

**CGIAR Research Programs
and CIRAD -
Presentations from the
2013 Annual Meeting
between CGIAR and the
French Research
Institutions**

Cirad, INRA, IRD, Agropolis Fondation, CRAI, Agreenium,
CGIAR Research Programs & Consortium
Montpellier, France

Research Themes of shared interest (based on the AAS agenda)	What we are doing (On going activities led by Cirad related to AAS agenda) <i>Contacts: JF Baroiller (JRU Intrepid –Cirad/Ifremer)</i>	On going projects (funded by)
<ul style="list-style-type: none"> • Sustainable increases in system productivity • Equitable access to markets • Social-ecological resilience and adaptive capacity • Gender equity • Policies and institutions to empower AAS users • Knowledge sharing and learning 	<p>Currently no Cirad-AAS join activities</p> <p>Sustainable intensification of smallholder fish farming in West and Central Africa (participatory innovation system approach); – Cote d'Ivoire, Benin, Cameroon</p> <p>Research and Development Network on Smallholder extensive fish farming systems in West and Central Africa</p>	<p>Systèmes Piscicoles Extensifs (SyPiEx) (CORAF/WE CARD)</p> <p>(Ré-SyPiEx) Programme d'appui à la recherche en réseau en Afrique (PARRAF)/AIRD</p>
Expected future collaborations	<p>On sustainable fish farming productivity at different levels : fish pond or parcel, farm, agroforest y system, countries: Rep of Guinea, Ivory Coast, Cameroon.</p> <p>Potential partners: Worldfish, NEPAD, NARS, NGO, Private sectors</p>	

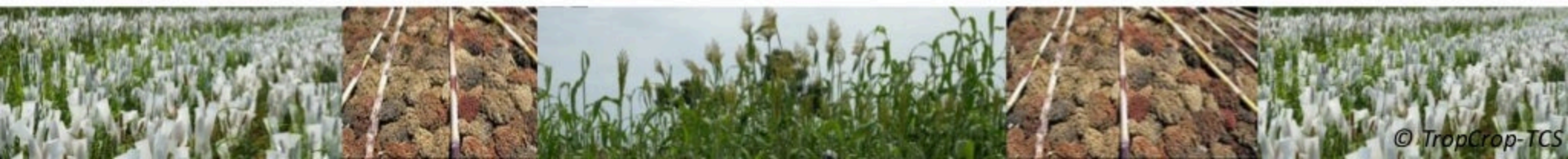
CRP Dryland cereals & French Institutions

Joint research themes	On-going activities <i>Contact person: JF Rami (cirad)</i>	Co-investment (funded projects), approx : 10 FTE scientists (Cirad+IRD)
PL1. Sorghum – West Africa: Supporting farmers' transition from subsistence to market orientation with productive, nutritious, photoperiod-sensitive sorghum production packages for multiple uses in West Africa	<ul style="list-style-type: none"> - Sorghum improvement and genetic analysis programs with Icrisat & National partners (Marker Assisted Recurrent Selection & BCNAM) 	(Mostly Cirad) GCP R.I. WAAPP program in WA
	<ul style="list-style-type: none"> - Combining experimentation and plant modeling for sorghum improvement 	1 Cirad agrophysiologist outposted to Icrisat
	<ul style="list-style-type: none"> - Dynamics of <i>in situ</i> genetic diversity 	(ARCAD, FFEM projects)
	<ul style="list-style-type: none"> - Local biodiversity and participatory breeding - Seed systems and ethnobotanical based seeds exchanges analysis 	(FFEM project) (ARCAD projects)
	<ul style="list-style-type: none"> - Breeding for multi-purpose sweet sorghum (Food- Fuel- Fodder) with Icrisat and other private-public partners 	(Sweetfuel) and others
	<ul style="list-style-type: none"> - Grain quality/Grain processing/Nutritional properties 	GCP, AFTER (Eu funded), INSTAPA (Eu funded-IRD)



CRP Dryland cereals & French Institutions

Joint research themes	On-going activities	Co-investment (funded projects), HR
PL2. Pearl millet – Africa: Improving food security for subsistence smallholder farmers in East and West Africa with productive and nutritious pearl millet food and fodder production technologies	<ul style="list-style-type: none"> - Study of history and patterns of crop domestication and adaptation - Evolutionary genomics and population genetics analysis of crop adaptation at various time scales - Nutrition and grain quality 	(Mostly IRD) ARCAD project ANR AdaptInWild ANR MilDiv
PL3. Sorghum – East Africa: Drought tolerant, highly productive multi-use sorghum varieties for food and processing uses in the dry lowlands of East Africa	<ul style="list-style-type: none"> - Seeds systems and ethnobotanical based seeds exchanges analysis 	(Mostly Cirad) ARCAD project, ANR Picevat



CRP Dryland cereals & French Institutions

Governance	<p>Member of the steering committee (Bernard Hubert, Agropolis International, chair)</p> <p>TBD : involvement in management Team, PL coordination</p>
Expected future collaborations	<ul style="list-style-type: none">➤ Develop collaborations on:<ul style="list-style-type: none">○ agronomy/post-harvest issues○ Economy/sorghum production, use and marketing trends➤ Development of MARS and BCNAM approaches at regional level in WA as integrated approaches for multi trait genetic basis enlargement➤ In situ genetic diversity dynamics➤ Plant modeling, TPEs and breeding ideotypes➤ Dual-purpose sorghum for WA with improved NP efficiency, drought and flooding tolerance and better grain and fodder quality



Research
Program on
Dryland
cereals







CRP Dryland systems & French Institutions



research themes and regions of shared interest	On going activities <i>Focal point : Pascal Bonnet (Cirad)</i>	governance
<ul style="list-style-type: none"> SRT 2: Reducing vulnerability and managing risk SRT3 : Sustainable intensification 	Participation to CRP development : 2 workshops during the CRP1.1 preparation (Nairobi, Alep)	Member of the steering committee (B. Hubert, Agropolis International)

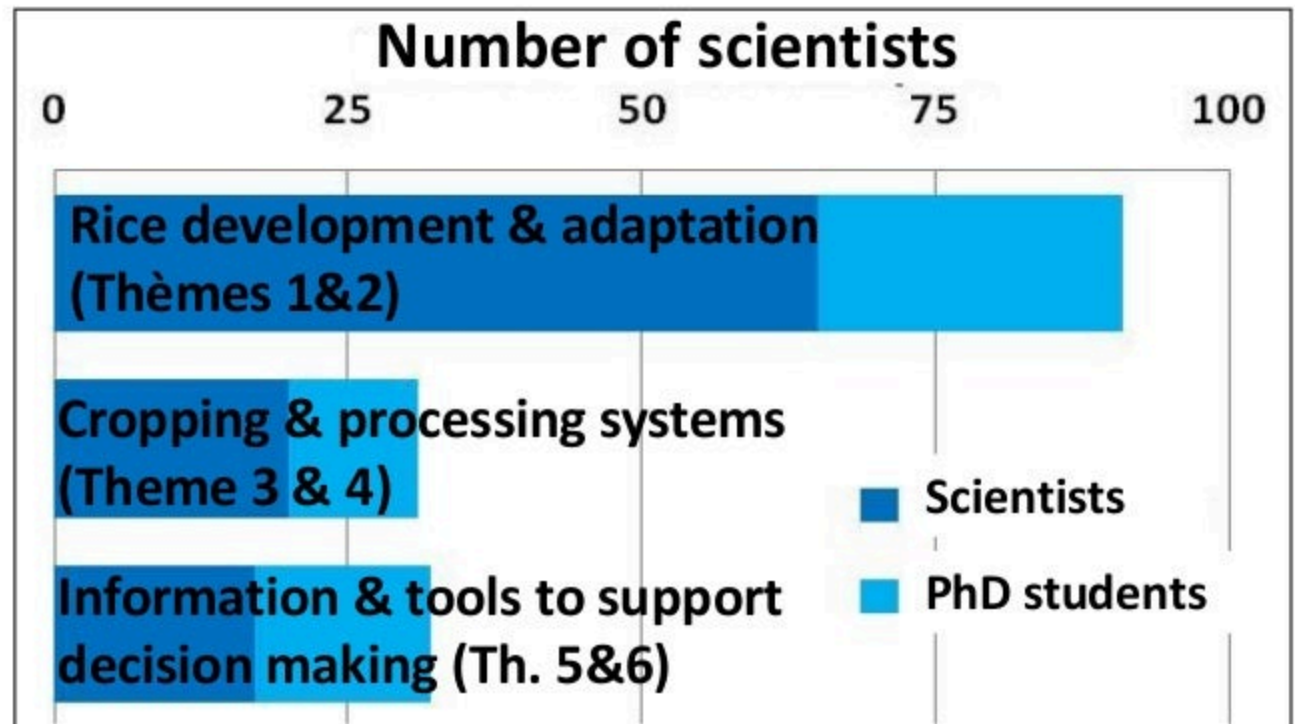


CRP Dryland systems & French Institutions

regions of shared interest	On going activities	Expected/potential collaborations
<ul style="list-style-type: none"> West Africa <p>Potentially 10 FTE Cirad scientists involved</p> 	<p>Participation to the Inception meeting Ouagadougou April 2012 (D. Gautier JRU BSEF)</p> <p>No yet join research activities</p>	<p>Linkage with pastoralism research platform (PPZS/CIRAD) in Senegal Commod (renewable resources management) and MAS (Multi-Agent system) approaches, Agro-sylvo-pastoral Systems in West Africa platform (ASAP-CIRAD) in Burkina/Mali</p>
<ul style="list-style-type: none"> Mediterranean region (N. Africa) <p>Potentially 10 FTE Cirad scientists involved</p> 	<p>Participation to 2 workshops for SRT3 in North Africa (April and May 2012) and regional inception workshop in July 2013</p> <p>On going joint projects (Cirad-led, partners: NARS, Icarda)</p> <ul style="list-style-type: none"> CLIMED (in New Reclaimed Land i.e. an action site of the CRP) EU ARIMNET-FP7 (Cirad coordinator) ELVULMED (in Bedouin zone) funded by ANR DAIRY (Nile Delta) funded by AIRD (Activities in Egypt, Morocco and Tunisia) 1 livestock system specialist (agro economist from JRU Selmet) based at Icarda & ARC in Egypt Cairo 	<p>1 Agric. system specialist (from JRU Innovation) posted in Meknes Morocco ready to collaborate (</p> <p>G-Eau JRU (Cirad-IRD-Irstea-MSA) ready to collaborate in Morocco on water management and irrigation research issues</p> <p>Assignment of a Cirad farming system specialist in Morocco or Tunisia in 2014 (JRU System Inra-Cirad-MSA) + possible links with new Mediterranean projects</p>

GRiSP & French Institutions : the roots of success

- Strong, original and south-oriented French rice science (Cirad, IRD, INRA, Universities)



- Institutional and peer to peer links driven from a long history of France-CGIAR collaboration on rice research



GRiSP - French Institutions : an exemplary partnership

- **Co-construction of GRiSP research agenda**
- **co-governance**
 - *Program Planning & Management Team*
 - *Oversight Committee*
- **Co-investment in scientific and financial resources and in partnership**
 - Cirad : 60 FTE (~9.8 M€)
 - IRD : 25 FTE (~4.0 M€)
 - 7 scientists assigned in AfricaRice, CIAT and IRRI

Recent contributions of French institutions to GRiSP

- **The Franco-Italian initiative FIRST**

- Joint support (2 M€) of the **Agropolis & CARIPLO Foundations**
- Four research projects involving teams from Agropolis, Italy and GRiSP-CGIAR Centres
 - Genomic selection for resources use efficiency in rice
 - Evolution of reproductive development in the *Oryza* genus
 - Connecting biology on rice disease resistance, drought tolerance and flowering time
 - Scenario assessment for sustainable rice production systems.

- **Massive sequencing (France-Genomic initiative)**

- 300 accessions of the African species *O. glaberrima*
- 4000 NAM lines (Ciat/IRD/AfricaRice)
- 800 lines for genomic selection (Ciat /Cirad)



GRiSP - French Institutions :

Clarifying & reinforcing commitments

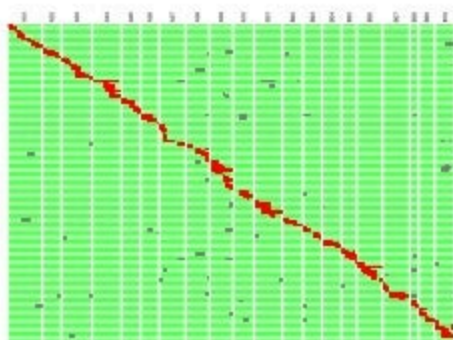
- “Rights and duties” of key partners
 - GRiSP M&E system
 - GRiSP reporting
- Joint “over-sea” Research and Partnership platforms (Madagascar, Vietnam, Senegal ...)
- Need of Incentives for maintaining the partnership momentum at the individual scientist level

CRP Grain Legumes & French Institutions

Joint research themes	On going activities <i>Focal point : JF Rami (Cirad)</i>	Co-investment (funded projects),
PL 3. Short-duration, drought-tolerant and aflatoxin-free groundnut	Collaboration as part of GCP and GATES Tropical Legumes (TL1) project with ISRA/CERAAS (Senegal), ICRISAT, EMBRAPA (Brazil) on wild introgressions	approx : 3 FTE scientists (Cirad)

Expected future collaborations

Common platform on groundnut wild introgressions in Africa: large scale development and characterization of peanut varieties incorporating wild introgressions





research themes of shared interest	On going activities <i>Focal point : Philippe Lecomte (Cirad)</i>	Co-investment (funded projects),
<p>Value Chain Development</p> <ul style="list-style-type: none"> 2.1. Sectoral & policy analysis 2.2. Value chain assessment 2.3. Value chain innovation <p>Technology developpt.</p> <ul style="list-style-type: none"> Genetics (fish)) 	<p>Potential linkage with Cirad on-going activities on</p> <ul style="list-style-type: none"> small ruminant VC (West Africa) Pig VC (Vietnam) Milk VC <p>Indian dairy systems trajectories facing global challenges</p> <ul style="list-style-type: none"> Development of a high-thermosensitive tilapia line giving an elevated male sex-ratio: Development of a selection program of tilapias tolerant to salinity showing good growth rates Development of isogenic homozygous tilapia lines 	<p>ANR REVALTER Multi-scale assessment of livestock development pathways in Vietnam" (Vietnam)</p> <p>ANR EPAD environmental efficiency of livestock systems</p> <p>Agreenskills</p> <p>1 fish geneticist assigned to WFC (since March 2013)</p> <p>Potentially XX Cirad scientists ???</p>
Expected future collaborations	Collaborations on milk chain approaches in India , Central America	

CRP Policy, institutions and Markets & French Institutions

Joint research themes	On going activities <i>Focal point : (Cirad)</i>	Co-investment (funded projects),
<p>Theme 1. Effective Policies and Strategic Investments</p> <p>Theme 2. Inclusive Governance and Institutions Subtheme</p> <p>Theme 3. Linking Small Producers to Markets</p>	<p>Participation to Africadryland report within HarvestChoice projects (IFPRI led)</p> <p>E-ATLAS SAKSS » (2012-2013) Mapping and geographical information systems on agriculture and food security. Countries: Senegal, Burkina Faso, Kenya, Ethiopia, Mozambique, Nigeria, Ghana, Benin</p>	<p>1 geographer/ economist assigned to IFPRI (as visiting Research Fellow)</p>

Expected future collaborations

Connection with African Drylands flagship study led by the World Bank, and which involves many partners including IFPRI and CIRAD.

Nepad Atlas

CRP-Roots, Tubers and Bananas - French partnership

Main recent features

Governance

- Member of Steering and Management Committees (F. Cote, R. Domaingue)
- One Cirad scientist (Dominique Dufour), based at Ciat, is leader of Theme 6 (Post harvest technologies...), since onset of RTB

Active participation in Workshops, contributions to projects and development of Flagships in 2013

- RTB priority setting for Musa – eg. proposal on sweet-acid AAB and ABB varieties on resistant to diseases
- Workshop on BBTV - proposal on training on viral diseases
- Seed degeneration
- Strategies for improving livelihoods through RTB postharvest technologies – proposal for concept notes on Flagships
- RTB Result based management Workshop - Flagships
- Contribution to development of several Flagships (May/June)

CRP-Roots, Tubers and Bananas - French partnership

Ongoing and linked activities

Analysis of *Musa* genomic diversity, origin and mode of formation of current cultivar, through re-sequencing strategies (A genome) with reference to the A genome reference sequence, and to improve breeding strategies

Characterization of the different types of resistance to black *sigatoka* in *Musa* GR, chromosome regions / genes involved.

Characterization of resistance in cassava against CBB developing epidemiological surveillance of *CBB*, *XW*, *Ralstonia* diseases

Understanding fruit quality parameters:

- physicochemical, functional and organoleptic properties in relation to consumer preferences;
- optimization process for reduction/limitation of anti-nutritional compounds;
- life cycle analysis of the environmental impacts of RTB processing

CRP-Roots, Tubers and Bananas - French partnership

Theme	Activity
Genetic Resources	Development of new markers in banana and in yam Characterization of potential novel BSV integrants, Novel approaches of distributing and evaluating diversity
Varieties with Higher, More Stable Yield and Added Value	Opportunities for NGS – exploitation of Musa A genome sequence; Breeding strategies for new sweet-acid AAB and ABB varieties resistant to <i>Fusarium wilts</i> and <i>Sigatoka</i> ; New strategies to generate broad and durable resistance in cassava; Validation of data on <i>eBSV</i> regulation (epigenetic and genetic), Distribution of improved hybrids
Priority Pests and Diseases	New strategies for detecting and controlling RTB bacterial diseases International training course for banana viruses diagnosis
Cropping systems	Evaluating specific service crops; spatial organization of multi-specific cropping systems based on plantain
Seed systems	Pest and disease free planting material : plantain, cassava, yam, sw.p
Postharvest Technologies...	Integrating post-harvest quality, consumer preference, equipment and value chain in case studies – Asia, Africa, Latin America

CRP-Roots, Tubers and Bananas - French partnership

Next steps ahead

Preparation of an annual collaboration plan during 2013, providing matching resources

- Short term and medium term action plans
- Co-construction with MC and for review by SC
- Human and financial resources involved
 - Cirad: 20 (+ 1 posted at Ciat), IRD: 8, INRA: 6, Vitropic: > 1

Contribution to construction of remaining Flagships and projects (eg. complementary funding)

Operational issues – strengthen and build better links between CG centres, French partners and its partners in the South

Engage in common reporting and evaluation of joint projects

CRP Water, Land & Ecosystems & French Institutions

research themes of shard interest	On going activities <i>Focal point : Dominique Rollin (Irstea)</i>	Expected future collaborations
<ul style="list-style-type: none"> Unlocking the potential of rainfed agriculture through integrated land and water management within social-ecological landscapes Pastoral systems Groundwater governance for poverty alleviation and livelihoods security Resource recovery from solid and liquid waste (recycling and reuse) Improved management of water and land resources in major agricultural river basins Improved ecosystem services and resilience 	<p>Partner of the Water & Food CP (Volta basin) V3 project</p> <p>Participation in the Ecosystem service and resilience group (ESSR)</p> <p>Individual Participation in the WLE Volta and Niger design workshop (Accra, May 2013)</p> <p>2 FP7 collaboration with IWMI (Eau4Food and Afromaison)</p> <p>French Partners :</p> <p>G-EAU (JRU Irstea, IRD, Cirad, Supagro, AgroParsiTech, CIHEAM-IAMM)</p> <p>RU Green (Cirad)</p>	<ul style="list-style-type: none"> Linkage with studies on irrigated system in Maghreb (CRP DS) Interest for collaboration collaborate on: <ul style="list-style-type: none"> ➤ ecological engineering to maintain and improve the agricultural and environmental functions of agro-ecosystems in relation with Global changes (JRT Eco&Sols) ➤ links between social and technical management of irrigation systems

Prioritary regions

1/Volta basin, 2/Limpopo –
3/ Nile, Mekong



Towards a CGIAR-CIRAD collaboration to enhance innovation processes and systems for achieving impact



Bernard Triomphe & Guy Faure (CIRAD)

Daniela alfaro (CGIAR Consortium)

2013 Annual Meeting, June 19th 2013.

General Objective

- To contribute towards improving the effectiveness of collaborative approaches designed to support agricultural innovation processes and systems in selected “pilot” sites throughout the developing world.

Specific objectives

- Learn from emblematic previous experiences about the “dos” and don’t” of existing approaches to innovation
- Strengthen the capacities of individuals and programs developed by CGIAR,CIRAD and their partners to engage effectively in innovation and achieve the desired impact
- Establish pilot sites in which improved collaborative approaches to innovation could be tested and assessed thoroughly.
- Formulate generic concrete recommendations at various scales for research, practice and policy.

Approach / Type of innovations

- Approach
 - Strengthening on-going programs being implemented by selected CRPs by considering relevant adjustments & changes in all phases of innovation development: from the design phase all the way to the large-scale implementation & dissemination of innovations.
- Type of innovation processes and systems:
 - Multiple dimensions of innovations (technical, organizational or institutional),
 - Multiple domains (production, processing, NRM, marketing, etc.)
 - Multiple scales (from local to global)
 - Multiple stakeholders: research, advisory services, farmers and farmers' organizations, education institutes, NGOs, private sector, governments, etc.

A 3-step approach

- Step 1 (June –Sept. 2013):
 - Develop a formal **concept note** and outline the **approach** to be used
- Step 2 (Sept 2013 - Spring 2014):
 - Develop a **full proposal**.
- Step 3 (from mid-2013 onwards, over 3-4 years):
 - **Consolidate funding** and **implement initial activities**