

**Input to roadmap for a jointly funded  
EU-Africa Research & Innovation Partnership with an initial  
focus on  
food and nutrition security and sustainable agriculture  
including water.**

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## I. An innovative initiative: background, rationale and specificities

1. Senior officials of the EU-Africa High Level Policy Dialogue (HPLD) on Science, Technology and Innovation agreed to work towards a long term jointly funded and co-owned research and innovation partnership with, as a first priority, the role of science, technology and innovation in ensuring “Food security, nutrition and sustainable agriculture”<sup>1</sup>. An integrated STI approach is taken, recognising the important cross-cutting nature of innovation, entrepreneurship, research infrastructures and technical competence strengthening. As a consequence, the HPLD tasked an expert working group to prepare a roadmap setting out short, medium and long-term-milestones in terms of the goals above<sup>2</sup>.

2. The rationale for Africa and EU to develop an innovative STI joint programme is as follows:

At present the level of global hunger continues to be a challenge, with 805 million people going hunger (global hunger index 2014), and the prevalence of undernourishment in Africa is the highest ever with 226 million people, or 21.2% (FAO food security indicators 2013).

It is also projected that the global population will increase from 7 billion to 9 billion. The majority of this growth is expected to occur in Africa, from around 1 billion to 2.1 billion by 2050 ([www.unfpa.org](http://www.unfpa.org)) or from 1.1 billion "today" to "at least" 2.4 billion by 2050 (2013 World Population Data Sheet, produced by the Population Reference Bureau PRB).

The increase in population and the change of food habits imply that world food production needs to increase by 60 to 100 % (depending on sources) by 2050, 5 to 7 fold more in Africa. The required increase will further threaten natural resources, particularly water and soil. Hence the need to harness science, technology and innovation to meet the gap in sustainable way.

Increasing the quantity of food produced will not be a sufficient answer in itself as food security<sup>3</sup> is an issue not only of food “availability” but also of “access to food”, affordability, stability of food supply and the quality of that supply, beyond its basic calorific value. In many African countries and other low income regions, under-nutrition and stunting, the result of a shortage of nutrients in pregnancy and early life, persist. Large parts of the African population also suffer from micronutrient deficiencies.

European food systems today generally provide, through locally produced and imported food, sufficient nutrients for its population, but both in Europe and in Africa, obesity and diet-related non-communicable diseases pose a growing health burden in both urban and rural communities. As a consequence, this challenge of achieving food and nutrition security within a context of sustainable agriculture, globally but also in Africa and in Europe, calls for increased investment

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<sup>1</sup> Including the management of water resources for agriculture.

<sup>2</sup> See Terms of Reference in Annex 1

<sup>3</sup> Food security has been defined in the World Food Summit Declaration, Rome, 1996, as a “situation in which all people at all times have physical and economic access to enough safe and nutritious food in order to cover their dietary needs and food preferences for an active and healthy life. Food security is a multidisciplinary concept which includes economic, political, demographic, social, cultural and technical aspects. This concept is set up on four pillars:

- The physical availability of food for everyone.
- Economic and physical access to food involving such as stable markets, affordable prices, decent incomes,
- The utilization of food and of related resources. This involves supplying an adequate and balanced diet in a way that satisfies the physiological needs (nutrition) of population and enables people to healthy and active lives.
- The Stability of food supply over time involving access to food either from the emergence of sudden shocks or cyclical events. Close linkage between humanitarian and development actors and instruments is essential and should be promoted using Linking Relief Rehabilitation and Development (LRRD) principles.”

and collaboration in agricultural development, including agricultural research. Several agricultural programmes dedicated to research and innovation have been launched or expanded with increased funding in recent years.<sup>4</sup>

In spite of those increased investments, Food and Nutrition Security and Sustainable Agriculture continue to be seen as a challenging target, particularly in light of the complicating factors of climate change, dwindling natural resources, increased energy costs, and other anticipated future trends. There are many obstacles perceived to progress in this area, in particular lack of coordination between initiatives, and insufficient mobilization of knowledge (both new and traditional) to sustain innovation process.

The fragmentation of efforts urgently needs to be reversed. Issues of food and nutrition security and sustainable agriculture must not be seen as separate development problems for the South and agro-environmental problems for the North. These are shared problems in a world increasingly serviced by a global food supply and integrated food systems. Useful innovation can arise in both African and European contexts, and its rapid sharing, adaptation and implementation is a clear win-win for both regions.

The opportunity therefore exists to launch a new and different initiative between Europe and Africa in this field, adding value to current investments. This is the common endeavour that the EU and Africa have chosen.

3. Although in the context of Science, Technology and Innovation (STI) for agriculture and nutrition, most African and European countries are in quite different situations (as highlighted above), substantial convergence exists between their regional goals for agricultural and food systems. The main objectives of the European Common Agricultural Policies, CAP, meet the objectives of the Comprehensive Africa Agriculture Development Programme, CAADP. In a recent meeting on July 2, 2014, African Union Heads of State and Government adopted the new Science, Technology and Innovation Strategy for Africa 2024 (STISA-2024), in Malabo (Equatorial Guinea) which is focussed on, amongst others, the use of Science, Technology and Innovation to the Eradication of Hunger and Achieving Food Security.

To summarize, both the EU and AU share the policy objectives of:

- Enhancing income growth
- Promoting rural development
- Producing more food with appropriate inputs

Their capacity to meet the above objectives depends very much on scientific progress, its upscaling, on research and innovation capacities (infrastructure, HR, etc).

4. It is on the basis of these shared challenges and opportunities in agriculture and food and nutrition security, that the EU-Africa HLPD and the EU-Africa Summit have agreed to launch a **“research and innovation partnership”** of joint research and innovation collaboration, managed and supported by EU and AU institutions, and other contributors/funders .

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<sup>4</sup> See for instance: global aid funding for agriculture, <http://www.oecd.org/dac/stats/agriculture.htm>. ; African governments investments in agriculture, <http://www.nepad.org/foodsecurity/agriculture/about> ; European funding for agricultural research increased from 1.9 billion euros in FP 7 to over 4 billion euros in Horizon 2020), <http://ec.europa.eu/programmes/horizon2020/en/area/agriculture-forestry>.

This jointly designed and funded partnership in research and innovation will accelerate the development, sharing and implementation of scientific approaches to improve food and nutrition security and the sustainability of agricultural systems in Africa, Europe and worldwide. These scientific advances, when implemented in national agricultural systems, will contribute to:

- the creation of jobs and new opportunities for smallholder farmers on both continents
  - the increase of diversification of agricultural systems and agribusinesses
  - the reduction of the yield gap in food production
  - the opening of new markets and the development of better trade within and between both continents
  - the reduction of structural dependence of African countries to food aid
  - the development of better and healthy diets for billions of people
5. This programme will build on recent bilateral and multilateral AR and AR4D projects and efforts in research and innovation capacity building.
  6. It will provide a framework for improved coordination of the diversity of European- and African-supported research projects and programmes on agriculture and food and nutrition security.
  7. It will programme multidisciplinary collaborative research and innovation activities between EU and AU, in which African and European scientists will jointly design and execute, together with the other stakeholders, a research and innovation agenda, to which both will contribute scientific expertise and resources.
  8. To facilitate optimal returns from investments in agricultural and food research, the R&I partnership will also address critical policy and market framework conditions for sustainable agricultural growth and food security in Africa and Europe.
  9. The critical elements of this R&I partnership, making it innovative, are:
    - The enhanced coordination of research relevant to food and nutrition security and sustainable agriculture between African and European researchers and the broader mobilisation of the STI community in Europe (going beyond the European AR4D institutions);
    - The Joint design of the programme by European and African stakeholders;
    - The direct linkage of research and innovation<sup>5</sup>.
  10. To achieve such a programme, there is a need to (1) identify areas of common research priority, and (2) to devise a mechanism for collaboration on these that creates a truly equitable research partnership. Both of these components, the “what” (see chapter 2) and the “how” (see chapter 3), will be critical to success, and are described below.

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<sup>5</sup> In this document, innovation is defined as a “process in which knowledge, from diverse sources, is mobilized and combined to generate societal, economic and environmental impact”.

## II. Proposed priorities for shared research and innovations activities

We propose that this research collaboration is organized around several research themes which are central to sustainable agriculture and food and nutrition security, facing effects of climate change, for both EU and AU.

These themes should be **prioritized on the basis of a set of criteria that draw out the most important shared research interests with the greatest possibility of equitable collaboration and uptake at national and regional levels in both Europe and Africa.**

Within each of these research themes, specific European and African research interests may vary, but the scientific agenda to be developed will focus on areas where joint efforts will have greatest benefit.

**Five criteria** to set priorities are proposed:

1. Relevance of the research domain to African and European priorities for sustainable agriculture and food and nutritional security, based on a consideration of existing EU and AU planning at the regional and national level (e.g. CAP “objectives”, CAADP “core results”).
2. Expected impact of research and likelihood of uptake, based on a clearly delineated “impact pathway” by which research and innovation will form part of an integrated knowledge system with farmers, advisors and other stakeholders. This will contribute to solutions and evidence for policy change, to positive agricultural and nutritional outcomes and to significant improvements in economies, wellbeing and resilience.
3. Capacity for joint research, based on comparable and complementary scientific expertise and resources in both the African and the Europeans scientific communities.
4. Scalability, or the likelihood that effective research outputs and outcomes will have impact at national or even regional scales.
5. Complementarity and value for money, based on the intention that the new investment will also up-scale existing bilateral and multilateral collaboration that will aim at filling research gaps or act synergistically with current investments in similar areas.

This programme will provide short to mid-term solutions, in the form of tools, knowledge and understanding, through the use of both new cutting edge technologies as well as indigenous and culturally sensitive knowledge, which can be used in applied research to solve problems in specific and different agro-ecological contexts in Africa and Europe.

Africa and Europe also have a strong common interest in building the capacities in basic science of direct and indirect relevance for agriculture, food and nutrition security. This is especially so for achieving long term mutual objectives of sustainable natural resource use (biodiversity, water, soils and biomass) in a context of increased risks and uncertainties, including climate change.

Enhanced, science based risk-response capabilities are a cross-cutting issue in the proposed programme components.

The Expert Group has identified, after consultation with AU and EU authorities, three indicative research themes which have the potential to satisfy the criteria stated above.

For each theme have been identified:

- The shared challenge/opportunity and the need for scientific research
- The short, medium and longer term activities which the partnership should undertake

- The expected outputs and outcomes of new research, including its added value
- The investments required, including partnerships with existing relevant activities.

Specific research projects are not presented here as these must be jointly identified and designed by collaborating African and European scientists together with other stakeholders in the framework of this proposed partnership. Rather, the choice is to outline the broad research thematic areas where projects may be developed.

## **II.1 Sustainable Intensification**

Europe and Africa share, with other regions, the global challenge to produce more food for a growing world population while reducing the environmental impact of agriculture and its demand for ecosystem services. Both continents face challenges associated with the high cost of inputs, environmental degradation and pollution, local water scarcity and changing climates. European countries and other large players on international agro-food markets greatly influence global food supply, with impacts for farmers and consumers in Africa. European governments have made commitments to support global food and nutrition security, which will mean maintaining and increasing their capacity to produce food, as well as its availability, access, affordability, and stability all year round. Looking to the future, Africa, with an estimated 65% of the uncultivated agricultural land remaining in the world and a potential to expand irrigated land by 100 million hectares, will become a key global producer, and international investment in African agricultural is already growing rapidly. Thus, while demographic trends that will demand greater food production are concentrated in the global South, both Africa and Europe will want to improve the sustainability of their production to meet future global demand. The great challenge in the Mediterranean Basin and in Sub-Saharan-Africa is developing sustainable market-driven food production systems that can boost household economies without water resources degradation and pollution.

The productivity (relative to the production of food/fiber/biomass and of services) of African agriculture could be greatly increased in the next decade by improved access of farmers to knowledge. This could include better pest management practices, mechanization, seeds quality, water use and nutrient management, and improved services, incl. information technology-based ones. Many European farmers already benefit from appropriate access to these inputs and services, and are much closer to their productive potential than most African farmers, who have currently very limited access to inputs and adopt a low risk approach to cultivation.

However both regions have to cope with the rising costs of inputs, especially energy, to solve greater problems with their farm management in the context of climate change mitigation and adaptation and to face the growing consequences of poor use of natural resources, in the form of agri-environmental degradation leading to low productivity. Beyond their differences, both continents need to consider how to promote a “knowledge based” intensification. Europe and Africa’s different trajectories of agriculture inputs must therefore ultimately converge on a sustainable level of affordable inputs, subject to differing agro-ecologies and vertical coordination through governance.

Both Europe and Africa are challenged to produce food in a sustainable manner. They therefore share a common interest in research on sustainable intensification<sup>6</sup>. Research is needed to both improve the production of food/fiber/biomass and of services (social, economic and environmental)

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<sup>6</sup> Definition of “Sustainable Intensification”: to produce more outputs (not limited to agricultural products) with a more efficient use of all inputs (not only improved seeds and fertilizers but also knowledge and know-how) on a durable basis, while building resilience and the social and natural capitals, reducing environmental damage and improving the flow of environmental services.

and to reduce the environmental impact and the depletion of natural resources. Areas of research opportunity and focus include:

- Ecological intensification approaches such as conservation agriculture, integrated pest management, intercropping, organic agriculture or precision irrigation, which optimises the use of ecosystem services to produce food at lowest costs and environmental impact.
- The identification, and breeding, of crops to maintain and increase productivity under conditions of limited inputs of water and fertilizers, soil and land management practices, and (in the context of climate change) increased abiotic and biotic stresses, making use of a range of approaches.
- Research on agricultural mechanisation, on appropriate use of soil, water and land management practices, and on integrated pest management that delivers greatest benefits at lowest costs and environmental impact.
- Research on organizational innovations, which will facilitate uptake of innovations across farms and rural communities, through new business models and farmer information systems for input and output markets, insurance, land use and land availability, etc. These models and systems have to learn from current and past experiences.

## **II.2 Agriculture and food systems for nutrition**

While agriculture is the basis for food production, and therefore contributes substantially to nutrition, there is a broad international consensus today that agricultural and food systems are not generating acceptable levels of nutrition. There is enormous scope for research into improving agriculture and food systems in order to improve diets that generate positive nutritional outcomes.

Dietary inadequacy takes very different forms but these are all linked to limitations in the production, availability, access, affordability and consumption of highly nutritious foods and to social behaviour.

In Africa and other low and middle income regions, under-nutrition - the lack of sufficient nutrients for healthy development - persists at unacceptable levels and contributes to child mortality, poor growth and cognitive development and increased risks of disease through the life course. The European Union has committed about Euro 2.8b to tackling undernutrition through nutrition-sensitive agricultural interventions, mostly in Africa, and reducing by 2025 the number of stunted children by 7m.

At the same time, many communities in both the North and South have diets high in cheap, energy dense foods such as refined carbohydrates and fats which contribute to overweight, obesity and non-communicable diseases (NCD) including cardiovascular disease, diabetes and some cancers. This problem is growing most rapidly in low and middle income countries, creating a double burden of food-related diseases which reaches beyond urban centres into poor rural households. Both under-nutrition and obesity are associated with micronutrient deficiency, which affects two billion people worldwide whose food intake is low in minerals and vitamins. Micronutrient deficiency can be addressed through diets which may include vegetables, pulses, fruits, biofortified staple crops and animal products.

While the average diets of Europeans and Africans are currently very different, and levels of under-nutrition in Europe are far below those in Africa, both continents share a common food future characterized by growing micronutrient deficiency and diet-related NCDs, if agriculture and food systems are not changed. Globalization of food systems, through international trade and

multinational food production and retailing industries, are making African and European food systems more convergent, creating shared challenges and opportunities.

A common African and European research agenda on agriculture and food systems for improved nutrition would have the following components:

- Research on improved food value chains so as to deliver more nutritionally rich food to consumers with minimal loss of nutritional value, little wastage and a high level of safety.
- Research to improve the nutritional value of crops and animal products, through advances in breeding and biotechnological innovation, such as biofortification (improved mineral and vitamin levels in various highly productive crop lines).
- Understanding consumer behaviour with respect to healthy diets and nutrition and how education and incentive systems, including regulation, subsidies and taxes, can improve nutrition.
- Public private partnerships on research to improve the nutritional quality of foods, particularly processed foods in the marketplace.

Underpinning these applied research activities is a need to better understand the physiological basis of nutrition, its relation to diets, the microbiome, age and general health and the influence of genotype and personal history on individual nutritional profiles. While the conditions between African and European consumers differ, there is considerable advantage to developing a common methodology for such research which is robust in different communities and contexts.

Furthermore African and European food systems currently differ considerably but this is changing rapidly, and agriculture and food related challenges for nutrition are converging between the continents. A collaborative approach to these problems will accelerate research in this field and will contribute to the creation of nutrition-sensitive agriculture and food systems in both continents.

### **II.3 Expansion and improvement of agricultural markets and trade**

Agriculture remains a principal mean of economic growth for many African countries and markets and trade play an important role in future growth, both in terms of domestic, regional and international markets. Europe constitutes a major growth market for African agriculture, while Africa's growing middle class provide a growing market for European agricultural and food products. Improved bi-continental and intra-continental trade will have benefits for farmers, consumers, countries, regions (for instance trade within West Africa) and continents. Non-tariff barriers to trade relate largely to food quality and safety, and research and improved technologies are critical to provide for evidence-based decisions. The experience of developing trade within Europe may provide useful lessons for intra-African trade, which is a priority area under the Malabo Declaration (2014). While African-European agricultural trade is currently highly asymmetric this is probably changing in the future, once African agricultural growth is further enhanced. This should not be seen as conventional support to development projects, as the benefits of common technologies and standards will be greater trade which will benefit both Africa and Europe.

A common strategic African and European research agenda in this field has several potential elements:

- Development of surveillance, monitoring and diagnostic systems. The development of standards that will permit improved trade in agricultural commodities is dependent on a shared set of methodologies for detection, monitoring and assessing risks (including food safety issues) and opportunities. Different technological requirements for imports and



exports in different countries currently constitute a major impediment to regional and international trade. There is a considerable added value to these methodologies being developed in a collaborative manner, so that they may be applied broadly, effectively and economically.

- Development of the science agenda of mutually beneficial bioeconomy innovations. Both Africa and Europe use biomass extensively for food, feed and non-food purposes (energy, construction, new bio-chemical and industrial materials, etc.) and the latter can impacts on food markets. In Africa, bioeconomy strategies have been developed in South Africa and Ethiopia. In Europe, the EU has pioneered related science based strategies. Example of specific scientific issues are the expansion of tradable biomass products with due consideration for food security, and research into the opportunities for agricultural value chains innovations and employment.
- Research on reducing excessive fluctuations in food and input prices and improving resilience of food systems. This will enable the design of price observatory mechanisms that are able to predict upcoming price peaks. Europe and Africa have a strong common interest in international and national food markets that are free from excessive volatilities. Such volatility hinders sustainable intensification and hurts especially poor consumers and farmers. Economic research on agricultural and food markets and institutional arrangements (such as stock holding) and infrastructures and information systems aimed at reducing volatility and improving resilience to price changes and shocks in agricultural inputs and products will benefit both African and European consumers and agribusinesses.
- Global Value chains and market power. Research priorities could include: the development of mechanisms for linking smallholder farmers to markets, addressing the question of how to link rural communities to markets, providing them with access to credits and investments and helping them to add value to food value chains; understanding better the impact of urbanisation on trade and rural-urban linkages, and how this will affect the future of farming in Africa and Europe; building on the success of quality labelling schemes - taking note of the outcomes of the African workshops on quality labels and requirements of the food and processing chain - by solving related barriers; new approaches to food safety, like the reduction of aflatoxin content in food and feed crops.

**Further prioritization and identification of research topics is required, for the 3 research areas previously described. To achieve this, it is propose that the first action of the Roadmap should be to support an efficient dialogue between the research communities of both continents, Africa and the Europe, and between these scientific communities and the other public and private actors of the agriculture and food systems.**

This dialogue should focus on establishing an inventory of existing research, technologies and innovations, drawing on existing mapping studies (so call “meta-mapping”). From this can be drawn a better understanding of levels of adoption (and obstacles to adoption) and impact, evaluating the potential for scaling up in different European and African contexts.

Each of the proposed research topics in the three areas above can be examined in this manner, to identify gaps, priorities and complementarity to existing work.

In order to quickly give an operational content to the Programme, it is proposed that at least one top priority theme in each of the three areas be identified (if possible “low hanging fruits” with potential for quick impact) in the short term and that corresponding relevant STI activities are launched.

#### **II.4. Cross cutting issues: adding value to what exist; facilitating innovation process; strengthening R&I capacities; ensuring partnership governance adaptation.**

Though supporting R&I activities (initially on the three areas identified previously) is a necessary component of this Partnership. It will also invest in 4 cross cutting areas:

**1. Creating a framework for improved coordination and added value between the diversity of European- and African-supported research projects on agriculture and food security.**

Many projects, funded by a diversity of bilateral and multilateral donors, are currently implementing R&I activities in Europe and in Africa on issues related to Food and nutrition security and sustainable agriculture. What is new with the proposed Partnership is to establish a mechanism to account for these previously existing projects<sup>7</sup>. This would be a way to avoid replication, increase linkage between existing initiatives and facilitate adoption of results. This mechanism would apply not only to research projects but also to R&I infrastructures and capacity strengthening initiatives.

To enable this EU-AU partnership to reinforce existing initiatives and to facilitate the identification of “gaps” and areas of investments having synergistic effects with other existing initiatives (incl. CGIAR, African research organizations, EU projects and programmes such as JOLISAA, INSARD, PAEPARD and others), the partnership will need to establish a “clearing house” (for gathering information on what exists – through a database/portal mechanism) and a “sorting house” mechanism, assessing the relevance of proposed interventions on the basis of a set of criteria specific to the Europe Africa partnership (“sorted” proposal would then be submitted for potential funders, respecting their own funding decision criterias).

**2. Supporting innovation processes through adequate mechanisms and capacities, allowing knowledge to be mobilized to generate impact**

One of the specificity of the proposed programme is the constant preoccupation to ensure efficient innovation processes.

Innovation has been at the centre of many STI initiatives in Europe and in Africa and valuable lessons have been learned through these initiatives, and been summarized in policy briefs (see for instance the policy brief produced by the JOLISAA project<sup>8</sup>) or in expert reports (see for instance the report published in March 2012 by the Standing Committee on Agricultural Research, SCAR, Collaborative Working Group on Agricultural Knowledge and Innovation Systems, CWG AKIS<sup>9</sup>). Other models require their examination for determining their potential and valuable lessons (e.g. EIP, AGRA innovation platforms...). The Partnership will promote innovation processes to translate research outputs and into tangible results. Such a result-oriented approach requires the combination of multiple scientific disciplines, and of diverse stakeholders. Hence, the Partnership will focus on Multi-Stakeholder Innovation proposals, in which research

<sup>7</sup> In the initial stage, this mechanism will pool all the information provided by the European and African institutions joining in this partnership, on a voluntary basis.

<sup>8</sup> [http://www.jolisaa.net/index.php/projets/media/media\\_jolisaa/public\\_files/jolisaa\\_global\\_policy\\_brief](http://www.jolisaa.net/index.php/projets/media/media_jolisaa/public_files/jolisaa_global_policy_brief)

<sup>9</sup> [http://ec.europa.eu/research/bioeconomy/pdf/ki3211999enc\\_002.pdf](http://ec.europa.eu/research/bioeconomy/pdf/ki3211999enc_002.pdf)

projects and investments in research infrastructures are considered as components of an innovation process.

The strategy for enabling an environment to facilitate innovation and impact will include linkage to markets, social innovation, regional/local ownership, reduction of risk-taking for innovators. The partnerships must be flexible, allowing for contingency plans to cope with possible unexpected results and adjusting to new approaches to reach the main result-oriented outcomes. Understanding the expected benefits but also how to cope with the risks will be especially relevant to engage with the private sector. Working on whole value-chains (or “value-web”), with a holistic approach, can also be a way to achieve a multi-stakeholder partnership supporting innovation process and guaranteeing that outputs generate outcomes and impact.

Activities to be promoted in this cross-cutting area will include

- a. Establishing multistakeholder dialogue mechanisms (like the EIP focus group or the Innovation Platforms promoted in Africa by FARA, AGRA and others)
- b. Adequate information flows (use of ICT)
- c. Developing specific funding streams for innovators (taking care of financial risks)
- d. Training Innovation brokers
- e. Improving the legal framework for the protection of Intellectual property rights, in particular to facilitate collaboration with the private sector
- f. Conducting research on innovation process.

Activity (f) recognises the need to also consider innovation as a research issue in itself. If it is, for instance, well admitted that it is crucial to ensure the implication of the various categories of stakeholders (including the private sector) in all stages of the research process, questions remain on how to ensure this implication in practical terms? How to engage the stakeholders? Through which representation mechanism? How to ensure their commitment to a sometimes long a tedious research process? How to cope with a very diverse and competitive private sector?...How innovation processes are initiated, what is the role of the social capital are also current subject of research.

It is therefore proposed that the innovation activities conducted within the three thematic areas mentioned previously will also be used to generate a generic understanding of innovation processes, a knowledge which could be applied beyond the three areas. Part of this work may also include the analysis of cases where knowledge was generated by a research process but did not lead, at least up to now, to an innovation process (e.g. Conservation Agriculture in many parts of both continents). Activities will cover the emergence of innovations and their effects in various development contexts, through specific analyses, combining comprehensive approaches, diagnoses, modelling, and design of tools for use by players involved in innovation. Activities will range from observation to action-research-, combining process analyses and support of players at three levels:

- farms, to assess, understand and support change processes;
- agrifood systems, determining the relations between production, commercial exchanges and food consumption;
- agri-urban projects, seen as territorial innovation processes.

Outputs of such research will enlighten decision-making by public and private players, by generating knowledge of innovation and development processes in agricultural, agrifood and rural systems.

**3. Strengthening the capacities for collaboration among the African and European R&I communities.**

This area of activity will cover all levels of capacity development - human, organisational, institutional, financial and infrastructural. It should target R&I capacities in Africa, where needs are greater, but also in Europe, in some specific domains, as a large part of the European R&I community is not currently collaborating with African stakeholders for various reasons (ignorance of context and opportunities, career evaluation criterias not providing incentives, etc).

Activities to be promoted in this cross-cutting area will include

- a. Development of HR ; addressing gender issues
- b. Infrastructure improved/created
- c. Facilitating functional networks (between scientists; with stakeholders)
- d. Investing in ICT
- e. Establishing or extending Partnership Platforms Europe Africa, with common goal, common agenda, joint resources, joint governance.

**4. Ensuring the ability of the partnership programme to evolve as it grows (both on institutional aspect and programme content) in the short/mid/long term.**

The Partnership is set to expand over the next 10 years, and will therefore need to evolve in its organisation. The partnership model could be of “variable geometry”, allowing entrance and exit of partners at different stages, but with incentives to maintain linkages over a long time period in order to allow for tangible results to be delivered.

The Partnership will therefore use a combination (patchwork) of various models (supported by various instruments) each being best adapted to its type of activity (capacity strengthening, infrastructure, research project...). This also allows for participation of some partners (funders) only to some components of the programme. What is important is that the activities supported through various mechanisms remain aligned with the goal and purpose of the Partnership.

Such “institutional agility” will require:

- a. Adopting the most appropriate modalities for each type of activity
- b. Implementing regular governance reviews, including through independent external evaluations
- c. Setting up a M&E and Learning process
- d. Embedding the Programme in the HLPD process (or its successor) to ensure link with EU and AU authorities

The administration of the Partnership is also a cross cutting issues. It will be necessary to put in place a strong and well supported administrative and managerial structure, including capacity to manage projects, communication infrastructures and ITC. Monitoring and Evaluation will also be part of the Partnership and is described below (chapter 4).

### III. How to implement the Partnership

#### III.1. Policy context: the EU-Africa High Level Policy Dialogue on Science Technology and Innovation

This partnership is set in the context of the EU-Africa High Level Policy Dialogue (HLPD) on Science, Technology and Innovation (STI) between the European Commission and the African Union Commission, the EU-Africa HLPD being a key component of the Joint Africa EU Strategy (JAES).

This gives to this partnership a legitimacy rooted at the highest levels of the political organisation of both continents but also, at the same time, an obligation to be consistent with various policy developments both in Europe and in Africa:

- “On the Wings of Innovation”, the AU Science, Technology and Innovation Strategy for Africa 2024 (STISA-2024), which places science, technology and innovation at the epicentre of Africa’s social- economic development and growth.
- The Scientific Agenda for African Agriculture (S3A), developed by the Forum for Agricultural Research in Africa (FARA) in support of the Comprehensive Africa Agriculture Development Programme (CAADP)
- the European Union’s growth strategy (Europe 2020), in which science, technology and innovation play a prominent role, and in particular the launch of the “Innovation Union”, the EU programme for research and innovation, Horizon 2020, and the new EU development strategy ‘An agenda for change’.

The HLPD has also set a number of characteristics for this partnership. It has defined its thematic priority as ‘the role of STI in securing food and nutrition security and sustainable agriculture development, including water management’. And it has described its philosophy: “An integrated approach (...) recognising the important cross-cutting nature of innovation/entrepreneurship, research infrastructures and technical competence building”.

In this context, to ensure an *effective and integrated* programme is initiated in the different research and innovation areas, and a truly *equitable partnership* is developed, great attention must be paid to its establishment and working modalities.

These modalities should follow a set of criteria (§ 3.2), be implemented by mobilising, in the short/mid/long term, a tool box of mechanisms and instruments (§ 3.3), based on lessons learnt from existing initiatives (§ 3.4).

#### III.2 Criteria for selecting modalities

To be selected as forming part of this partnership, activities will have to fulfil the following criteria:

- **Joint interest<sup>10</sup>, joint governance<sup>11</sup>, joint investment for and by Europe and Africa;**

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<sup>10</sup> “Joint interest” could be define as research leading to applications both in Africa and in Europe, or research on global (like climate change) or bi-continental (like movement of pests and pathogens between Europe and Africa) issues affecting or threatening FNS in both continents.

<sup>11</sup> “Joint governance” implies the existence of an explicit agreement between African and European stakeholders (including but not limited to research institutes), regarding a common subject to be tackled, a work plan, a monitoring and reporting system (with

- **Promoting a systemic approach to research and innovation;**
- **Adapted to a program level partnership ;**
- **Strengthening collaboration between researchers and other stakeholders;**
- **Novelty and with a potential for leverage;**
- **Focused on STI but within a vision for impact.**

The partnership activities, fulfilling the above criteria, will be supported in the mid to long term, by a combination of **3 support modalities: Competitive call for proposals, Commissioned work, and targeted facilitation mechanisms.**

All three modalities will be mobilised as they all have their positive and negative points making them more or less able to support specific activities:

- ***Competitive call for proposals***
  - “+” Transparent procedure; rewards for the “best”;
  - “-” A competitive system can work against the sense of partnership; risk of duplication or overlap between activities; not easily leading to rapid impact
- ***Commissioned work/targeted funding***
  - “+” Avoid the competition between teams in Europe and in Africa and therefore better promotes a feeling of partnership; easier to generate quick impact by focusing on “low hanging fruits”; can quickly strengthen the formation of critical mass of EU and AU researchers in a limited number of topic, creating at the same time a “boosting” effect for some weaker partners;
  - “-” Choice of beneficiaries not very transparent and subject to influences. Note that this modality has been implemented with success by CORAF in West and Central Africa (with World Bank funding); it is also commonly used by the B&M Gates Foundation.
- ***Enabling and facilitation mechanisms:***
  - establishing policies enhancing the mobility (long term, short term) of researcher;
  - developing adapted ICT tools, for instance promoting a support tool (could be a portal) for exchange of information, access to data, brokering R&I partnerships, or adding value to local knowledge<sup>12</sup>;
  - joint research programming
  - mechanism for African and European scientists to work together, and to interact with other public and private stakeholders (thematic workshops, mobility grants, exchange of students, innovation competition...). It is for instance suggested to work on the creation of an “African Research Area” which could benefit from lessons learnt from the European experience to promote the “European Research Area”.

All three tools, initiatives and subsequent instruments should be used in the partnership. A careful attention will be paid to the adaptation between the specificities of a tool and the type of activity to be supported. For instance, commissioned work (which may be implemented through a targeted

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accountability), a communication and policy outreach strategy.... Such agreement could be of “variable geometry” but with a mid to long term commitment.

<sup>12</sup> Facilitation mechanisms will in particular include systems that enable information and knowledge to flow between innovators in Europe and in Africa. ICTs are necessary to deal with the “digital divide”, not especially only between researchers in Europa and Africa but in particular between innovators.

competitive call) may be more adapted to strengthening capacities; open competitive call may be more adapted to upstream research, etc.

These tools could also be working in “tandem”. For instance a competitive call in one continent could be coordinated with a targeted funding in the other.

### **III.3 Toolbox of mechanisms and instruments for implementing the partnership**

Various instruments currently used by the EC and the AUC can be mobilized for the development of this partnership, in the short to medium term, and also for structuring the proposed partnership platform, in the long term.

#### *3.3.1 Instruments for the short to medium term (2015 to 2017):*

In the short term, starting in 2015, it is proposed that the EC and the AUC use the following instruments to implement the road map.

- Jointly funded competitive calls for research and innovation. This is in particular the case of the calls launched by the ERAfrica project (an ERANet between European and African countries). To be really effective in implementing this roadmap, funders should consider extending the ERAfrica but with a more significant funding component dedicated to the area of Food and Nutrition Security and Sustainable Agriculture. Current Joint Programming Initiatives (JPI Water and HDHL) could include specific subjects within identified priority themes after promoting the inclusion of more African partners. The African Union Research Grants is another example of competitive call to be extended in budget, scope (ideally with the participation of European partners) and modalities (considering also the possibility to support commissioned work).
- Jointly funded competitive calls for capacity development. The “Tempus” calls and the “Intra ACP mobility scheme for science and technology” are particularly relevant and, if extended in the short term, could significantly support the implementation of the RoadMap. A new programme for co-directed PhD students linked to existing projects and using the “sandwich” approach could also be tested in both continents.
- Several Cooperation and Support Action (funded by the EC under the FP 7 or H2020 calls) can directly support the RoadMap. This is especially the case of the on-going projects CAAST-NET Plus (STI policy dialogue between Europe and Africa), PAERIP (joint research infrastructure), RINEA, etc, and of the soon to be launched (end of 2014/beginning of 2015) CSA on “Sustainable Intensification”. Some of these projects have limited budget (less than 1 million euro per project) and do not fund large R&I activities but they support key targeted activities and ensure an effective dialogue between the European and Africa STI communities, identifying priorities (mapping, gap studies) and setting strategic R&I agendas. As the CSA on “Sustainable Intensification” will only cover one of the three priority areas of this roadmap, it is proposed to launch as soon as possible (2016 ?) a call for two equivalent CSA: one on Nutrition and one on Trade.
- H2020 topics to support RoadMap in the new biennium 2016-2017 (e.g. “Evaluation of innovation models for sustainable agriculture” in 2016).

Apart from these three sets of instruments, others instruments have been implemented successfully in Europe and in Africa, in the STI domain. This is in particular the case for Commissioned projects funded by DEVCO (to be implemented by International Organizations or by legitimate consortium of partners; example of PAEPARD) and by CORAF, in particular through the World Bank funded WAPP program. These instruments, and others like DEVCO's Twinning instrument, have a potential to support the short/mid term implementation of the Roadmap. This will require a more thorough analysis, initiated in the § 3.4 but to be furthered in the coming years by some specific analysis to be commissioned in the initiation phase of the partnership.

### *3.3.2 Instruments for the long term: models of cooperation platform.*

In the long term, the partnership will lead to the creation of "platform" jointly funded by EU and Africa public institutions, but with potential support from the private sector. It will ensure long term (10 years) support for the research-innovation Agri-Food chain eco-system, promoting a vibrant community of STI actors between Europe and Africa.

Depending on further political negotiation, this platform may follow various models:

- Public-public models
  - o EU article 185 such as EDCTP
  - o CORAF West African Productivity Partnerships
  - o Trust funds (like the GAVI initiative or the CGIAR programs; note that the possibility for the EC to create specific trust funds is foreseen in the EC financial regulations)
- Public-Private models
  - o EU article 187 such as the Public Private Partnership for BioBased Industries
  - o European Innovation Partnership for Sustainable Agriculture (EIP-SA)
  - o Innovation Platforms promoted in Africa by CORAF, FARA, AGRA and other organizations
  - o Others like pooled instruments: UK research club model, African Enterprise Challenge Fund, GAIN....

One likely hypotheses is that the platform may be initially launched as bi continental Public Public partnership between the EC, the AUC and, on a voluntary basis, European and African Governments (it could be under a format adapted from an EU Article 185) but with legal framework enabling the opening of the partnership to the private sector and to foundations (like the BMGF), either on a restricted *ad hoc* basis or as full partners.

This is an ambitious target, but the example of the EDCTP shows that reaching this level of funding, in the mid to long term, is feasible. It is considered though that this level could be reached by the present Roadmap already by 2020, thanks to the lessons learned from pre-existing partnership programs like EDCTP.

### *3.3.3. Possible way forward: 2015 to 2017*

The proposal is to launch this EU-Africa partnership during the year 2015, after a phase of external consultations and of political and financial negotiation between Europe and Africa.



Though it may only be possible to initiate a limited number of activities in 2015<sup>13</sup>, it will be important:

- to acknowledge, from the onset, the broad perspective of this partnership,
- to find pragmatic solutions to enable, in the following years, adding new components as they emerge (with their respective institutional and funding mechanisms)
- to progress in parallel (though possibly at different speeds) on the three thematic areas (sustainable intensification, agriculture and food systems for improved nutrition, agricultural trade),
- as well as on the horizontal (non-thematic) issues. Some of these non-thematic issues, like how to strengthen innovation processes, would start to be analysed in the context of the three thematic areas, for effectiveness and to allow “learning by doing”, but with a vision of supporting more broadly the EU-Africa STI partnership.

**Timing:**

2015/2016: Launch of the EU Africa Partnership, with three components:

- Component 1: “Sustainable Intensification CSA” (participating to some activities or meetings; engaging with policy makers; assessing the CSA recommendations and preparing their implementation: institutional and financial aspects) ; assessing how CSA recommendations could be scaled out to other thematic areas (nutrition, trade).
- Component 2 : meta-mapping<sup>14</sup> of existing collaborations and new initiatives in the nutrition and the trade thematic areas
- Component 3: meta-mapping of existing collaborations and new initiatives in the non-thematic areas of innovation, communication, and research infrastructure.

2017-2019 : Set-up of a new funding and institutional mechanism to support

- the full scale implementation of recommendations on Sustainable Intensification, Nutrition, and Trade, including through a jointly funded call for proposals,
- the implementation of a jointly funded non thematic partnership initiative (in at least two or three areas like communication, innovation, research infrastructure, capacity strengthening...).

2019 and afterwards:

- Expansion of the programme to support EU-Africa partnerships in new thematic and non-thematic areas.
- Research project will lead to innovation and upscaling initiative<sup>15</sup>, to generate significant impact in both continents.

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<sup>13</sup> Including the launch of a 2 years Coordination and Support Action (CSA, funded under Horizon 2020) on sustainable intensification, aiming at the “creation of a long-term research partnership between Europe and Africa (.....) on research and innovation on sustainable intensification pathways in agro-food systems”. This CSA will be strongly linked to the Roadmap by having HLPD members joining the CSA “policy support group”, by bringing into the policy arena (for discussion, further elaboration and possible approval) the documents to be produced by the CSA (Strategic Research and Innovation Agenda, partnership governance structure, etc) and by analysing how to extend to other thematic areas (especially Nutrition, Trade) what may be proposed by the CSA regarding “sustainable intensification”.

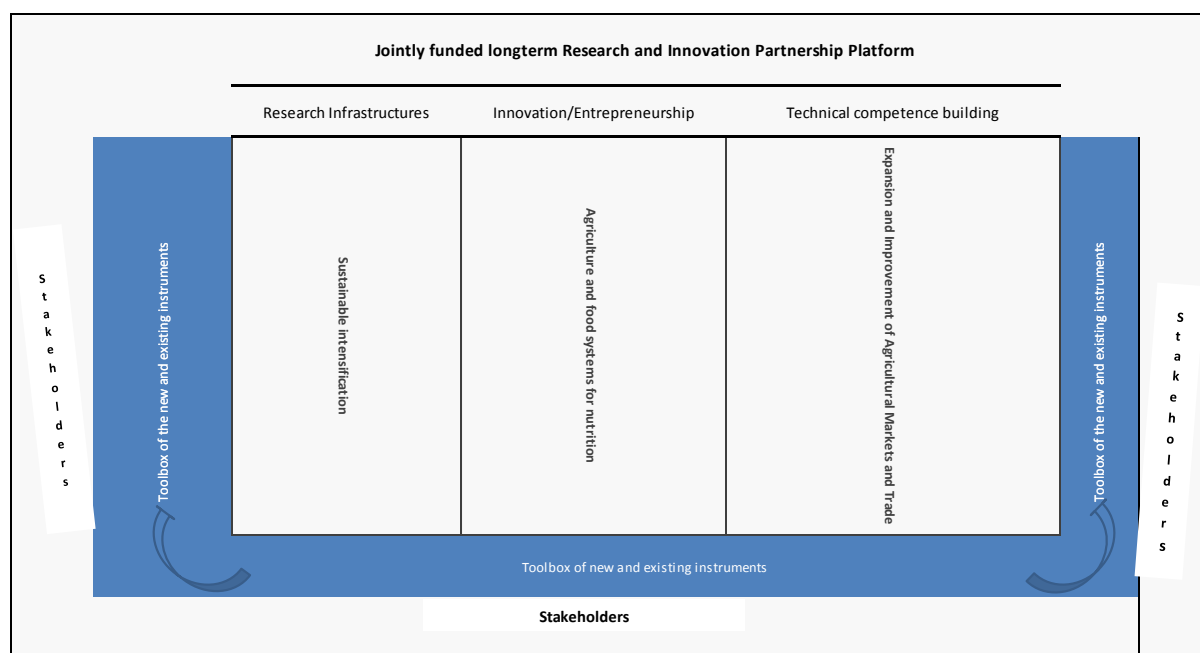
<sup>14</sup> Such meta-mapping would make use of and add value to the many mapping exercises already available in Europe and in Africa.

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<sup>15</sup> In Europe, this link could be established through the European Innovation Partnership (EIP) on sustainable agriculture.

## Visual image of the potential R&I partnership platform in the long-term



### III.4 Lessons learnt from past or current relevant STI collaborations or initiatives between or within Africa and Europe

Relevant STI collaborations or initiatives between or within Africa and Europe have been looked at considering the fulfilment of established criteria in Section 3.2 (Europe-Africa joint interest, governance and investment; Systemic approach; Program level; Stakeholders; Potential for leverage; Vision of impact). This information is captured in Table 1 (below).

There is not a single instrument that fulfils the 8 criteria but some appeared appropriate and have been considered in Section 3.3 (Toolbox of mechanisms to support the collaboration). The ANNEX 2 details the main elements of networks, programmes and instruments listed in Table 1, in the same order.

The closest instruments to the pursued as models are EDCTP (an Article 185), ERAfrica (an ERANet) and JPI Water (a Joint Programming Initiative). Among these, EDCTP is the most solid programme. The three address research, innovation and capacity building, as well and includes co-funding. The innovation part may be the weakest point of these initiatives (less in the case of EDCTP) as they generally follow Top-Down approaches.

There are many networks linked to agriculture research. Some include African and European Institutions (ERAfrica), some have been established at continental (FARA, ERA-Nets) or regional (SROs) scales. In general, those that include both continents are short-term projects while regional or continental networks are expected to have mid- and long-term duration. These institutional networks often have strategies that address general research priorities, approaches and capacity development needs. Networking on more technical or specific issues has also been promoted (e.g.

CARD and CAAST-Net Plus Projects) and involve research institutions as well as other stakeholders. There have been also extensive discussions on research priorities on various aspects of sustainable intensification of agriculture and nutrition in Europe and Africa. For research in developing countries, special mention deserves the CGIAR Consortium Research Programs as they involve various CG Centres and have been reviewed by large number of stakeholders. Addressing complicated issues by redefining the research approach is also possible (e.g. UK Sandpit model).

There are several examples of research and innovation projects with participation of African and European Institutions, but funding is generally European or International. There are various examples of efforts on approaches to innovation, both public-public and private-public, within Africa (e.g. WAAPP, SSA-CP, AGRA-Global Alliance for Improved Nutrition) and within Europe (e.g. EIP-AGRI, UK Research Clubs). Some projects target specific systems (e.g. CARD, UNIBrain), although it may cover very diverse environments within the continent. EIP-Sustainable Agriculture is a new approach to innovation development in Europe that follows bottom-up approach and with elements that may be implemented globally. WAAP (implemented by CORAF in West Africa) also works on innovation, often through commissioned activities.

Capacity building is addressed in most programmes and projects but none specific for the exchange of EU and AU staff and students on equal basis. Regarding PhD and MSc, none of the programme reviewed offers the possibility of the “sandwich approach” by which the student spends part of the time in both continents and the research usually addresses local problems.

In most cases, African activities require external funding. Only EDCTP, ERAfrica, JPI Water and CIDLID have real jointly programmed and co-funded activities.

**Table 1. STI collaborations or initiatives between or within Africa and Europe: tool type and fulfilment of criteria**

	Africa, Europe focus	TOOL TYPE	Networking	Programme	Project	Research	Innovation	Capacity building	Information/Database	Infrastructures	CRITERIA	Equal Europe-Africa	Systemic approach	Program level	Multi-stakeholders	Potential for leverage	Vision of impact
RAILS (FARA)	A				X				X						X		
eRAILS (FARA)	A				X		X		X				X		X		
DONATA (FARA)	A				X		X						X		X		X
AfricaAdapt (FARA)	A		X		X			X	X				X		X		
CARD (FARA)	A		X		X			X					X		X	X	X
SCARDA (FARA)	A				X			X									
UniBRAIN (FARA)	A				X		X	X					X		X	X	X
PAEAPARD (FARA/EU)	AE		X		X	X	X	X					X		X		
SSA-CP (FARA)	A		X		X		X	X							X		X
WAPP (CORAF)	A		X	X	X	X	X	X					X		X	X	X
NEPAD Centres of excellence	A		X	X				X					X	X			
AU Research Grant Programme	A			X		X								X			
AGRA	A						X	X							X		X
ERAfrica	AE		X		X	X	X	X				X	X		X	X	X
JPI	AE		X	X	X	X	X	X				X	X	X	X	X	X
EDCTP Article 185	AE		X	X		X		X	X			X		X	X	X	X
EIP-AGRI	E		X	X			X	X	X				X	X	X	X	X
CAAST-NETPlus FP7 Project	AE		X		X	X	X	X	X				X		X	X	X
PAERIP FP7 Project	AE				X					X							
JOLISAA FP7 Project	AE				X		X	X							X		X
PPP BRIDGE H2020	E				X	X	X								X		X
UK Research Clubs	E			X		X	X						X		X		X
UK Sandpit or Ideas Lab	E			X		X	X						X		X		X
UK CIDLID	AE			X		X		X							X		X
CRPs of the CGIAR	A		X	X		X	X	X	X				X	X	X	X	X
ASTI (IFPRI)	A		X						X				X				
Innovation for Poverty Action			X			X									X		
FINNOVAR	AE		X														
SASAKAWA 2000	A						X										
EIARD-InfoSys	E								X								
AGRINATURA	E							X	X								
Tempus	E							X									
Intra ACP mobility scheme	A							X									
Poverty Alleviation Programme	A						X										
AU-IBAR	A						X										

### **III.5 How should this partnership programme be connected to the “non STI” stakeholders and in particular to the private sector?**

Continuous interaction between researchers, policy makers and the private sector, including farmers, is needed to achieve innovation and make them adopted. The engagement of the private sector from both continents is therefore sought in supporting this STI partnership, aiming at translating research knowledge into tangible products, systems or mechanisms that can be adopted by the society, ultimately resulting in promotion of socioeconomic development.

Among the today's factors hindering the uptake of research outputs are lack of linkages among stakeholders, lack of organization of the private sector (including producers), lack of private sector engagement, inadequacy of R&D outputs with private sector's priorities, and lack of information from the R&D sector. The way to engage the private sector and its corporate decision makers is to involve it in the research agendas from the beginning, in global, regional and national identification of research needs, in funding and investing and in making part of the research teams bringing complementary expertise. This can be foreseen through multilateral dialogue to define priorities and challenges and to build trust between all stakeholders (move from priority takers to priority makers) and include the commitment that success pilot projects will have support to be scaled up and implemented, and by providing clear awareness of trade-offs with intellectual property protection issues.

This partnership programme will have a focus on innovation. Innovation is pursued by the private sector if considered to deliver competitive advantages and as an opportunity for profit. Despite its potential in driving innovation and expertise in management and efficiency, analyses of the determinants of private sector investment are incipient. Currently, private companies make a contribution to the food and nutrition arena mainly in providing innovation in seeds, pesticides, fertilizers, machinery and livestock. The focus on innovation should be advertised in order to trigger the interest of the private sector that will look at this programme as a distinctive mechanism, easier to participate in and delivering better results.

Private companies usually do not seek proactively to be involved in public partnerships for research and innovation but they are often demanded from the academia to support research projects. Its participation is mainly through providing funds and in-kind support through non-remunerated work, equipment, and resource materials. Many of the existing mechanisms of cooperation and instruments impose limiting controls that hamper the participation of the private sector in research and innovation programs. Highlighted are the extensive administrative procedures required to apply to the calls, costs in time and resources to develop concept notes and grant proposals and assembling the required documentation, complex regulations required to register and release new products, conflicting intellectual property right policies between privates and the academia, poor tax incentives to reward companies who invest in research.

There are a number of barriers to obtaining private-sector financing, which are mostly related with risk, low technical capacity levels or lack of information. This programme can advocate its uniqueness if the role asked to the private sector, supported by its participation in project design and research agendas, is not only to finance the research, but mainly as innovation-facilitators, helping filling gaps from research outputs to use by the society in holistic views of value chains. Also novelty, this programme should include the private sector among the beneficiaries for capacity building (both human and institutional).

To change behaviours and attitudes, this STI programme must provide the private sector with new tools to allow their participation in research and innovation in win-win models, bridging the public-

private sector divide for linking research and innovation. The private sector seeks for business cases and research funding opportunities rarely allow participation on its specific profit-making terms.

Putting the particular skills of the private sector to its best use can be achieved by innovative financing in public-private partnerships. Examples include looking at the private sector on the basis of their intellectual property and other forms of know-how and intangible assets rather than physical and financial assets; leveraging investments by taking or sharing the investment risks (e.g. Africa Agricultural and Trade Investment Fund (AATIF)) or Advanced Market Commitments (AMC) ensuring a bottom market and thereby reducing the risk of market failures; partnerships catalysing private investment and mechanisms to whole value chains (like integrating supply from small local producers in food related corporate business) and mechanisms for de-risking non-profitable engagement. Mechanisms aiming at removing barriers between actors in the value chains are to be foreseen. In addition, a favourable political will and regulatory environment is needed to create a business-friendly environment and to encourage private sector investment, including allowing for failure. Providing the interested companies with a good understanding of other initiatives that target the same segment of the private sector, including private-sector liaison with sectorial ministries, is also desirable to build trust.

Moreover, strong and aggressive communication abilities are needed to getting the attention of the private sector, namely using business language and to-business issues, keep realistic expectations, identify with transparency co-benefits for companies, advocate access to new markets, brand recognition and financial incentives to scale up the innovations.

Successful and innovative examples of public-private, EU-Africa multi-stakeholder platforms for research and innovation exist and are among some of the best and current models for achieving best results in agricultural research for development, allowing for replication. Known research-private sector partnerships have been mostly established in the Health sector and have been dominated by international companies through Corporate Social Responsibility programs (e.g. Bill & Melinda Gates Foundation) and alongside other focused public-public funding mechanisms including the EDCTP for Clinical Trials. Regarding food and agriculture issues, Public-Private models were implemented, both within Africa such as the Public Private Partnership for Bio-Based Industries (BRIDGE), the CORAF and FARA Innovation Platforms, including PAEPARD, the AGRA-Global Alliance for Improved Nutrition, the European Innovation Partnership for sustainable Agriculture, the G8 initiative (GAFSN), FINNOVAR, JPI, or the SMEs participation to FP7 and H2020 projects, or within Europe such as the UK Research Clubs and European Innovation Partnerships (EIP)-AGRI.

Impact analyses of these initiatives will help designing mechanisms of participation built on lessons learned<sup>16</sup>, selecting specific modules of success from each programme, on governance, financing and benefits, to be individually incorporated in the present programme, collecting the “best from each past experience” to tailor an attractive way to engage the private sector.

As the private sector is not homogeneous and covers a very diverse universe, from smallholder farmers to multinational agribusiness, a framework addressing the diversity of partnerships and classifying them according to their role/benefit in the partnership will be developed and included in the criteria for evaluating the proposals. The particular heterogeneity of the private companies

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<sup>16</sup> Such evaluation of on-going experiences are essential to the learning process, including when they highlight some difficulties in public private collaborations. See for instance the report published in September 2014 « La Faim, un business comme un autre. Comment la Nouvelle Alliance du G8 menace la sécurité alimentaire en Afrique » <http://www.oxfamfrance.org/communiqu%C3%A9-presse/agricultures-paysannes-et-investissements-agricoles/faim-business-comme-autre>

established in Europe and Africa should be looked as another level of the partnership and their equitable inclusion in the programme should be based on mutual interest, benefit, and capacity for innovation in their target countries.

#### **4. Monitoring, Evaluation and Impact assessment of the Partnership**

The purpose of Monitoring, Evaluation and Impact Assessment is to check the progress of activities implemented by the Partnership programme and to assess their effectiveness.

This will be done using standard project management tools, reporting procedures, progress reports, etc. Key activities in monitoring, evaluation and impact assessment of the Partnership will therefore be related to the establishment of proposal log-frame, with its designated top priorities, strategic and specific objectives, thematic activities and outputs.

In particular, the implementation of the Roadmap for this partnership will be measured on outputs and Impact Indicators related to:

- The effectiveness of the functional framework for improved coordination of the diversity of European- and African-supported research and innovation projects;
- The effectiveness of the multidisciplinary collaborative research and innovation project teams and their ability to mobilize the diversity of stakeholders, to organize them around research themes and to source funds;
- The extent to which the capacities (human, organisational, institutional, financial, infrastructural and, network) for collaboration among African and European research and innovation communities have been enhanced;
- The extent to which the mechanisms and the capacities that support mobilization of knowledge(s) for innovation are operational;
- The ability and the effectiveness of the Partnership programme to evolve (both on institutional aspects and programme contents) in the short/mid/long term, adapting by using the most appropriate modalities. For this specific objective, the M&E system will in particular organise, every year, an event to collect and analyse lessons learnt and, every 3 years, an external evaluation involving experts in the organization of institutions.

The responsibility for Monitoring, Evaluation and Impact assessment of the Partnership lies with the HLPD.

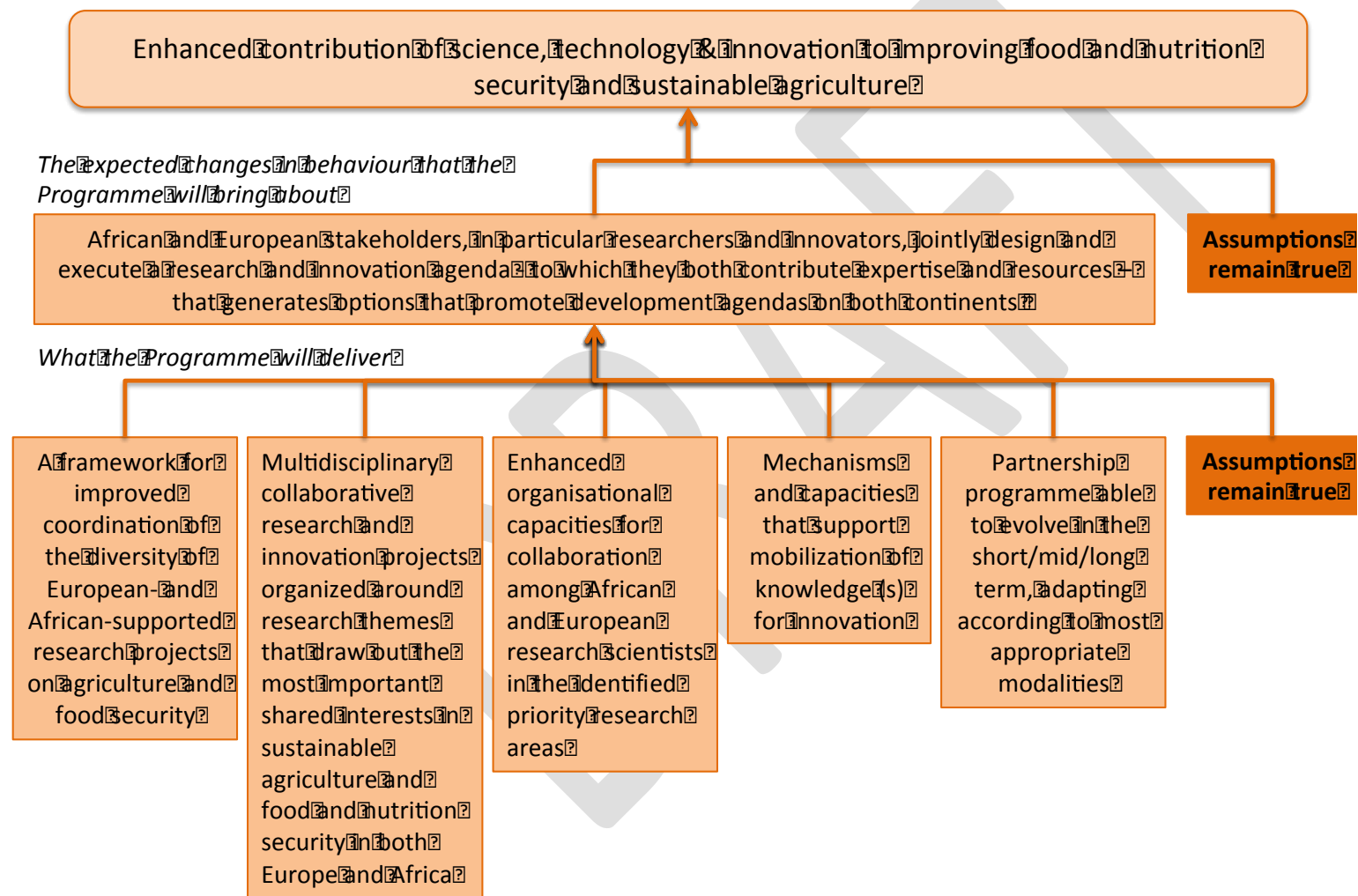
Other stakeholders could provide their perspectives as well. It is important to monitor progress continuously and report back to the stakeholders on performance so that appropriate measures can be put in place to rectify the gaps identified.

An unit will be put in place to carry out the day to day activities.



## Partnership Logframe:

1/ Tree of objectives: The vertical logic of the Roadmap for the EU-Africa partnership on research and innovation, with an initial focus on food and nutrition security and sustainable agriculture



2/ Detailed Logical framework<sup>17</sup> for the Roadmap for the EU-Africa partnership on research and innovation, with an initial focus on food and nutrition security and sustainable agriculture

Narrative summary	Indicators	Means of Verification	Important assumptions
<b>Principle Objective/ Goal/ Development Objective</b>			
Enhanced contribution of science, technology & innovation to improving food and nutrition security and sustainable agriculture	<ol style="list-style-type: none"> <li>1. Increasing demand for options generated by the programme by beneficiaries identified at the beginning of implementation of each funded project</li> <li>2. Adopters (<u>disaggregated by gender and poverty status</u>) of options generated by the programme significantly and sustainably increase their levels of food and nutrition security</li> <li>3. Users (<u>disaggregated by gender and poverty status</u>) of options generated by the programme have a significantly higher and sustainable level of nutrition security than non-users</li> <li>4. There is a higher level of policy-level support for sustained Africa-Europe collaboration and partnership in science, technology and innovation as a mechanism for enhancing food and nutrition security as well as sustainable agriculture</li> </ol>	<ul style="list-style-type: none"> <li>• Impact assessment surveys</li> </ul>	
<b>Purpose/ Specific Objective</b>			
African and European scientists jointly design and execute, together with other stakeholders, a research and innovation agenda - to which they both contribute expertise and resources – that generates	<ol style="list-style-type: none"> <li>1. A joint Africa-Europe research and innovation programme that addresses an agenda that can generate options for: (i) moving beyond an “inputs based” intensification towards a “knowledge based” intensification (ii) agriculture and food systems that support healthy nutrition (iii) improvement of agricultural markets and trade between Africa and Europe, and (iv) cross cutting areas - including innovation,</li> </ol>	<ul style="list-style-type: none"> <li>• M&amp;E reports from partner institutions</li> <li>• Technology adoption surveys</li> <li>• Beneficiary (including donor) assessment surveys</li> </ul>	<ul style="list-style-type: none"> <li>• Complementary development policies, strategies and programmes are successfully implemented</li> </ul>

<sup>17</sup> Logframe based on “Project Cycle Management: Integrated Approach and Logical Framework, Commission of the European Communities Evaluation Unit Methods and Instruments for Project Cycle Management, No. 1, February 1993” and also here: <http://goo.gl/kbcwNj>

options that promote development agendas on both continents	<p>knowledge systems, collaborative institutional development <b>being implemented</b></p> <ol style="list-style-type: none"> <li>The implemented research <b>generates options</b> for scaling up and out from the <b>[insert time]</b> year of commencement of funding</li> <li>The <b>utilization (at pilot sites/platforms) of options generated</b> by the funded research in innovation activities that are aimed at improving food security, nutrition security and sustainable agriculture shows a progressive increase over time in both Africa and Europe</li> <li>Partnership programme gets <b>progressive increase in endorsement and/or support from funders</b>, based on evidence of effectiveness of the institutional innovations, lessons learnt and potential for impact</li> </ol>		<ul style="list-style-type: none"> <li>A culture for utilising research outputs in income growth and rural development options (innovation) is enhanced</li> </ul>
<b>Results</b>			
<b>1:</b> A framework for improved coordination of the diversity of European- and African-supported research and innovation projects on agriculture and food security developed and functional	1.1. Institutional arrangements that foster joint interest, joint governance, joint investment, promoting a systemic approach to research and innovation, program level partnership, strengthening collaboration between researchers and other stakeholders (including private sector), novelty and potential for leverage developed by <b>[insert time]</b>	<ul style="list-style-type: none"> <li>Governance and management guidelines and manuals</li> <li>Governance and management M&amp;E reports</li> </ul>	Incentives for partnership research activities for both African and European scientists exists
	1.2. A balanced and appropriately qualified African-European Programme Coordination team in place by <b>[insert time]</b>		
	1.3. Tools for supporting collaboration (including but not limited to tools for planning, monitoring, evaluation and learning) developed and in use by <b>[insert time]</b>		
	1.4. Matchmaking mechanism for enabling best-fit partnerships between African and European institutions for developing and implementing joint projects developed by <b>[insert time]</b>		
	1.5. A management information system for the programme developed and operational by <b>[insert time]</b>		
<b>2:</b> Multidisciplinary collaborative research and innovation projects	2.1. In both Africa and Europe, at least <b>[insert number]</b> projects generating <b>options for which there is objectively derived</b>	<ul style="list-style-type: none"> <li>Ex ante impact</li> </ul>	The identified priority research

<p>mobilizing the diversity of stakeholders and organized around research themes that draw out the most important shared interests in sustainable agriculture and food and nutrition security and with the greatest possibility of equitable collaboration and uptake at national and regional levels in both Europe and Africa funded</p>	<p><b>indication that they can have impact for moving beyond an “inputs based” intensification towards a “knowledge based” intensification;</b> projects involving partner institutions that meet the partnership participation criteria and commencing in <b>[insert time]</b></p> <p>2.2. In both Africa and Europe, at least <b>[insert number]</b> projects generating <b>options for which there is objectively derived indication that they can have impact for agriculture and food systems that support healthy nutrition;</b> projects involving partner institutions that meet the partnership participation criteria and commencing in <b>[insert time]</b></p> <p>2.3. In both Africa and Europe, at least <b>[insert number]</b> projects generating <b>options for which there is objectively derived indication that they can have impact for improvement of agricultural markets and trade between Africa and Europe;</b> projects involving partner institutions that meet the partnership participation criteria and commencing in <b>[insert time]</b></p> <p>2.4. In both Africa and Europe, at least <b>[insert number]</b> projects developing facilitation mechanisms for which there is objectively derived indication that they can have impact <b>for cross cutting areas</b> - including innovation, knowledge systems, collaborative institutional development -; projects involving partner institutions that meet the partnership participation criteria and commencing in <b>[insert time]</b></p>	<p>assessment reports</p> <ul style="list-style-type: none"> <li>• M&amp;E reports</li> <li>• Partnership Beneficiary assessments</li> </ul>	<p>themes for partnership activities do not change</p>
<p><b>3: Organisational capacities</b> (governance, institutional, managerial, human, physical, financial, information, network) for collaboration among the African and European research and innovation communities, in the identified priority research</p>	<p>3.1. Organisational capacity needs assessment for identifying gaps in the requirements for equitable and sustainable collaboration - in the priority areas - among African and European institutions in the partnership undertaken and completed by <b>[insert time]</b></p> <p>3.2. A budgeted strategy and operational plan for addressing the identified organizational capacity needs developed and its implementation started by <b>[insert time]</b></p>	<ul style="list-style-type: none"> <li>• Biennial capacity reviews</li> <li>• Biennial organisational performance assessments</li> </ul>	<p>Developed capacity does not “decay” due to external factors (such as conflicts, disasters, pandemics etc.)</p>

areas, developed and utilised efficiently and effectively	3.3. All the partner institutions have the governance, managerial, institutional, monitoring, evaluation and learning systems that meet the set standards for participating in the partnership before they commence participation in the programme		
	3.4. Gender-balanced human resource capacity needed to sustain equitable collaboration (following the subsidiarity principle) between Africa and Europe in the areas of the proposed priorities for shared research and innovation activities attained by <i>[insert time]</i> and sustained thereafter		
	3.5. Each partner institution has the infrastructure, equipment and supplies that they need to effectively and efficiently play its part in implement the partnership research activities following the subsidiarity principle by <i>[insert time]</i> and sustained thereafter		
	3.6. Each partner institution has the information resources they need to be able to participate in the partnership activities by <i>[insert time]</i> and sustained thereafter		
	3.7. All the partner institutions are internally networked through physical and virtual means and also linked to other external networks relevant to the priority research areas by <i>[insert time]</i> and sustained thereafter		
4: Mechanisms and capacities that support mobilization of knowledge (s) for innovation developed and operational	4.1. A joint study to investigate the determinants of use/ failure of use of research results in the priority research areas for innovations targeting agriculture-driven development objectives in both Africa and Europe undertaken, and prioritised recommendations made (and validated) on the system for supporting innovation that the Programme should implement made by <i>[insert time]</i>	<ul style="list-style-type: none"> <li>• Study report</li> <li>• Validation workshop report</li> </ul>	Incentives and effective demand for investing in innovations in the areas addressed by the research themes exists
	4.2. By <i>[insert time]</i> appropriate systems and mechanisms for supporting innovation (including but not limited to innovation brokerage, multi-stakeholder innovation platforms, public-private partnerships, diversified funding, intellectual property	<ul style="list-style-type: none"> <li>• Innovation capacity assessment</li> <li>• M&amp;E of innovation promotion activities</li> </ul>	

	protection) focusing on the set development agendas in Africa and Europe developed and operational	by partners	
	4.3. In Africa and Europe the involvement of women, youth, elderly, disadvantaged and marginalised groups in multi-stakeholder innovation processes progressively increases throughout the life of the programme	• M&E reports	
	4.4. In both Africa and Europe there is progressive increase in the participation of the private sector in innovation processes that support agriculture-driven development objectives	• M&E reports	
	4.5. In both Africa and Europe there is progressive increase in the use of appropriate information and communication technologies to support innovation processes	• M&E reports	
<b>5:</b> Partnership programme able to evolve (both on institutional aspect and programme content) in the short/mid/long term, adapting by using the most appropriate modalities	5.1. A monitoring, evaluation and learning system strategy and plan developed by end of year 1 of the programme and implemented routinely thereafter	<ul style="list-style-type: none"> <li>• M&amp;E reports</li> <li>• External evaluation</li> <li>• Lesson learning reports</li> </ul>	
	5.2. A information, communication and knowledge management strategy and plan for the programme developed and operational by end of year 1 of the programme		
	5.3. An advocacy and lobbying strategy and plan directed at mobilising support and resources for sustaining the partnership programme developed and in operation by end of year 1		
	5.4. Lesson learning events undertaken at least once every year and the lessons learnt in all areas of organisational performance communicated to stakeholders by the most appropriate means		

Table 2: Detailed activities for 2015-2016

Activity	when	Who is in charge for the HLPD	How	
<b>Thematic: sustainable intensification (with inputs from the CSA, among other inputs)</b>				
Ensuring an active Policy dialogue (for follow-up + advice)	Continuous along 2015-2016	Contact points EC, AUC, Amcost (tbd)	Email/phone with contacts with CSA coordination team , participating to meetings	
Participating to relevant event (including the CSA launch)	Beginning 2015	Representatives EC, AUC, AMCOST	Meeting	
Participating to final workshops for policy makers	End 2016	Representatives EC, AUC, AMCOST	Meeting	
Assessing the Strategic Research and Innovation Agenda proposed by the CSA on "Sustainable Intensification"	Mid/end 2016	WG (scientific) selected by EC, AUC, Amcost	Small study (review of proposal)	
Assessing governance mechanism proposed by proposed by the CSA on "Sustainable Intensification"	Mid/end 2016	WG (institutional) selected by EC AUC AMCOST	Small study	
Complementing the mapping produced by the CSA, with other on-going activities Europe-Africa on sustainable intensification	End 2016	WG (experts)	Study	
<b>Thematic: nutrition ; trade</b>				
Meta-Mapping of on-going activities Europe-Africa on Nutrition	6 months assignment, to be concluded before mid 2016	WG (experts)	Study	
Meta-Mapping of on-going activities Europe-Africa on TRADE	6 months assignment, to be concluded before mid 2016	WG (experts)	Study	
<b>Non thematic (horizontal) issues: infrastructure, innovation, information exchange...</b>				
Meta-Mapping of on-going activities Europe-Africa on	6 months assignment, to be concluded	WG (experts; could be performed by	Study	study

research infrastructure, relevant to the three thematic areas mentioned above	before mid 2016	PAERIP project ? or AgInfra project ?)		
Meta-Mapping of on-going activities Europe-Africa on Innovation, relevant to the three thematic areas mentioned above	6 months assignment, to be concluded before mid 2016	Could be done by existing projects or new projects under development or negotiation		
Meta-Mapping of on-going activities Europe-Africa on information exchange, relevant to the three thematic areas mentioned above	6 months assignment, to be concluded before mid 2016			
Reviewing the conclusions of these three mappings on existing and desirable infrastructures or innovation support or information system to assess their relevance for other thematic areas	As from mid 2016			
<b>FUNDING</b>				
Assessing funding mechanism proposed by CSA	Mid/end 2016	WG (institutional) selected by EC AUC AMCOST	Small study	
Liaising with EC/AUC negotiation on joint funding to ensure resources mobilized are compatible with ambition ("What and How ?")				



Annex 1:

## **Terms of Reference for an Expert Working Group on Food and Nutrition Security, and Sustainable Agriculture**

Following the 2<sup>nd</sup> meeting of the EU-Africa HLPD  
on STI, November 2013

*Based on HLPD 'way forward'*

*HLPD Bureau, 11/03/2014* (HLPD Bureau, final version adopted at HLPD Bureau on 11/03/2014)

### **Background and context:**

The second meeting of the EU-Africa High Level Policy Dialogue (HLPD) on Science, Technology and Innovation took place in Brussels on 28-29 November 2013. The meeting has brought together around 90 senior officials from Research and Innovation Ministries from the African Union and the European Union member states as well as the African Union Commission and the European Commission.

The meeting was called to review cooperation and set new priorities ahead of the EU-Africa Summit 2014 (2-3 April).

Senior officials agreed to work towards a long term, **jointly-funded and co-owned research and innovation partnership with a particular focus on promoting food and nutrition security and sustainable agriculture** as a first priority. In view of this, the decision was taken to set up an Expert Working Group (EWG) that would be tasked to prepare a roadmap setting out short-, medium-, and long-term milestones in support of this goal. The roadmap is due for September 2014.

The concept note prepared prior to the meeting as well as the conclusions and the 'way forward' that were adopted at the meeting can be found in annex.

The 'way forward' sets out clearly the objective and aim of the partnership as well as the role and task of the EWG and the approach that should be taken. These Terms of References are an addition to the 'way forward' to enhance clarity and were subsequently prepared by the HLPD Bureau.

### **Output:**

The EWG should produce an electronic version of a roadmap setting out the short-term (2015), medium-term (2017) and long-term (2020 and beyond) steps in support of the implementation of a jointly funded and co-owned research and innovation partnership with a particular focus on food and nutrition security and sustainable agriculture.

The roadmap should be short and concise (maximum 15 pages) and presented in the form of a logical framework. This should include all the elements a logical framework usually contains (the way forward article 4.1.1) whenever realistically possible, such as time-specific objectives, detailed activities, outputs and outcomes, milestones, critical dependencies, progress indicators, mechanisms for monitoring and evaluation, criteria of success, as well as key risks and assumptions for the partnership on food and nutrition security and sustainable agriculture. The timeline should also describe time-specific input-requirements and the responsibilities of the relevant actors in relation to temporal progression. Explanations and comments on each element of the logical framework should figure directly in the related boxes.

The experts will also be invited to present and comment the roadmap to the EU-Africa HLPD Bureau once it is finalised.

The roadmap will be presented for endorsement by the senior officials at the next meeting of the EU-Africa HLPD on STI, most probably in the first semester of 2015.

### **Scope and focus:**

The scope and focus of the roadmap on thematic sub-challenges and cross-cutting topics are set out in article 3 of the 'way forward. The scope of the roadmap should extend beyond purely academic cooperation to consider:

- ☐ Achieving mutual benefit (noting that primary drivers include reinforcing the broader Africa-EU partnership in research and innovation and to foster collaboration for mutual benefit in research and innovation, rather than development cooperation);
- ☐ Improving collaboration on information exchange and knowledge (including data) management;
- ☐ Improving the policies, processes and instruments to create a conducive operational and financial environment for research and innovation collaboration;
- ☐ Strengthening communication within and between constituencies and dissemination of the outputs and data from on-going initiatives in the domain;
- ☐ Building necessary future skills and capacities for EU-Africa cooperation in research and innovation;
- ☐ Implementing the roadmap within the current political framework and employing the existing and likely future landscape of instruments for cooperation;
- ☐ Linkages and opportunities for synergies with other areas of policy (and the policy instruments) such as development cooperation, trade and foreign relations;
- ☐ Opening-up to other stakeholders such as the private sectors in order to mobilise additional resources (financial and technical).

### **Composition, selection and appointment of members of the Expert Working Group**

The EWG has strictly limited membership (10) with the aim of convening a small and efficient group that includes among its members all the key skills required to compile a roadmap as described herein. Following the second meeting of the EU-Africa HLPD in November 2013, the participating AU and EU Member States as well as the African Union Commission and the European Commission were invited to suggest names of high level experts. The final selection of experts was done by the HLPD Bureau that was guided by article 4 of the HLPD ‘way forward’ and driven by the following criteria:

- ☐ Expertise: individual members will be acknowledged experts, having competencies in specific areas of relevance to the roadmap: food and nutrition security, sustainable agriculture, water and innovation; research infrastructures
- ☐ Key skills: Collectively, the group should demonstrate all the key skills required to compile a roadmap: knowledge of EU/AU institutions and research programmes, knowledge of best practice in collaboration and cooperation, research communication, knowledge exchange, uptake and impact, science-policy interface, capacity-building
- ☐ Regional balance: Equal representation from Africa and EU.
- ☐ Gender balance: Without compromising other criteria, the selection process will strive for gender balance.
- ☐ Geographic and linguistic balance: Where relevant, notably for Africa, EWG members will be selected to achieve sub-regional and linguistic representation.
- ☐ Sectors: The EWG should include representatives of the scientific community, civil society, the public sector and the private sector<sup>18</sup>.

The final decision of its composition was taken by the HLPD Bureau on 11/03/2014.

Members of the EWG are appointed by the HLPD Bureau in the first instance for the period March to September 2014, with scope for continuation according to HLPD needs for the partnership. In the first instance, it is expected that each expert will be required to commit a maximum of 12 days for the work.

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<sup>18</sup> Due to the absence of the private and civil society sectors in the working group, consultation of these sectors should be sought at the draft stage of the roadmap.

EWG members participate in their own right, on the basis of their particular expertise, and do not represent either their organization or their country.

Participation in the EWG is voluntary. Members may resign from the EWG at any time, but are asked to provide the HLPD Bureau with 'reasonable' advance notice.

**EWG reporting and liaison:**

The EWG should appoint two contact-points at the kick-off meeting, one from the EU and one from Africa. Liaison between EWG and HLPD Bureau should then preferably pass via the contact-points of the EWG and the co-chairs of the HLPD Bureau.

The EWG should provide brief monthly progress reports during the period of the study which will feed into meetings of the EU-Africa HLPD Bureau.

**Language:**

The EWG should report in English. Translation into other languages if necessary will be assured by the HLPD Bureau.

**Location:**

It is anticipated that the EWG will mainly operate in a virtual configuration, with physical meetings on a small number of occasions, including at kick-off.

**Support, resources and financing:**

The HLPD Bureau and the European Commission/African Union Commission will ensure secretariat services of the EWG during the period of the study.

All essential and legitimate direct costs of the expert working group (travel costs and per diems for a maximum of 3 trips (2 to Europe and 1 to Africa) will be paid for. In certain cases financial support to remunerate the work to be undertaken by the experts may be sought. This will only be allowed were the expert is not already receiving a salary from his/her institution.

## Annex 2: Brief description of main elements of STI collaborations or initiatives between or within Africa and Europe

The African NARS strengthened regional collaboration through the formation and development of **sub-regional organizations (SROs)**, and through the creation of the **Forum for Agricultural Research in Africa (FARA)**. In general, SROs operate through research networks, programmes and projects, involving NARS and CGIAR centres. Four SROs are linked to FARA:

- West and Central African Council for agricultural Development (**CORAF/WECARD**, [www.coraf.org](http://www.coraf.org), 21 countries). With strategic plan (2007-2016) developed in the context of CAADP, CORAF encompasses conventional research, innovation platforms, policy, markets, capacity strengthening, coordination, advocacy, knowledge management and the involvement of a broad base of stakeholders.
- Association for Strengthening Agricultural Research in East and Central Africa (**ASARECA**, [www.asareca.org](http://www.asareca.org), 11 countries). Objective: to develop policies and programs aimed at deepening co-operation in agricultural research and policy among its member countries for the mutual benefit of all the stakeholders in the agricultural sector. Activities are mostly focus on specific commodities (e.g. bananas), cross-commodity agricultural topics (e.g. biotechnology) or natural resources.
- North African members of AARINENA (**NASRO**, [www.aarinena.org](http://www.aarinena.org), 6 countries)
- Centre for Coordination of Agricultural Resources and Development for Southern Africa (**CCARDESA**, [www.ccardesa.org](http://www.ccardesa.org), 15 countries). Leads Agricultural Productivity Program for Southern Africa (APPSA), coordinates Agricultural Research and Development in the SADC region and recognizes the role of National Agricultural Research Systems in responding to releasing the CAADP especially pillar 4 which deals with technology generation and adaption.

**FARA** ([www.fara-africa.org](http://www.fara-africa.org)), established in 2001, brings together major stakeholders in agricultural research and development in Africa. FARA reaches out to non – research stakeholders through continental platforms of farmer's organizations (PAFO), private sector (PanAAC) and the non-governmental organizations (Pan NGOC). FARA has developed a **ten-year Strategic Plan (2007 – 2016)** and has five result areas according to priorities of FARA's stakeholders and clients, and to FARA's comparative advantage. These are to ensure the establishment of:

- Appropriate institutional and organizational arrangements for regional agricultural research and development
- Broad-based stakeholder access to the knowledge and technology necessary for innovation
- Strategic decision making option for policy institution and markets
- Human and institutional capacity for innovation
- Platforms for agricultural innovation

FARA's work is supported by World Bank, African Development Bank (AfDB), DFID, EC, CIDA, USAID, DANIDA, IDRC, Rockefeller Foundation, Syngenta Foundation for Sustainable Agriculture, Bill and Melinda Gates Foundation, the Governments of Italy, Ireland, Germany, Netherlands, Norway, France, Sierra Leone, and other multi-lateral and bi-lateral donors.

**FARA's** Networking Support Functions (NSFs) includes one or more **projects** in which SROs or NARS may be involved:

### **NSF2: Access to knowledge and technologies**

- **RAILS** - Regional Agricultural Information & Learning Systems. This six-year (2007–2012) African Development Bank (AfDB) funded project was designed to fill current gaps in the rural community–NARS–regional–continental–global **information chain**. It was expected to improve the utility of web-based information and use of traditional communications tools, including FARA's website.

- **eRAILS** ([www.erails.net](http://www.erails.net)) is a major African **portal for agricultural innovation**, funded by AfDB. The project "**eRAILS phase II**" launched an information exchange service in 13 pilot countries in SSA to build a knowledge base in collaboration with 30 farmers' organisations and a large number of experts from the selected countries. During detailed household interviews, a thousand farmers indicate production constraints and are providing valuable data.
- **DONATA** (Dissemination of New Agricultural Technologies in Africa) was a six-year (2007-2013) AfDB-funded project to accelerate the dissemination of agricultural technologies across the region. The principle of creation **of Innovation Platforms for Technology Adoption (IPTA)** on segments of each value chain, with the task of inclusive monitoring and evaluation, lesson learning and experience sharing was central in the DONATA project. The project was led by FARA, managed by the SROs, and implemented by the NARS. DONATA is component 2 of **PSTAD project**. The agriculture development actors include farmers and post-harvest; extension and advisory services; policy-makers, decision-takers; and agribusinesses.
- **AfricaAdapt** ([www.africa-adapt.net](http://www.africa-adapt.net)) is an independent bilingual **network** (French/English), focused exclusively on Africa, and with the aim is to facilitate the flow of climate change adaptation knowledge for sustainable livelihoods between researchers, policy makers, civil society organisations and communities. Hosted by FARA, Environment and Development in the Third World (ENDA-TM) and IGAD Climate Prediction and Applications Centre (ICPAC), the network is jointly funded by DFID and the International Development Research Centre (IDRC) Climate Change Adaptation in Africa Programme. Activities use **the latest web-based applications**, face-to-face interactions, and other media for sharing resources, facilitating learning, and strengthening the African adaptation community.
- **CARD** - Coalition for African Rice Development ([www.riceforafrica.org](http://www.riceforafrica.org)) was established in 2008 with the aim of doubling the rice production in Sub-Saharan Africa by 2018. It is a **consultative group** of bilateral and multilateral donors and African/international institutions (AGRA, AfricaRice, AfDB, FAO, FARA, IFAD, IRRI, JICA, JIRCAS, NEPAD and WB) and has 23 member countries, all African. Based in 3 pillars: a) **capacity development of rice sector**; b) better **coordination among relevant stakeholders**; c) provides NO funding but increased investment through creation of enabling environment – **networking, including private sector**. It uses a **value-chain approach**. Progress 2008-2013: rice development strategies prepared in 21 countries; capacity development in relevant technical areas, mainly through South-South cooperation; pilot enabling environment in mechanization in Cameroon and Tanzania (FARA, IRRI, JICA). At country level, integration into CAADP. Outlook for 2013-2018: accelerating NRDS implementation (including capacity development); creation of enabling business environment (including, facilitation of dialogues between Public and Private sector); continuous capacity development

#### **NSF4: Capacity strengthening**

- **SCARDA** (Strengthening capacity for agricultural research and development in Africa) was implemented over a 2 ½ - year duration beginning in March 2008 with the purpose of improving the capacity and performance of participating NARS in key areas of their AR4D functions. Funded by DFID and coordinated by FARA, it was implemented in 12 focal institutions spread out in 10 African countries. The main outcome of the Inception Phase was a detailed **capacity strengthening programme** and structures for its implementation. The approach differs from standard capacity building projects in that it embedded the capacity strengthening interventions in a change management process, which started with a rigorous institutional analysis of target institutions, identifying their weaknesses and capacity strengthening needs.
- **UniBRAIN** pioneers a new approach to **promoting agricultural innovation** and improving tertiary **agribusiness education** in Africa. It links university education, research and business

in sustainable agriculture. UniBRAIN **Incubators** function as training, research and advisory centres for small and medium enterprises (SMEs), start-ups and enterprises undertaking change and innovation. They are also businesses in their own right providing problem solving, testing and validation, and business development services to innovators and agribusinesses. UniBRAIN promotes a value chain approach. Supported by Royal Danish Ministry of Foreign Affairs (Danida), facilitated by a team of seven partner institutions, and hosted by FARA. Supports **6 pilot agribusiness innovation incubator consortia** (AIIC), which work in critical African agricultural value chains: coffee, banana, sorghum, livestock, non-timber forestry products, cereals and fruits, and tropical fruit and vegetables.

#### **NSF5: Partnerships and strategic alliances**

- **PAEPARD** ([paepard.org](http://paepard.org)) - Platform for **African-European partnership** on AR4D, it mobilises resources for priority projects that combine African and European institutional and financial resources for mutually advantageous projects. PAEPARD **supports the establishment of innovative partnerships** of African and European stakeholders that engage in agricultural innovation and collaborative research to address shared challenges and opportunities of the partners involved. Successful applicants benefits from: 1) Support for participation in a facilitated “partnership inception workshop”; 2) Support for capacity strengthening, including training of an innovation-facilitator proposed by the partnership; 3) Support for facilitation and coordination of partnerships. PAEPARD is coordinated by FARA in collaboration with Agrinatura, a consortium of research and education organizations in Europe. The initiative is supported by the European Union.
- **SSA CP** – The Sub-Saharan Africa Challenge Programme was initiated in 2004, with the aim of facilitating a substantial increase in the impact of ARD for improved rural livelihood, increased food security and sustainable natural resource management throughout Sub-Saharan Africa. It proposed a new approach to conduct agricultural research. This approach entails a multi-sectoral orientation to problem diagnosis, and draws on integrated approaches using “hard” and “soft” sciences to provide solutions, while making the most of the available resources. This concept requires systemic interaction among all stakeholders around a specific commodity or production system. The SSA CP proposed to create the “**innovation platforms**” (IPs). The **research** is organized around four projects: one Meta-Analysis project focusing on the proof of concept and three PLS projects (each with three subprojects) in three different regions of sub-Saharan Africa. The projects were headed by Africans or CGIAR institutions. The SAA CP has been evaluated ([www.fao.org/docrep/014/i2350e/i2350e00.pdf](http://www.fao.org/docrep/014/i2350e/i2350e00.pdf)): the IPs have to varying degrees achieved a functional partnership across quite different organizational actors, a bottom-up approach to problem diagnosis and testing of potential solutions, real ownership by farmers and other actors of the IP, and a framework for integrating innovations in productivity, markets, and NRM.

**WAAPP (CORAF/WE CARD)**. The West Africa Agricultural Productivity Program (**WAAPP**) led by CORAF/WE CARD is an initiative of ECOWAS supported by World Bank for a period of 10 years (2008-2018) divided into 2 phases in order to facilitate the contribution of its member's states in implementing CAADP Pillar IV for the improvement of agriculture research, technology dissemination and adoption, in particular, contribute to sustained productivity increase in the top priority commodity sub-sectors as identified in an IFPRI/CORAF quantitative study. It has four components:

1) Enabling conditions for regional cooperation in the generation, dissemination and adoption of agricultural technologies with the aim at strengthening the mechanisms and procedures for the exchange of technologies, so as to allow participating countries to benefit fully from the regional cooperation in technology generation and exchange.



2) Promotion of National Centers of Specialization. It will support the upgrading of the National Centers of Specialization into Regional Centers of Excellence.

3) Support to demand driven technology generation, dissemination and adoption. It aims at strengthening priority-focused demand-driven agricultural R&D and scale-up technology dissemination and adoption within participating countries.

4) Programme coordination, management and monitoring and evaluation.

The key components 2 & 3 are implemented through the mechanisms of the **competitive and commissioned projects** according to the general criteria such as the participation of at least three NARS of West Africa, Gender mainstreaming, capacity strengthening of the different stakeholders of the project. The specific criteria used are related to the scientific quality of the project, the team of the project and its Leader institution, the budget du project, Environmental and social impacts etc. The commissioned projects are also selected after a thorough evaluation among a limited number of institutions on the basis of their professional competency and technical expertise for solving specific problems of research for development.

**Main achievements:** Government funded with WB facilitation; Large scale project with strong regional integration connotation in West Africa & strong potential for driving transformational change; Implemented at country level under coordination of CORAF/WE CARD with strong control mechanisms; Addresses perceived challenges to agricultural productivity under reduced transactional costs; Attracts private sector investments and international donors.

**Some deliverables:** A total financial resource mobilization of over \$456 million by 2013; 9 National Centers of Specialization with mandate to lead technology generation and use of the priority staples established; 300 research scientists have been mobilized and working on the nine staples in the Centers of Specialization; 65 yield enhancing technologies developed /improved and made available to participating countries; 230 000 ha covered with improved technologies; promotion of technological marketplace allows buying and selling of technologies relevant to value chain systems; Countries are implementing technology dissemination and adoption plans.

**Lessons learned:**

- The use of competitive and commissioned projects on a transparency base allows the full participation of all the stakeholders of CORAF/WE CARD (NARS, ARIs, CGIAR, Private Sector etc.) to successfully implementation of the WAAPP as shown by its deliverables which are contributing to the achievement of its purpose ;
- Following the successful implementation of WAAPP 1A (Ghana, Mali, Senegal), all the 15 countries of ECOWAS are now involved in the programme which also includes Mauritania;
- CORAF/WE CARD has been reinforced in its role for the coordination and capacity strengthening of AR4D in West Africa;
- Recognized as a model for sustainable investment in agricultural research for development, WAAPP has been adopted by other Sub Regional Organization such as ASARECA which is implementing the EAAPP (East Africa Agricultural Productivity Program). On the request of Central African States, a Central Africa Agricultural Productivity Program (CAAPP) which will be coordinated by CORAF/WE CARD is also in preparation.

**NEPAD (Centres of Excellence)** launched a specific **programme** for identifying and reinforcing Research and Development capacities in Africa through building **regional networks of Centres of Excellence**. In the case of Water Sciences, calls of interest were launched in order to identify and appoint Centre of excellences; two regional networks were set up since 2009. In the case of Agriculture, there seem to be no parallel exercise. Nevertheless, the **NEPAD/ABI (African Biosciences Initiative)** is being implemented through **establishment of regional networks of centres of excellence** throughout the continent, e.g. **BecANet Hub** network (24 research projects on crops and livestock) and **NABNet** network (biotic and abiotic stress tolerant bio-fortified barley varieties, iron bio-fortified and drought tolerant transgenic plants, genetic risk factors of type II diabetes, date palms against major pathogens, and bio-insecticides for biological control).



**The African Union Research Grant Programme** was initiated in 2011 and aims to support the implementation of Africa's Science and Technology Consolidated Plan of Action and its lighthouse projects as well as to develop African Union Council capacity for managing research grants. The Programme is led by the Department of Human Resources, Science and Technology and was formulated as one of the lighthouse projects and was identified among the early deliverables in Partnership No.8 on Science, Information Society and Space of the EU-Africa Joint Strategy and its Action Plan, Lisbon 2007. It is financed through the Financing Agreement between the European Commission and the African, Caribbean and Pacific Group of States. In the Open Call for proposals issued by African Union in 2011 and 2012, the total budget allocation for the programme was €7 million in 2011 and €14.7 million in 2012. The budget for evaluation of the project proposals was €700,000 in 2012. The funding is split between three priority areas: post-harvest and agriculture, sustainable energy, water and sanitation. In 2011 nine projects were awarded (€500,000-€750,000 per proposal, with grants covering 50-80% of the total costs). Scientists constructed **consortia of at least three organisations from at least two different African countries** (South Africa excluded). Established **research networks and regional bodies recognised by the African Union Council such as Regional Economic Communities, are considered to be partnerships in themselves** and did not need to form alliances with other organisations.

**Alliance for a Green Revolution in Africa (AGRA, [agra-alliance.org](http://agra-alliance.org))** is a **public-private partnership** for improving smallholder farming. AGRA's works in Africa with a presence in 17 African countries. AGRA was founded in 2006 through a partnership between the Rockefeller Foundation and the Bill & Melinda Gates Foundation; today it also receives funding from other governments, agencies and international institutions. AGRA had facilitated the **training of African scientists** at the MSc and PhD levels **and smallholder farmers** in modern agronomy, the **development of operated seed companies** and empowered agricultural entrepreneurs who are now providing small-scale farmers with better access to modern agricultural inputs, such as fertilizer and higher yielding, disease- and pest-resistant crop varieties. **African Enterprise Challenge Fund** (longterm multi-donor funding platform hosted by AGRA) pool of funds from donors to engage private sector in delivering public goods. Companies submit tenders and share the cost. **GAIN - Global Alliance for Improved Nutrition**, started off as trust fund. Now always combines private sector, national governments, academia and CSO. Business Platform for Nutrition Research, working with academia on pre-competitive research to address gaps in global evidence base on good nutrition, and barriers to entry for new products

**ERAfrica** (*European Research Area Network for Africa - Developing African-European joint collaboration for Science and Technology*) facilitates the **networking** of European and African research donors and encourages joint calls for proposals to promote long-term cooperation between EU Member States and /or associated countries and African countries (there are also ERA-Nets with Russia, India and Korea). ERAfrica operates **within the framework of the Joint Africa-EU Strategy** (8th partnership) with the EC acting as catalyst (2 M€ funding under FP7; project from Dic 2010 to Nov 2014). 10 European (France, Germany, Portugal, Finland, Austria, Belgium, Spain, Switzerland, Norway, and the Netherlands), Turkey and 5 African (South Africa, Egypt, Kenya, Burkina Faso, Ivory Coast) countries are participating. **ERAfrica** provides the opportunity to **define jointly the priorities** and fields in which countries **decide to collectively invest**. All parties participate in the **decision-making on an equal basis**, irrespective of the amount of their financial contribution. First joint call (January 2013) for three types of cooperative activities: **research, innovation and capacity building**. Three thematic fields were defined: renewable energies, interfacing challenges (challenges of common interest) and "new ideas". Each project had to involve at least four countries, two European and two African. Budget of 10 M€, of which the five participating African countries alone contributed almost half of the total funds. Although European financing of the programme ends at

the end of 2014, the partners have demonstrated a shared desire to further pursue project implementation.

National research programmes in Europe are often run in an isolated way, leading to unwanted fragmentation or ineffectiveness. The **Joint Programming Initiative (JPI)** concept was recently introduced by the EC “to tackle common European challenges more effectively, in a few key areas, by **concerted and joint planning, implementation and evaluation of research programmes**”. Around 10 JPIs have been launched not following the same model on programming and funding but with tendency to follow same rules in the future. In general, each country contributes with variable funding and the EC cofunds part through ERA-NET Cofund (funding tool, around 33% of call costs and other activities provided some rules are followed e.g. coherence with H2020) and other EC funding. The JPI also contribute to the identification of priority topics for H2020. Three JPIs are related to STI on agriculture and nutrition; participants are all European but may include **international partners as well (South Africa in JPI-Water, Canada and New Zealand in JPI-HDHL)**.

- **FACCE-JPI** (JPI on Agriculture, Food Security and Climate Change) addresses the need to build more resilient food systems in the light of expected (and unexpected) changes ahead. It was in part a response to the 2007-2008 world food crisis and extreme climate events, such as the summer heat of 2003 and the spring drought of 2007 in Europe. Additionally, to determine agriculture and forestry sectors potential for CC mitigation, reducing GHGs emissions and carbon sequestration. Agriculture also has to meet the estimated rise of food demand. Two calls already: **BiodivERsA/FACCE call** for research projects on « Promoting synergies and reducing trade-offs between food supply, biodiversity and ecosystem services » (8-10 research; total funding 9.7 M€ approx.; multistakeholder, including private); and, **FACCE ERA-NET+ action “Climate Smart Agriculture: Adaptation of agricultural systems in Europe”** co-funded by FP7 (11 projects; total 18.7 M€ from 22 national funding organizations from 18 countries, and the European Commission).
- **JPI-Water** deals with research in the field of water and hydrological sciences and responds to the grand challenge of “Achieving Sustainable Water Systems for a Sustainable Economy in Europe and Abroad”. Water in agriculture is a major component. **Participation of 18 countries including South Africa**. Call may include additional funds in the form of loans from countries to private partners (SMEs). Third call (2015) on “improving water use efficiency and reducing soil and water pollution for a sustainable agriculture”. A Horizon 2020 on an ERA-NET has been published through Societal Challenge 5. The Strategic Research and Innovation Agenda of the Water JPI (presentation on 21st October 2014) provides a framework for future Research, Development and Innovation activities and European investments in the water sector (over 500 M€ per year) laying out needs grouped by thematic areas and priorities according to their scientific and societal importance.
- **JPI HDHL** (Joint Programming Initiative A Healthy Diet for a Healthy Life) following the vision: “By 2030 all Europeans will have the motivation, ability and opportunity to consume a healthy diet from a variety of foods and have healthy levels of physical activity, and that the incidence of diet-related diseases will have decreased significantly.” The JPI HDHL aims to coordinate research on the impact of diet and lifestyles on health, significantly contributing to the construction of a fully operational European Research Area for the prevention of diet-related diseases and strengthening the leadership and competitiveness of research activities in this field. 25 Member States and Associated Countries are engaged. Only Canada and New Zealand are non-European participants. The first joint action “DEDIPAC - the Knowledge Hub on the DEterminants of Diet and Physical Activity” was launched on November 2012: 56 research groups including 160 scientists from 12 JPI Member States were selected to carry out a programme of joint trans- and multidisciplinary activities. On April 2014, the JPI HDHL launched a transnational call for research proposals on Biomarkers in Nutrition and Health (BioNH).

The **European & Developing Countries Clinical Trials Partnership (EDCTP)** aims to accelerate the development of new or improved drugs, vaccines, microbicides and diagnostics against HIV/AIDS, tuberculosis and malaria, with focus on phase II and III clinical trials in sub-Saharan Africa. **Article 185 initiative**, started in 2003, jointly funded by EC and 16 member states. Second-phase (EDCTP Association) will allow for co-funding from African countries. South Africa, Congo Brazzaville, Senegal, Cameroon and Uganda have already committed to 200.000 euros. Congo, Zambia, Mozambique, Burkina Faso, Gambia and Tanzania have marked a strong interest to join in the future. The EU will provide a maximum Union financial contribution of 683 million euro on condition that it will be matched by at least the same amount from the participating European countries. In the EDCTP2 Strategic Business Plan the participating European countries provide 1.6 billion euro upfront commitments for 2014 to 2023. Funded activities are based on: Supporting relevant clinical trials; Networking and coordination of European national research and development programmes and with their partners in the south; Networking and coordination of African national programmes; Strengthening African capacity in this field.

The **European Innovation Partnership for Agricultural productivity and Sustainability (EIP-AGRI)** was launched in 2012, works to foster competitive and sustainable farming and forestry that 'achieves more and better from less'. It contributes to ensuring a steady supply of food, feed and biomaterials, developing its work in harmony with the essential natural resources on which farming depends. The EIP-AGRI follows an **interactive innovation model** which brings together specific actors (e.g. farmers, advisors, researchers, businesses, etc) to work together in multi-actor projects (**Operational Groups**) in order to find a solution for a specific issue or developing a concrete opportunity. A **high-level steering board** has kicked off the EIP-AGRI by providing **strategic orientations for its implementation**. Coordinating agricultural research across the European Research Area, the Standing Committee for Agricultural Research, which consists of representatives from Member States and Candidate and Associated Countries, has engaged in assisting the EIP through the development of innovative Horizon 2020 instruments. It is providing advice via a dedicated working group on Agricultural Knowledge and Innovation Systems (AKIS). Different types of available funding sources can help get an agricultural innovation project started, such as the **European Rural Development policy** or the EU's research and innovation programme **Horizon 2020**. The EIP-AGRI contributes to integrating different funding streams so that they contribute together to a same goal and duplicate results. Rural Development will in particular support **Operational Groups** and **Innovation Support Services** within a country or region. **Horizon 2020** will fund multi-actor projects and thematic networks involving partners from at least three EU countries. Other policies may offer additional opportunities. The EIP-AGRI website has interactive useful features, including funding opportunities for innovation projects, potential partners, **innovative project ideas** and practices, information about **research and innovation projects**, including projects' results. **EIP-AGRI Focus Groups** are temporary groups of selected experts focusing on a specific subject, sharing knowledge and experience. The Focus Groups organized until now are: Animal husbandry; Fertiliser efficiency; Genetic resources; High nature value; IPM for Brassica; Organic farming; Permanent grassland; Precision farming; Protein crops; Soil organic matter.

**CAAST-Net Plus** ([www.caastr-net-plus.org/](http://www.caastr-net-plus.org/)) is a **network** of 25 partner organizations from all over Europe (Austria, Germany, Switzerland, Portugal, France, **Greece**, Spain, Norway, Finland) and sub-Saharan Africa (Cape Verde, South Africa, Rwanda, Kenya, Senegal, Madagascar, Malawi, Ghana, Nigeria, Uganda). Also includes Egypt, the Association of African Universities and the Association of Commonwealth Universities. CAAST-Net Plus is funded by the EU **FP7** and it builds on the activities and outputs of the CAAST-Net project (2008-2012). CAAST-Net Plus will run from **2013 to 2016** and will make contributions to the quality and scope of the Africa-Europe STI relationship for mutual benefit. The objectives are:

- To encourage new and diverse multi-stakeholder partnerships that, **through research and innovation**, tackle the global challenges of health, food security, and climate change that affect Europe and Africa;
- To enable better understanding between the public and private sector in Africa and Europe of the link between research and innovation, and to identify and share opportunities for cooperation through networking and communication;
- To facilitate exchanges that result in learning and that support formal policy dialogue for more effective research and innovation cooperation.

**PAERIP** (Promoting African European Research Infrastructure Partnerships) is a project funded under FP7 (Theme INFRA-2010-3.2). The project will create a dedicated initiative to promote research infrastructure partnerships between Europe and Africa. Four African and four European partners. An inventory of Research Infrastructures in Europe and Africa is available on-line ([inventory.paerip.org/paerip/](http://inventory.paerip.org/paerip/)). In May 2012 it was carried out a PAERIP survey to look at how to improve collaboration between European and African researchers, explore the experiences of European researchers in their participation in African research infrastructures, and to identify major factors hindering research collaboration between both continents, and to find solutions on ways to improve and increase European participation in African research projects. Duration: April 2011- April 2013. Project budget: €450000.

The **JOLISAA** (**Joint learning in and about Innovation Systems in African Agriculture**) is a project funded under EU FP7 and operated from February 2010 to July 2013 with the aim to increase **understanding of agricultural innovation systems** focusing on smallholders' livelihoods and the articulation of local and global knowledge. The goal was to assess how smallholders' innovativeness, knowledge, capacities and other resources can be tapped into, strengthened and linked effectively to those of other stakeholders – public or private, local or global – to contribute to reducing rural poverty and improving food security in Africa. Lessons learnt about recent experiences with agricultural/rural innovation involving multiple stakeholders in Kenya, South Africa and Benin have been synthesised by combining joint case-study assessment with capacity-strengthening and networking at various scales. It had three African and four European partners.

**BRIDGE PPP** (Biobased and Renewable Industries for Development and Growth in Europe Public Private Partnership) is an integrated and fundamental tool under Horizon 2020 to realise the biobased industry vision. BRIDGE focuses on developing EU-based value chain ([fbheuropabiovideos.co.uk/BBE\\_PPP/about](http://fbheuropabiovideos.co.uk/BBE_PPP/about)). The PPP is an instrument to support industrial research and innovation, to overcome the innovation 'valley of death', the path from research to the marketplace. It encourages partnership with the private sector to fund and bring together the resources needed to address the challenges involved in commercializing major society-changing new technologies.

**UK Research Clubs:** A group of companies interested in similar pre-competitive research questions 'club' together putting in equal amounts of funding, which is matched by public funders. Then this is made into a research call, which the academic community responds to. There are regular dissemination meetings with the grant-holders and the private sector throughout the duration of the grant to show what the research has established/ produced. (<http://www.bbsrc.ac.uk/business/collaborative-research/industry-clubs/crop/crop-index.aspx>)

**Sandpit / Ideas Lab model** is a really **innovative approach to research funding in UK**. The competitive stage of this programme is to be selected for a week long, intense event on a particular theme e.g. enhancing photosynthesis efficiency. Ultimately around 15-20 researchers from a range of research disciplines are chosen. Over the week they group themselves and iteratively develop

research proposals with each other, assisted by on-site mentors. At the end of the week they present their proposals to a peer review panel. Previously these initiatives have been co-funded between the UK and another country e.g. the US. The idea is **to develop a research proposal that will bring about a step change in how that topic is researched.**  
(<http://www.epsrc.ac.uk/files/funding/calls/2014/sandpitwaterenergyfoodnexus/>)

**Combating Infectious Diseases in Livestock for International Development (CIDLID)** is a **collaborative research programme** with 3-4 member research teams, from both UK and Africa (or other international expertise) for a duration of 3-4 years. In CIDLID, the UK side was funded by the Research Council, and international collaborators by the Department for International Development. Programmes are assessed on scientific excellence. It would be good for this to evolve into a programme more like ERAfrica, where each country is able to fund its own researchers for a greater sense of co-ownership and greater long term sustainability.  
(<http://www.bbsrc.ac.uk/funding/opportunities/2008/combating-infectious-diseases-livestock.aspx>)

CGIAR Research Programs (**CRPs of the CGIAR**) tackle the cross-cutting issues in agricultural development across the globe and align the research of the 15 Research Centers and their partners into efficient, coherent, multidisciplinary programs. 16 CRPs have been prepared and reviewed in a transparent way and considering relevant stakeholders. Current CRPs on (<http://www.cgiar.org/our-research/cgiar-research-programs/>):

1. Dryland Cereals;
2. Grain Legumes;
3. Livestock and Fish;
4. Maize;
5. Rice;
6. Roots, Tubers and Bananas; and
7. Wheat.
8. Climate Change, Agriculture and Food Security;
9. Forests, Trees and Agroforestry; and
10. Water, Land and Ecosystems.
11. Integrated Systems for the Humid Tropics;
12. Aquatic Agricultural Systems; and
13. Dryland Systems.
14. Policies, Institutions, and Markets.
15. Agriculture for Nutrition and Health.
16. Managing and Sustaining Crop Collections.

Partners also include European, American, Asian and other international institutions. The CGIAR Fund provides reliable and predictable multi-year funding to enable research planning over the long term, resource allocation based on agreed priorities. The multi-donor trust fund finances research carried out by the Centers through the CGIAR Research Programs (EC is a major donor. Other funders include IFAD, BMGF, ACIAR, USDA...).

The **Agricultural Science and Technology Indicators (ASTI, [www.asti.cgiar.org](http://www.asti.cgiar.org))** initiative, led by the International Food Policy Research Institute (**IFPRI**), is a comprehensive and trusted source of information on agricultural research and development (R&D) systems across the developing world. Working with a large network of country-level collaborators, ASTI conducts primary surveys to collect data from government, higher education, nonprofit, and private agricultural R&D agencies. After analyzing the resulting raw data, ASTI publishes quantitative and qualitative information and trends on funding sources, spending levels and allocations, and human resource capacities, at both country and regional levels. Funded by Bill & Melinda Gates Foundation, Government of Canada (DFATD), USDA and others.



**Innovations for Poverty Action** ([www.poverty-action.org](http://www.poverty-action.org)) was born in 2002 when Dean Karlan founded Development Innovations, a non-profit organization dedicated to bridging the gap between academia and development policy in practice. **MIT's Poverty Action Lab** (now the Abdul Latteef Jameel Poverty Action Lab, or J-PAL), a center at MIT and network of like-minded researchers from around the world, started in 2003. From the beginning the two organizations were set to work closely. Today over 250 researchers — many professors at some of the leading institutions of higher education in the world — turn to IPA to implement and manage their projects.

The objective of the European Information System on Agricultural Research for Development (**EARD-InfoSys+**) is to map the European landscape of Agricultural Research for Development (ARD). It is collecting metadata on organisations, projects, funding opportunities, experts, news and events in European ARD. All the information is available online through a relational database which can be searched by theme, country, organisation, project, geographical focus, funding type, etc...

**AGRINATURA** Project is the European Alliance on Agricultural Knowledge for Development, a new entity established jointly by 31 European research and education organisations ([www.agrinatura.eu](http://www.agrinatura.eu)) working in agricultural research, education, training and capacity strengthening for development. AGRINATURA formulates and implements research and education programmes and projects in developing and emerging economy countries on every continent. AGRINATURA'S actions in the field of education are two-fold: A) Develop an integrated offer of capacity building in Europe in agriculture for development and integrated management of natural resources; B) Support and strengthen the capacities to build capacities in the South, through various partnerships and projects. AGRINATURA works in partnership with the European Commission on A) Strategy analysis on the Use Biotechnologies in Developing Countries, and B) Monitoring of EC funded CGIAR projects; and with the European Initiative on Agricultural Research for Development (EIARD) on Policy and strategic support on key ARD topics.

**TEMPUS** is the European Union's programme which supports the modernisation of higher education in the EU's surrounding area. Tempus promotes institutional cooperation that involves the European Union and Partner Countries and focuses on the reform and modernisation of higher education systems in the Partner Countries of Eastern Europe, Central Asia, the Western Balkans and the **Mediterranean region**. The Tempus programme is implemented in close coordination with the Erasmus Mundus programme which provides scholarships to third country students allowing them to participate in top-level Master courses and Doctorate programmes outside the EU. The ENPI (**European Neighbourhood and Partnership Instrument**) provides financial support for the European Neighbourhood Policy and ENP countries plus Russia.

The **Intra-ACP academic mobility scheme** supports higher education cooperation between countries in **Africa**, the **Caribbean** and the **Pacific** (ACP) and aims at increasing the availability of trained and qualified high-level professional manpower in the ACP countries. The Education, Audiovisual and Culture Executive Agency is responsible for the managing this programme, with the support of the African Union (AU) and the Africa Caribbean and Pacific Group of States (ACP), and under the supervision of the Directorate-General for Development and Cooperation-EuropeAid. It provides support to: a) higher education institutions to set up inter-institutional cooperation partnerships between universities from different countries within the ACP regions; b) individual students, researchers and university staff to spend a study / research / teaching period in the context of one of the above mentioned cooperation partnerships;

This programme builds on the African Union's Mwalimu Nyerere programme for Africa.

Forum International sur la promotion des **innovations** et des **partenariats** dans le secteur agro-alimentaire et des agro-ressources (**FINNOVAR**). The 1<sup>st</sup> FINNOVAR was organized in Dakar (2010 et

2011), 2nd in Kinshasa (2012) and 3rd in Dakar (2014), the last one organized by the Institut de Technologie Alimentaire (ITA), l'Institut Sénégalais de Recherches Agricoles (ISRA), the Délégation Wallonie Bruxelles à Dakar and CIRAD.

Over a 20-year period, the **Sasakawa Global 2000** partnership has sponsored country **technology transfer** projects in 15 African countries. In assisting with implementation of the CAADP initiative, it has formed viable partnerships with the CGIAR Centers and the NARS.

**Poverty Alleviation Programme** has economic and social interventions that are linked to IDP and growth Strategy of eThekweni Municipality (South Africa), including co-operatives development and support but it does not have research or innovation ([http://www.durban.gov.za/City\\_Services/Commuhnity\\_Participation/Pages/Poverty-Alleviation-Programme.aspx](http://www.durban.gov.za/City_Services/Commuhnity_Participation/Pages/Poverty-Alleviation-Programme.aspx))

**Interafrican Bureau for Animal Resources (AU-IBAR)** provides leadership in the development of animal resources for Africa, AU-IBAR's mandate covers all aspects of animal resources, including livestock, fisheries and wildlife, across the entire African continent. The specific areas of the mandate include to improve public and animal health through the control and possible eradication of transboundary animal diseases and zoonoses; to improve the management of animal resources and the natural resource bases on which they depend; to explore investment options and enhance competitiveness of African animal products; to contribute to the development of relevant standards and regulations and enhance compliance by Member States; to strengthen institutional capacity and support policy development and harmonization; and others related activities.