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ANNEX 3

of the Commission Implementing Decision on the Annual Action Programme 2018 for Food and Nutrition Security and Sustainable Agriculture under the Multiannual Indicative Programme for the Thematic Programme on Global Public Goods and Challenges for the period 2018-2020 to be financed from the general budget of the Union

ANNUAL PROGRAMME
This document constitutes the annual work programme in the sense of Article 110(2) of the Financial Regulation and the action programme in the sense of Articles 2 and 3 of Regulation N° 236/2014.

1. Title/basic act/ CRIS number	DeSIRA – climate-relevant actions at country level CRIS number: FOOD 2018 / 041-107 financed under Development Cooperation Instrument	
2. Zone benefiting from the action/location	Africa, Central and Latin America : The action shall be carried out at the following location: 25 countries	
3. Programming document	GPGC MIP 2014-2020	
4. SDGs	Main SDG Goal(s) 1, 2 and 13 Secondary SDG Goal(s) 5, 8, 15	
5. Sector of concentration/ thematic area	Food and Nutrition Security and Sustainable Agriculture	DEV. Aid: YES
6. Amounts concerned	Total estimated cost: EUR 103,500,000 Total amount of EU budget contribution : EUR 98,500,000 The contribution is for an amount of EUR 55,000,000 from the general budget of the European Union for 2018 and for an amount of EUR EUR 43,500,000 from the general budget of the European Union for 2019, subject to the availability of appropriations following the adoption of the relevant budget The Commission will be entrusted with the responsibility of managing the contribution for an amount of EUR 5,000,000 transferred by AFD (France) after the signature of the corresponding transfer agreement, in accordance with the procedures applicable to the expenditure of the	

	European Union , in particular EU budget. This action is co-financed in parallel co-financing by the Bill and Melinda Gates Foundation (USD 33, 000,000).
7. Aid modality(ies) and implementation modality(ies)	Project Modality Direct management through grants Indirect management with Agencia Española de Cooperación Internacional para el Desarrollo (AECID), Belgian Development Agency (ENABEL), Inter-American Institute for Cooperation on Agriculture (IICA), and Agence Française de Développement (AFD) (to be confirmed).
8 a) DAC code(s)	Main DAC code 311 (Agriculture) –100% sector- percentage ; Sub-code Agriculture research – 31182-90% ; <Sub-code Forestry research – 31282- 10%
b) Main Delivery Channel	41000

9. Markers (from CRIS DAC form)

General policy objective	**Not targeted**	**Significant objective**	**Main objective**
Participation development/good governance	☐	☐	x
Aid to environment	☐	x	☐
Gender equality (including Women In Development)	☐	x	☐
Trade Development	x	☐	☐
Reproductive, Maternal, New born and child health	x	☐	☐
RIO Convention markers	**Not targeted**	**Significant objective**	**Main objective**
Biological diversity	☐	x	☐
Combat desertification	☐	x	☐
Climate change mitigation	☐	☐	x
Climate change adaptation	☐	☐	x

10. Global Public Goods and Challenges (GPGC) thematic flagships	Food and nutrition security and sustainable agriculture

SUMMARY

This action is part of an initiative on Development Smart Innovation through Research in Agriculture (DeSIRA), which is steered by the European Commission and involves some EU Member States and the Bill and Melinda Gates Foundation. By linking more effectively research and innovation with development initiatives, DeSIRA intends to boost innovation in

agriculture and food systems transformation of partner countries with a view to be more resilient to the effects of climate change.
It will contribute to the climate-relevant, productive, and sustainable transformation of agriculture and food systems in low and middle-income countries, thereby contributing to the achievement of the following SDG Targets: 2.3 (Agricultural productivity), 2.4 (Sustainable food systems and resilient agricultural practices), 2.A (Investments in research and extension), and 13.2 (integrate climate change into policies, strategies, and planning).

Main outcomes would be:
- Improved resilience to climate change of specific agricultural and food systems in 25 countries in Africa and Latin America by 2023; and
- Increased climate relevance of Agriculture and Knowledge Innovation Systems (AKIS) in 25 countries in Africa and Latin America by 2023

Capacity development of organisations and individuals in low and middle-income countries is at the basis of the intervention logic of this action, with a view to enhance the effectiveness of agricultural policies on a long term basis and of supporting development cooperation and investment programmes through more climate-relevant agriculture knowledge and innovation systems.

1. CONTEXT

1.1 Context description

The world is facing global challenges that affect the sustainability of food and agriculture systems, and thus the livelihoods of millions of family farmers worldwide. These global challenges are exacerbated by the effects of climate change and pose serious threats to achieving the fundamental right of everyone to be free from hunger, and achieving the transformational changes predicated by the Agenda 2030 for Sustainable Development. Climate relevant innovation, be it institutional, social or technological, is needed in agriculture and food systems to meet these challenges.

With a growing population, the tension between agricultural production, scarcity of arable land and water, and climate change will increasingly be a source of conflicts and a powerful driver of migration. Climate change is increasingly compromising humanity's ability to feed itself, with increasing average temperatures, change in rainfall patterns and growing recurrence of droughts and floods. Agriculture is both a victim of and a major contributor to climate change and environmental degradation, notably through land use change and land degradation. At the same time, practices that help farmers adapt to climate change often bring multiple benefits and reduce net greenhouse gas emissions too.

The 23rd session of the Conference of the Parties (COP 23) to the UN Convention on Climate Change (UNFCCC) took place in Bonn, Germany from 6-17 November 2017. Among other decisions, COP 23 adopted a major one on “Issues Relating to Agriculture”, recognizing the importance of agriculture for the implementation of the Paris Climate Agreement. This is expected to help create an enabling environment for countries and non-state actors to conduct activities in the agricultural sectors that are key to achieve the objectives of the Paris

Agreement; and it will be supported by the 'Koronivia joint work on agriculture' under which Subsidiary Body for Scientific and Technological Advice and the Subsidiary Body for Implementation will jointly address issues related to agriculture. Parties to the UNFCCC were requested to provide views by mid-2018 on several issues, starting with methods and approaches for assessing adaptation, adaptation co-benefits and resilience; improved soil carbon, soil health and soil fertility under grassland and cropland as well as integrated systems, including water management; improved nutrient use and manure management towards sustainable and resilient agricultural systems; improved livestock management systems; and socioeconomic and food security dimensions of climate change in the agricultural sector.

The public sector, in collaboration with civil society, farmers' organizations and the private sector, is responsible for creating and supporting the conditions and the institutional framework that will enable innovation to flourish, linking these various actors, fostering the capacity of smallholder farmers and other stakeholders and providing incentives, for them to innovate. Research and extension play a central role in these innovation pathways. The institutional architecture comprises different types of research and extension organisations, operating at different scales, from the global to the national and local levels. These organisations are currently not well enough equipped to face the challenges of supporting climate change adaptation and mitigation. This is in that context that FAO will organise an international symposium on innovation for family farmers in November 2018.

The Action is enshrined in Commission's larger approach to Food and Nutrition Security and Sustainable Agriculture, where poverty eradication, reducing inequalities, and fostering human development are paramount objectives to be achieved by promoting partnerships –as highlighted in the 2030 Agenda- to attain sustainable economic growth, stability and peace.

1.2 Public Policy Assessment and EU Policy Framework (EU, Global)

In line with the New EU Consensus on Development, the Multi-annual Indicative Programme 2018-2020 for the Global Public Goods and Challenges programme recognises the need to reconcile agriculture with climate change and environmental degradation challenges, and addresses the importance of generating and exchanging knowledge to foster innovation under its priority for "Food and Nutrition Security and Sustainable Agriculture".

The "One Planet Summit" (Paris, 12 December 2017) generated a positive momentum on climate relevant research and innovation in agriculture, and led to pledges from the European Commission (EC), the Gates Foundation (BMGF) and France.

The EC commitment is built on discussions held under an EC-led platform called DeSIRA (Development Smart Innovation through Research in Agriculture) to enhance farmers' access to innovation through better integration of agricultural research. DeSIRA results in particular from a G7 declaration to strengthen support to agricultural research for the poor (Elmau, 2015, German Presidency) and from Council conclusions (3477th meeting, 20 June 2016, Netherlands Presidency) where: "The Council encourages the EU and its Member States to work together to accelerate farmers' access to innovation and strengthen partnerships between European and partner research institutions for long term effectiveness."

1.3 Public Policy Assessment of the partner country/region

The Action has been designed in accordance with the New European Consensus on Development and in close partnerships with EU MS, in particular DE, FR, ES, IT. At country level, a joint identification exercise led by EU Delegations has resulted in a number of strong proposals involving Member States together with partner countries' research institutions.

For Africa, the African Union (AU) Malabo Declaration on Agriculture (2014) was adopted on the 10th anniversary of the Comprehensive African Agriculture Development Programme (CAADP). It constitutes its strategy for agricultural development. The Science, Technology and Innovation Strategy for Africa (STI SA) is the overall strategy for the continent. The Science Agenda for Agriculture in Africa (S3A) is a framework for ensuring that Malabo commitments take advantage of STI in response to Malabo call for "*the African Agricultural Research and Knowledge Institutions to vigorously support the realization of this agenda through an integrated and coherent manner, building on national systems and capacities*". These commitments to achieve the CAADP targets include targets in terms of resilience of agriculture towards climate change, and of investments in agricultural research (1% of agricultural GDP). The first Biennial Review (published in 2018) has however shown that very few countries are on track to achieve 2025 targets, and calls for enhanced efforts.

In Latin America and the Caribbean, efforts are being made to implement public policies for climate change mitigation and adaptation, including in agriculture and forestry. The Paris Agreement was signed and ratified by the 33 member countries of the Community of Latin American and Caribbean States (CELAC) and ratified by 31 of them. The EU is supporting the region for the implementation through the EUROCLIMA joint programme, established in May 2008 by the Lima Declaration, adopted at the Fifth Summit Conference of Heads of State and Government of Latin America and the Caribbean and the European Union. Within this cooperation framework, technical inputs have been developed to assess economic and social impacts, which include support for designing nationally determined contributions. As a result of the second EU-CELAC Foreign Ministers Meeting held on July 16-17 in Brussels under the theme "Building bridges and strengthening our partnership to face global changes", the document "The European Union and Latin America and the Caribbean: Convergent and sustainable strategies in the current global environment" was published. It highlights that rising concerns about climate change and environment require a new approach linking innovation and environmental sustainability.

In relation with global Commission's commitments on nutrition, a focus for the Action put on fostering agricultural diversification and integration with livestock and forestry at farm level will contribute to healthier diets among smallholder farmers in priority countries.

1.4 Stakeholder analysis

The beneficiaries of this action are the national agricultural research systems (NARS) in partner countries, comprising research and academic organisations, extension services, producers' organisations, private sector organizations, and civil society organisations.

The final beneficiaries comprise smallholder farmers, entrepreneurs, etc. with a particular focus on the rural poor, especially smallholder women and youth farmers and pastoralists as well as the marginalized communities.

Key stakeholders are: partner countries governments, organisations for agricultural research in Africa, in Latin and Central America at sub-regional, regional and continental level, Regional Economic Communities (RECs); EU Member States and some of their specific interventions (such as GiZ Green Innovation Centres); Financial Development Institutions, European advanced Research Institutions, universities and networks (incl. AGRINATURA), international research centres, farmers' and professional organisations; private sector, and other civil society organizations.

1.5 Priority areas for support/problem analysis

Challenges posed by poverty and climate change to the transformation of agriculture and food systems are complex and diverse.

To address these challenges, this action fosters a vision to bring more science into development action to support cooperation and investments programmes in the sector of Food and Nutrition Security and Sustainable Agriculture (FNSSA). FNSSA is a major EU sector of cooperation in more than 60 countries over the current financial framework (2014-2020), for an overall amount of €8.4 billion. In 2016 annual financial assistance from the EU and its Member States to food and nutrition security increased to EUR 4.2 billion, this is a rise of 14.7% since 2014 and 24.8% since 2012.

The priority areas have both geographic and thematic focus, with some intersections: Sahel; Livestock; Agroforestry and forest agriculture; Water management in rice farming systems in fragile and coastal States in Africa; surveillance of emerging pests; Institutional and human capacities in National Agriculture Research Systems on climate and agriculture.

They respond to a number of elements such as their relevance in terms of challenges of resilience to climate change; the importance of (EU) development cooperation in FNSSA; the capacity to mobilise European research and innovation capacities; the potential for partnership with national partners and international research entities.

Africa and Sahel

Africa's low economic development and booming demography calls for considerable social, economic and environmental transformations for the decades to come. With a population expected to triple, Africa will be taking the largest share of the humanity's increase during the next three generations by 2100. The continent will also hold the largest share of young and productive people, which is an asset as a workforce, but also a challenge in terms of securing food security, employment and incomes, especially in the context of increasing pressure on natural resources, continuing environmental degradation and projected impacts of climate change. During the recent decades, Africa has generally succeeded to increase its food production to match its population growth. However, less than half of this expanded food production came through higher productivity, the rest coming from the expansion of cropped areas. Hunger and malnutrition, and resulting short- and long-term human health and labor productivity losses, persist due to poverty, conflicts, epidemics, drought, or an economic crisis such as in 2008-2009, creating vicious spirals.

These challenges are especially acute in the Sahel region, the poorest region of the planet, where family farming is highly vulnerable to land degradation and climate change. Climate change, with an expected increase in variability of the water cycle (more and severe floods and droughts), is further complicating the situation of agriculture and endangering livelihoods.

As a consequence, sustainable crop management, supplemental irrigation, bio-energy supplies, and flood/drought management are becoming important components of strengthening the resilience of food production systems, climate change adaptation measures and spatial planning.

The pathways towards the global intensification of agriculture in the Sahel are multiple and should be different from the transformation which occurred during the « green revolution » in Asia, as the levers to activate for agricultural development are different nowadays. Although it is clear that African agriculture will need to be intensified, production must not increase at the cost of severe losses in soil degradation, biodiversity, ecosystem services and natural capital. All forms of "agro-ecological" pathways to intensification aiming at increasing yields while taking advantage of, and even consolidating, ecosystem services will need to be explored in their full diversity.

Innovative agriculture practices, although some of them well known for decades, remain poorly disseminated, and the measures necessary to promote the adoption of such new approaches and technologies are highly needed. This includes integrated water and soil fertility management, carbon sequestration, advanced plant breeding techniques, integrated control of pests and diseases, information and communication technologies (ICTs), appropriate mechanisation of agricultural production, and market connections and integration within value chains.

ICTs in the Sahel remain poorly developed, with the mobile phone as the sole exception. Smartphone technology has a high potential for triggering new frameworks of services for agricultural development, as it will become gradually more affordable and inter-connected through Internet of Things. ICT-related innovation will focus less on the hardware which is quite mature and more on the design of uses and services, i.e. the software (apps) and data management, to facilitate important services such as farmers advisory systems, crop genetic data management and mobile-banking which could capitalise on existing (predominantly eastern and southern) African success stories.

Although demographic projections show an increase of urban dwellers, rural populations will continue to grow in the region, leading to a massive arrival of the youth on the labour market. Employment in the rural sector in the Sahel is presently unattractive, especially to the youth. Non-agricultural sector, although increasing, still offers limited economic opportunities in the region. Hence, sustainable development, poverty reduction and job creation for the youth in the Sahel will crucially depend on agricultural development, strengthening and expansion of backward and forward linkages within the rural economy and small country towns, particularly for agricultural input supply and processing of agricultural products along different value chains, within integrated food-energy systems.

Water management and rice in Western Africa Coastal and fragile states

Due to changes in West African food consumption patterns, a growing imbalance between regional **rice** supply and demand has been observed over the last decades. Since 1973, regional demand has grown at 6.0% annually, driven by a combination of population growth (2.9% growth rate) and substitution away from the region's traditional coarse grains. Per capita rice consumption has been increasing at more than 3% annually since the late 1990s in the context of growing urbanisation and changes in family occupation. In comparison with the rapid growth in demand, regional rice production, mainly driven by the expansion of cultivated area, barely exceeded population growth, and matched only two-thirds of the increments in demand. In populated areas and fragile coastal States of West Africa, rising

cropping intensity in fragile upland ecosystems has begun to degrade the resource base, with environmental damage and loss in production potential. Nevertheless rice is well adapted to flooded lowland ecosystems where the soils are least fragile and best able to support continuous cultivation. The developing profitable lowland rice technologies is therefore a central element of strategies to reduce pressure on rapidly degraded uplands. Mangrove rice covers approximately 147,000 ha of mangrove swamps, representing 3% of the total area and producing roughly 4% of the West Africa's output. Soils are generally more fertile than in the other environments since they benefit from regular deposits of silt left during annual flooding. However, the soils are also characterized by high salinity and sulfate acidity. Lower rainfall during the last two decades has reduced seasonal flushing substantially, further accentuating both problems. Although West Africa has approximately 1 million ha of potentially cultivable mangrove swamps, the high labour costs associated with clearing and potentially negative environmental effects pose major constraints to further area expansion.

Agroforestry and forest agriculture

The challenge is to use the potential of agroforestry, i.e. the intentional integration of trees and/or shrubs into crop and animal production systems, for addressing climate change and environmental degradation. It is estimated that two-thirds of croplands in Africa, 45% in South America and 74% in Meso-America are degraded to some degree. Land degradation erodes farming systems' productivity, weakens resilience, damages climate and water cycles and ecosystem services, worsens green house gases (GHG) emissions and exacerbates biodiversity loss. Agroforestry may serve both climate change mitigation and adaptation objectives. It can help to revert this environmental degradation, deliver ecosystem services, reduce human impacts on natural forests, and provide economic benefits while contributing decisively to sustainable land management and restoration and maintenance of healthy landscapes; providing assets and income to improve soil fertility, enhance local climate conditions and supply wood energy; increasing annual crops efficiency and delivering specific tree produce (fruits, vegetables, oils, nuts and honey, fuelwood, fibre, fodder, resins, timber and medicines) within intercropped tree systems.

Phytosanitary surveillance is a critical requirement in the context of climate change and new emerging diseases. Rapid spread of biotic diseases and emergence of new ones may have very harmful impact for production, food security and farmers' revenues. Understanding mechanisms governing populations of pathogens in specific production systems and epidemiology will provide the scientific basis for field diagnostics, routine warning systems, surveillance of specific threats and response actions. Cassava mosaic disease (CMD) and cassava brown streak disease (CBSD) are the most important biotic constraints to cassava production in Africa today. An outbreak of one of these viral diseases in any West African country would be catastrophic for food security as West Africans depend more on cassava for their daily calories than any other crop. Monitoring the movement of the disease through Africa by setting up a widespread appropriate system including participatory disease surveillance, training, and testing diverse low-cost/high-coverage approaches with input from expert epidemiological modelers will prepare for an effective response. Beyond cassava, it will help in a regional approach to control vegetal bio-aggressors for both research and phytosanitary policies.

Livestock fulfils multiple economic, social and risk management functions particularly in poor communities, where it is an essential risk reduction strategy as well as an important

source of nutrients and traction for growing crops in smallholder systems. It employs at least 1.3 billion people globally and directly supports the livelihoods of 600 million poor smallholder farmers in the developing world. Climate change is severely challenging the livestock sector through reduced productivity owing to feed and water shortage (reduction of herbage yield, increase in lignification, decreasing forage digestibility, shrub encroachment reducing forage availability…) and to changes in animal diseases ecology and transmission dynamics (stress and heat-related diseases, infectious and vector-borne diseases…). Livestock is not only hurt by climate change, it also contributes significantly to global greenhouse gas emissions (14.5% of total) and to environmental degradation (deforestation, large-scale operations effluent pollution…). Livestock sector will need to adapt to climate change in order to keep contributing to feed the world with high nutritional value proteins and to reduce GHG emissions by taking advantage of the carbon sequestration potential in rangelands.

National Agriculture Research Systems and climate change

Agri-food research and innovation systems are short of impacting significantly the lives and livelihoods of resource-poor smallholder farmers around the world. This is due to major problems including inadequate public policies and government investments to create a favourable environment for innovation in agriculture and food systems. Empowering smallholder farmers, facilitating private sector investments, and strengthening human and institutional resources of public sector research and extension services are essential to address capacity and blockages for agri-food innovation to impact at scale, in particular in the context of climate challenge.

2. RISKS AND ASSUMPTIONS

Risks	**Risk level (H/M/L)**	**Mitigating measures**
Difficulty to monitor progress of the Action - Some of the expected results represent qualitative "intangible" behavioural changes (increased capacities, shifts of paradigm in research operations, more active role of smallholder farmers, etc.), necessary to generate the longer term sustained developmental impacts.	M	Develop a common M&E system, which would allow to measure progress against expected outcomes with attention to collecting and analysing data from the perspectives of gender and youth.
Disconnect between research and development (risk to fall into a business-as-usual approach to research and innovation)	M	In each specific contract to be signed under this Action, design clear outputs, outcomes, well-defined impact pathways, and clearly identified end beneficiaries (youth and gender sensitive) Build functional linkages with development interventions at national and local level

Mobilisation of European research individuals and entities in long term innovation processes	M	Value European research centres' in kind contributions to specific actions
Assumptions		
Adequate and appropriate policies and plans in partner countries for climate change adaptation and mitigation in the agricultural sector Political support for agriculture as a major drive of sustainable national economic development Multi-stakeholder partners will be motivated to share and exchange information and knowledge		

3. LESSONS LEARNT, COMPLEMENTARITY AND CROSS-CUTTING ISSUES

3.1 **Lessons learnt**

The design of this action builds on recommendations that emerged from a number of reviews and evaluations.

The evaluation of "EU support to research and innovation for development in partner countries 2007-2013"1 (2015) called for the formulation of a strategic approach to Research &Innovation (R&I) with a focus on establishing institutional framework for R&I to support at global level international research agendas related to global challenges in relevant sectors, and develop a strategy for R&I that adapts the support provided to the needs and level of development at country level. It calls for attention to support to networks, capacity development, careful selection of partner institutions, policy dialogue, actual funding of research for development, capitalisation of results and establishment and strengthening of national innovation systems. This more strategic, more visible and better coordinated approach is seen as beneficial, with explicit complementarity with the EU's framework programme for research and innovation.

The GPARD[2] review (2018) recommended that actions should focus on bringing about changes in smallholder farmers' (or other beneficiaries') behaviour leading directly to improvements in their livelihoods; be prioritised for their potential for the results to be transferable to other farmers (beneficiaries) and hence to have impact at scale; should include a clearly thought-through developmental "impact pathway", which takes account of the specific challenges and opportunities facing women and youth. It also concluded that European Advanced Research Institutions and other qualified organisations with expertise and experience in participatory way of working with farmers (men, women, youth) and other key beneficiaries can add substantial value to research and innovation projects. It also called for the private sector (i.e. beyond farmers) to be more actively involved, particularly in the uptake pathways, and underlined the need for a systematic approach to monitoring, evaluation and learning, including through baseline studies and independent reviews.

[1] Agriculture Research for Development accounted for more than 50% of DEVCO portfolio in R&I
[2] EU-funded Global Programme for Agricultural Research for Development (€ 45 million, 2010-2017)

The PAEPARD[3] evaluation (2017) highlights that the need for scaling to be part of new initiatives and to further develop successful practices such as PAEPARD User Lead Process projects. It underlines the need for better involvement of youth and women and greater focus on job opportunities. The review of the Global Programme for Agriculture Research in Development (GPARD, 2018) identifies that projects and programmes with focus on bringing about behavioural changes at smallholder farmers' level (or other beneficiaries) should be prioritised for their potential in result transfer and hence impact at scale, calling for developmental "impact pathway" but taking into account the challenges and opportunities facing women and youth. It recognises the value that European ARIs and other qualified organisations with particular expertise and experience have in working in a participatory way with farmers and other key beneficiaries, with a substantial value to research and innovation projects. It also makes clear for the private sector to be more actively involved, particularly in the uptake pathways, and insists on systematic approach to Monitoring & Evaluation to be adopted, including through baseline studies and independent reviews.

During the past years different approaches and methodologies to farmer-centred agriculture innovation systems have been successfully experimented through initiatives such as the Sub-Saharan Africa Challenge Programme (Integrated Agricultural Research for Development and Multi-Stakeholder Innovation Platforms), PROLINNOVA (Strengthening and transforming national Agro-Food Innovation Systems through building multi-stakeholder action-research partnerships for farmer-led innovation), PAEPARD (Users Led Process for agricultural research for development), CDAIS (Conceptual Framework for Capacity Development of Agriculture Innovation Systems), and many others. They will be integrated in ways to build multi-stakeholder partnerships and actions under this programme.

3.2 **Complementarity, synergy and donor coordination**

This action is by its very nature aims at building complementarity, synergy and coordination within the EU such as in the context of AU-EU High Level Policy Dialogue on Science, Technology and Innovation (on Food and Nutrition Security and Sustainable Agriculture), and with Member States' and other actors' initiatives.

The type of knowledge and innovation generated, supported and disseminated through this action, will also be linked to development cooperation programmes in food and nutrition security and in sustainable agriculture funded through EU geographic envelopes, in particular EDF and DCI.

Potential synergies and complementarities with other EU-funded programmes such as the €60 million programme to strengthen Research and Innovation capacity on ACP countries, will be assessed in the course of their respective implementation.

This action will have its own coordination mechanisms and reporting will be performed by the European Commission on a regular basis in the framework of meetings of the DeSIRA platform.

[3] Platform for African and European Partnerships in Agriculture Research for Development (€11.5 million, 2008-2018)

4. DESCRIPTION OF THE ACTION

4.1 **Objectives/results**

Impact:

- Contribute to the climate-relevant, productive, and sustainable transformation of agriculture and food systems in low and middle-income countries, thereby contributing to the achievement of the following SDG Targets: 2.3 (Agricultural productivity), 2.4 (Sustainable food systems and resilient agricultural practices), 2.A (Investments in research and extension), 13.2 (integrate climate change into policies, strategies, and planning) and 15 (by protecting, restoring and promoting sustainable use of ecosystems, sustainable agro-forest management and halting land degradation and biodiversity loss).

Outcomes:

- Improved resilience to climate change of specific agricultural and food systems in 25 countries in Africa, Latin America by 2023;
- Increased climate relevance of Agriculture and Knowledge Innovation Systems (AKIS)4 in 25 countries in Africa, Latin America by 2023.

Outputs:

- Output 1: 20 climate-relevant research and development initiatives carried out in partner countries and building "innovations put into use" in specific crops, agro-ecosystems, value chains, and approaches, contributing to conservation of ecosystems, biological diversity and reducing land degradation.
- Output 2: Knowledge and evidence to feed policy making, strategy development, cooperation programming, and programme implementation generated
- Output 3: Organisational and individual capacities of Agricultural and Knowledge Innovation Systems in partner countries improved
- Output 4: European scientists and their organisations mobilised through partnerships with national and international entities.

Activities will be oriented towards fostering innovation through research questions and inputs in support to development challenges and programmes in FNSSA, in particular addressing resilience to climate change.

In the **Sahel**, activities will include:

- the design and experimentation of the main elements if an efficient sustainable intensification and management of resources, along agro-ecological and climate smart practices, fostering farmer-led and joint processes of innovation (***in a multi-country approach in Burkina Faso, Mali, Niger and Senegal***);
- the support to breeding networks and modernized breeding capacity in West Africa to develop climate resilient crops and delivery of improved varieties to smallholders (***in a multi-country approach in Burkina Faso, Mali, Niger and Senegal***)

[4] According to EIP-AGRI, knowledge is co-created by farmers, scientists, advisers, enterprises, NGOs, etc. The term Agricultural Knowledge and Innovation Systems (AKIS) is used to describe the whole knowledge exchange system: the ways people and organisations interact within a country or a region. AKIS can include farming practice, businesses, authorities, research, etc. and can vary a lot, depending on the country or sector. https://ec.europa.eu/eip/agriculture/en/publications/eip-agri-brochure-agricultural-knowledge

- the promotion of climate smart agri-food SMEs in rural areas through sustainable bioenergy supply and optimisation of food processing (***in a multi-country approach in Côte d'Ivoire, Mali and Senegal***).

In the area of **livestock**, activities will include:

- the support to access to feed and water (fodder management and conservation, manure management, water efficiency and harvesting, rangeland management and agro-silvopastoral systems) in ***Chad***, ***Eritrea and Zimbabwe***
- the genetic development of breeds (in particular, higher feed conversion rates, rusticity) in Eritrea
- the crop and livestock integration and characterisation of interactions (Zimbabwe)
- animal health in terms of analysis of evolving pathogenic pressure (disease ecology and changes of transmission dynamics of vector-borne diseases) and strengthening of health services (Chad, **Nigeria** and Zimbabwe)
- carbon sequestration in rangelands with attention to the evolution of carbon contents and emissions in ecosystems (**CILSS[5] countries**)

In the area of **agroforestry and forest agriculture**, activities may include sets of locally-adapted practices taking into account the specific agro-ecological, economic and social conditions are to be developed., such as:

- home gardens, fuelwood production, and incentive mechanisms in ***Rwanda***;
- plantation crop combinations, with multi-storey mixtures of plantation crops (cocoa in particular) and shade trees for plantation crops in ***Côte d'Ivoire (and Ghana)***, and in a regional action for ***Colombia, Ecuador, Peru***;
- home gardens, trees in soil conservation and reclamation, shelterbelts and windbreaks, live hedges, riparian forest buffers in a regional action in ***Central America***.

In the area for **water management in rice farming systems** in fragile and coastal States in Africa, activities will include innovation in:

- water management and associated practices (aquaculture), for rice-based cropping systems to cope with climate change whilst increase productivity, safeguard fragile environments like mangroves (**Guinea Bissau**) and upland ecosystems and protect the coast (in particular in **Benin and Liberia**)
- Use of traditional knowledge and agro-ecological practices will be particularly mobilised and supported in Guinea Bissau, Benin and Liberia.

In the area of **phytosanitary surveillance**, activities will include activities in partnership with ECOWAS and CORAF, harnessing and enhancing the BMGF and DFID funded WAVE project:

- Extending activities from initial countries (Côte d'Ivoire, Nigeria, Ghana, Burkina Faso, DRC, Benin, Togo) to key West and Central African countries**,** broadening it to three key West African cassava producing countries (Guinea, Sierra Leone and Liberia) and two CBSD gateway countries (Cameroon and Gabon) from Central Africa.

[5] CILSS stands for Permanent Interstate Committee for Drought Control in the Sahel (Comité permanent inter-État de lutte contre la sécheresse au Sahel)

- Developing tools based on a model for a joined-up approach to crop disease threats – integrating scientific capacity, diagnostics capability, epidemiological and surveillance capacity, and emergency response planning. Such a model could be replicated in other regions.
- Raising awareness through communication and advocacy.

In the area of **Institutional and human capacities development in** National Agriculture Research Systems, and more broadly the National Agricultural Research Systems on climate and agriculture, activities would include in particular:

- Scientific input to Nationally Determined Contributions by: enhancing applied research through programme design and experimentation of sustainable intensification practices; bringing together research, extension, education, farmers and private sectors in professional learning hubs and networks (***Mauritius***);
- Multidisciplinary country collaboration: Fostering efficient multidisciplinary research to develop integrated packages of new technologies to be tested requires improving coordination and increasing collaboration among the agricultural research organizations acting in the country. (***Malawi***)
- Development of a new generation of African and European scientists: The One Planet Summit Fellowship Program (OPS FP) will establish and strengthen a long-lasting community of 600 African and European scientists working on the challenges of African agricultural adaptation to climate change and mitigation actions. This community will develop and share a comprehensive integrated vision on how African agriculture in its diversity may adapt to climate change based on scientific evidence. This initial phase will launch the process with the first 120 scientists. (***Africa***, *One Planet Fellowship programme* – ***Agropolis fondation & AWARD***)

4.2 **Intervention logic**

The intervention logic of this Action is built around some key elements of the innovation system approach:

- The inter-linked reality of agriculture innovation systems at national and local level;
- The multiple entry points for innovations addressing climate change, whether from market demand, societal demand, technologies developed in Africa or elsewhere or from farmers own innovation;
- The importance of engaging communities in all processes, in particular through multi-stakeholder innovation platforms that combine advances from science with farmers own experience and innovation and ensures demand-led steering of research;
- Innovations from agricultural science require transformation and access to be taken up by farmers and mobilize private sector actors in achieving scale out and adoption into use.

Capacity development of organisations and individuals in low and middle-income countries is at the basis of the intervention logic of this action, with a view to ensure actual sustainability and to enhance the effectiveness of agricultural policies and of supporting development cooperation and investment programmes through more climate-relevant agriculture knowledge and innovation systems.

4.3 **Mainstreaming**

Environment and climate change

The whole action is designed to support adaptation and mitigation of agriculture and food systems in developing countries, supporting the implementation of their Nationally Determined Contributions. In terms of environmental sustainability, the action will align to provisions of the European Consensus for Development. By supporting healthy ecosystems in response to climate change adaptation and mitigation needs, the Action also aims to reduce environmental degradation, harbour biological diversity, and promote sustainable land management, including soil and water conservation, thereby contributing to land degradation neutrality (LDN).

Gender

Promoting gender equality and women's empowerment - and creating specific opportunities for young women and men - are central to the achievement of Agenda 2030. The future productivity and sustainability of the agricultural sector and associated value chains is dependent on women and the youth having the ability and motivation to engage as smallholder producers, value chain actors and agripreneurs, including the adoption and adaption of climate-smart technologies. This is most urgent in contexts where there has been significant adult male outmigration, resulting in the 'feminisation of agriculture', and where the 'youth' cohort is growing rapidly. Addressing underlying causes for gender inequalities require working with decision-makers in policy dialogue and at the same time empowering rural women at home and in the community, engaging with men as allies for change, removing the structural, political, economic, cultural, and social barriers that limit women's access and rights to resources and assets, voice and participation in decision-making.

There is a specific interface between gender inequalities and climate change. Women experience firsthand the impact of climate change and natural resource degradation. Gender inequalities influence their unequal access to natural resources, their inability to adopt and adapt more environmentally-friendly and sustainable farming technologies and practices, and the unequal distribution of work among family members. As a consequence women often end up using poorer quality land and are unable to adopt more environmentally-friendly practices. Climate-smart technologies are often less suited for use by women, are less relevant to their needs, and are financially unattainable. Women's domestic workloads become more onerous as supplies of water and fuelwood become scarce. In turn, this affects the productivity of women smallholders, which has a significant impact on the sector in contexts where women are the majority of producers. Their ability to engage in other parts of the value chain or develop off-farm enterprises is similarly constrained by gender inequalities. Similarly, women's participation in stakeholder platforms for innovation may be restricted by eligibility criteria (ie head of household), cultural norms, a lack of skills or a lack of confidence in their own abilities. As a result, the research agenda is often shaped without their active contribution and a full understanding of their needs and priorities. Young women need a distinct space to represent their views.

In 2017, COP 23 introduced the first Gender Action Plan which aims to increase the participation of women in all UNFCCC processes, to ensure that those who are traditionally marginalised and victims of climate change are empowered to become actors of change. It

also seeks to increase awareness of and support for the development and effective implementation of gender-responsive climate policy at the regional, national and local levelsThe global, regional and sub-regional organisations involved on this programme all have commitments to delivering on the gender agenda, as do national research and extension organisations. However, there is often a gap between policy commitments, on the one hand, and, on the other hand, sufficient staff with gender expertise and adequate budget allocations to thoroughly identify and address gender inequalities in agricultural research and development initiatives. A strong gender dimension in this Action would enable organisations at all levels to deliver more effectively on their gender commitments, as well as contributing towards the achievement of SDG5 on gender equality and women's empowerment.

Right based approach

This action builds on the commitment of the Commission to adopt a human rights based approach to development cooperation. Promoting innovation for building resilience to the effect of climate change and focusing on smallholder family farmers will contribute to ensure the fundamental right to food for the poor and the most deprived, by increasing availability, access, and stability for food security.

4.4 **Contribution to SDGs**

This programme is relevant for the Agenda 2030. It contributes primarily to the progressive achievement of SDG Goal(s) 1, 2 and 13, but also promotes progress towards Goal(s) 5, 8, 15. This does not imply a commitment by the countries benefiting from this programme.

5. IMPLEMENTATION

5.1 **Financing agreement**

In order to implement this action, it is not foreseen to conclude a financing agreement with the partner country or regional organisation.

5.2 **Indicative implementation period**

The indicative operational implementation period of this action, during which the activities described in section 4.1 will be carried out and the corresponding contracts and agreements implemented, is 72 months from the date of adoption by the Commission of this Financing Decision.

Extensions of the implementation period may be agreed by the Commission's authorising officer responsible by amending this decision and the relevant contracts and agreements.

5.3 **Implementation modalities**

The envisaged assistance is deemed to follow the conditions and procedures set out by the restrictive measures adopted pursuant to Article 215 TFEU[6].

[6] www.sanctionsmap.eu

5.3.1 Grants: (direct management)

The grants will obey to a country-based and/or component based approach. All the grants planned in the framework of the Action in the various countries as specified below may be awarded without a call for proposals to consortia of research entities. In accordance with the Article 195 (f) of the Financial Regulations, the direct award of the grants is justified by the very specific features of the projects to be implemented, which will require the participation of very specialised research centres and development organisations with knowledge and experience, both geographic and thematic, adapted to the specific challenges identified in each country and region. The identification process for the Action resulted, for each country project funded through grants, in multi-stakeholders consortium, specifically established to respond to the challenges that each country project intends to tackle.

Sahel:

Design and experimentation of the main elements of an efficient sustainable intensification and management of resources, along with agro-ecological and climate relevant agricultural practices, fostering farmer-led and joint processes of innovation (**Burkina Faso, Mali, Senegal**)

Under the responsibility of the Commission's authorising officer responsible, the grants may be awarded without a call for proposals to consortia of research entities. For the regional level, a consortium led by CIRAD and including Hohenheim University and the Groupe d'Appui à la Transition Ecologique (GTAE) and NGOs will benefit form a direct grant**.** CIRAD has a permanent office in Burkina Faso with several mixed (local and international expertise) laboratories. They have a strong background in ecological intensification, water management, development of small private irrigation, agriculture-livestock integration and landscape agronomy, innovation processes and value chain analysis. They have a long experience in cooperation with African countries, and are currently involved in cooperation with 2iE, University of Ouagadougou, INERA, etc. At country level, a special focus will be put on Burkina Faso, where the Institut de l'Environnement et des Recherches Agricoles (*INERA*) together with the University of Ougadougou are piloting a consortium where CIRAD will take the financial responsibility.

In addition to that, an administrative agreement will be signed with JRC. JRC will be the co-leader of the project. JRC has a long experience in development of decision support system with relation to food security and dialogue with Western African stakeholders. JRC developed and implemented collaboratively the E-WATER optimization tool (including water and food security) in the Mékrou river basin. JRC, amongst other tasks will be responsible of involving the University of Ouagadougou I and INERA, the Minister of Agriculture/Water. JRC will support the EU delegation in ensuring the overall scientific and technological coherence of the action from the EC point of view.

Dryland crop varietal improvement

Regional: Senegal, Mali, Burkina Faso, Niger (also involving Mauritania, Chad, Ghana and Togo)

Under the responsibility of the Commission's authorising officer responsible, grants may be awarded without a call for proposals to consortia involving ICRISAT (International Crops Research Institute for the Semi-Arid Tropics - a CGIAR Organisation), CORAF (West and Central African Council for Agricultural Research and Development), CERAAS (Centre d'Etude Régional pour l'Amélioration de l'Adaptation à la Sécheresse) and IAVAO (Innovation et amélioration variétale en Afrique de l'Ouest). CORAF enjoys a de facto monopoly as the sub-regional organisation in charge of facilitating and coordinating agricultural research for development in Western and Central Africa, with all the national and international relevant actors, while ICRISAT gathers a unique set of skills and experiences in the field of agricultural research in semi-arid tropics. CERAAS, the only regional center of excellence for dryland cereals and associated crops will be the lead center, and will work particularly with the international IBP (Integrated Breeding Platform, hosted by CGIAR) and the IAVAO regional platform, which integrates the main national agricultural research centres in the region. This project will also be supported by Bill and Melinda Gates Foundation.

Bioenergy

Burkina Faso, Senegal, Côte d'Ivoire

National research centres are at the centre of the inititives on bioenergy that will be supported in those three countries. Those national stakeholders hace created consortia involving other national and international stakeholders. In Burkina Faso, the Research Institute in Applied Sciences and Technologies (IRSAT) in the field of agri-food mechanization and food technology, and INERA, the Institut de l'Environnement et de Recherches Agricoles, are the pivot stakeholders. In Senegal the Institut sénégalais de recherche agricole (Isra/Bame), Université Cheikh Anta Diop de Dakar, UCAD, are the main national partners, whilst in Ivory Coast the Institut national polytechnique Félix Houphouët-Boigny (INPHB), and the Université Félix-Houphouët-Boigny (UFHB) will play a central role.

Under the responsibility of the Commission's authorising officer responsible, the grants may be awarded without a call for proposals to CIRAD, which will be in charge of the project involving the aforementioned national research centers, JRC and private equipment manufacturers. CIRAD designed and promoted the concept, they have a strong local presence and background in biomass conversion technologies, innovation processes and value chain analysis. They have a long experience in cooperating in Western Africa, including a long cooperation with 2iE.

An administrative agreement will be signed with the Joint Research Centre. JRC will assist CIRAD in the Climate Change modelling and impact assessment. JRC has a long experience in development of decision support system with relation to food security, agriculture, value chains and dialogue with Western African stakeholders. JRC will support the EU delegation in ensuring the overall scientific and technological coherence of the action from the EC point of view.

Livestock activities:

Eritrea

Under the responsibility of the Commission's authorising officer responsible, the grant may be awarded without a call for proposals to a consortium of Irish institutions (TEAGASC) and NGOs, involving also the University College Dublin and the University College of Cork and working in collaboration with the Eritrean National Agricultural Research Institute (NARI). .

TEAGASC–the Irish Agriculture and Food Development Authority– is the national body providing integrated research, advisory and training services to the agriculture and food industry and rural communities. TEAGASC has a long-standing partnership with NARI and the Eritrean ministry of agriculture to develop the potato and dairy industries in the country. For this programme, NARI has led together with TEAGASC the creation of a unique consortium involving all the key stakeholders in the livestock sector in Eritrea.

Zimbabwe
The project will be complimentary to the Zimbabwe Resilience Building Fund (ZRBF): a multi donor project implemented in cooperation with the ministry of Agriculture, Mechanisation and Irrigation Development and financed by the European Union, Sweden, UNDP, and the UK Department for International Development. Under the responsibility of the Commission's authorising officer responsible, the grant may be awarded without a call for proposals to a consortium of research entities organised around the Zimbabwe Department of Research and Specialist Services (DRSS) and including research entities such as CGIAR Centres (CIMMYT, ILRI and ICRISAT), CIRAD, IRD, Institut Pasteur, University of Zimbabwe, University of Chinovi.

Nigeria
The (Nigeria) National Veterinary Research Institute (NVRI) collaborates with a number of EU Partners, e.g. as member of the Global Strategic Alliance for the Coordination of Research on the Major Infectious Diseases of Animals and Zoonoses (STAR-IDAZ); as partner in the EU-funded Foot and Mouth Disease (FMD) Projects, in the OIE Twinning Project in FMD capacity building via technical and scientific collaboration between NVRI Nigeria and Sciensano, Belgium (Formerly CODA-CERVA), and in the OIE Twinning Project on improving NVRI laboratory capacity for a better control of Avian Influenza virus at national and regional level.

Under the responsibility of the Commission's authorising officer responsible, the grant may be awarded without a call for proposals to a European research institution, while the NVRI will be a co-applicant. The NVRI will provide the technical planning, management and implementation of the disease surveillance, vaccine production and distribution.

Chad
Under the responsibility of the Commission's authorising officer responsible, the grant may be awarded without a call for proposals to a consortium organised around the two national public entities leading in the sector: « Institut de Recherche en Elevage pour le Développement » (IRED) and Chadian Institute of Agricultural Research for Development *(*ITRAD*)*. The consortium is based on strong partnerships with local universities, regional research entities and European research entities able to support capacity building for innovation in the livestock sector and having a significant cooperation background in Chad. Private sector and farmers organisations will be associated to this component.

CILSS[7] countries (CASSECS)
Pastoralism development at regional level will be channeled through the « Pôle Pastoralisme

[7] CILSS stands for Permanent Interstate Committee for Drought Control in the Sahel (Comité permanent inter-État de lutte contre la sécheresse au Sahel)

et Zones Sèches" (PPZS, www.ppzs.org), based in Sénégal with a regional mandate, and its two foundator partners in Senegal Institut Sénégalais de Recherches Agricoles (ISRA), and Centre de Suivi Ecologique (CSE), with their counterpart national research institutions in the countries of the region. PPZS is a unique regional initiative associating the main stakeholders in pastoralism in the region.

Under the responsibility of the Commission's authorising officer responsible, the grant may be awarded without a call for proposals to a consortium led by ISRA, the co-leader of "Pôle Pastoralisme et Zones Sèches", as a coordinator of European organisations, including Lund University (Sweden), University of Copenhagen (Denmark), University of Hohenheim and Karlsruhe Institute of Technology (Germany), CIRAD and IRD (France).

<u>Agroforestry and forest agriculture</u>,

Côte d'Ivoire and Ghana
Under the responsibility of the Commission's authorising officer responsible, the grant will be directly awarded, without a call for proposals, to a consortium led by CIRAD.

The high degree of specialisation of CIRAD presents a high degree of specialisation in tropical agricultural research, in Côte d'Ivoire, and in cocoa. It has the administrative capacity to manage a significant budget, while mobilising national research entities and other European entities in the implementation of the project. The achievement of the results of the action requires not to multiply the number of stakeholders for each expected result but partnership with other universities have been identified such as the KIT, the University of Reading, and private firms. The reason for direct award is the case "Actions with specific characteristics that require a particular type of body on account of its technical competence, its high degree of specialisation or its administrative power" (Art. 195 (f)).

Regional action in Colombia, Ecuador, Peru
Under the responsibility of the Commission's authorising officer responsible, the grant will be directly awarded, without a call for proposals, to a consortium led by CIAT, a CGIAR centre established in Colombia. CIAT has an unique background in prmoting agricultural innovation in the region and is part of the CGIAR network, the biggest agricultural research initiative in the world which gathers an unparalleled set of skills in the domain. Others co-applicants may include among others: in Colombia: CORPOICA, Universities of Medellin, Nacional, Industrial de Santander and EAFIT), in Ecuador: ESPOL, INIAP, and in Peru: CIC, ICT, and Agric. University La Molina. The following European institutions will be included as co-applicants CIRAD, KU Leuven and Wageningen University.

Rwanda
Under the responsibility of the Commission's authorising officer responsible, the grant will be directly awarded, without a call for proposals, to a consortium led by IUCN, which is an organization with a wide experience in landscape restoration through agroforestry in Rwanda. IUCN is a the centre of a regional partnership network for agroforestry as it is hosting the regional forest landscape restoration hub for Eastern and Southern Africa, with technical capacity in GIS and spatial data. IUCN has a partnership with RAB, the government

institution in charge of agricultural and agroforestry research, ICRAF a CGIAR Centre, and European universities and research entities such as UGent (e.g. Natural Capital Platform).

Water management in rice farming systems

Guinea Bissau

Under the responsibility of the Commission's authorising officer responsible, the grant will be directly awarded, without a call for proposals, to a consortium of European Universities led by the University of Lisbon (Instituto de Agronomia) and including the Instituto de Geografia e Ordenamento do Território (University of Lisbon), the Wageningen University, the University of München and French IRD. Depending on the final detailed setup defined for the action, the University of Oxford, local University Jean Piaget and IBAP could participate to the action either as partners (co-applicants) or as associates. INPA and the Ministry of Agriculture would be associates.

The direct award of the grant is justified by the very specific features of the intervention to be implemented, by the specialised knowledge and experience, both geographic and thematic, it requires, as referred to in Article 195 (f) of the Financial Regulations. All the beneficiaries of the grant and their associates comply with these criteria, in addition to the ones of sound operational, financial and managerial capacity. Further, under the responsibility of the Commission's authorising officer responsible, the recourse to an award of a grant without a call for proposals is also justified because the country is in a crisis situation referred to in Article 195 (c) of the Financial Regulations. This situation of crisis makes it extremely difficult for new players to settle in Guinea Bissau to implement agriculture-related research projects. The maximum possible rate of co-financing for this grant is 100% of the eligible costs of the action.

Liberia

Under the responsibility of the Commission's authorising officer responsible, the grant will be directly awarded, without a call for proposals, to a consortium organised around the Liberian Central Agricultural Research Institute (CARI), with two CGIAR centres WorldFish and AfricaRice on the lead, involving also universities such as Wageningen (NL) and Sterling (UK), and in collaboration with the National Fisheries & Aquaculture Authority of the Republic of Liberia (NaFAA), the regulator for the sector, and the Ministry of Agriculture (MoA), as the department responsible for extension services in Liberia.

As referred to in Article 195 (f) of the Financial Regulations, the direct award of the grant is justified by the very specific knowledge and thematic experience the Action requires to be implemented successfully. CARI is the national agricultural research centre endowed with the mandate to conduct broad-based research on –among others- food and cash crops, livestock, fish, land and water management and natural research management in order to inform national agricultural policies. Worldfish is the CGIAR leading centre on fisheries and aquaculture and has developped innovations that increase adaptive capacity at scale, enhance resilience and improve food and nutrition security for the poor. Recognizing the strategic importance of rice for Africa, AfricaRice focuses its work in West Africa on developing new rice-based production systems to respond to the challenge of climate change and increasing water scarcity across rice ecologies. For Liberia, Worldfish and AfricaRice will bring their experience to work together on integrated agriculture aquaculture systems, in particular those

that integrate fish into rice-based systems to reduce the use of inorganic fertilizers and increase water-use efficiency and productivity.

Phytosanitary surveillance

Under the responsibility of the Commission's authorising officer responsible, the grant will be directly awarded, without a call for proposals, to CORAF a public sub-regional organisation in charge of coordination and mobilisation of agriculture research in West Africa and Central Africa working together with the lead African university Felix Houphouet Boigny (Côte d'Ivoire). CORAF's unique mandate in the region make it the most suitable institution to lead a regional programme such as this one. This project will also be supported by Bill and Melinda Gates Foundation

Institutional and human capacities development in National Agriculture Research Systems

Mauritius
Under the responsibility of the Commission's authorising officer responsible, the grant will be directly awarded, without a call for proposals, to Food and Agricultural Research and Extension Institute (FAREI) and to the University of Mauritius (UoM). FAREI and UoM-Faculty of Agriculture, as public entities have the monopoly and technical expertise to carry out research and development in the non-sugar crop sector and livestock sector in Mauritius. Existing collaborations with European institutions such as Centre de Cooperation Internationale en Recherche Agronomique pour le Developpement (CIRAD, France) and Collaborating Centre on Sustainable Consumption and Production (CSCP) gGmbH of Germany, will be considered, but not limited to, and with other regional research institutions will be sought in view of their proven expertise in the field of agricultural research and innovation.

Malawi
Under the responsibility of the Commission's authorising officer responsible, the grant will be directly awarded, without a call for proposals, to CIP (International Potato Centre) which is the CGIAR centre nominated 'lead centre' for this site-integration process (currently known as CGIAR Country Collaboration). The ***'CGIAR Country Collaboration'*** aims at improving coordination and collaboration amongst centres, making the best use of their respective area of expertise for a better alignment of the CGIAR centres' work to the country priorities. In addition to the 8 international research CGIAR centers based in Malawi, potential implementing partners are National institutions (DARS, DAES and LUANAR), and EU based research institutions (CIRAD, University of Liège and Wageningen University) to which CIP will subcontract part of the activities depending on their areas of competence.

The reason for direct award is the case "Actions with specific characteristics that require a particular type of body on account of its technical competence, its high degree of specialisation or its administrative power" (Art. 195 (f)).

One Planet Summit Fellowship Program (OPS FP)
Under the responsibility of the Commission's authorising officer responsible, the grant will be directly awarded, without a call for proposals, to Agropolis Fondation which is the co-

manager with AWARD, of this Fellowship Program. This project will also be supported by Bill and Melinda Gates Foundation.

5.3.2 Prize(s) (direct management)

N/A

5.3.3 Procurement (direct management)

N/A

5.3.4 Indirect management with Member State Organisations and international organisations

Sahel

Agroecological / climate smart practices: **Niger**
This component in Niger will be implemented by AECID which will ensure the management of resources, the coordination of activities implementation and the communication. AECID brings its experience in fund management, in institutional communication and technical expertise, its knowledge and management capacities of experiences sharing with universities. Involved partners will notably include Spanish CSIC and other Spanish research institures, and SFR Racines which is a network of 16 centres and research institutes in Niger and French IRD.

Water Management in rice farming:

Benin
This component will be implemented in indirect management with ENABEL which will coordinate the interventions of different stakeholders and implement directly some activities. Funds will be allocated to research institutes or university through public-public agreement and to local university/research institutes through grants, according to ENABEL procedures. This action will contribute to the achievement of 11th EDF « Programme d'Appui au Développement Durable du Secteur Agricole (PADDSA) » of EUR 70.000.000. Part of the EUR 15.000.000 € for institutional support will be implemented by indirect management with ENABEL.

Agroforestry and forest agriculture,

Central America
This component will be implemented in indirect management with Instituto Interamericano de cooperación para la Agricultura (IICA). This implementation entails support to farmers, technical assistance and support to operational expenditure and management costs. This implementation is justified because of IICA's technical competence and experience in Central American region and on agriculture applied research. IICA favours alignment and harmonisation on agriculture cooperation in Central America and benefits from solid partnerships with the different research institutions such CATIE or the national institutions. The good result obtained from past and ongoing actions implemented by IICA on the region

(PRIICA and PROCAGICA) demonstrated its administrative and operational capacity to operate regionally.

Rwanda
Part of this component will be implemented partly in indirect management with ENABEL which shall ensure the full coordination of the project and shall implement in direct management some activities. Funds shall be allocated to a university through public-public agreement and to local university/research institutes through grants. Enabel is supporting, jointly with the EU Delegation, the process of review of the BEST. ENABEL provided especially the support of International technical Assistance for the customization, in collaboration with the Stockholm Environmental Institute (SEI) of the LEAP software, which has been chosen as the main tool for the analysis of the projection scenario of supply and demand of biomass energy in Rwanda, based on different settings of assumptions of driving parameters.

5.3.5 Changes from indirect to direct management mode due to exceptional circumstances (one alternative second option)

5.4 Scope of geographical eligibility for procurement and grants

The geographical eligibility in terms of place of establishment for participating in procurement and grant award procedures and in terms of origin of supplies purchased as established in the basic act and set out in the relevant contractual documents shall apply.

The Commission's authorising officer responsible may extend the geographical eligibility on the basis of urgency or of unavailability of products and services in the markets of the countries concerned, or in other duly substantiated cases where the eligibility rules would make the realisation of this action impossible or exceedingly difficult.

5.5 Indicative budget

The contribution is for an amount of EUR 55,000,000 from the general budget of the European Union for 2018 and for an amount of EUR EUR 43,500,000 from the general budget of the European Union for 2019, subject to the availability of appropriations following the adoption of the relevant budget. AFD will make a non-earmarked global contribution of EUR 5 million to the overall budget for the Action. This sum will not be allocated to any specific country action.

	EU contribution (amount in EUR)	**Indicative third party contribu-tion, in currency identified**
	of which EUR 5,000,000 from France through	

	a transfer agreement to be signed	
Grants (direct management) : (cf section 5.3.1)		
Sahel		
Agroecological / climate smart practices		
Regional (Burkina Faso, Mali, Niger, Senegal)	7,000,000	
Burkina Faso	2,400,000	
Burkina Faso - Administrative agreement with Joint Research Council	600,000	
Dryland crop varietal improvement		
Regional (Senegal, Mali, Burkina Faso, Niger, …)	8,000,000	
Mali	4,000,000	
Bioenergy		
Regional : Burkina Faso, Senegal, Côte d'Ivoire	9,400,000	
Administrative agreement with Joint Research Council	600,000	
Water management for rice farming		
Guinea Bissau	3,000,000	
Liberia	3,500,000	
Agroforestry		
Côte d'Ivoire and Ghana	6,000,000	
Agroforestry, Rwanda	2,000,000	
Regional : Colombia, Ecuador, Peru	6,000,000	
Livestock		
Nigeria	2,500,000	
Chad	3,000,000	
Eritrea	4,000,000	
Zimbabwe	5,000,000	
Regional: CILSS countries	5,000,000	
Phytosanitary surveillance	5,000,000	
AKIS		
Mauritius	3,000,000	
Malawi	6,000,000	
Regional ; One Planet Summit Fellowship Programme	3,000,000	
Grants – total envelope under section 5.4.1	**89,000,000**	N.A.

	(including Administrative Agreements with JRC)	
Indirect management with: (cf. section 5.4.4) **Sahel:** *Agroecological / climate smart practices* Niger: AECID **Water management for rice farming** Benin: ENABEL **Agroforestry and forest agriculture** Rwanda: ENABEL Central America: IICA	 5,000,000 1,500,000 2,000,000 6,000,000	<amount, currency>
Evaluation, (cf. section 5.9), 5.10 – Audit(cf. section 5.10)/Expenditure verification	will be covered by another decision	N.A.
Communication and visibility (to be directly set up at grant agreement level, cf. section 5.11)	N.A.	N.A.
Contingencies		N.A.
Totals	**103,500,000**	

5.6 Organisational set-up and responsibilities

Implementation modalities will involve two main mechanisms for steering the actions funded.

Direct and indirect management grants under the responsibility of the Commission's authorising officer at the country level will define the relevant management and monitoring systems and follow standard reporting requirements.

To ensure the strategic management of the DeSIRA initiative in a long-term perspective, according to the Commission (EC) commitment in the One Planet Summity process, and to guide the momentum of joint action with EU Member States, an Advisory Committee will be established. Its role will be (i) to ensure that these initial actions do apply guiding principles and are drawing lessons from their activities to be shared at a wider scale, and (ii) to prepare the next steps and actions of the DeSIRA initiative. It will particularly look at ensuring coherence and innovation effectiveness of the actions supported, and achieving complementarity and European coordination and synergy of scientific expertise.

Advisory Committee (AC) members will be mobilised by the EC and include notably EC staff, interested Member States and other donors, representatives of research fora (such as FARA) and Farmers Organizations, and 3 high level experts in this field, Members will be selected based on their experience and understanding in innovation processes and applied research.

The AC should meet at least twice a year. Looking forward, it will help preparing the next annual work packages under DeSIRA. It will refine the guiding principles for present and future actions aiming at direct practical innovation and capacity development based on: (i) multistakeholder approach allowing ownership and organizational efficiency, (ii) taking a long term perspective to provide a solid basis for up and out-scaling, (iii) programming of research in a regional perspective, (iv) prioritizing European expertise when outside support is necessary, and (v) helping to strengthen the involvement of partner countries into international initiatives and into the global research organisations.

5.7 **Performance and Results monitoring and reporting**

The internal monitoring system for this Action will be part of the global monitoring system for DeSIRA, including country level actions together with measures intended to strengthen the global architecture of agricultural research for development.

The day-to-day technical and financial monitoring of the implementation of this action will be a continuous process, and part of the implementing partner's responsibilities. To this aim, the implementing partner shall establish a permanent internal, technical and financial monitoring system for the action and elaborate regular progress reports (not less than annual) and final reports. Every report shall provide an accurate account of implementation of the action, difficulties encountered, changes introduced, as well as the degree of achievement of its results (outputs and direct outcomes) as measured by corresponding indicators, using as reference the Logframe matrix (for project modality) or the partner's strategy, policy or reform action plan list (for budget support).
The Commission may undertake additional project monitoring visits both through its own staff and through independent consultants recruited directly by the Commission for independent monitoring reviews (or recruited by the responsible agent contracted by the Commission for implementing such reviews).

5.8 **Evaluation**

Having regard to the nature of the action, a mid-term and final evaluation(s) will be carried out for this action or its components contracted by the Commission.
It will be carried out for problem solving, if any, and for learning purposes, in particular with respect to the approach followed.
The Commission shall inform the implementing partner at least 3 months in advance of the dates foreseen for the evaluation missions. The implementing partner shall collaborate efficiently and effectively with the evaluation experts, and inter alia provide them with all necessary information and documentation, as well as access to the project premises and activities.
The evaluation reports shall be shared with the partner country and other key stakeholders. The implementing partner and the Commission shall analyse the conclusions and recommendations of the evaluations and, where appropriate, in agreement with the partner country, jointly decide on the follow-up actions to be taken and any adjustments necessary, including, if indicated, the reorientation of the project.
The financing of the evaluation shall be covered by another measure constituting a financing decision.

5.9 **Audit**

Without prejudice to the obligations applicable to contracts concluded for the implementation of this action, the Commission may, on the basis of a risk assessment, contract independent audits or expenditure verification assignments for one or several contracts or agreements.
The financing of the audit shall be covered by another measure constituting a financing decision.

5.10 **Communication and visibility**

Communication and visibility of the EU is a legal obligation for all external actions funded by the EU.

This action shall contain communication and visibility that will be directly set up at grant agreement level, based on a specific Communication and Visibility Plan of the Action, to be elaborated at the start of implementation.

In terms of legal obligations on communication and visibility, the measures shall be implemented by the Commission, the partner country, contractors, grant beneficiaries and/or entrusted entities. Appropriate contractual obligations shall be included in, respectively, the financing agreement, procurement and grant contracts, and delegation agreements.

The Communication and Visibility Requirements for European Union External Action (or any succeeding document) shall be used to establish the Communication and Visibility Plan of the Action and the appropriate contractual obligations.

APPENDIX - INDICATIVE LOGFRAME MATRIX (FOR PROJECT MODALITY) [8]

The activities, the expected outputs and all the indicators, targets and baselines included in the logframe matrix are indicative and may be updated during the implementation of the action, no amendment being required to the financing decision. When it is not possible to determine the outputs of an action at formulation stage, intermediary outcomes should be presented and the outputs defined during inception of the overall programme and its components. The indicative logframe matrix will evolve during the lifetime of the action: new lines will be added for including the activities as well as new columns for intermediary targets (milestones) for the output and outcome indicators whenever it is relevant for monitoring and reporting purposes. Note also that indicators should be disaggregated by sex whenever relevant.

	Results chain	Indicators	Baselines (incl. reference year)	Targets (incl. reference year)	Sources and means of verification	Assumptions
Overall objective: Impact	Contribute to the climate-relevant, productive, and sustainable transformation of agriculture and food systems in low and middle-income countries, thereby contributing to the achievement of the following SDG Targets: 2.3 (Agricultural productivity), 2.4 (Sustainable food systems and resilient agricultural practices), 2.A (Investments in research and extension), and 13.2 (integrate climate change into policies, strategies, and planning)	Agricultural and pastoral ecosystems where climate relevant management practices have been introduced (number of hectares) (**) Number of countries that have established or operationalized an integrated policy/strategy/plan which increases their ability to adapt to the adverse impacts of climate change on agriculture and food systems	To be estimated To be determined during inception phase	To be determined during inception phase To be determined during inception phase	Baseline and endline assessment reports National policies, strategies and plans on agriculture and food systems	Adequate and appropriate policies and plans in partner countries for climate change adaptation and mitigation in the agricultural sector

[8] Mark indicators aligned with the relevant programming document mark with '*' and indicators aligned to the EU Results Framework with '**'.

Specific objective(s): Outcome(s)	Improved resilience to climate change of specific agricultural and food systems in 25 countries in Africa, Latin America by 2023. Increased climate relevance of Agriculture and Knowledge Innovation Systems (AKIS)[9] in 25 countries in Africa, Latin America by 2023	Number of small-scale farmers adopting sustainable and resilient agriculture practices thanks to this action, disaggregated by sex (*) Number of AKIS supporting climate relevant development cooperation and investment programmes Intensity ratio of government expenditure for agricultural research over agricultural GDP (ASTI indicator)	0 To be estimated during inception phase To be derived from ASTI database	To be determined during inception phase To be determined during inception phase To be determined during inception phase	Baseline and endline assessment reports Project reports ASTI reports, CAADP peer review reports	Political support for agriculture as a major drive of sustainable national economic development allowing for conditions for transformation of agriculture and food systems in place: land tenure reform, enabling environment for private sector investments, adequate fiscal legislation, market infrastructure, ICTs, rural roads, rural credit, rural energy, to vocational training, rural advisory services, etc.

[9] According to EIP-AGRI, knowledge is now co-created by farmers, scientists, advisers, enterprises, NGOs, etc. The term Agricultural Knowledge and Innovation Systems (AKIS) is used to describe the whole knowledge exchange system: the ways people and organisations interact within a country or a region. AKIS can include farming practice, businesses, authorities, research, etc. and can vary a lot, depending on the country or sector. https://ec.europa.eu/eip/agriculture/en/publications/eip-agri-brochure-agricultural-knowledge

Outputs	Output1: 20 Innovative climate-relevant research and development initiatives on specific crops, agro-ecosystems, value chains, and approaches carried out in partner countries	Number of smallholder farmers reached, disaggregated by sex and country	0	To be determined during inception phase	Annual project reports	Smallholder agriculture is prioritised in partner countries policies for inclusive and sustainable growth and poverty eradication, and for climate change adaptation and mitigation action Multi-stakeholder partners will be motivated to share and exchange information and knowledge
	Output 2: Knowledge and evidence to feed policy making, strategy development, cooperation programming, and programme implementation generated	Number of knowledge products elaborated	0	To be determined during inception phase	Annual project reports	
	Output 3: Organisational and individual capacities of Agricultural and Knowledge Innovation Systems in partner countries improved	Number of individuals trained, disaggregated by sex and age	0	To be determined during inception phase	Annual project reports	
		Number of organisations strengthened through various forms of intervention	0	To be determined during inception phase	Annual project reports	
	Output 4: European scientists and their organisations mobilised through partnerships with national and international entities	Number of EU research organisations mobilised by the actions	0	To be determined during inception phase	Annual project reports	