West Africa Agriculture Productivity Program

WAAPP / PPAAO
WEST AFRICA AGRICULTURAL PRODUCTIVITY PROGRAMME
PROGRAMME DE PRODUCTIVITE AGRICOLE EN AFRIQUE DE L'OUEST

Migration of the National Center of Specialization (NCoS) on dryland cereals to Regional Center of Excellence (RCE)

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GOUVERNEMENT
RÉPUBLIQUE DU SÉNÉGAL

THE WORLD BANK
IBRD • IDA | WORLD BANK GROUP


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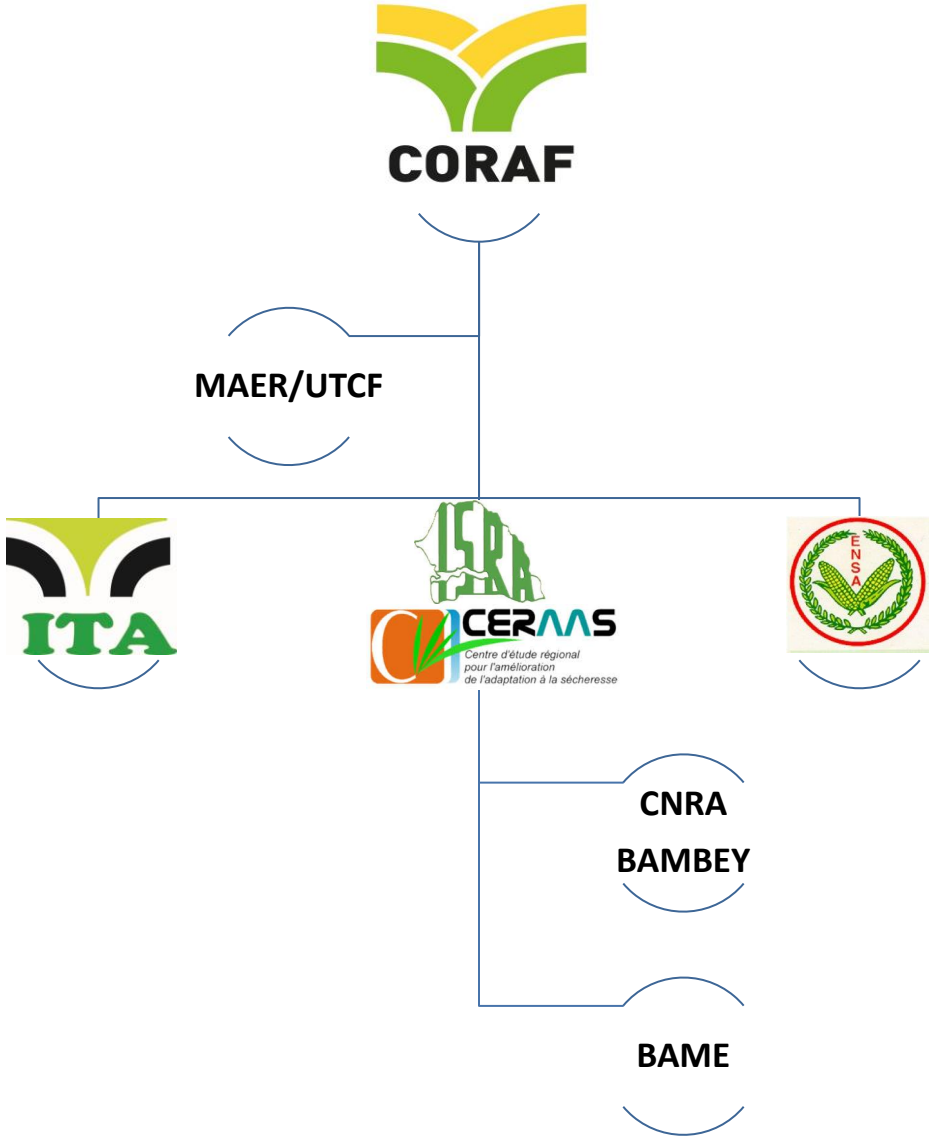
pour l'amélioration
de l'adaptation à la sécheresse


CORAF
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pour l'amélioration
de l'adaptation à la sécheresse
ENSA
CNRA
BAMBEY
BAME

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WE ARE ADDRESSING SDGs AND CONTRIBUTING TO THE *PLAN SENEGAL EMERGENT* (PSE)

MANDATE

Generation of knowledge and technologies to improving agricultural productivity in Senegal and the dryland countries of West Africa

MISSIONS

- ❑ Quality of research projects
- ❑ Partenership with CGIAR and ARI
- ❑ ISO Certification of the laboratories
- ❑ Capacity building of scientists, PhD and Master students
- ❑ Regional networking and research planning

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WE WORK TO IMPROVE DROUGHT ADAPTATION

- Physiological and molecular basis of crop responses to drought
- Characterization of the Target Populations of dry Environments
- Crop genetic diversity and breeding
- Socio-economic studies of the target crops value chains

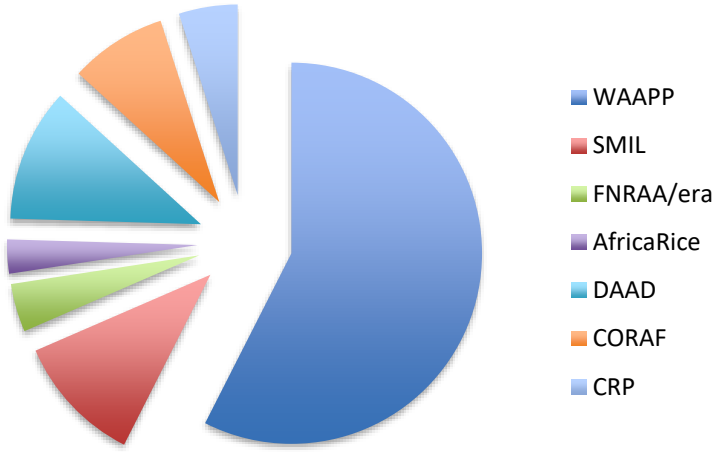
WE HAVE EXECUTED 31 PROJECTS UNDER 2A PHASE

CO-CONSTRUCTORS

- ❑ 84 researchers (54 PhD, 30 Master), Lab and field technicians
- ❑ Universities
- ❑ NARS and International research institutes
- ❑ Farmers organizations
- ❑ Extensions Services

CO-FUNDERS

- GCP_BMGF
- Kirkhouse
- UE (ANR, Agropolis)
- South Korean KOPIA
- German Cooperation DAAD
- USAID-FEED THE FUTURE Innovation Labs and ERA
- IFPRI
- Etc.



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WE RELEASED DROUGHT-ADAPTED, CLIMATE SMART TECHNOLOGIES

Crops	Technologies	Characteristics	Potential (t/ha)
Sorghum	2 varieties	Short cycle	4
Cowpea	5 varieties	Short cycle	2.4 – 3
Peanut	10 varieties	8 short cycle, 2 intermediate	2.5 – 3
Sesame	5 varieties	1 extra-short and 4 short cycle	1.4 – 2.3




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WE DEVELOPED ADMIXTURES TECHNOLOGIES

Crops	Technologies	Impact
Sorghum	Baking with mixed wheat and millet flour	20 – 30% of incorporation
Sorghum	Sorghum Malt	Increase the volume of the bread
Maize, millet	Mineral fertilization formula	Yield increase with good economical profitability

WE ARE HARNESSING BIODIVERSITY FOR SUSTAINALBLE PRODUCTIVITY ENHANCEMENT

Crops	Technologies	Impact
Maize, millet	Technical solution for manure conservation	50% yield increase compared to the traditional methods
Sorghum	Technical solution for cowpea and sorghum intercropping in recession conditions	17% increase in grain and haulm yield
Millet, fonio, cowpea	Wide collection of genetic ressources	Mining interesting alleles

WE RE-CONSTRUCT OUR SEED CAPITAL

SEEDS Production (G2 et G3) by ISRA 2018

Crop	Variety	Generation (pré base)	Production 2018 (kg)	Target PTS 2018 (%)	Stock Available kg (before 2018)
Sorgho (CSC et Hiv)	Darou	G2	858		
	Nguinth	G2	1 373		
	Faourou	G2	2 090		
	CE-180-33	G2	1 000		
	CE-180-33	G3	340		690
	Total Sorgho		**5 661**	**4 000 (141%)**	**690**
Mil (Hiv)	Souna 3	G2			166
	Thialack 2	G2			60
	Souna 3	G3	5 968		
	Total Mil		**5 968**	**4 000 (149%)**	**226**
Niébé (Hiv)	Yacine	G2	319		
	Mélakh	G3			720
	Total Niébé		**319**	**5 000 (6%)**	**720**

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SEEDS Production (G2 et G3) by ISRA 2018

Crop	Variety	Generation (pré base)	Production 2018 (kg)	Target PTS 2018 (%)	Stock Available kg (before 2018)
Arachide (CSC et Hiv)	Essamay	G2	4 556		31
	SRV1-19	G2	320		139
	73-9-11	G2	4 504		
	73-9-11	G3	434		
	73-33	G2			25
	73-33	G3	1 160		
	Sunugaal	G2	1 929		32
	55-33	G3	1 500		
	55-33	G2	819		
	Fleur 11	G2	1100		
	Jambaar	G2	2 765		76
	Rafeet Kar	G2	3 909		27
	Yaakar	G2	1 500		
	55-437	G3	200		
	78-936	G2	438		
	Tarou	G2	828		
	Tosset	G2	655		
	28-206	G2	3 305		
	Total Arachide		**29 922**	**75 000 (34%)**	**330**

WE HELP DEVELOP PROTOTYPES

- A 18-hole disc mechanized distribution system for sowing sesame
- An oil press to improved oil extraction for sesame
- 2 multifunctional prototypes of granulator (arraw, thiackry, couscous) for millet
- Threshing prototype for fonio

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WE SHARED TECHNOLOGIES

Peanut Bread flour (millet) Sorghum Cowpea

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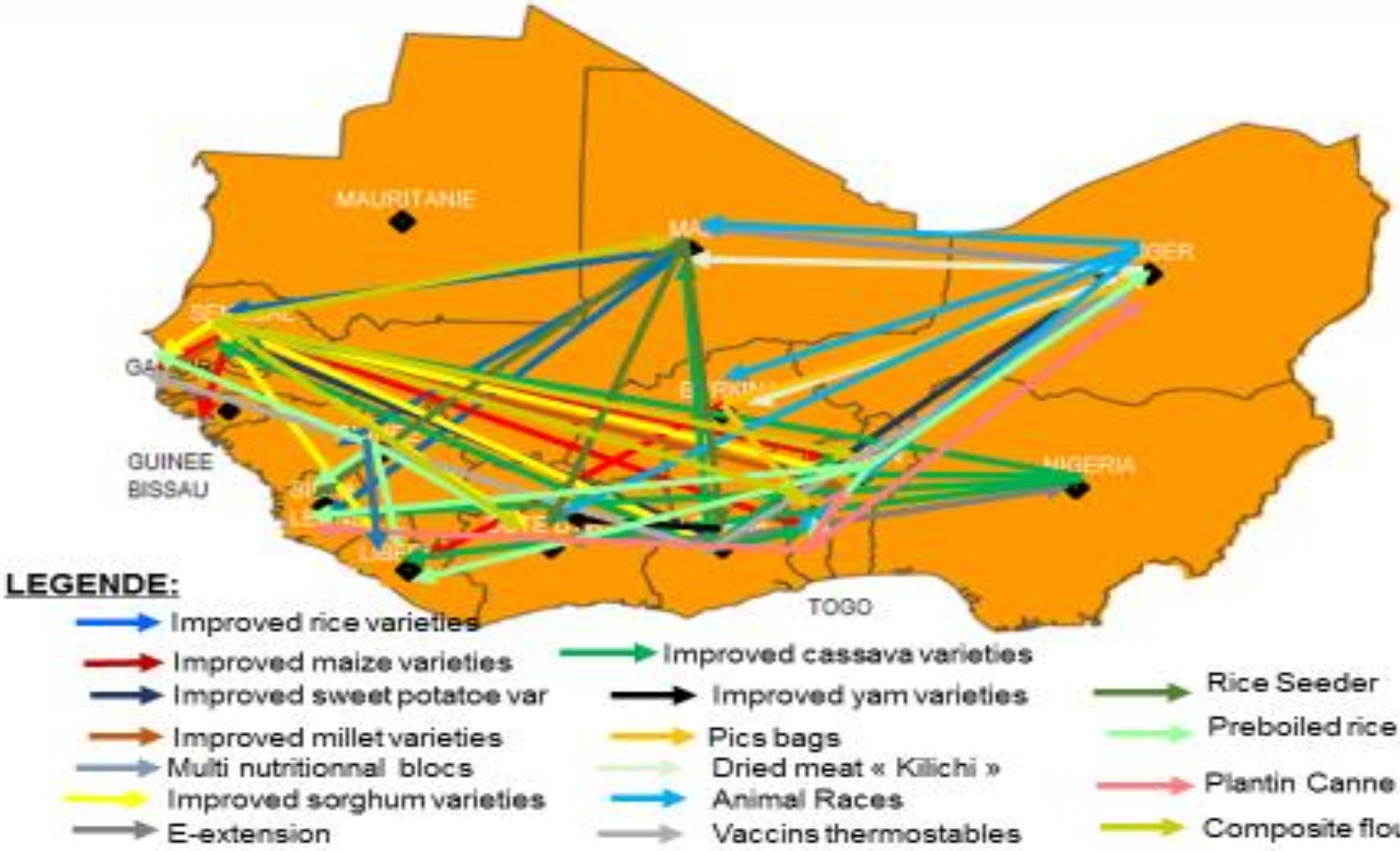
WE RECEIVED TECHNOLOGIES

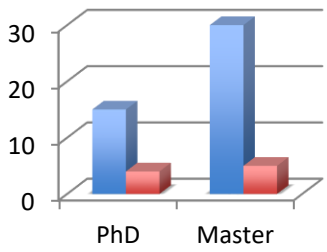
WAAPP boosting technology and innovation exchange and adoption

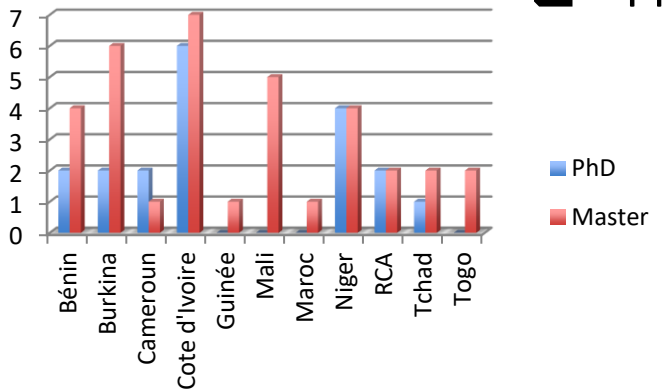


WE TRAINED/EMPOWERED NEXT GENERATION OF SCIENTISTS

DEGREE

- 107 PhD, 135 masters
- 43% Women
- DAAD Coorporation since 2002:
  - 29 PhD
  - 57 Master students
  - 12 African countries trained





SHORT-TERM REGIONAL TRAINING

- Molecular marker and their use in diversity analysis and breeding
- Physiology and crop modelling

2 MASTERS

- Seed technology
- Plant Health and protection

… and leaders - ALUMNI PhD

F. Hamidou
ICRISAT Niamey

N. Belko
U.Bobo Dioulasso

S. Bourou
Dir. Reg. IRAD

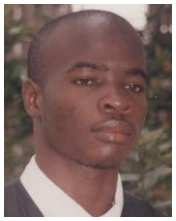
S. Salack
WASCAL, Ouaga

L. Tomnou
U. de Bangui

B. Ouattara
U. Ouaga

C. Dolou
U. JLOG
Cote d'Ivoire

S. Boureima
U. Maradi



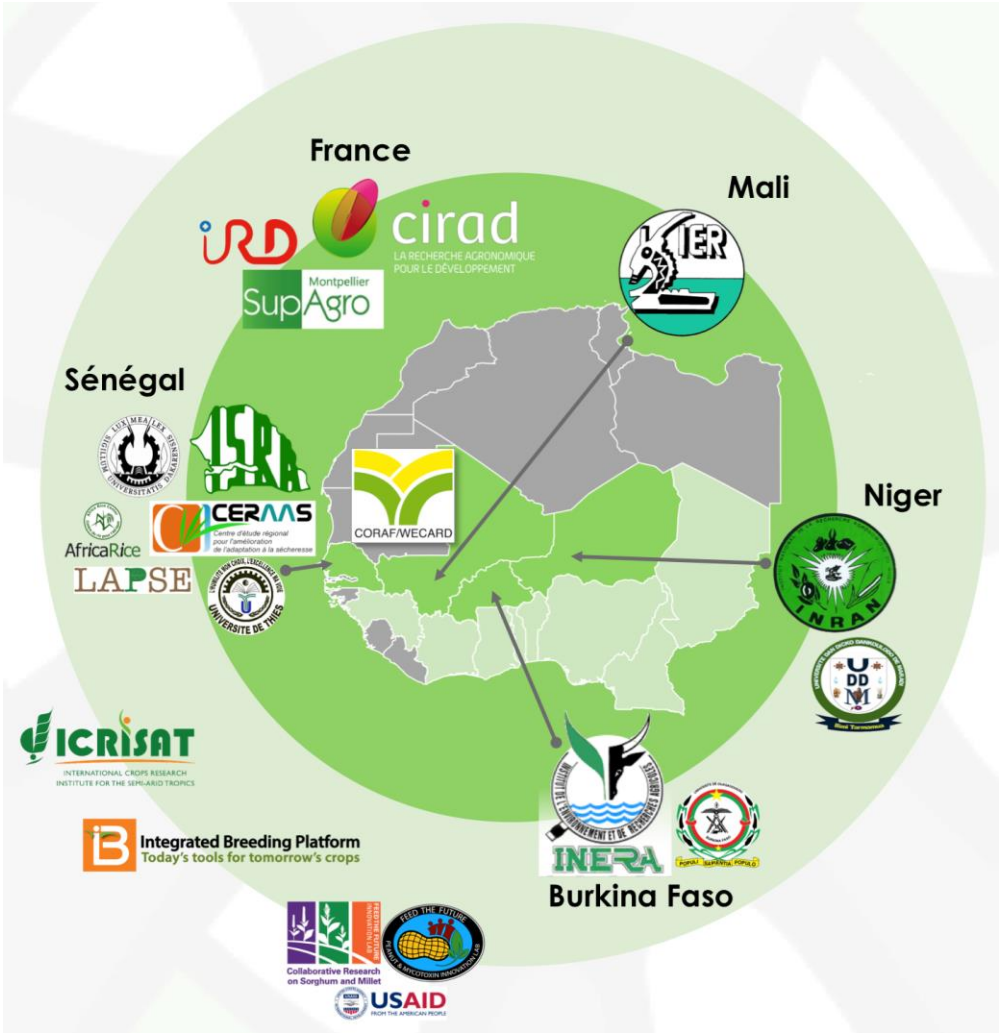
P. Kouakou
CIRAD, Bobo
Dioulasso

A. Siene
U. Korogo

H. Hissein
Dir. Agri. Tchad

P.M. Kouakou
INP-HB,
Yamoussoukro

WE PARTNER WITH NARS, IRD AND CIRAD



WE COLLABORATE WITH CGs

- Training of Scientists : Bassirou Sine (6 months), Marème Niang Belko (6 months), Hodo-Abalo Tossim (3 months)
- Research Activities
- Publications

nature biotechnology

OPEN

Pearl millet genome sequence provides a resource to improve agronomic traits in arid environments

Rajeev K Varshney[1,35], Chengcheng Shi[2,35], Mahendar Thudi[1], Cedric Mariac[3], Jason Wallace[4], Peng Qi[4], He Zhang[2], Yusheng Zhao[5], Xiyin Wang[4], Abhishek Rathore[1], Rakesh K Srivastava[1], Annapurna Chitikineni[1], Guangyi Fan[2], Prasad Bajaj[1], Somashekhar Punnuri[6], S K Gupta[1], Hao Wang[7], Yong Jiang[5], Marie Couderc[3], Mohan A V S K Katta[1], Dev R Paudel[8], K D Mungra[9], Wenbin Chen[2], Karen R Harris-Shultz[10], Vanika Garg[1], Neetin Desai[11,12], Dadakhalandar Doddamani[1], Ndjido Ardo Kane[13], Joann A Conner[14], Arindam Ghatak[11,15], Palak Chaturvedi[11], Sabarinath Subramaniam[16,17], Om Parkash Yadav[18], Cécile Berthouly-Salazar[3,19], Falalou Hamidou[20,21], Jianping Wang[8], Xinming Liang[2], Jérémy Clotault[3,22], Hari D Upadhyaya[1], Philippe Cubry[3], Bénédicte Rhoné[3,23], Mame Codou Gueye[13], Ramanjulu Sunkar[24], Christian Dupuy[25], Francesca Sparvoli[26], Shifeng Cheng[2], R S Mahala[27], Bharat Singh[6], Rattan S Yadav[28], Eric Lyons[16],

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WE PARTNER WITH USAID – FEED THE FUTURE

Collaborative Research on Sorghum and Millet

Legume Innovation Lab

FEED THE FUTURE PEANUT & MYCOTOXIN INNOVATION LAB

Collaborative Research on Sustainable Intensification

WE PARTNER WITH CHINA and WITH S. KOREA

Memorandum of Understanding

- ❑ CAAS.: 2 PhD hosted at OCRI
- ❑ HENAN Sesame Research Institute

Genomics Data 11 (2017) 122–124

Contents lists available at ScienceDirect

Genomics Data

journal homepage: www.elsevier.com/locate/gdata

Dynamic transcriptome landscape of sesame (*Sesamum indicum* L.) under progressive drought and after rewatering

Komivi Dossa [a,b,c], Donghua Li [a], Linhai Wang [a], Xiaomin Zheng [d], Jingyin Yu [a], Xin Wei [a], Daniel Fonceka [b,e], Diaga Diouf [c], Boshou Liao [a], Ndiaga Cisse [b], Xiurong Zhang [a,*]

[a] Oil Crops Research Institute of the Chinese Academy of Agricultural Sciences, Key Laboratory of Biology and Genetic Improvement of Oil Crops, Ministry of Agriculture, No. 2 Xudong 2nd Road, 430062 Wuhan, Hubei, China
[b] Centre d'Etudes Régional pour l'Amélioration de l'Adaptation à la Sécheresse (CERAAS), BP 3320 Route de Khombole, Thiès, Senegal
[c] Laboratoire Campus de Biotechnologies Végétales, Département de Biologie Végétale, Faculté des Sciences et Techniques, Université Cheikh Anta Diop, BP 5005, Dakar-Fann, 107000, Dakar, Senegal
[d] BGI, Shenzhen, China
[e] Centre de coopération internationale en recherche agronomique pour le développement (CIRAD), UMR AGAP, F-34398 Montpellier, France

RESEARCH ARTICLE Open Access

Insight into the AP2/ERF transcription factor superfamily in sesame and expression profiling of DREB subfamily under drought stress

Komivi Dossa[1,2,3], Xin Wei[1], Donghua Li[1], Daniel Fonceka[2,4], Yanxin Zhang[1], Linhai Wang[1], Jingyin Yu[1], Liao Boshou[1], Diaga Diouf[3], Ndiaga Cissé[2] and Xiurong Zhang[1*]

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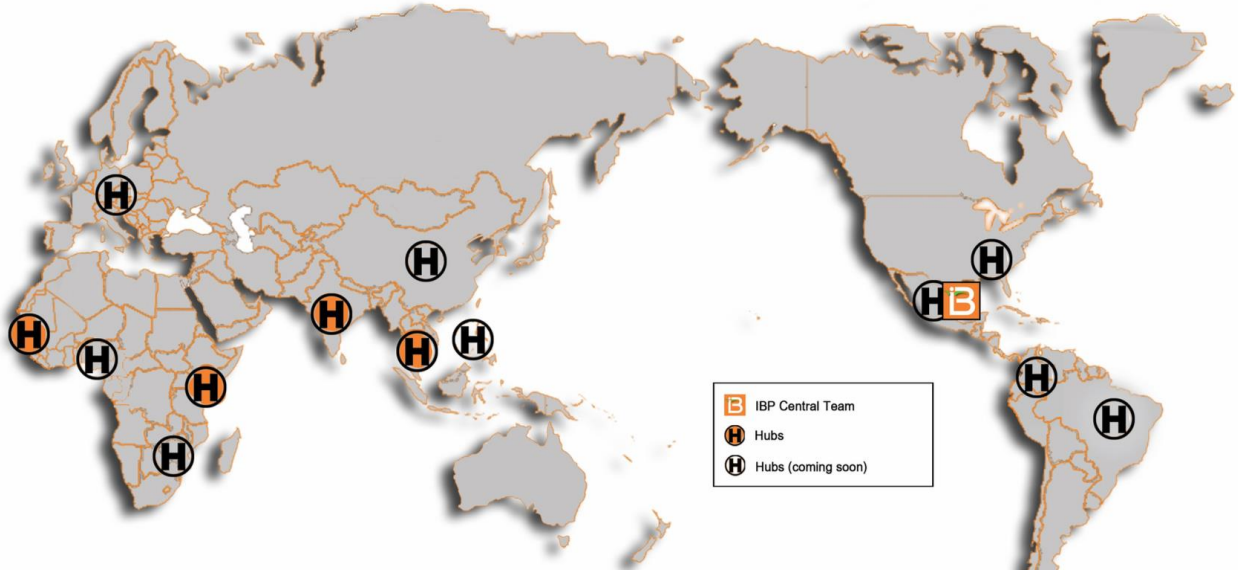
WE HOST THE Integrated Breeding Platform

Today's tools for tomorrow's crops

- CORAF hub for the IBP-CIMMYT
- Training on the use of the BMS to support breeding of dryland cereals and associated crops



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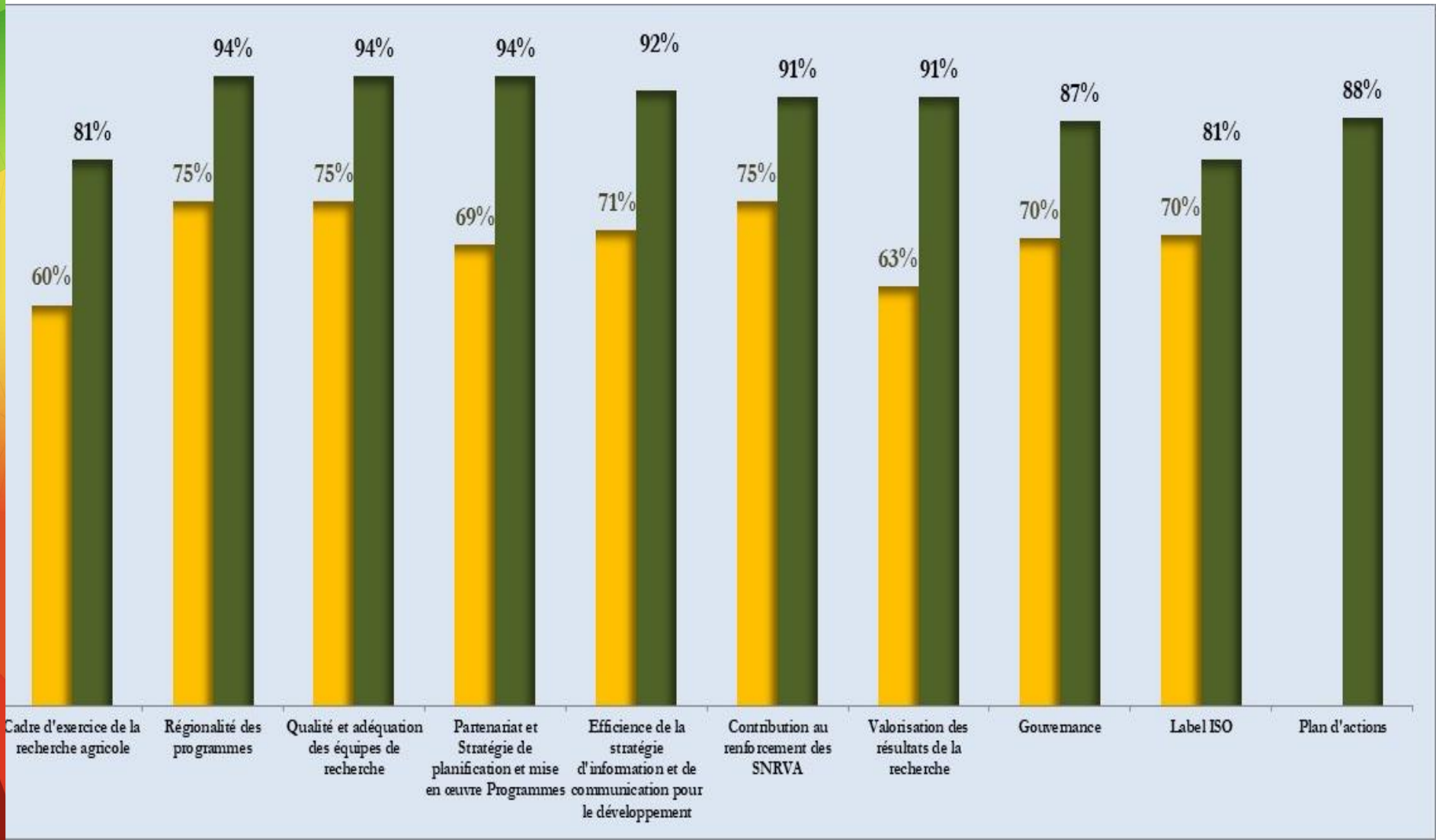
WE HAVE ACHIEVED THE ECOWAS CRITERIA OF EXCELLENCE



WE ARE PURSUING OUR RESEARCH AND TRAINING ACTIVITIES IN ALIGNMENT WITH NATIONAL POLITICS AND WITH SUPPORT OF FUNDERS

GOUVERNEMENT
RÉPUBLIQUE DU SÉNÉGAL

Les objectifs du PRACAS deuxième génération

1- Augmenter manière substantielle la production et la productivité des cultures vivrières et améliorer leurs performances économiques

	Rendement moyen (2013/2017) (Kg/ha)	Rendement moyen (2018/2022) (Kg/ha)	Production moyenne (2018/2022) (tonnes)
Mil	787	1 139	1 300 000
Sorgho	904	1 000	350 000
Maïs	1 445	2 166	650 000
Fonio	733	1 014	7 000
Niébé	420	731	180 000

New Program Seeks Lasting Changes to Agriculture System of West and Central Africa

FEED THE FUTURE
The U.S. Government's Global Hunger & Food Security Initiative

CEDEAO ECOWAS

CORAF

IFAD
INTERNATIONAL FUND FOR AGRICULTURAL DEVELOPMENT

THE ROYAL SOCIETY

BILL & MELINDA GATES foundation

ISRA

CERAAS
Centre d'étude régional pour l'amélioration de l'adaptation à la sécheresse

WE ENVISION TO IMPACTING FURTHER LIVELIHOOD OF POPULATIONS LIVING UNDER DRY AREAS

THANKS FOR YOUR ATTENTION