementation, specific ForEva Actions impacted
	<b>IPK - CiLaKlima:</b> Screening of genetic resources of chickpea ( <i>Cicer arietinum</i> ) and grass pea ( <i>Lathyrus sativus</i> ): Adaptation to climate change in Germany with alternative legumes for human consumption German Ministry of Food and Agriculture		Screening of legume PGRs, Linked mainly with development of Action 1, 2, 3, 4
	<b>IPK -PreLuteus:</b> Development of high-yielding and resistant pre-breeding lines of yellow lupin ( <i>Lupinus luteus</i> ) in Germany German Ministry of Food and Agriculture		Screening of legume PGRs, Linked mainly with development of Action 1, 2, 3, 4
	<b>IPK - SPITFIRE:</b> Screening of <i>Pisum sativum</i> (pea) accessions for pea necrotic yellow dwarf virus resistance Cornet		Screening of legume PGRs, Linked mainly with development of Action 1, 2, 3, 4
	<b>IFVCNS - LEGATO</b> LEGumes for the Agriculture of Tomorrow, EU		<ul style="list-style-type: none"> <li>•increased sustainable reintroduction of grain legumes in European cropping systems.</li> <li>•identification and testing of novel legume breeding lines possessing valuable characters such as disease and pest resistance and quality for human consumption</li> <li>•linked mainly with development of Action 1, 2, 3, 4</li> </ul>
	<b>IFVCNS – EUCLEG</b> Breeding forage and grain legumes to increase EU's and China's protein self-sufficiency, EU		<ul style="list-style-type: none"> <li>•improve the genetic progress</li> <li>•developing efficient breeding strategies for the legume crops of major economic importance in human food and animal feed.</li> <li>•improve diversification, crop productivity, yield stability and protein quality of grain legumes</li> <li>•identify and develop the best genetic resources, phenotyping methods and molecular tools to breed legume varieties with improved performance under biotic and abiotic stresses</li> <li>•linked mainly with development of Action 1, 2, 3, 4, 5</li> </ul>
	<b>IFVCNS – CROPDIVA</b> Climate Resilient Orphan crops for increased DIVERSity in Agriculture, EU		<ul style="list-style-type: none"> <li>•reinforce agrobiodiversity at different levels and along geographic and socio-economic areas.</li> <li>•promotion of key underutilized arable crops</li> <li>•creation of value chains and the study of the socio-economic impact of the project's results.</li> <li>•enable biodiversity management at all levels, including diversifying the use of genetic resources,</li> </ul>

	<p>crop production systems, new food/non-food products and market opportunities</p> <ul style="list-style-type: none"> <li>•linked mainly with development of Action 1, 2, 3, 4</li> </ul>
<p><b>VRDS, IPK – BRESOV</b> Breeding for Resilient, Efficient and Sustainable Organic Vegetable production EU</p>	<ul style="list-style-type: none"> <li>•Identification of valuable bean materials</li> <li>•Pre-breeding and breeding of resilient bean resources able to perform in organic system.</li> <li>•Investigations of bean influence and its performance in organic crop rotation with vegetables, linked mainly with development of Action</li> </ul>
<p><b>VRDS, KIS, IPK, INIA – INCREASE</b> Intelligent Collections of Food Legumes Genetic Resources for European Agrofood Systems</p>	<ul style="list-style-type: none"> <li>•Development of intelligent collection for EU agri food chains, pure lines SSD; phenotyping protocols; new schemes for intercropping.</li> <li>•Linked mainly with development of Action 1, 2, 3, 4, 5</li> </ul>
<p><b>ECOBREED - KIS</b></p>	<ul style="list-style-type: none"> <li>•improve the availability of seed and varieties suitable for organic and low- input production</li> <li>•linked mainly with development of Action 1, 2, 3, 4, 5</li> </ul>

**Please send the completed form together with the budget table to the  
Chair of the submitting Working Group for submission of the Activity proposal.**