European Agricultural Research towards greater impact on global challenges: Intersection between AR and ARD

Study to support EIARD-SCAR Strategic Working Group 'ARCH - Agricultural Research on Global Challenges'

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ACRONYMS

AC	Associated Country
AR	Agricultural Research
ARD	Agricultural Research for Development
ASARECA	Association for strengthening Agricultural Research in Eastern and Central Africa
BRIC	Brazil, Russia, India and China
CAADP	Comprehensive Africa Agriculture Development Programme
CCARDESA	Center for the Coordination of Agricultural Research and Development in Southern Africa
CGIAR	Consultative Group for International Agricultural Research
CIRAD	Centre de coopération internationale en recherche agronomique pour le développement)
CRP	CGIAR Research Programmes
CSIRO	Commonwealth Scientific and Industrial Research Organisation
CTA	Technical Centre for Agricultural and Rural Cooperation
DCI	Development Cooperation Instrument
DG AGRI	Directorate General for Agriculture and Rural Development
DG DEVCO	Directorate General Development and Cooperation, formerly DG Development / EuropeAid
DG RTD	Directorate Research and Innovation, formerly DG Research and Technology Development
EC	European Commission
EFARD	European Forum for Agricultural Research for Development
EIARD	European Initiative on Agricultural Research for Development
ENRTP	Environment and Natural Resource Thematic Programme
ERA-ARD	The ARD dimension of the European Research Area
EU	European Union
FAO	Food and Agriculture Organization
FARA	Forum for Agricultural Research in Africa
FP7	Framework Programme 7
FSTP	Food Security Thematic Programme
GCARD	Global Conference on Agricultural Research for Development
GFAR	Global Forum on Agricultural Research
GRCP	Global Research Collaboration Platforms
HARD	Heads of Agricultural Research for Development
ICPC	International Cooperation Partner Countries
IEA	Independent Evaluation Arrangement
IFAD	International Fund for Agricultural Development
MACS	Meeting of Agricultural Chief Scientists
MDG	Millennium Development Goal
MDTF	Multi-Donor Trust Fund
MTR	Mid-Term Review
MS	Member State of the European Community
NARS	National Agricultural Research System
PAEPARD	Platform for African European Partnership on Agricultural Research for Development
SCAR	Standing Committee on Agricultural Research
SICA	Specific International Cooperation Actions
SME	Small or Medium-size Enterprise
SWG	Strategic Working Group
USAID	United States Agency for International Development

1. INTRODUCTION

Two types of agricultural research receive public funding from the European Commission (EC) and its Member States (MSs): (1) Agricultural Research *sensu stricto* (AR), focussing on national needs within Europe, and (2) Agricultural Research for Development (ARD) dedicated to collaboration with and in developing countries working towards the Millennium Development Goals (MDGs)[1].

However, there is an overlap between the two spheres. An area of joint interest between AR and ARD exists in terms of the policy issues that are addressed, common research themes, funders and funding mechanisms and the research institutes involved.

With regards to the research themes in agricultural research, the intersection includes global issues (such as climate change) affecting both developed and developing countries; issues that affect developed countries but that are better tackled in developing countries (e.g. certain trans-boundary pests in agriculture); the production of generic knowledge (e.g. gene discovery) which can be applied in various contexts; and issues that are currently only studied in the developed world which might be relevant for developing countries as well[2].

In 2008, a document prepared by the SCAR[3] EIARD[4] ERA-ARD[5] Task force[6] identified the need to develop synergies between AR and ARD, including recommendations for a better coordination between the different "components" – institutions, instruments, policies- of International Agricultural Research.

The Task Force identified four categories of commonalities between AR and ARD:

1) Common research challenges
   E.g. climate change, global food security, food safety and nutrition
2) Common research instruments and tools
   E.g. genome sequencing, phenotyping platforms, crop/system modelling, remote sensing
3) Domains where synergies may exist where AR or ARD is more effective if it uses knowledge from respectively ARD or AR.
   E.g. emerging diseases, invasive species management
4) Common policy issues regarding research
   E.g. the implementation of policy requirements regarding impact, gender, farmer participation

At the same time there might be differences between AR and ARD, areas where AR or ARD are unique.

Although there are important commonalities between AR and ARD, the ERA-ARD network confirmed recently that AR and ARD activities are fragmented both at the national and at the European level. Despite positive developments, insufficient coordination of European investments in AR and ARD still exists. Lack of coordination between different ministries and funding mechanisms at national and at European level still represents a hindrance to more effective use of public investments aimed at addressing global challenges and ultimately increasing impact on poverty alleviation. There is also a lack of coordination with other international agencies and with National Agricultural Research Systems (NARS) in developing countries[7].

The main instruments to enhance synergies between AR and ARD observed by the SCAR EIARD ERA-ARD Task force in 2012 are (1) funding mechanisms, especially joint calls and thematic coverage of ARD issues by AR programs, (2) institutional policy dialogue (e.g. between SCAR and HARDS[8]), and (3) coordination and alliances between AR and ARD institutions (incl. ministries) and scientists.

[1] SCAR / EIARD / ERA ARD Task Force (2012) Improving the contribution of European Agricultural Research to Agricultural Research for Development
[2] Philippe Petithuguenin, CIRAD, 2nd Task Force meeting doc 4 Identifying the intersection between AR and ARD
[3] Standing Committee on Agricultural Research managed by DG Research &Innovation
[4] European Initiative for Agricultural Research for Development
[5] The ARD dimension of the European Research Area
[6] Fostering complementarities & synergies between European Agricultural Research for Europe and for Developing & Emerging Economy Countries. Report from a SCAR, EIARD & ERA-ARD Task Force- October 2008
[7] Terms of Reference for a new Joint EIARD-SCAR Strategic Working Group (2013)
[8] Heads of Agriculture and Rural Development Sectors- managed by DG DEVCO.

In 2012 the SCAR EIARD ERA-ARD Task Force published the following recommendations:

1. To facilitate the potential for European institutions to learn from each other's "experiments" on AR / ARD linkages, for instance on co-funding practicalities (United Kingdom) or on partnership instruments between institutions and between researchers (France);
2. To extend the review to the EC's instruments supporting AR and ARD;
3. To establish a SCAR "strategic working group" on linkages between AR and ARD;
4. To set up a dialogue mechanism between SCAR and the HARDs allowing for exchange of information on issues of joint interest and the promotion of mutual understanding on AR and ARD policies and instruments, between delegates from MSs and Associated Countries (ACs) and between Directorates Generals (DGs) of the EC;
5. To "revisit" the AR and AR4D paradigms:
    - Because AR is increasingly "internationalised" and sees its societal justification increasingly challenged by taxpayers and potential users of new knowledge
    - Because the two historical "foundations" of ARD, the north/south divide and the "aid" paradigm, are shifting.

The reported poor coordination between investments in AR and in ARD has often been primarily attributed to administrative and institutional constraints rather than to scientific divergences[9]. At the same time it is important to recognise that budgets dedicated to ARD by European governments and by the EC remain much smaller than European public investment in AR. Table 1 illustrates the difference between AR and ARD investments by the EC in 2013.

In 2013, the international conference on "European Agricultural Research towards greater impact on global challenges" co-organised by ERA-ARD, SCAR and EIARD came to the following conclusions[10]:

- There is a need to link AR and ARD to enable better coordination between regions, countries and programmes and flexible financing instruments to promote ARD aligned to demand, particularly from smallholder farmers. Alignment and coordination needs to feed into global processes through GCARD.
- A shared vision, better cooperation and improving efficiencies are essential for the future of ARD. We need to address the gap at the programme level, focus on being catalytic with funding, and scale up current initiatives (programmes, partnerships) rather than exclusively focusing on generating new projects.
- Multi-stakeholder partnerships are rapidly developing from aid-based relations into international cooperation and co-ownership. Effective partnerships are a key factor to success. However, developing these partnerships takes time. We need, therefore, to capitalize on existing partnerships, through flexible funding instruments.
- We need to close the gap between research and innovation. The basis is finding mutual challenges; the perspective is enjoying mutual benefits. The challenge is to align.

The conference called for shared vision, better cooperation and improved efficiencies. As a result, the Joint EIARD-SCAR Strategic Working Group (SWG) for improved linkages between Agricultural Research and Agricultural Research for Development was initiated to address questions as to how Europe can improve coordination leading to more synergy, impact on solving global issues, and efficiency of use of agricultural research funding.

The SWG aims to enhance cooperation between funders of research, which will improve the efficiency of research investments and impact on global issues. Coordination of research programmes between Ministries at national levels and between DGs at the level of the EC and improved alignment of policies and programmes within Europe and between Europe and other regions of the world are considered to also improve efficiency of research investments and increase synergy. A further critical issue is the need to create better linkages that help embed research in the broader development context thereby enabling developmental change. The Joint SWG will ensure such linkages are considered[11].

9 SCAR / EIARD / ERA ARD Task Force (2012) Improving the contribution of European Agricultural Research to Agricultural Research for Development

10 www.era-ard.org/fileadmin/SITE_MASTER/content/Dokumente/Outputs_phase_II/Conference_Summary_of_Presentations_and_Discussions.pdf

11 Terms of Reference for a new Joint EIARD-SCAR Strategic Working Group

Purpose of the study (Dec 2013-Jan 2014)

To support the SWG, a study has been commissioned by the Dutch Ministry of Economic Affairs on the intersection between AR and ARD. This study should help the SWG focus on areas of common interest, looking for ways to make better use of these commonalities to ultimately achieve the SWG's objectives.

While the Task force report from 2012 focused on European Country case studies, this study reviews the EC instruments supporting AR and ARD and analyses 10 programmes that are either funded by EC instruments, MSs, or are being funded from non-European sources with the intention to explore new steps towards greater synergy between AR and ARD.

This report aims to answer the question of how Directorates General of the EC who fund agricultural research can enhance cooperation between donors to improve the efficiency of research investments and increase positive impact on global issues. The sub-questions used in the study on the intersection between AR and ARD are as follows:

A. Institutional policy dialogue and cooperation

1) What are the policy goals of the Directorates General of the EC that fund AR and ARD?
2) Which processes and structures are used by EC donors to set the agricultural research agenda?
3) Is there an overlap between policy goals and the structures used by the different EC funders of AR and ARD that provides scope for harmonisation?

B. Funding mechanisms

1) Which funding instruments are used by the EC donors that support AR and ARD?
2) What are the differences and similarities between the funding instruments?

C. International cooperation between AR and ARD institutions and scientists

1) Is there scope for increased cooperation at the level of AR and ARD programmes?
2) What are best practices for cooperation and sharing of resources at the programme level?
3) What could donors of AR and ARD do to enhance cooperation at the programme level?

The study on the intersection of AR and ARD focuses on EC research funding. Indirectly this does link to European Member States (MSs) because MSs participate in the different EC bodies that decide about EC funding for AR and ARD. On the other hand, the report also touches upon global linkages by (a) describing the fora for setting the ARD research agenda at the global level; (b) by paying special attention to international donor support to the CGIAR, and, (c) by including programmes that are funded by non-EU donors in the analysis of AR and ARD programmes that are reviewed to seek synergies between institutions and scientists.

The study focuses on EC funding of AR and ARD during 2011-2013. This period was chosen to retrospectively identify lessons that can be learned from this period.

2. METHODOLOGY

Activity 1

As a first step in the study process, EC funding programmes for 2011-2013 were reviewed to provide an overview of EC funding instruments for AR and ARD and the research themes funded by the EC.

The EC funds AR and ARD through funding programmes of DG Research and Innovation (DG RTD) and DG Development and Cooperation (DG DEVCO). Within the scope of agricultural research, DG RTD primarily funds agricultural research focused on Europe and for the benefit of the EU. DG RTD to a lesser extent funds agricultural research on areas of mutual interest and benefit between Europe and third countries. DG DEVCO primarily funds development activities, among which agricultural development. The focus of research funding by DG DEVCO is on pro-poor and demand-driven agricultural research for development, whilst in addition supporting agricultural extension and innovation.

In order to gather information about EC funding for AR and ARD a study was made of research funding through the Seventh Framework Programme (FP7) of DG RTD and funding for research by DG DEVCO through the Development Cooperation Instrument (DCI).

The review of FP7 focused on the Cooperation work programme and in particular on theme 2: *food, agriculture and fisheries, and biotechnology* and theme 6: *environment (including climate change).*The review of DCI focused on strategic priority 1 of the Food Security Thematic Programme (FSTP): *Research, technology transfer and innovation to enhance food security.* After initially also reviewing the DCI Environment and Natural Resource Thematic Programme (ENRTP) it was decided to exclude it from the study because the calls under this programme did not include research activities. The 2nd and 3rd strategies under FSTP were excluded for the same reason.

The gathered information was used to:

- Compare FP7 and FSTP research funding approaches and instruments, including evaluation guidelines
- Identify main research themes within the spectrum of AR and ARD that are funded by the EC
- Identify criteria for the selection of AR and ARD programmes to be analysed
- Identify categories for the analysis of AR and ARD programmes

Chapter 3 of this report provides an analysis of EC policy goals and explains how the EC sets the research agenda, manages funding mechanisms, encourages partner-/stakeholder involvement, and evaluates proposals.

Activity 2

The second part of the study process included providing a summary of the AR and ARD research themes covered under the cooperation programme of FP7 for the period 2011-2013. All calls under the thematic programmes Food, Agriculture and Fisheries, Biotechnology and Environment including Climate Change were listed in an excel file with distinctions being made between different thematic levels as indicated in the official documents: activities, areas and topics.

In order to identify research themes that were funded by FSTP, the research programmes that are executed by the research institutions that were supported under this programme were included in the excel file and listed under a matching research area of FP7. The thematic programmes covered by the research institutions have been used as a proxy for the thematic areas that are funded by DEVCO.

The resulting overview of the 2011-2013 AR and ARD research themes is provided in **Annex 1** to this report.

This part of the study also included a review of documents from the SWG, FP7 and FSTP to identify the following criteria in order to select AR and ARD programmes for further investigation:

- AR & ARD programmes with a research focus on global societal challenges related to food and nutrition security and sustainable use of (agriculture related) natural resources
- Programmes that are European funded AR & ARD programmes on comparable research themes or as European and non-European funded programmes on comparable research themes
- Programmes that are funded through different EC instruments such as FP7 and FSTP, and others that are funded from non-EC sources, EU member countries and bilateral research programmes
- Programmes with a budget bigger than 3 million euro
- Programmes about which sufficient information is publicly available
- A number of CGIAR Research Programmes (CRPs) that are explicitly supported by DG DEVCO

- A Joint Programming Initiative
- Programmes that are recent or ongoing

AR and ARD programmes that met the above criteria were listed and organized along:
- Six main research themes that are relevant for AR and ARD
- Four main funding mechanisms for AR/ARD

As a next step, members of the SWG and a number of other experts were consulted to make a sub-selection of ten AR and ARD programmes for further analysis. Based on received feedback, a number of programmes were added whilst others were removed from the final selection of ten programmes. The resulting "long list" and selection of AR and ARD programmes is provided in **Annex 2**.

Activity 3

The ten selected AR & ARD programmes were compared based upon publicly available information. A summary was made to facilitate comparison of each programme in terms of:
- Budget
- Duration
- Geographical focus
- Overall objective
- Specific objectives
- Expected results
- Research methodologies
- Dissemination to put research into use
- Donors &, funding mechanisms
- Research partners

The resulting summaries of the selected AR and ARD programmes are provided in **Annex 3** to this report.

Activity 4

The fourth step in the study process was to identify areas of common interest of AR and ARD programmes, potential synergies and ways to promote mutually beneficial programmes.

Chapter 4 describes the themes that are covered in research funded through FP7 and FSTP, provides examples of overlapping areas and areas that are unique to AR and ARD programmes and identifies ways to make better use of the commonalities found and overcome barriers for coordination and cooperation between funders of research.

Activity 5

Finally, the research results and key finding from Activities 1-4 were presented to a meeting of the SWG for feedback. A discussion about possible recommendations was facilitated regarding the following questions:

1) Enhancing institutional policy dialogue; could cooperation between SCAR, EIARD and HARD be strengthened and institutionalized? What are the key lessons in terms of cooperation between DG AGRI and DG RTD?
2) Funding instruments; how can the pros and cons of strategic support and competitive calls for proposals be better used to coordinate AR and ARD funding mechanisms?
3) Coordination and cooperation at the programme level; can the EC and MSs achieve quick wins?

Chapter 5 reports on this discussion and provides an overview of key findings and recommendations that should improve the coordination and cooperation between funders of AR and ARD, as well as the efficiency of research investments and impact on global issues.

3. EC FUNDING FOR AR & ARD

As already mentioned in the introduction, AR and ARD in Europe are usually distinguished as follows: (1) AR is Agricultural Research strictly speaking, focussing on national needs within Europe, and (2) Agricultural Research for Development is dedicated to collaboration with and in developing countries, working towards the MDGs.

This chapter describes the policy goals and research objectives of FP7 and FSTP, the processes for setting the research agenda of FP7 and the international ARD agenda as well as the FP7 and FSTP funding mechanisms and evaluation.

An important fact to stress is that the majority of FSTP funding is targeted at development, not at research. In this report though, the focus is on the FSTP funding for agricultural research. Particular attention is paid to funding to the CGIAR because of its role and position in the global ARD landscape.

From here in the report, when reference is made to "FP7" it means "FP7 in relation to agriculture" with information drawn from the Cooperation work programme and in particular theme 2: food, agriculture and fisheries, and biotechnology and theme 6: environment (including climate change). When reference is made to "FSTP" it means "FSTP in relation to agricultural research" with information based on strategic priority 1 of FSTP: Research, technology transfer and innovation to enhance food security. Table 1 provides the budgets for the programmes that were reviewed for this study.

Table 1: EC budgets AR and ARD 2011-2013

FP7 –theme 2: food, agriculture and fisheries, and biotechnology	€ 1,013.91 million
FP7 - theme 6: environment (including climate change)	€ 860.44 million
FSTP- Strategic priority 1: Research, technology transfer and innovation to enhance food security	€ 260 million[12]

3.1 FP7 and FSTP policy goals and research objectives

Policy goals

The agricultural research policy goals of FP7 and FSTP largely overlap. Both aim to:

- Address climate change
- Address food security; the growing demand for safer, healthier, higher quality food
- Focus on the ecologically efficient intensification of agriculture
- Promote and facilitate knowledge transfer and the uptake and exploitation of research results by bringing together science, industry and other stakeholders for economic development of the agricultural sector
- Contribute to regional policies on agriculture, food security and fisheries

An additional policy goal of FSTP is coordination and coherence with programmes under FP7. How this is to be achieved is, however, not made explicit in the publicly available information about FSTP.

Objectives

In terms of the objectives, there are differences between FP7 and FSTP; FP7 primarily aims to develop an open and competitive European Research Area aimed at securing Europe's global competitiveness while FSTP focuses on resilience of small-scale farmers and rural livelihoods, governance of agriculture and food security and assistance mechanisms for vulnerable population groups in developing countries.

[12] http://ec.europa.eu/development/icenter/repository/FSTP%202011-2013_Commission%20adoption.pdf

Research approach

FP7 and FSTP are rather distinct in the overall research approach, but occasionally seem to use different names for comparable items.

The research approach of FP7 is:

- Full innovation cycle, including demonstration, piloting, and validation
- Dedicating 20% of the budget share to SME involvement
- Global in scope

The research approach of FSTP is to:

- Incorporate a value chain approach for farm modernisation
- Aim for greater participation by civil society, farmer organisations and the private sector
- Aim for South-South and South-North scientific and technical cooperation, as a way to address food security challenges in developing countries
- Focus on food-insecure countries that are furthest from reaching MDG 1, in particular in sub-Sahara Africa, but also in South Asia

In short, there is scope for exchanging complementary research approaches.

3.2 Institutional policy dialogue; setting the research agenda

FP7

Setting the research agenda for agricultural research takes place at different levels and through different processes and fora. The research agenda of FP7 is defined through a consultative process that is initiated and managed by DG RTD. It includes a process of stakeholder consultation, the work of a formal advisory group and SCAR and includes an inter-service consultation through which other EC DGs are asked for revisions and endorsement[13].

Stakeholder consultations are open to any interested party. Members of the "Food, Agriculture and Fisheries, and Biotechnology" Advisory Group[14] provide advice to the Commission regarding theme 2: "Food, Agriculture and Fisheries, and Biotechnology" and members of the Environment Advisory Group[15] provide advice to the Commission regarding theme 6: Environment (including climate change) of the Cooperation work programme.

The advisory groups are made up of individuals working as high-level representatives of European research institutes and universities, European and national government/ policy institutes and, exceptionally, an NGO[16].

The advisory groups' mandate[17] is to provide advice on strategy, relevant objectives and scientific and technological priorities. Advice should refer to all activities under each theme, including international cooperation and responding to emerging needs and unforeseen policy needs, and taking account of pluridisciplinary and cross thematic research; dissemination, knowledge transfer and broader public engagement; SME participation; and societal and economic aspects.

To ensure transparency around the process the EC publishes the names of the members of the Advisory Group and the written advice provided by the Advisory Group on the Internet. Members of the Advisory Groups may not be involved in the evaluation or selection of proposals for funding under FP7. The Advisory Group provides input on an annual basis, which is used in the preparation of the annual work programme. The advice received from the group complements other sources of external advice received by the EC, including from stakeholder consultations and, where relevant, from European Technology Platforms.

The SCAR is formed by representatives of the Member States and representatives from Candidate and Associated Countries[18]. Representatives from Candidate Countries and Associated Countries participate as Observers in the SCAR meetings but are fully involved in its works. In total 37 countries are currently represented. SCAR is made up of MS national high-level representatives in charge of the national public agricultural research portfolio. These include representatives of Ministries of Agriculture, Ministries of Education and Science, Ministries of Economic Affairs, Universities and research institutes. The SCAR has a mandate[19] to advise the EC and the MSs on the

13 Commissions rules of procedure
14 http://ec.europa.eu/research/fp7/pdf/advisory-groups/eag_fafb_members.pdf
15 http://ec.europa.eu/research/fp7/pdf/advisory-groups/environment-members.pdf#view=fit&pagemode=none
16 Oxfam is member of the Food, Agriculture and Fisheries, and Biotechnology Advisory Group
17 Fp7 advisory group_fafb_mandate_en
18 http://ec.europa.eu/research/agriculture/scar/pdf/scar-members_en.pdf#pagemode=none&zoom=200,300,0
19 http://ec.europa.eu/research/agriculture/scar/mandate_en.htm

coordination of agricultural research in Europe. In 2004, SCAR was transferred from DG Agriculture and Rural Development (DG AGRI) to DG RTD. Since 2006 the SCAR, under the supervision of DG RTD, has commissioned foresight reports to improve coordination of agricultural research and to enable Europe to successfully face the profound changes in the agricultural sector. The foresight process identifies future scenarios for European agriculture (20-30 year perspective), to be used in the identification of medium/long term research priorities to support the development of the European Knowledge-Based Bio-Economy. It functions as an early warning system that allows policy makers and researchers to clearly anticipate the challenges and problems in the years to come, and to suggest ways of tackling them through the European research agenda. Information available in national, regional and international studies is gathered and analysed to predict future scenarios and to carry out an assessment of the implications of these on the research requirements of European agriculture.

There is no publicly available information about the cooperation between DG RTD and DG AGRI for the period covered by FP7. Within Horizon2020, the successor of FP7 from 2014 to 2020, DG AGRI assumes a bigger role and as such cooperation between the two DGs is becoming stronger. DG AGRI has become a member of the 'DG Research family'[20] and DG AGRI will manage a number of calls in the *Food security, sustainable agriculture and forestry, marine and maritime and inland water research and the bioeconomy* Work Programme 2014-2015. On the website of DG RTD, DG AGRI is mentioned as one of the other DGs involved in research[21].

Setting the ARD agenda

To define the European and global ARD agenda, there are a number of bodies, processes and fora:

- **GFAR** (Global Forum for Agricultural Research)
  GFAR provides the framework for multi-stakeholder engagement at both the global and the regional level in setting research priorities. GFAR brings the voice of multiple stakeholders, including farmers, NGOs, private sector, and regional bodies, to discussions establishing the new agenda for international agricultural research.
  GFAR has a donor support group, at the time of writing led by Canada, which represents donors on the Steering Committee. The EC is active in EFARD (European Forum on Agricultural Research for Development[22]), which is the European stakeholder network associated with GFAR. EFARD is made up of regional and national fora on ARD, universities, EIARD, farmers' organizations and NGOs. The secretariat is currently provided by CTA. EFARD is an informal and voluntary mechanism without its own financial resources; all activities are supported through specific initiatives or by voluntary work by the Chair and Steering Committee members[23].

- **GCARD** (The Global Conference on Agricultural Research for Development)
  GCARD is a relatively new initiative to broaden stakeholder involvement in setting research priorities and to make research more demand driven and responsive to the needs of poor smallholder farmers. GCARD replaces both the annual general meetings of CGIAR and the triennial meetings of GFAR. The first GCARD was held in France in 2010[24] and the second in Uruguay in 2012. GCARD is organized by GFAR in partnership with the CGIAR.

- **G20 Meeting of Agricultural Chief Scientists** (MACS) [25]
  At a global level, MACS aims to promote global collective action by establishing Global Research Collaboration Platforms (GRCPs)[26]. The MACS is a voluntary initiative[27] and brings together Chief Scientists and high level research officials from the G20 countries and from international organizations including GFAR, FAO, IFAD, CGIAR and OECD[28].

- **EIARD**[29]
  EIARD is an informal European donor policy and investment coordination platform between European MSs, the EC and Switzerland and Norway on policies and programming in ARD. It received its strong political legitimacy through COM(1997)126 on EIARD. The EC is represented by DG RTD and DG DEVCO. EIARD is governed by a European Coordination Group (ECG) consisting of representatives of each MS, appointed by their respective governments or the EC. DG RTD is hosting the EIARD Executive

20 Stated by representatives of the EC at the Horizon 2002 information day on 17/1/14
21 http://ec.europa.eu/research/index.cfm?pg=dgs&lg=en
22 http://www.egfar.org/
23 http://www.eiard.org/ard-world/efard/
24 EC FSTP strategy paper& programme 2011-2013
25 http://ecfs.msu.ru/docs/MACS_TOR_final.pdf
26 G20 Meeting of Agricultural Chief Scientists -Communiqué 2013
27 http://globalplantcouncil.org/news-events/latest-news/second-meeting-of-the-g20-agricultural-chief-scientists
28 http://www.cgiar.org/wp-content/uploads/2012/10/Final-MACS-Communiqu%C3%A9.pdf
29 http://www.eiard.org The European Initiative for Agricultural Research for Development

Secretariat and covers mission costs of the Executive Secretary for which the EC through DG DEVCO has received the permanent vice chairmanship. The Executive Secretary of EIARD is provided by one of the non-EC EIARD members though a "Seconded National Expert" (SNE) to the EC. The Executive Secretary is responsible for the day-to-day management of EIARD. A Working Group (WG) consisting of voluntary EIARD members ensures the continuing activities of EIARD, and operates as an "Executive Committee". It meets about four times a year, and is fully accountable to the ECG.
The four outputs of EIARD as defined in its strategy for 2009–2013 are[30]:

1) Effective coordination of European ARD policies
2) Coordination of investment in CGIAR (including advocacy and support for reform of the CGIAR)
3) Coordination of ARD investments in strengthening ARD organisations in Africa
4) Linking ARD with rural development

- **HARDs**
  Is a group that includes the MSs' Heads of Agriculture and Rural Development, and DG ARD, DG RTD and DG DEVCO. The MSs' Heads of Agriculture and Rural Development come from Ministries of Foreign Affairs and Development, Ministries for Rural Development and national development agencies. The large majority of EC representatives in the HARDS group are from DG DEVCO who coordinates the meetings. DG DEVCO usually calls for HARDs meetings twice a year. It serves as a forum for discussion and exchange on recent developments at the EU level in regards to rural development, food and nutrition security. In this respect, the group also discusses ARD. Marc Nolting, Senior policy advisor at GIZ, HARDs Platform secretariat explains:
  "(The HARDs group) to some extent… also serves as a forum for joint planning and programming. At the same time, it is still very much an informal group. It is a forum for exchange, discussion, but also for alignment of strategies and positions related to food and nutrition security and rural development"[31].

Defining the FSTP research agenda

The Thematic Strategy and Multiannual Indicative Programme (MIP) of FSTP for the period 2011-2013[32] was based on lessons learnt from the first phase of FSTP (2007-2010) and the 2010 'EU policy framework to assist developing countries in addressing food security challenges'[33].

In 2009, a Mid-Term Review (MTR) recommended that the new strategic priorities should reflect the international debate on global, regional and national food security more closely, while adding value to geographical programmes and national strategies. International platforms for donor coordination on food security in which the EU participates actively include the G8 (AFSI group), the G20, and the Global Donor Platform for Rural Development (GDPRD). In Africa, the Comprehensive Africa Agriculture Development Programme (CAADP) provides the framework for donor coordination. The expected results of FSTP 2011-2013 reflected the strategic priorities identified by the GCARD 2010.

Coordination and coherence with programmes under the 7th Framework Programme (FP7) for Research and Technological Development was ensured, including sharing lessons on design and implementation and on scaling up the most promising innovations and methodologies. The Platform for African-European Partnership on Agricultural Research for Development (PAEPARD) is an example of such collaboration. PAEPARD 1 was funded under FP6 and identified research priorities that were used to shape parts of FSTP and FP7 research agendas. The second expanded phase of PAEPARD is funded under FSTP.

Annual Action Programmes of FSTP, including support to the CGIAR, undergo an in-house quality check and review before interservice consultations with other DGs and approval by MSs.[34]

Improved coordination of AR & ARD; Joint EIARD-SCAR Strategic Working Group 'ARCH'

The SWG comprises National Representatives, from EIARD and SCAR, who are committed and willing to invest time in the activities of the SWG. The SWG reports to the SCAR Plenary through the SCAR Working Group and to the EIARD European Coordination Group through the EIARD Working Group.

30 EC FSTP action fiche 2013 Part I
31 www.donorplatform.org/aid-effectiveness/interviews/1056-marc-nolting-on-hards-meeting-and-eu-resilience-action-plan.html
32 http://ec.europa.eu/development/icenter/repository/FSTP%202011-2013_Commission%20adoption.pdf
33 http://ec.europa.eu/development/icenter/repository/COMM_PDF_COM_2010_0127_EN.PDF
34 http://ec.europa.eu/europeaid/who/about/documents/devco-mission_statement_en.pdf

The SCAR committee has initiated Collaborative Working Groups and Strategic Working Groups to enable a structured approach to the prioritisation of research topics for further collaboration and to stimulate and ultimately increase research collaboration between funders and programme managers on key-research areas. SWGs are driven by long-term policy and develop a common vision of how to address major challenges in the field of agricultural research.

3.3 Funding mechanisms and evaluation guidelines of FP7 & FSTP

FP7

FP7 used to be (2007-2013) the EC's main instrument for funding research in Europe. FP7 generally relates to co-funding. The FP7 Cooperation work programme issues competitive calls for proposals to implement research on *food, agriculture and fisheries, and biotechnology* and the *environment (including climate change*). The Cooperation work programme supports a range of research and innovation actions involving the active collaboration of research teams from all sectors, including industry, SMEs, universities and other higher education institutions, research institutes and centres, international European interest organisations, civil society organisations, and any other legal entities.
FP7 uses the following funding schemes which have differing requirements relating to the aim, activities, number of legal entities participating in the project, their country of origin and the target audience. All topics under FP7-Cooperation theme 2 and theme 6 are open for participants from ICPC[35].
In Horizon2020 research partners from third countries may receive (additional) funding from the EC[36].

Collaborative projects are research projects designed to develop new knowledge, new technology and/or new products. Activities may include scientific coordination, demonstration activities or sharing of common resources for research. Collaborative Projects involve at least 3 independent legal entities, each of which is established in a different MS or AC. The target audience is research institutes, universities and industry, including SMEs, and (possibly) potential end-users. Research for the benefit of SMEs should have at least 3 SME participants (from 3 different MSs or ACs) and 2 RTD performers. This will change considerably under Horizon2020[37].

Specific International Cooperation Actions (SICA) aim to foster research both for and with developing countries, thereby contributing to the MDGs. SICA are calls on topics of mutual interest with the special condition to promote research collaborations between European organisations and those based in ICPC. At least 4 independent legal entities, including 2 from different MS or AC and 2 from ICPC must be involved. Co-operation with the *BRIC countries* (Brazil, Russia, India and China) is fostered via selected topics (SICAs and topics with mandatory ICPC participation) that are identified through bilateral and regional dialogues. EU-India Partnering Initiative aims to promote programme-level co-operation between the EU and India, in line with the scope and priorities of the Strategic Forum for International S&T Co-operation. Further, the European Union has Science and Technology Cooperation Agreements with Argentina, Brazil, Chile and Mexico. These countries will support the participation of organisations from their country in projects called for under the header of the EU-Latin America Partnering Initiative. Participants from other Latin American ICPC countries could be funded by the EU. Twinning of projects is another way to promote international cooperation with third countries that have signed bilateral S&T agreements with the European Union. The EC may ask coordinators of FP7 projects, during the grant agreement negotiations, to include collaboration activities with projects financed by these third countries. Parallel funding is expected from the related research programmes in the third countries for counterpart projects.

Under Horizon 2020[38], in calls under societal challenge 2 there are 2 types of Third Countries:

1. Countries from which partners are eligible for automatic funding listed in annex A of the work programme (similar to the ICPC list in FP7 minus the BRIC countries and Mexico).
2. Remaining countries, partners are only eligible for funding in exceptional cases:
    a. If participation is clearly indicated/ required in the call
    b. If a bi-lateral agreement is in place
    c. If the partner is essential to the success of the project (provides access to knowledge/ infrastructure etc.) and this is justified in the proposal. This is assessed on a case-by-case basis.

35 International Cooperation Partner Countries
36 Personal communication Patricia Wagenmakers and Eric Regouin, Netherlands Ministry of Economic Affairs
37 Personal communication Patricia Wagenmakers and Eric Regouin, Netherlands Ministry of Economic Affairs

38 Stated by representatives of the EC at the Horizon 2002 information day on 17/1/14

In general participation of partners from third countries is encouraged. These partners are suggested to go to their own national funding agencies to seek funding. Their participation can however, also be described as being essential in the proposal and funding can be requested to the EU.

Co-ordination actions aim at coordinating research activities and policies. Activities may include the organisation of events, related studies, exchanges of personnel, exchange and dissemination of good practices, and joint or common initiatives. Co-ordination actions involve at least 3 independent legal entities, each of which is established in a different MS or AC.

Support actions aim at contributing to the implementation of Framework Programmes and the preparation of future EU research and technological development policy or the development of synergies with other policies, or to stimulate, encourage and facilitate the participation of SMEs, civil society organisations and their networks, or small research teams and newly developed or remote research centres, in the activities of the thematic areas of the Cooperation programme. Support actions normally focus on one specific activity and often one specific event. Support actions may be implemented by 1 independent legal entity.

Integrating activities are a combination of collaborative projects and coordination and support actions. Horizon2020 still yields the possibility of coordinated support actions[39].

ERA-NET actions provide a framework for national and regional research programmes to coordinate their activities, which may include 1) Information exchange; 2) Definition and preparation of joint activities; 3) Implementation of joint activities; 4) Funding of joint trans-national research. ERA-NET Plus actions can provide additional EC financial support to facilitate joint calls for proposals between national and/or regional programmes; the EC 'tops-up' joint transnational funding with EU funding. ERA-NET actions and ERA-NET Plus actions are funded as Coordination Actions. The minimum number of participants in an ERA-NET action is 3 independent legal entities which finance or manage publicly funded national or regional programmes. 'ERA-NET Plus actions' require programme owners or programme managers from at least 5 different MSs or ACs.
As mentioned above, ERA-NET actions are open for participants from ICPC. An example is ERAfrica which facilitates the networking of European and African research donors and encourages joint calls for proposals to promote long-term cooperation between EU MSs and /or ACs and African countries. Other examples are ERA-Net RUS (cooperation with Russia), New INDIGO (cooperation with India) and KorA-Net (with Korea), among others.
Under Horizon2020, it is known as ERAnet CoFund. The EC co-funds the research activities but not the coordination costs[40].

Article 185 of the Treaty on the Functioning of the European Union enables the EU to participate in research programmes undertaken jointly by several MSs[41]. This concerns the largest budget allocation of programming by the EC and is reserved for only a few programmes, and is continued under Horizon2020[42].

Article 187 is funding of PPPs, where the EC and private partners have a joint undertaking to fund research and innovation.

Networks of Excellence aim to overcome the fragmentation of European research and strengthen scientific and technological excellence on a particular research topic through the durable integration of the research capacities of the participants. Networks of Excellence involve a minimum of 3 partners from 3 different countries.
Under Horizon 2020 Support and Coordination Actions can include Networks of Excellence[43].

The evaluation guidelines of FP7-Cooperation are based on:
1) Scientific and/or technological excellence
2) Relevance to the objectives of the specific programmes
3) Quality and efficiency of the implementation and management
4) The potential impact through the development, dissemination and use of project results

Evaluation method

The 'Rules for Submission of Proposals and the Related Evaluation, Selection and Award Procedures[44]' provide the

[39] Personal communication Patricia Wagenmakers and Eric Regouin, Netherlands Ministry of Economic Affairs

[40] Personal communication Patricia Wagenmakers and Eric Regouin, Netherlands Ministry of Economic Affairs
[41] Article 185 of the Treaty on the Functioning of the European Union (TFEU) [ex Article 169 of the
[42] Personal communication Patricia Wagenmakers and Eric Regouin, Netherlands Ministry of Economic Affairs
[43] http://www.dit.ie/media/ditresearchenterprise/dredocuments/Finance%20Helpdesk%20h2020.pdf

evaluation procedures to be followed by all programmes under FP7. The evaluation starts with an eligibility check. Proposals must fulfil all of the eligibility criteria, which are:

- Receipt of the proposal before the deadline
- Minimum conditions (such as number of participants)
- Completeness of the proposal
- Scope of the call: the content of the proposal must relate to the topic(s) and funding scheme(s)

Proposals that pass the eligibility check are evaluated with the assistance of independent, external experts to ensure that proposals of the highest quality are selected for funding. When relevant specialised knowledge is held in-house, Commission staff may work as experts alongside external experts. Experts are selected based on the following criteria: a high level of expertise, an appropriate range of competencies, an appropriate balance between academic and industrial expertise and users, a reasonable gender balance, a reasonable distribution of geographical origins, and regular rotation of experts.

In order to ensure transparency, the Commission may appoint independent observers who verify that the procedures of the evaluation process are adhered to.

The detailed evaluation criteria, and associated weights and thresholds, are set out in the work programmes, based on the principles given in the specific programmes, and on the criteria given in the Rules for Participation. The manner in which they are applied is further explained in the call for proposals and associated Guide for Applicants. Proposals are evaluated by a minimum of three experts. Initially each expert works individually, and gives scores and comments for each criterion. Once all the experts have completed their individual assessments, the evaluation progresses to a consensus discussion moderated by a Commission representative. The role of the moderator is to seek consensus between the experts and to ensure a fair and equitable evaluation of each proposal. The final step for the experts is to formulate their recommendations to the Commission. The evaluation is finalised by Commission staff that rank proposals according to the evaluation results and make funding decisions on the basis of this ranking. The responsible department then consults the other interested departments and directorates-general on the list of proposals it intends to select for funding. Following this internal consultation, the final list and negotiation mandates are established. If the consultation reveals that very similar work is already funded elsewhere, or if a proposal would result in work that is manifestly contrary to established Union policies, it is possible that a project that had originally been put forward for funding by the responsible department does not appear on the final Commission ranked list. The coordinators of proposals that are listed for funding are invited to begin negotiations.

The Commission provides statistical information on the outcome of calls for proposal to the programme committee. During six years of FP7, proposals and applicants had an average success rate of 19% and 22% respectively[45].

FSTP

The majority of FSTP funding is targeted at development, not at research. This report focuses on the FSTP funding for agricultural research. Particular attention is paid to funding to the CGIAR because of its role and position in the global ARD landscape.

In the first phase (2007-2010) FSTP directly supported research organisations and networks but also funded projects resulting from competitive calls for proposals under the Global Programme on Agricultural Research for Development (GPARD) and the Asia 'Technology Transfer for Food Security Programme'. Under strategic priority 1[46] of the second phase of FSTP (2011-2013), the EC provided strategic support to a number of research organizations and networks: CGIAR and GFAR[47], ASARECA[48], FARA[49], CCARDESA[50] and PAEPARD[51]. Under the same strategic priority 1 of the FSTP 2011-2013, the EC did not issue competitive calls for research proposals[52]. "FSTP directly contracts the African institutions and networks with the purpose of institutional support, to build institutional capacity. FSTP directly contracts the CGIAR because the new strategic results framework of the CGIAR is in line with the EC policy priorities[53]".

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[44] http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2011:075:0001:0044:EN:PDF
[45] http://ec.europa.eu/research/evaluations/pdf/archive/fp7_monitoring_reports/6th_fp7_monitoring_report.pdf
46 Research, technology transfer and innovation to enhance food security
47 Global Forum for Agricultural Research
48 Association for strengthening Agricultural Research in Eastern and Central Africa
49 Forum for Agricultural research in Africa
50 Center for the Coordination of Agricultural Research and Development in Southern Africa
51 Platform for African European Partnership on Agricultural Research for Development
52 Although support to PAEPARD in 2013 did concern a competitive research fund component
53 Personal communication David Radcliffe, DG DEVCO

The DG DEVCO support to CGIAR and GFAR, ASARECA, FARA and CCARDESA is provided through a mechanism called "Joint Management with an international organisation" and each of the organizations has a forum for donor coordination. In the case of support to ASARECA, FARA and CCARDESA, donor support is coordinated and administered through various Multi-Donor Trust Funds (MDTF) managed by the World Bank. MDTFs are effective in managing pooled donor funding and in strengthening capacity of recipient organisations, particularly in governance, financial management and procurement[54]. An MDTF ensures harmonisation of procedures and reduction of transaction costs through joint monitoring and evaluation missions and follow up of programme implementation. It also facilitates longer-term support to an organization or partnership.
PAEPARD is supported by way of a directly centralised project, implemented under "Direct Centralised Management" through the signing of a Grant Contract between FARA and the EC.

Under the DCI, each call for proposals has its specific eligibility criteria[55]. Eligibility or quality criteria for FSTP to directly fund ARD institutions and networks seem not publicly available whilst guidelines appear not to be published. Nevertheless, FSTP does specify expected results of the CGIAR, GFAR, ASARECA, FARA, CCARDESA and PAEPARD.

FSTP funding and monitoring of the CGIAR

44 per cent of the FSTP budget for agricultural research is used to support CGIAR research programmes. The EC supports the CGIAR through Joint Management with IFAD. The CGIAR Fund Council is the mechanism for coordination of donor support to the CGIAR. The EC cannot pay directly into the CGIAR donor fund chaired by the WB because the agreement with the WB states clearly that the WB does not take financial responsibility. That is the reason why IFAD manages the EC contribution to the CGIAR. IFAD accepts fiduciary liability for EU funds and requires separate financial reporting by the CGIAR for the EU contribution. This explains why the EU contribution is still targeted to specific components or activities (Window 3 of the CGIAR Fund). The EC identifies, together with IFAD and relevant CGIAR centres components of these CRPs that are consistent with EU priority research questions[56]. Results and activities for each CRP are specified in detailed proposals submitted by the lead CGIAR centres to IFAD. This portfolio also includes details of prior investments in projects that are drawing to completion including two 'challenge programmes'[57]. IFAD has a contribution agreement with the CGIAR Fund which specifies how resources are divided between CRPs and Challenge Programmes[58].
Both IFAD and the EC occupy a seat on the Fund Council[59]. IFAD concludes grant agreements with specific CGIAR centres for delivery of specific outputs and activities within the framework of the CGIAR Research Programmes; reviews and approves the technical and financial reports submitted by the CGIAR centres benefiting from the contribution; and ensures that adequate monitoring arrangements for the programmes are in place and work towards joint monitoring in collaboration with Fund Council members and the CGIAR Independent Evaluation Arrangement (IEA).

The expected results of the EU package of support to the GCIAR in 2013 are as follows[60]:

1) Pro-poor scientific, technological and institutional innovations and knowledge, with emphasis on the needs of low income smallholder farmers including women;
2) Evidence of the comparative effectiveness of alternative approaches to meeting future agricultural and rural development needs, to guide policy decisions.
3) Capacity for pro-poor agricultural research and its uptake enhanced among researchers, non-research stakeholders and institutions;
4) Partnerships established between CGIAR centres, CGIAR and non-CGIAR research institutions, and research and non-research development institutions for more effective uptake of research outputs.
5) Improved complementarities and synergies with research, extension and innovation programmes and activities supported by the EC, MSs, and by IFAD.

The EC 2013 package of support, through FSTP, selectively supports the following CRPs and challenge programmes:

- Humid Tropics (CRP 1.2)
- Aquatic Agricultural Systems (CRP 1.3)
- Policies, institutions and markets (CRP 2)

54 EC FSTP action fiche 2013 Part I
55 http://ec.europa.eu/europeaid/how/finance/dci/food_en.htm
56 EC FSTP action fiche 2013 Part I.pdf
57 CGIAR Challenge Programs were the early precursors of Research Programs: (www.cgiar.org/our-research/challenge-programs)
58 Personal communication David Radcliffe, DG DEVCO
59 www.cgiarfund.org/fund_council_membership
60 EC FSTP action fiche 2013 Part I.pdf

- Global Rice Science Partnership (CRP 3.3)
- Roots, tubers and bananas (CRP 3.4)
- Grain Legumes (CRP 3.5)
- Dryland Cereals (CRP 3.6)
- Agriculture for Nutrition and Health (CRP 4)
- Water, Land and Ecosystems (CRP 5)
- Forests, trees and agro-forestry (CRP 6)
- Climate Change, Agriculture and Food Security (CRP 7)
- Generation Challenge Programme
- Challenge programme on Sub-Saharan Africa

The CGIAR has established an Independent Evaluation Arrangement (IEA) that commissions evaluations of CRPs and, together with the consortium, prescribes standards and procedures for monitoring performance of CRP components. Performance monitoring is linked to a harmonised system of annual progress reporting by which CRPs report progress against indicators at output and purpose level. The Consortium submits an annual CRP portfolio report that assesses performance towards higher level indicators including those reflecting poverty reduction, food security and nutrition.

A mid-term review with regard to the reforms of the CGIAR will be completed in 2014, and a full system-wide review will take place in 2017. These reviews are commissioned by the CGIAR donor fund council. Further, as long as EC funding is targeted to specific components or activities (Window 3), IFAD requires separate financial reporting of the EC contribution. IFAD also prepares a summary narrative report on EC funding and commissions monitoring of selected EU-supported programmes in coordination with the work programme of the IEA and the specific needs of the EC.

4. RESEARCH THEMES AND PROGRAMMES

This chapter reviews the research themes related to the global challenges of food and nutrition security and sustainable use of (agriculture related) natural resources programmes that are funded by the EC. It describes the call topics of FP7 (theme 2 and 6) and the research themes covered by programmes of the CGIAR, ASARECA, FARA, CCARDESA and AFAAS - the research institutions that receive funding through FSTP.

Analysing the research topics that are called for under FP7 and the research themes that are covered by the research institutions and networks that are funded through FSTP (see Annex 1) it is apparent that these research themes largely overlap and can be grouped under six broad themes:

1) Climate Change and agriculture
2) Agriculture for food security, nutrition and food safety
3) Animal health, production and welfare
4) Sustainable use of natural resources
5) Innovation and dissemination of agricultural knowledge
6) Institutions, markets and food chains

Following the programme identification and selection process (described in Chapter 2, see Annex 2), ten programmes were selected for further analysis:

1) FACCE JPI[61] - The Joint Research Programming Initiative on Agriculture, Food Security and Climate Change
2) CCAFS[62-] CGIAR Research Program on Climate Change, Agriculture and Food Security
3) A4NH[63] - CGIAR Research Program on Agriculture for Nutrition and Health
4) Feed the Future[64] -USAID
5) ASARECA Livestock and Fisheries Programme[65]
6) SECUREFISH[66]
7) CSIRO Sustainable agriculture Flagship[67]
8) ANIHWA – Animal Health and Welfare ERA-NET[68]
9) FOODSECURE[69] – Interdisciplinary Research Project to Explore the Future of Food and Nutrition Security
10) PIM[70]- the CGIAR research programme on Policies, Institutions and Markets

Considering the summaries of these ten selected AR and ARD programmes (see Annex 3), it is evident that cooperation and coordination between AR and ARD partly exists through an overlap in funders and funding mechanisms, and through the pathways for uptake of research outputs as well as through the participation by research institutes, universities and NARS. In addition, (potential) synergies appear in the objectives and research methodologies of different programmes and potential complementarities in the expected results.

Further observations are made according to the programme selection criteria.

61 www.faccejpi.com
62 The selected CRPs are supported by the EU (FSTP 2011/ 2013)
63 www.a4nh.cgiar.org
www.ifpri.org/sites/default/files/crp4execsummary_oct07_2011.pdf
64 www.feedthefuture.gov
65 www.asareca.org/content/livestock-and-fisheries-programme
66 www.securefish.net
www.securefish.net/documents/SECUREFISH%20INTRODUCTION.pdf
67 www.csiro.au/en/Organisation-Structure/Flagships/Sustainable-Agriculture-Flagship.aspx
68 www.anihwa.eu
69 www.foodsecure.eu/
70 www.pim.cgiar.org/

Estimated total budget

Total budgets range from €3 million to €3 billion:

Table 2 Total budgets of selected programmes

Funding source	FP7 co-funding				FSTP co-funding				USAID funded	CSIRO funded
Programme	FACCE	Secure -fish	Anihwa	Food-secure	CCAFS	A4NH	Asareca Livestock & Fisheries	PIM	Feed the Future	CSIRO Sustainable agriculture
Total budget	€1B	€4M	€1B	€10.5M	$350M	$320M	$4.5M	$265M	$3.5B	Unknown

Duration

Eight programmes have a duration of 3-5 years, the ASARECA programme has a duration of 7-years and the duration of the CSIRO programme is unknown. Seven programmes have longer term ambitions.

Geographical focus

Table 3 geographical scope of selected programmes

4 FSTP funded programmes	4 FP7 funded programmes	USAID funded programme	CSIRO Flagship programme
Africa, Asia and Latin America	1) Europe's role in a global context 2) Africa, Asia and Latin America 3) Europe and Israel 4) Europe, Africa, Asia, Latin America and other regions	Africa, Asia and Latin America	Has a global objective, involves research partners in developing countries and AUSAID and ACIAR but only mentions expected results with regard to Australia.

Objectives and expected results

Eight of the ten programmes aim to contribute to global food security. One of four FP7 funded programmes explicitly aims to develop the European research community and strengthen the European economy. Five programmes aim to optimize the use of natural resources and six programmes address, or are related to, food safety and nutrition.

Dissemination to put research into use

All selected programmes make public statements about steps that will be taken to put the research results into practice. FACCE-JPI, CCAFS, ASARECA, SECUREFISH, FOODSECURE and PIM are quite elaborate and specific in describing these steps. A4NH, Feed the Future, CSIRO and ANIHWA are less elaborate in their description. It is noted that both groups include AR and ARD programmes.

Looking at two programmes that focus on climate change, agriculture and food security; FACCE JPI and CCAFS

FACCE JPI and CCAFS both have the ambition to develop into long term initiatives and the overall objectives are very similar:

- FACCE-JPI aims to provide research to support sustainable growth in agricultural production to meet increasing world food demand and to contribute to sustainable economic growth and a European bio-based economy while maintaining and restoring ecosystem services within current and future climates.

- CCAFS aims to promote a food secure world through the provision of science based efforts that support sustainable agriculture and enhance livelihoods while adapting to climate change and conserving natural resources and environmental services.

Both programmes have a strong communication and knowledge transfer component. With regard to the geographic focus the two programmes are complementary, FACCE having a global focus with the aim to ensure European food security and CCAFS initially targeting West Africa, East Africa and the Indo-Gangetic Plains aiming to benefit the rural poor.

Budgets are rather different in size: FACCE has a budget of €1 Billion and CCAFS $ 350 Million.

Looking at two programmes that focus on nutrition; A4NH and Feed the Future

There are great overlaps in geographical scope, objectives, expected results and research partners in these programmes whilst Feed the Future has a budget that is ten times the A4NH budget. Feed the Future is relatively more technical and A4NH more applied with more attention to social aspects. There are (opportunities for) linkages between both programmes, A4NH because the CGIAR is mentioned among the research partners in both programmes. It is noted though that A4NH does not have the strongest communication element of the 3 selected CRPs.

With regard to Feed the Future it would be interesting to investigate the scientific prioritization process that was applied and to seek collaboration with this huge programme. The USA is a large CGIAR donor. The USA funds the A4NH CRP through Window 2 and the EU supports A4NH through Window 3. Feed the Future also supports the Global Agriculture and Food Security Program (GAFSP), a World Bank-managed, Multi-Donor Trust Fund (MTDF) that significantly expands resources available to countries to implement evidence-based, country-led food security investment plans (i.e. this is not for research).

ANIHWA versus the ASARECA Livestock and Fisheries Programme

Even though ANIHWA is classified under the header 'Innovation and dissemination of agricultural knowledge' and the ASARECA programme under 'Animal health, production and welfare' a comparison of the two programmes is valid because both focus on animal health.

The ASARECA programme has a duration of 7 years, while ANIHWA has the typical duration of an ERA-NET project, i.e. 3 years. IT should be noted though that ANIHWA is a follow-up of the EMIDA project, also an ERA-NET and that these successive ERA-NETs build on and accelerate the work of a SCAR collaborative working group 'European Animal Health & Welfare Research'. ANIHWA is funded by EC and MSs and the ASARECA is funded through a MDTF, with both an estimated total budget of around €1 Billion.

The programmes are distinct in a number of ways. ANIHWA has a European focus while the ASARECA programme naturally focuses on Eastern and Central Africa; ANIHWA focuses on animal health and ASARECA focuses on productivity, market access and environmental sustainability. Whilst ANIHWA aims to increase cooperation and coordination of the European research community, ASARECA emphasises the communication of research results with evidence-based uptake pathways.

SECUREFISH

The one selected FP7 SICA project, SECUREFISH, stands out in a number of ways; it has a strong focus on applied and participatory research, it is the smallest programme in terms of budget, has a strong dissemination and knowledge transfer component and involves industry partners from developing countries.

The CSIRO Sustainable agriculture Flagship

There is limited information publicly available about the CSIRO Sustainable agriculture Flagship compared to all the public information provided by the EC. Australia, like the EC, has a parallel system to fund AR with a global focus and at the same time funds the CGIAR. Australia funds all CRPs through Window 2 except the CRP on Genebanks.

FOODSECURE

The origin of research partners is the most striking element in FOODSECURE. It is an interdisciplinary research programme with a policy development objective involving 18 partners from 13 countries including eight EC MSs, the USA, China, Switzerland, Ethiopia and Brazil. The EC is the main funder and the programme has a limited duration of five years.

CRP 2 – Policies Institutions and Markets

PIM has a strong socio-political and economic focus and as such stands out from the other programmes and has the potential to complement all other ARD programmes. The programme is supported by the EC through Window 3 and funded by Denmark, the Netherlands, Russia, Switzerland, Australia and the USA through Window 2.

5. KEY FINDINGS AND RECOMMENDATIONS

This report aims to answer the question of how EC funders of agricultural research can enhance cooperation between donors to improve the efficiency of research investments and increase positive impact on global issues.

The SCAR EIARD ERA-ARD Task force concluded in 2012 that the main instruments to enhance synergies between AR and ARD observed in recent years are (A) institutional policy dialogue and cooperation, (B) funding mechanisms, and (C) International cooperation between AR and ARD institutions and scientists. The sub-questions that are addressed in the study on the intersection between AR and ARD are therefore listed accordingly.

The key observations of this study were presented during the second meeting of the SCAR EIARD SWG. On the basis of the feedback received during this meeting some key findings have been amended and the recommendations were formulated.

A. Institutional policy dialogue and cooperation

The questions that were addressed with respect to institutional policy dialogue and cooperation are: What are the policy goals of the Directorates General of the EC that fund AR and ARD? Which processes and structures are used by the EC to set the agricultural research agenda? Is there an overlap between policy goals and the structures used by the different DGs funding AR and ARD that provides scope for harmonisation?

Key observations:

1) The policy goals of FP7 and FSTP regarding agricultural research largely overlap. The separation between AR and ARD is historic and irrelevant considering that both aim to address the same global challenges.
2) SCAR, HARDs and EIARD overlap in focus and activities and involve overlapping MSs Ministries and EC DGs. HARDs are not so relevant for the SWG. SCAR is the only group with an official status and has the official mandate to advise the EC. There is scope for improved coordination between SCAR and EIARD, in particular in case joint agricultural research agenda setting can be considered.
3) DG DEVCO aims for coordination with DG RTD whilst DG RTD is increasingly coordinating agricultural research funding with DG AGRI. Increased coordination of agricultural research funding should therefore include all three DGs.

Recommendations:

1) It is recommended that the SCAR EIARD SWG identifies concrete opportunities for cooperation such as for example involving EIARD in SCAR foresight activities.
2) It is recommended that SCAR broadens its scope to include agricultural research that is relevant to the MDGs.
3) To increase coordination of agricultural research funding among DG RTD, DG AGRI and DG DEVCO, it is recommended that the three DGs actively seek each other's input, above and beyond existing inter-service consultations.

B. Funding mechanisms

The questions that were addressed with respect to funding mechanisms are: Which funding instruments are used by the EC donors that support AR and ARD? What are the differences and similarities between these funding instruments?

Key observations:

1) There are two different funding mechanisms in place for agricultural research managed by DG RTD and DG DEVCO.
2) FP7 and FSTP as relevant to agricultural research are different in a number of ways:
    - Funding instrument: FP7 competitive calls focused on excellent science to the benefit of Europe / FSTP strategic support focused on contribution to the MDGs
    - FP7 transparent and structured procedures for consultation and research agenda setting with a focus on Europe / FSTP policies and programming in ARD through EIARD

- FP7 transparent about requirements for participation by partners from developing countries and other stakeholders; Eligibility criteria are published / FSTP more flexible, supportive of partners to build institutional capacity and partners whose work is aligned with the EC policy priorities.
- FP7 ex-ante grant agreement / FSTP ex-ante grant agreement plus ex-post performance monitoring

3) The different funding mechanisms have pros and cons. Instruments that allow direct or joint funding, joint management and MDTF provide useful instruments for flexible funding and enhancement of long-term research partnerships. These instruments allow funding of selected research partners and can be used to avoid that certain areas of research are neglected. The experience of DG DEVCO with these instruments can provide valuable lessons learned for funding agricultural research in Europe and with / in developing countries. On the other hand, competitive calls are assumed to enhance cost efficiency and generate novel approaches due to competition among potential research partners. The biggest disadvantage of competitive grants is the time that scientists invest into proposal preparation when only a limited number of the developed proposals will be funded. They also seem to require more up-front donor time than core funding mechanisms, because of the need to conduct rigorous priority setting and evaluation methods.

Recommendations:

1) It is recommended that the SWG discusses and identifies the advantages and disadvantages of the different funding instruments and advises SCAR and EIARD about ways to use the different instruments more strategically so that the objectives of different EC donors of agricultural research (excellence as well as impact of research) are achieved and that synergies are increased. Into the future, the envisaged programme IntensAfrica could be a case in point to test a mixed funding approach.

2) It is recommended that DG RTD, DG AGRI and DG DEVCO publicise the background to choosing particular funding instruments and eligibility criteria.

C. International cooperation between AR and ARD institutions and scientists

The questions that were addressed with respect to international cooperation between AR and ARD institutions and scientists are: Is there scope for increased cooperation at the level of AR and ARD programmes? What are best practices for cooperation and sharing of resources at the programme level? What could donors of AR and ARD do to enhance cooperation at the programme level?

Key observations:

1) FP7 and FSTP address overlapping research challenges

2) There are opportunities for synergy between current programmes and partnerships due to:
   a. significant overlap of objectives and complementarity of expected results
   b. partial overlap of research partners
   c. shared lessons learnt re dissemination and knowledge transfer
   d. mutual donors and funding mechanisms

3) There seems to be a lack of a mechanism that identifies common ground between programmes at an early stage in order to connect from the start.

4) Retrospectively it seems that “Quick wins” are possible regarding improved coordination between funders of AR and ARD. However it is appreciated that this requires a significant change in the research funding approach, starting with harmonising research agenda setting and funding instruments, which takes time.

Recommendations:

1) It is recommended that DG RTD, DG AGRI and DG DEVCO start a dialogue with large non-European donors about increased collaboration. Global funders of agricultural research could establish additional MDTFs to support the prolongation of successful partnerships, and to align and seek synergy with respect to research objectives, methodologies, results and knowledge transfer between programmes. Donors are encouraged to look for “quick wins”, e.g. by jointly generating and funding extraordinary workshop opportunities, for researchers from different scientific programmes that address similar themes, to elaborate joint briefing papers, which add value both to programmes and to end beneficiaries.

2) It is recommended that funders of agricultural research require research consortia to exchange between programmes and connect with each other from the start.

3) It is recommended that the SWG interacts with FACCE to broaden the network that actively seeks coordination and cooperation.

4) It is recommended that the SWG analyses the potential overlap between IntensAfrica and CRPs to coordinate MS funding to African programmes.

5) It is recommended that funders of agricultural research create 'new' instruments, such as knowledge hubs.

Overall

Enhanced cooperation between EC institutions funding agricultural research is possible at different levels and can improve the efficiency of research investments and increase positive impact on global issues. This report recommends a number of steps that can be taken to capitalize on the lessons learned in the period 2011-2013 and increase cooperation in the period 2014-2020.

The methodology used to implement this study could be used and replicated going forward in order to measure change. The SWG may consider replicating this study at 3-year intervals to assess whether coordination and cooperation between EC institutions funding agricultural research has improved and what further improvements can be identified.

6. REFERENCES

Consulted FSTP documents on website:
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COOPERATION WORK PROGRAMME 2012-theme 2
COOPERATION WORK PROGRAMME 2011-theme 2
COOPERATION WORK PROGRAMME 2013-theme 6
COOPERATION WORK PROGRAMME 2012-theme 6
COOPERATION WORK PROGRAMME 2011-theme 6
FP7 Rules for Submission of Proposals and the Related Evaluation, Selection and Award
FP7-factsheets
Guide for applicants- collaborative projects
Guide for applicants- coordination and support actions-coordinating
Guide for applicants- coordination and support actions-supporting

Consulted FSTP documents on website:
http://ec.europa.eu/europeaid/work/funding/index_en.htm
EC DEVCO policy framework food security 2010
EC DEVCO FSTP strategy paper & programme 2011-2013
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ANNEX 1: Overview of the AR & ARD research themes funded through FP7 & FSTP (2011-2013)

FP7 - cooperation	DEVCO - FSTP
Climate Change and agriculture	
Earth and ocean observation systems Forecasting methods and assessment tools for sustainable development Coping with climate change Pressures on environment and climate	CGIAR Research Program on Climate Change, Agriculture and Food Security
Agriculture for food security, nutrition and food safety	
Food, health and well-being incl. food quality and food safety	CGIAR research programme to improve nutrition and diets CGIAR research programmes to improve yields and profits of crops, fish, and livestock ASARECA Staple Crops Programme ASARECA High Value Non Staple Crops Programme ASARECA Livestock and Fisheries Programme
Animal health, production and welfare	
Sustainable production and management of resources from land, forest and aquatic environment	CGIAR Programme on Livestock and Fish ASARECA Livestock and Fisheries Programme
Sustainable use of natural resources	
Sustainable use and management of land and seas Sustainable production and management of resources from land, forest and aquatic environment Conservation and sustainable management of natural and man-made resources and biodiversity Life sciences, biotechnology and biochemistry for sustainable non-food products and processes The Ocean of Tomorrow Sustainable use and management of land and seas Improving resource efficiency Sustainable production and management of resources from land, forest and aquatic environment Conservation and sustainable management of natural and man-made resources and biodiversity Technologies for observation, simulation, prevention and mitigation of the environment Increased sustainability of all production systems (agriculture, forestry, fisheries and aquaculture)	CGIAR Programme for Managing and Sustaining Crop Collections CGIAR programmes for productivity, profitability, sustainability, and resilience of farming systems ASARECA Agro-biodiversity and Biotechnology Programme ASARECA Natural Resources Management and Biodiversity Programme FARA Advocacy and Policy Programme) Leading the field- international treaty on plant genetic resources for food and agriculture CCARDESA Agricultural Productivity Program for Southern Africa

Innovation and dissemination of agricultural knowledge	
European Research Area	ASARECA Knowledge Management and Up-scaling Programme
Socio-economic research and support to policies	FARA Access to Knowledge and Technologies Programme
Improving resource efficiency	FARA Capacity Strengthening Programme
Horizontal and cross-thematic activities	FARA Partnerships and Strategic Alliances Programme
ERA-NETs relevant to Knowledge Based Bio-Economy	CCARDESA UniBRAIN Programme
Support to EC activities related to international co-operation with Australia-Canada-New Zealand and with the USA	CCARDESA Promoting Science and Technology for Agricultural Development
Communication of research results	CCARDESA Sub-Saharan Africa Challenge Programme
EU partnering initiatives with specific countries (e.g. India)	Support to PAEPARD
	AFAAS –implementation of the Agricultural Advisory Services aspects of CAADP
	Support to Plantwise: integrated plant health systems in Africa
Institutions, markets and food chains	
Food, health and well-being incl. environmental impacts and total food chain	CGIAR research programme to improve policies and markets
Socio-economic research and support to policies	ASARECA Policy Analysis and Advocacy programme
Improving resource efficiency	FARA advocacy and policy programme

ANNEX 2: long list of AR & ARD programmes

	Programmes funded through FP7	Programmes funded through FSTP[71]	Joint EU member state funded programmes	Non-European funded programmes
Climate Change and agriculture	**JPI-FACCE** *JPI Climate* *CHIESA*	**CCAFS**	*MICCA* *IFAD–ASAP*	
Agriculture for food security, nutrition and food safety	*HDHL-JPI* *After*	**A4NH**		*CSIRO Food Futures Flagship* **Feed the Future**
Animal health, production and welfare	*Animalchange* *Star-Idaz*	**ASARECA Livestock and Fisheries Programme**		
Sustainable use of natural resources	*Intensafrica* *Push and Pull* **SECUREFISH**	*Plantwise*		**CSIRO Sustainable agriculture Flagship** *EMBRAPA Sustainable Agriculture in the Amazon*
Innovation and dissemination of knowledge	*ErAfrica* **ANIHWA**			
Institutions, markets and food chains	**FOODSECURE**	**PIM**	*Food Security Pilot Finland*	

Included in the selection / *Not included in the selection*

[71] The selected CRPs are supported by the EU (FSTP 2011/2013)

ANNEX 3: Summary of 10 AR & ARD programmes

1. FACCE JPI[72] - The Joint Research Programming Initiative on Agriculture, Food Security and Climate Change

Budget/ duration/ Geographic focus	Overall objective	Specific objectives	Expected results	Research methodologies	Dissemination to put research into use	Funders &, funding mechanisms	Research partners
National funding > €1B annually plus EC contribution of € 2M to support the secretariat and SAB[73] The EC also contributes to ERA-NETs and ERA-NET Plus. Launched in 2010 the JPI is planned to be a long-term process April 2011 - March2014 Europe's role in a global context and how the global context will affect Europe.	Provide research to support sustainable growth in agricultural production to meet increasing world food demand and to contribute to sustainable economic growth and a European bio-based economy while maintaining and restoring ecosystem services under current and future climate change.	i) Provide new approaches for sustainable growth and intensification of agriculture in Europe incl. transformational adaptation and increase the resilience of food systems to deliver European food security, feed, fuel, fibre and other ecosystem services under current and future climate and resource availability; ii) Provide an integrated impact assessment of climate change for the whole food chain, including market repercussions; iii) Contribute to reductions GHG emissions through carbon sequestration, fossil fuel energy substitution and mitigation of N2O and CH4 emissions by the agriculture and forestry sector, while reducing GHG emissions per unit area and per unit product associated with land use change; iv) Reduce trade-offs between food production and the preservation of biodiversity, ecosystem functions and services.	1• The biological efficiency of European agriculture raised 2• Increased global food supply 3• Agriculture operating within greenhouse gas, energy, biodiversity and contaminant limits 4• Resilience in agricultural and food systems.	Based on a strong trans-disciplinary research base, encompassing economic and social aspects in addition to scientific ones and aligning national programmes. The interrelated challenges addressed are European and global and require the effort of multiple actors and stakeholders. A Scientific Research Agenda has been agreed including five evidence-based interdisciplinary core research themes. Short-, medium- and long-term priority actions have been defined within each of these core themes. Core theme 1• Sustainable food security under climate change, based on an integrated food systems perspective: modelling, benchmarking and policy research perspective. Core theme 2• Environmentally sustainable growth and intensification of agricultural systems under current and future climate and resource availability. Core theme 3• Assessing and reducing trade-offs between food production, biodiversity and ecosystem services Core theme 4• Adaptation to climate change throughout the whole food chain, including market repercussions. Core theme 5• Greenhouse gas mitigation: nitrous oxide and methane mitigation in the agriculture and forestry sector, carbon sequestration, fossil fuel substitution and mitigating GHG emissions induced by indirect land use change.	The research strategy will be supported by activities on infrastructure and platforms, capacity building, education and training, knowledge exchange and communication and dissemination. JPI will work with the European Institute of Technology's Knowledge and Innovation Communities (KIC) which focus on bringing together education, technology, research, business and entrepreneurship and seek interactions with the European Strategy Forum on Research Infrastructures (ESFRI). Social innovation (change of behaviour), organisational (changes in management), and know-how innovation (knowledge around methods and practices) will also be considered. When mature, these innovations will be considered for integration in production systems and in policy measures. The Knowledge Hub is an instrument for alignment, in which many participants are already (nationally) funded to carry out (national) research. It has 3 complementary dimensions: networking, research and capacity building. The aims of a Knowledge Hub are to increase and facilitate cooperation between excellent researchers and research institutions; bring international impact, develop research capacity, provide learning and training activities and in the long-term to provide efficient scientific support for strategic and political decision-making. FACCE – JPI will establish links with the new European Innovation Partnership on Agricultural Productivity and Sustainability to promote interactions between researchers, farmers, private sector and consumers, in order to provide new opportunities for innovation. Additionally, the use of existing EC instruments such as public – public partnerships (ERA-NETs, ERA-NET Plus or Article 185) or public-private partnerships, infrastructures, mobility and training grants will enhance the ability of participants to work together.	Coordination and Support Action from the European Commission and entry fees[74] from the participating countries[75]. Member States are expected to coordinate national research activities, group resources, benefit from complementarities and develop common research agendas. Non-EU cooperation through joint actions such as International Call on GHG Mitigation with Global Research Alliance on Agricultural Greenhouse Gases (USA, Canada, New Zealand), (~ 5 Million in cash + in kind contribution) and Joint call with Belmont Forum (incl. National Science Foundation US), (approximately €10.5 million)[76]	Jointly led by INRA and BBSRC and implemented through ERA –NETs with research groups from participating countries. Civil society (NGOs and consumers), farmer organisations, industries, administration, and European and International programmes/ initiatives are represented by a Stakeholder Advisory Board allowing them to participate in the development of the JPI[77]. SCAR acts as observer in the Governing Board. A global approach, with key international partners, is also part of the research and implementation strategy such as collaboration with and complementing CCAFS efforts, which are currently centred on developing countries.

[72] http://www.faccejpi.com

[73] http://europa.eu/rapid/press-release_IP-10-714_en.htm?locale=en

[74] General presentation JPI Agriculture, Food Security and Climate Change 5000 € entry fees

[75] FACCE-JPI brochure 21 countries (Austria, Belgium, Czech Republic, Cyprus, Denmark, Estonia, Finland, France, Germany, Ireland, Israel, Italy, The Netherlands, Norway, Poland, Romania, Spain, Sweden, Switzerland, Turkey and UK)

[76] FACCE-JPI implementation plan 2014-2015

2. CCAFS[78]- CGIAR Research Program on Climate Change, Agriculture and Food Security

Budget/ Duration/ Geographic focus	Overall objective	Specific objectives	Expected results	Research methodologies	Dissemination to put research into use	Funders &, funding mechanisms	Research partners
The budget is US$63.2 million in 2011, rising to US$90.3 million in 2015. The budget is allocated to 15 Centres and 30% to partners [79] The 2013 CCAFS total budget is US$56.8 million. 24% of the 2013 budget is to be allocated to partners[80] Phase I = 2011-2015 Target regions initially West Africa, East Africa and the Indo-Gangetic Plains	To promote a food secure world through the provision of science based efforts that support sustainable agriculture and enhance livelihoods while adapting to climate change and conserving natural resources and environmental services.	(1) To identify and test pro-poor adaptation and mitigation practices, technologies and policies for food systems, adaptive capacity and rural livelihoods; (2) To provide diagnosis and analysis that will ensure cost effective investments, the inclusion of agriculture in Climate change policies and the inclusion of climate issues in agricultural policies, from the sub-national to the global level in a way that brings benefits to the rural poor.	1.1 agricultural and food security strategies that are adapted towards predicted conditions of climate change promoted and communicated by the key development and funding, civil society organizations and private sector. 1.2 breeding strategies for addressing abiotic and biotic stresses under future climate change, mainstreamed among the majority of the international research agencies who engage with CCAFS and by national agencies. 1.3 Adaptation strategies for agricultural and food systems integrated into policy and institutional frameworks to enable movement of seed material. 2.1 Improved support for farm- to community-level risk-management actions that buffer against climate shocks and enhance livelihood resilience. 2.2. Better climate- informed management by key international, regional and national agencies, of food-crisis response, post-crisis recovery, and food trade and delivery. 2.3. Enhanced use of climate information services by resource-poor farmers particularly vulnerable groups and women. 3.1. Enhanced knowledge about agricultural development pathways that lead to better decisions for climate mitigation, poverty alleviation, food security and environmental health by national agencies. 3.2. Improved knowledge about incentives and institutional arrangements for mitigation practices in use by resource-poor smallholders, project developers and policy makers. 3.3. Key agencies deal with climate mitigation in at least, promoting technically and economically feasible agricultural mitigation practices that also benefit resource-poor farmers, particularly vulnerable groups and women. 4.1. Appropriate adaptation and mitigation strategies mainstreamed into national policies, development plans, and in the key global processes related to food security and climate change. 4.2. Improved frameworks, databases and methods for planning responses to climate change used by national agencies and by international and regional agencies. 4.3. new knowledge on how alternative policy and program options impact on agriculture and food security under climate change incorporated into strategy development by national agencies and international and regional agencies to a variable and changing climate	Four closely interlinked global themes: 1: Adaptation to progressive climate change 2: Adaptation through managing climate risk 3: Pro-poor climate change mitigation 4: Integration for decision making Field-level work in benchmark sites in the target regions on first 3 themes: Identify and test technologies, practices and policies, and enhance capacity to reduce the vulnerability of rural communities. Collectively, these three themes will assess and demonstrate the feasibility and effectiveness of strategies for advancing food security, rural livelihoods and environmental goals; identify and prioritize institutional and policy options for overcoming obstacles to implementing these strategies; and ensure that appropriate practices and technologies become available to farmers. Theme 4 provides an analytical and diagnostic framework for the whole of CCAFS. It ensures effective engagement of rural communities and institutional and policy stakeholders and grounds CCAFS in the policy context. CCAFS activities will be fully integrated with CGIAR Research Program on Integrated Agricultural Production Systems for the Poor and Vulnerable in Dry Areas in shared target regions.	CCAFS seeks to become the place key stakeholders go to find relevant evidence, knowledge and tools to formulate strategies for tackling food insecurity in the face of climate change. CCAFS will have an ambitious, well-resourced, proactive communications strategy. A focus of the research strategy will be developing and implementing innovative approaches to strengthen the links between research, policy and practice. Partnerships will be essential, especially with organizations that communicate directly with farmers and with global and local media to capture the attention of policy makers and interested public, private and civil-society sectors.	CGIAR Fund Donors[81]; EU contribution to Window 3 and contributions from AusAid, DANIDA Denmark, Environment Canada, Irish Aid, Government of Russia, Netherlands Ministry of Foreign Affairs, Portugal (IICT), SDC Switzerland, UK Aid to Window 2.	CGIAR and Future Earth, led by the International Centre for Tropical Agriculture (CIAT). Core Partners: Leeds University, Columbia University, University of Vermont, University of Oxford, University of Copenhagen. In total 700 partners[82] in total including private research institutions, academic institutions, NARES, NGOs, CGIAR centres and challenge research programs, ROs, government departments, research networks, advanced research institutions and donors. Bringing together the 'climate world' and the 'agriculture for development world' will happen at all levels.

[77] http://www.faccejpi.com/faccejpi/Document-library/Strategic-Research-Agenda FACCE-JPI Strategic Research Agenda 2012

[78] The selected CRPs are supported by the EU (FSTP 2011/ 2013)

[79] http://ccafs.cgiar.org/publications/ccafs-program-plan#.UswUXptwbDc CRP7_program_plan 2011.pdf

[80] http://ccafs.cgiar.org/publications/2013-business-plan#.UswVtptwbDc CCAFS Business Plan 2013.pdf

[81] https://www.cgiarfund.org/FundDonors The CGIAR Fund Council determines how these contributions are allocated to CGIAR Research Programs.

[82] http://ccafs.cgiar.org/partners?field_name_acronym_value=&field_themes_tid=All&field_regions_tid=All

3. A4NH[83] - the CGIAR Research Program on Agriculture for Nutrition and Health

Budget/ Duration/ Geographic focus	Overall objective	Specific objectives	Expected results	Research methodologies	Dissemination to put research into use	Funders &, funding mechanisms	Research partners
Budget for 2011 was $59M, rising to 63,409$M in 2012 and $69M in 2013[84] Start with 5-year operations plan (2011-2015). Actual start in 2012 Africa, Asia, Latin America	Improving human nutrition and health of poor people by exploiting and enhancing the synergies between agriculture, nutrition, and health through four key research components: 1. value chains 2, biofortification 3. control of agriculture-associated diseases 4. integrated agriculture, nutrition, and health development programs and policies	1. Generate knowledge and technologies to improve the nutritional quality and safety of foods along value chains 2. Develop, test, and release a variety of biofortified foods, as well as other nutrient-rich foods that are affordable for the poor and accessible to them 3. Generate knowledge and technologies for the control of zoonotic, food-borne, water-borne, and occupational diseases 4. Develop methods and tools to improve the effectiveness, efficiency, and timeliness of surveillance and monitoring systems and to permit meaningful evaluation of complex multi-sectoral programs and policies. 5. Produce evidence of nutritional and health burdens and benefits and of the returns to different interventions in different sectors. 6. Assess and document changes in dietary and nutritional patterns and risks of agriculture-associated diseases among poor people in intensifying systems, and identify and test agricultural options to enhance nutrition and health benefits and mitigate risks of agriculture intensification in these populations	•Biofortified and diverse nutrient-rich foods available and accessible to the poor •Knowledge and technologies to improve quality and safety of foods along value chains developed •Better, more cost-effective integrated ANH program models and capacity strengthened •Strong evidence of role of integrated ANH programs in improving health and nutrition •Good practices in integrated ANH policymaking applied •Cross-sectoral work incentivized •Capacity for joint policymaking strengthened	1. Value Chains for Enhanced Nutrition: a variety of quantitative and qualitative methods[85] 2. Biofortification: clear stages of discovery, development, and delivery: a. Identify target populations and set nutritional breeding targets b. Validate nutrition and micronutrient deficiency data c. Screening and applied biotechnology d. Crop improvement e. Test genotype x environment interactions f. Test nutritional efficacy g. Identify factors driving farmer adoption and consumer acceptance h. Release biofortified crops in target countries i. Facilitate dissemination, promotion, and consumer acceptance of crops j. Measure impact and changes in nutritional status of target population 3. Prevention and Control of Agriculture-Associated Diseases: The keystone of this component is agriculture research plus epidemiology and risk analysis, while the interface of human health and agriculture is a meeting ground for many disciplines and approaches and requires contributions from economics, sociology, gender studies, ecology, biology, genetics, molecular epidemiology, bioinformatics, food technology, communications, extension, and other specialties. 4: Integrated Agriculture, Nutrition, and Health Programs and Policies: Programs- monitoring and evaluation methods, based on program theory and on well-defined program impact pathways, using mixed methods drawing from quantitative as well as qualitative research tools, involve multidisciplinary teams, engage local and implementation partners, and include simple tools and feedback loops to ensure that real time information is available and used by decision-makers at all levels. An information management and learning system will link the different case studies and generate learning across sites. Policies- An assessment of the current state of policy and institutions will provide a baseline level of information to assess changes. Common indicators will be developed for tracking change over time, and various methods will be used to document change. Evaluation of impact will be based solidly on established theories of change. Research will assess contribution and influence.	CRP4 will contribute to large-scale sustainable impacts by developing strong linkages with development implementers, including value chain actors and ANH program implementers, and with enablers such as international and national policy makers and governments.	CGIAR fund[86], EU contribution to Window 3 and the following donors have contributed specifically to A4NH: Australia, Canada, IDRC Ireland, Netherlands, Sweden, Russia, and USA. Also BMGF	Led by IFPRI in cooperation with the CGIAR centres: ILRI BIOVERSITY, CIAT CIMMYT, CIP, ICARDA, ICRAF, ICRISAT, IITA, WORLD FISH, the HarvestPlus Challenge Program, other CRPs and a host of global partners. CRP4 will build on existing research partnerships and develop new ones with advanced research institutes and academic institutions (universities) and developing-country research institutes and universities.

[83] http://www.a4nh.cgiar.org/
http://www.ifpri.org/sites/default/files/crp4execsummary_oct07_2011.pdf

[84] http://www.ifpri.org/sites/default/files/crp4proposal_final_oct06_2011.pdf crp4 full_proposal_final_oct06_2011

[85] http://www.ifpri.org/sites/default/files/crp4proposal_final_oct06_2011.pdf

[86] crp4 full_proposal_final_oct06_2011: In 2011, $17M, or 29 percent of total funding, was assumed to be from the Fund and $42M is from bilateral sources (total of $58.8M funding).

4. Feed the Future[87]

Budget/ duration/ Geographic focus	Overall objective	Specific objectives	Expected results	Research methodologies	Dissemination to put research into use	Funders &, funding mechanisms	Research partners
U.S. Government L'Aquila pledge for 3 years: $3.5 billion[88] [89] Launched 2012 Duration not found 19 countries in Africa, Asia and Latin America[90]	Reduce global poverty and undernutrition by advancing food security through science, technology and innovation	.Sustainable Intensification of major agricultural systems with high concentrations of poverty and undernutrition .Increasing productivity while optimizing the use of natural resources. .Improve food safety and nutrition by enhancing dietary diversity, increasing the availability of nutritious foods and access to them, and reducing losses and contamination of food after harvest.	Over five years, Feed the Future is expected to reduce the prevalence of poverty by 20% and the prevalence of stunted children under five years of age by 20% in the areas where we work[91]. *Improved agricultural productivity *Expanded markets and trade *Increased investments in agriculture and nutrition-related activities *Increased employment opportunities in targeted value chains *Increased resilience of vulnerable households and communities *Improved access to diverse and quality foods *Improved nutrition-related behaviour *Improved use of maternal and child health & nutrition services	Range from longer-term research to address major global challenges to applied and adaptive research guided by host-country priorities for nearer-term impact.	There is no one-size-fits-all solution to the challenge of technology adoption, which is why we are focused on identifying best practices and building the evidence base around adoption Progress to scale through expanded global partnerships such as Meeting of Agricultural Chief Scientists.[92] .Supporting Country-Led Development . Integrating Agriculture and Nutrition . Bringing Innovation to Scale .Promoting a Favourable Policy Environment . Embracing Innovative Partnerships . Building Resilience	. USAID . U.S. Department of the Treasury . Millennium Challenge Corporation	U.S. universities, private sector research partners, federal research institutes, and international and national research partners such as the CGIAR and national agricultural research systems

[87] www.feedthefuture.gov

[88] http://www.feedthefuture.gov/sites/default/files/resource/files/feed_the_future_scorecard_2013.pdf

[89] In addition to U.S. bilateral programs, Feed the Future also supports the Global Agriculture and Food Security Program (GAFSP), a World Bank-managed, multi-donor trust fund that significantly expands resources available to countries to implement evidence-based, country-led food security investment plans.

[90] http://www.feedthefuture.gov/countries

[91] Feed the Future Scorecard 2013

[92] Feed the Future progress report 2013 / http://www.cgiar.org/wp-content/uploads/2012/10/Final-MACS-Communiqu%C3%A9.pdf

5. ASARECA Livestock and Fisheries Programme[93]

Budget/ Duration/ Geographic focus	Overall objective	Specific objectives	Expected results	Research methodologies	Dissemination to put research into use	Funders &, funding mechanisms	Research partners
2009-2013 budget on-going activities: 4.5M $[94], 2008-2012 budget on-going projects: 3,859,422 $, of which MDTF: 3,259,122$ Strategic plan covers 2009-2016 Burundi D R Congo Eritrea Ethiopia Kenya Madagascar Rwanda Sudan Tanzania Uganda	Enhanced [95] utilisation of livestock and fisheries research for development Innovations in Eastern and Central Africa.	*Improving livestock and fisheries productivity *Improving access to markets *Improving value addition in input and output marketing chains *Improving sustainable interaction between livestock, fisheries and the environment	1. Generation and uptake of demand-driven livestock and fisheries technologies and innovations facilitated. 2. Policy options for enhancing the performance of the livestock and fisheries subsectors in the ECA sub-region facilitated. 3. Capacity for gender responsive livestock and fisheries research for development in the ECA sub-region strengthened. 4. Availability of information on livestock and fisheries innovation enhanced.	*Incorporate stakeholder participation and learning. *Multidisciplinary and multi-institutional frameworks, resource sharing and mobilisation with clearly defined roles and responsibilities. *Building on indigenous knowledge	The projects will have evidence-based uptake pathways: . technical publications targeting various audiences including academia, and scientific fora, popular versions of reports for lay consumer groups; . educational materials for training institutions; technical advisory packs for advisory service providers; . web-based training modules and computer packages that can be used as decisions support tools for customised service delivery; . policy advisories targeting key decision makers at community, national and regional levels; . Existing information systems that inform producers and consumer of sources and costs of accessing commodities.	MDTF incl. AfDB CIDA DFID European Union IFAD SIDA USAID	-ISABU, Burundi; -NARI, Eritrea; -EIAR, OARI and ILRI, Ethiopia. -KARI, ILRI, University of Nairobi, Egerton University, Kenya; -FOFIFA, Madagascar; -ISAR, NUR, Send a Cow, Rwanda; -ARC, Ministry of Science and Technology-Central Veterinary Research Laboratory, Sudan; -National Biological Control Program, NLRI, ADRI, Sokoine University of Agriculture, Department of Research Ministry of Livestock, SUA, Tanzania; -NARO, Gulu University, Makerere University Uganda;

[93] www.asareca.org/content/livestock-and-fisheries-programme

[94] http://www.asareca.org/researchdir/FILES/LIVESTOCK___FISH_PROGRAM_PROFIL.PDF Research directory Livestock and Fisheries

[95] http://www.asareca.org/researchdir/FILES/DRAFT_LFP_STRATEGIC_PLAN.PDF Livestock and Fisheries Programme-Transforming Livestock and Fisheries for Improved Livelihoods - strategic plan 2009–2016

6. SECUREFISH[96]

Budget/ duration/ Geographic focus	Overall objective	Specific objectives	Expected results	Research methodologies	Dissemination to put research into use	Funders &, funding mechanisms	Research partners
Total budget: €3,965,592[97] EU: €3M, other contributions €1M [98] Start 2012. Duration not found Africa, Asia , and Latin America	Improve food security by reducing post-harvest losses in the fisheries sector by strengthening local capacity in processing, preservation and quality control of fish and fish products.	* Strengthen capacity in low cost technology; * Improve the preservation of existing fish supplies; * Utilize waste and by-catch to produce value-added products; * Develop an integrated quality management tool; * Test the developed technology and quality management tools in different real third country conditions	Options within the food chain to improve processing, preservation, food safety and nutrition: *Low cost innovative processing tools based on traditional technology for preserving fish including a solar tunnel drier, a modified solar assisted extruder and fast freezing/ continuous atmosphere freeze-drier (CAFD) * Underutilized by-catch and waste by-products of fish filleting recovered and converted to high value products * Quality management tool (safety and risk assessment, HACCP quality costs and traceability, nutritional quality and carbon footprint) of three fish product chains (solar dried, extruded and frozen/CAFD) which can be tailored to suit local needs	Case studies in Africa (Kenya, Namibia, Ghana), Asia (India and Malaysia) and Latin America (Argentina) involving all stakeholders to implement improved technology, added-value products and quality management tool in three fish product chains from harvest to consumption (solar dried, extruded, CAFD). - Identify areas where real improvement targets can be set and achieved - Marketable products monitored for safety and quality using the processing and quality management tools - Benchmarking and result in best practices including handling, transport and storage.	* Case studies in Africa (Kenya, Namibia, Ghana), Asia (India and Malaysia) and Latin America (Argentina) involving all stakeholders including SMEs to ensure sustained implementation of project results. *publications, conferences, websites and communication to stakeholders. • Information to consumers, food manufacturers, processors and retailers by organising meetings and workshops. • Education and training of researchers, MSc and PhD students and exchanges between partners and training in local communities	FP7 KBBE.2011.2.5.02: Reducing post-harvest losses for increased food security-SICA Collaborative project (small or medium-scale focused research project for specific cooperation actions dedicated to international cooperation (SICA). Minimum nr of participants: 3 from different MSs or ACs and 2 from different ICPCs. 2-5 years Follow-up on EU project INCO-DEV ICA4-CT-2001-10032	Academic and research institutes: 1.University of Surrey, UK 2.Instituto Nacional de Recursos Biológicos INRB, I.P./L-IPIMAR, Portugal 3.Kenya Marine Fisheries Research Institute 4.University of Namibia 5.Karnataka Veterinary, Animal and Fisheries Sciences University, India 6.Universiti Teknologi Mara, Malaysia 7. Instituto Nacional de Tecnologia Industrial, Argentina 8.Dienst LandbouwKundig Onderzoek, The Netherlands 9. Food Research Institute (CSIR- FRI), Ghana Industrial: 1. Ebbens Engineering Ingenieursbureau b.v., Netherlands 2.Millennium Exports, India 3.Karnataka Fisheries Development Corporation, India 4.Peche Foods, Kenya

[96] http://www.securefish.net
http://www.securefish.net/documents/SECUREFISH%20INTRODUCTION.pdf
[97] http://www.securefish.net/news.html
[98] CAASTNET Plus_Food Security_October 2013V2_CTA Task 1 1_JAF Review_20 October 2013.pdf

7. CSIRO Sustainable agriculture Flagship[99]

Budget/ Duration/ Geographic focus	Overall objective	Specific objectives	Expected results	Research methodologies	Dissemination to put research into use	Funders &, funding mechanisms	Research partners
Budget not found Start 2009, duration not found Geographic focus not found	Build global solutions for food security and greenhouse gas management	.Greenhouse gas abatement and carbon storage in land use systems .Producing more with less .Measure, monitor and predict the condition of Australian agricultural and forestry landscapes to increase productivity and reduce carbon emissions. . Partner with international communities to create sustainable livelihoods	*Total factor productivity growth across Australia's key agricultural industries of at least 2% per annum over the next 20 years * Greenhouse gas emissions per unit of food and fibre production reduced by at least 50% by 2030 through a mix of productivity growth, emissions reduction and carbon storage in soils and vegetation	*Science, technology, measurement and management systems to reduce greenhouse gas emissions. *Monitor agricultural and forestry landscapes through innovative earth observation and knowledge systems which inform land use planning, policy options and natural resource assessment. *Complimentary research & development -developing analytical tools -system based modelling -whole of landscape reporting -developing new technologies *Direct application research	Direct impact pathways through: -government policy priorities -uptake of technical and practices on-farm -Innovations in agri-industry	CSIRO Flagship Collaboration Fund[100] -More than A$ 100M committed to FCF - Co-investments, from one-off projects to 15+ year strategic partnerships At different times throughout the year, the FCF provides contestable funding for: -Flagship clusters -Flagship research projects -Flagship visiting fellowships -Flagship postgraduate scholarships.	The Sustainable Agriculture Flagship draws on the skills of scientists from many different disciplines and collaborates with a range of organizations including: *Industry: Rural Research and Development Corporations, peak agribusiness bodies and companies, emerging service industries for the carbon sector *Government: Federal Government (Departments of Agriculture, Fisheries and Forestry, Climate Change, and Environment, Water, Heritage and the Arts), State Governments, International (AUSAID, Australian Centre for International Agricultural Research (ACIAR)) *Research Community: Australian universities, state agencies, Cooperative Research Centres, International institutes and agencies, national agricultural research and development systems in developing countries[101]. - Engaged with over 70 different external institutions since 2005.

[99] http://www.csiro.au/en/Organisation-Structure/Flagships/Sustainable-Agriculture-Flagship.aspx

[100] http://www.csiro.au/Organisation-Structure/Flagships/AboutNationalResearchFlagships/Flagship-Collaboration-Fund-Overview.aspx

[101] Principles that guide our co-investment activity are: Strategic fit, Capability matching, IP management, Benefit sharing, Commercialization, Value Pricing and Risk sharing

8. ANIHWA – Animal Health and Welfare ERA-NET[102]

Budget/ duration/ Geographic focus	Overall objective	Specific objectives	Expected results	Research methodologies	Dissemination to put research into use	Funders &, funding mechanisms	Research partners
Funds estimated at over €250 Million annually[103] 2012-2015 Europe plus Israel	Building on EMIDA[104], ANIHWA aims to increase cooperation and coordination of national research programmes on animal health and welfare of farm animals, including fish and bees	-Develop integrated animal health and welfare research policies and activities at the EU-wide level. - Optimise the research provision that underpins EU animal health and welfare policy development and policy implementation, and the sustainability of the EU livestock industries through the coordination of funding to develop improved tools for the control of health and welfare threats of livestock. - Increase the capacity of European animal health and welfare science and research, in order to maintain and develop EU expertise in this field and maintain Europe's competitiveness in the global Animal Health & Welfare market.	Deepened cooperation and coordination among partners by systematic exchange of information and mapping of national research activities and facilities: . gap analysis and preparation of a dedicated strategic research agenda, . thorough assessment of the funding mechanisms with increased number of joint calls and finally strategic activities .sustainable development and extension of the network.	2nd call 1. Research integrating animal health and welfare: *Validation of animal-based indicators of both health and welfare: behavioural and physiological indicators, disease sampling outcomes, genomic and molecular indicators for animal breeding *New livestock husbandry and management systems: innovative livestock facilities, transport vehicles or practices, integrated models of livestock housing, transport, handling, and stunning, that take into account the behaviour and welfare of animals, new models of livestock production and management aiming at improving productivity and environmental, energetic and economic sustainability *Assessment of pain and suffering caused by: infectious or production diseases, mutilation and commonly used management practices, transport and slaughter conditions *Evaluation of human-animal relationships 2: New or improved tools for diagnosis and disease prevention * study pathogen biology and host-pathogen interactions, taking into account interacting cells and molecules involved in virulence, pathogenesis, immunity and escape strategies: development of approaches to distinguish reliably between infected and vaccinated animals, including DIVA compatible vaccines, rapid tests to identify pathogens including their virulence, epidemiology and resistance pattern (molecular analysis, incl. nanotechnology e.g. lab-on-chip), 3: Assess preparedness for emerging and exotic diseases by an epidemiological approach to risk pathways identification: models for prediction and spread of vector-borne diseases, information on the competence of EU vector species for vector-borne diseases, early warning systems, risk assessment and communication networks to prevent outbreaks, disease modelling/ bio-economical modelling to support systematic evaluation of efficacy of biosecurity measures and to better understand the consequences of outbreaks and develop scenarios for control of the diseases 4: Asses antimicrobial and anthelmintic resistance, and development of alternative curative and preventive therapies: prevalence of resistance in gut (micro-)organisms, rapid tests for identifying resistance, ecology of drug resistant bacteria and transfer of antimicrobial resistance in livestock production and to humans, analysis and mitigation of resistance genesis with emphasis on resistance critical for human infections, strategies to reduce antibiotic / anthelmintic treatment	Project deliverables are published on the website	Coordinated Action FP7 ERA-NET The consortium consists of 30 partner organisations from 19 countries: Member State Countries (17); Associated Countries (2). [105] Non-EU: Switzerland, Israel, Norway, Funding transnational collaborative research through multiple and flexible joint research calls. Each country has its own national regulation for applicants[106] The consortium is led by INRA, FR and represents the leading national financing bodies for Animal Health And Animal Welfare research in the EU[107], It includes funders of basic, strategic and applied science, allowing a joined-up approach, which should improve delivery.	1st call see MoU[108]: 19 partners, 2 associated partners.

[102] www.anihwa.eu
[103] http://www.anihwa.eu/About-Anihwa/Project-description
[104] http://www.emida-era.net/
[105] http://www.anihwa.eu/Calls
[106] http://www.anihwa.eu/Home/News/2nd-call 131125_anihwa second call_guidelines for applicants_Call 2v9.pdf
[107] 15 countries take part in the 2nd Anihwa Call with a "distributed common pot" funding (BE, CH, DE, DK, ES, FI, FR, GR, IE, IT, LT, NO, SE, SK, UK), http://www.anihwa.eu/Home/News/2nd-call 130923_anihwaCallAnnouncement_call 2_v8.pdf
[108] http://www.anihwa.eu/Calls/1st-call

9. FOODSECURE[109] – Interdisciplinary Research Project to Explore the Future of Food and Nutrition Security

Budget/ Duration/ Geographic focus	Overall objective	Specific objectives	Expected results	Research methodologies	Dissemination to put research into use	Funders &, funding mechanisms	Research partners
EU contribution : 8M euro, other sources: 2.5M euro, Total: 10.5 M euro[110] March 2012 – February 2017 Europe, Africa, Asia, Latin America and other regions.	Support EU policy makers and other stakeholders in the design of consistent, coherent, long-term strategies for improving food and nutrition security.	• Better understand the causes of hunger and malnutrition and the determinants of global food and nutrition security. • To improve the ability of decision makers to foresee and respond to future food and nutrition security crises. • Provide guidance to stakeholders on technological and institutional change and policy strategies to improve global FNS.	A set of analytical instruments to experiment, analyse, and coordinate the effects of short and long term policies related to achieving food security- critical pathways for technological and institutional change and policies, and the integration of a diversity of visions in a common framework.	Research areas: 1. Causes of hunger and poor diets 2. Database on hunger: outcomes and drivers 3. Innovation for FNS 4. Aid, trade and agriculture policies 5. Stakeholder orientation on the future of hunger 6. Short term modelling 7. Long-term modelling 8. Surveillance on and management of food crises 9. Sustainable agriculture 10. EU and national food security strategies and aid policies 11. EU policies in support of food and nutrition security 12. Pooling resources: Models and data Research components: *Determinants module: understanding the causes of hunger and malnutrition *Future module: tools for improved surveillance and foresight *Guidance module: policy framework to support food and nutrition security *Stakeholder engagement *Pooling data and modelling resources	Stakeholder engagement through events such as round table discussion with African and international experts, presentations at international conferences, briefings of main reference units in the Commission, International expert consultations and workshops, presentations to beneficiaries.	FP7-Collaborative Project	18 partners from 13 countries: LEI-WUR, Netherlands (project coordination), ZEF-UBO, Germany (scientific coordination), IFPRI-USA, INRA-France, K.U. Leuven-Belgium, CCAP-China, IAE-Romania, IHEID-Switzerland, IIASA-Austria, JRC-EU, PBL-Netherlands, Prospex-Belgium, SAU-Slovakia, URoma3-Italy, IDDRI-France, EEPRI-Ethiopia, EMBRAPA-Brazil, CIRAD-France In cooperation with research partners in regions facing food insecurity[111].

[109] http://www.foodsecure.eu/

[110] CAASTNET Plus_Food Security_October 2013V2_CTA Task 1 1_JAF Review_20 October 2013.pdf / http://www.foodsecure.eu/About.aspx

[111] http://www.foodsecure.eu/Documents/flyer.PDF

10. PIM[112]/[113] - the CGIAR research programme on Policies, Institutions and Markets

Budget/ Duration/ Geographic focus	Overall objective	Specific objectives	Expected results	Research methodologies	Dissemination to put research into use	Funders &, funding mechanisms	Research partners
The budget is projected at US$82 million for 2011, rising to US$95 million in 2013[114] with a total budget incl. institutional overhead of US$ 265M for 2011-2012. Partnerships = 23% of CRP2 funding[115] Launch in 2012 with 3-year budget Asia, Sub-Saharan Africa, and Latin America	Identify and promote implementation of policies, institutions, and markets to improve food security and incomes of the rural poor on a sustainable basis	* Improve policies to deliver sustainable technologies to small-scale producers * Enhance the effectiveness of public and private investment * Improve macroeconomic, trade, and agricultural sector policies *Develop social protection to build and protect assets for the poor *Strengthen property rights and collective action institutions for sustainable natural resource management and poverty reduction *Improve governance of rural services, especially related to land administration, management of rural infrastructure and agricultural innovation *Increase competitiveness of markets to benefit producers and consumers *Offer greater income opportunities by integrating small-scale producers into upgraded value chains	1. Improve policy options at the global, regional, and country levels and strengthened capacity for formulating and implementing policies and investments designed to increase agricultural productivity and enhance rural incomes. 2. Contribute to effective and equitable access to rural services, property rights, collective action, and assets by studying existing systems and testing institutional innovations in these areas. 3. Increase the competitiveness of markets to benefit producers and consumers and offer greater income opportunities by integrating small-scale producers into upgraded value chains.	A range of interdisciplinary approaches and methods including econometric methods, model-based simulation analyses, strategic foresight assessments, social network analyses, qualitative analyses, participatory action research, experi-mental and randomized controlled approaches, and gender and intra-household analysis. Also an annual competitive grants program to promote innovation among researchers in developed and developing countries. The development of integrated data and knowledge management platforms is a priority of CRP2 A country typology based on three types of countries/ subnational regions—agriculture-based, transforming, and urbanized—is used to determine key development challenges, approaches, and strategies.	3 pathways for uptake of research outputs: 1. Bolstering the capacity of research communities 2. Influencing policy development and implementation by major development agencies 3. Providing policy recommendations for policymakers and decision-makers at the global, national, and local levels In addition, the CRP2 strategy to ensure that outputs are translated into outcomes includes the following components: . partnerships, to link research to on-the-ground implementation and widen CRP2's influence; capacity strengthening, to enhance the capacity of partners who will translate research results into on-the-ground impacts; communication, to produce different outputs that will ensure research dissemination and influence; specific outreach strategies to be developed by each subtheme. IFPRI's Country Strategy Support Programs (CSSPs), help researchers stay close to the issues and facilitate the delivery of results in the developing world.	CGIAR fund, EU contribution to Window 3 and the following countries have contributed specifically to PIM: Australia, Denmark, Netherlands, Russia, Switzerland USA	IFPRI (lead[116]), BIOVERSITY, CIAT, CIMMYT, CIP, ICARDA, ICRAF, ICRISAT, IITA, ILRI, WORLDFISH The program will be a platform of excellence, drawing on expertise not only within the CGIAR system, but also in many other research and development organizations and agencies worldwide, including conventional research partners from universities and national agricultural research systems, but also with a wide range of stakeholders at national, regional, and global levels, such as farmers' organizations, regional forums, governments, development agencies, donor agencies, and the private sector-CGIAR centres participating in CRP2 already collaborate with more than 500 partner organizations today[117]

[112] www.pim.cgiar.org/

[113] The selected CRPs are supported by the EU (FSTP 2011/ 2013)

[114] http://www.ifpri.org/sites/default/files/pim_execsummary.pdf

[115] http://fsaw2012.ifpri.info/files/2012/01/PPT1-Rosegrant-CRP2-Overall-presentation.pdf It seems this means partnerships with other CGIAR centres (see presentation slide 19 and page 149 & 151 of the full proposal)

[116] http://www.ifpri.org/sites/default/files/crp2proposal_final_oct05_2011.pdf The Lead Centre, IFPRI, has historically had a higher portion of its budget devoted to partners than other centres, and has the management capacity and corporate structure to manage such relationships.

[117] See page 193 of the full proposal for a complete list of CRP2-research partners: http://www.ifpri.org/sites/default/files/crp2proposal_final_oct05_2011.pdf