



AfricaRice



Report of the 7th Biennial Meeting of the National
Experts Committee (NEC VII)
Cotonou, Republic of Benin
13–5 September 2010

GRiSP and Revitalization of Task Forces

Collaboration between Africa Rice Center (AfricaRice) and the National Agricultural Research Systems (NARS) of Member Countries

Biennial Africa Rice Center (AfricaRice) and National Experts
Committee Meeting Report No. 7

About Africa Rice Center (AfricaRice)

The Africa Rice Center (AfricaRice) is a leading pan-African research organization working to contribute to poverty alleviation and food security in Africa through research, development and partnership activities. It is one of the 15 international agricultural research Centers supported by the Consultative Group on International Agricultural Research (CGIAR). It is also an autonomous intergovernmental research association of African member countries.

The Center was created in 1971 by 11 African countries. Today its membership comprises 24 countries, covering West, Central, East and North African regions, namely Benin, Burkina Faso, Cameroon, Central African Republic, Chad, Côte d'Ivoire, Democratic Republic of Congo, Egypt, Gabon, the Gambia, Ghana, Guinea, Guinea Bissau, Liberia, Madagascar, Mali, Mauritania, Niger, Nigeria, Republic of Congo, Senegal, Sierra Leone, Togo and Uganda.

AfricaRice's temporary headquarters is based in Cotonou, Benin; research staff are also based in Senegal, Nigeria, Tanzania and Côte d'Ivoire.

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Report of the 7th Biennial Meeting of the National Experts Committee (NEC VII) Cotonou, Benin 13–15 September 2010

1. Introduction

The 7th Biennial meeting of the AfricaRice National Experts Committee (NEC VII) was held from 13 to 15 September 2010 in Cotonou, Benin, and attended by the Directors General of the National Agricultural Research Systems (NARS) or their representatives from Benin, Burkina Faso, Côte d'Ivoire, Congo, Egypt, Gabon, The Gambia, Ghana, Guinea, Guinea Bissau, Liberia, Madagascar, Mali, Mauritania, Niger, Nigeria, Uganda, RCA, RDC, Senegal, Sierra Leone, Chad, and Togo. Cameroon was not represented. The West and Central African Council for Agricultural Research and Development (CORAF/WECARD) and the Rice Farmers' Consultative Council of Benin affiliated to ROPPA attended as observers.

2. Synthesis report, main conclusions and recommendations

2.1 Opening Ceremony

The Deputy Director General (DDG) of the National Agricultural Research Institute (NARI) of The Gambia, Dr. Mustapha Ceesay, chaired the opening of the NEC VII meeting and gave the opening address in his capacity as representative of the current Chair of NEC, Dr. Babou Jobe, the Director General of NARI-The Gambia. In his opening address, he thanked AfricaRice for hosting the biennial NEC meeting and emphasized that such a gathering of NARS Directors General made it possible to assess the Center's achievements and the constraints encountered in contributing to achieving the Millennium Development Goals. The NARI DDG congratulated the AfricaRice DG on the renewal of his mandate at the Head of the institution for a second term and added that the Center's visibility in The Gambia has been greatly enhanced by the DG's courtesy call on the Gambian President, His Excellency Prof. Dr. Alhaji Yahya Jammeh, at State House in January 2009.

The NARI DDG praised the AfricaRice DG for a very successful first term at the Center, which witnessed i) the strong and convincing advocacy role the Center has played in pushing for rice-based food security on the continent, ii) the Center's contribution in assisting in seed production in the member states, iii) the Center's contribution to capacity building of the NARS with the launch of the Post Master's program in

two countries to be scaled out to other countries. In concluding his address, Dr. Ceesay called for the continued strengthening of the privileged partnership between AfricaRice and the NARS of member states and wished all the participants very fruitful deliberations.

2.2 Agenda adoption and election of rapporteurs

The draft program was amended as attached in Appendix 1. It was adopted unanimously thereafter. Mali and Cameroun were appointed rapporteurs for the meeting.

2.3 Highlights of main activities presented by AfricaRice DG

The DG of AfricaRice, Dr. Papa Seck, in his presentation of the Center's main activities since the last NEC meeting reiterated the importance of NEC as a consultative body which provides a platform to facilitate the exchange and sharing of information on the research and development activities of AfricaRice and its NARS members. He proceeded to highlight 14 main achievements of the Center over the two-year period that had elapsed, as follows:

- i) The admission of Madagascar as AfricaRice's 24th member state;
- ii) The provision and use of AfricaRice technologies and services by at least 34 countries in Africa, which enhances the pan-African dimension of the organization;
- iii) The ranking of the Center as Outstanding by the World Bank in the annual performance measurement exercise (PMI) of CG Centers based on indicators such as, the quality, relevance and impact of research results; the Center's financial and institutional health, the number of and stakeholders' perceptions. AfricaRice was one of only four CGIAR Centers from a total of 15 to be rated Outstanding in the 2010 PMIs;
- iv) Endorsement by the Consortium Board of the Global Rice Science Partnership (GRiSP) as the first CGIAR Research Program (CRP). GRiSP is being implemented by three CG Centers, the International Rice Research Institute (IRRI), Africa Rice Center (AfricaRice) and the International Center for Tropical Agriculture (CIAT);
- v) The increasing international recognition of AfricaRice with the Center's scientists winning two out of seven CGIAR Science Awards at the Global Conference on Agricultural Research and Development (GCARD) held in Montpellier, France, in March 2010. Dr. Jonne Rodenburg, AfricaRice Weed Scientist was presented the 2009 CGIAR Outstanding Promising Young Scientist Award and Dr. Paul Van Mele, Program Leader – Learning & Innovation Systems, the Outstanding Communication Award;

- vi) The DG of AfricaRice was invited to chair the 2nd Science Week and the Ministerial Round Table of CORAF/WECARD held in Cotonou, Benin, in May 2010;
- vii) The DG was invited to speak at the 5th FARA General Assembly in Ouagadougou, Burkina Faso, in July 2010 on the issue of agricultural research in Africa spokesperson for FARA's international scientific partners;
- viii) A Memorandum of Understanding (MoU) is being finalized with the African Union Commission, in which AfricaRice will be recognized as a Center of Excellence in rice research and development by the African Union
- ix) The successful organization of the 2nd Africa Rice Congress in Bamako, Mali, in March 2010 under the chief patronage of the Prime Minister of Mali, H. E. Modibo Sidibé, representing the Malian President Amadou Toumani Touré and which was attended by more than 500 participants;
- x) Advocacy at the highest levels of national governments with the Director General meeting the President of The Gambia, the Prime Minister and Agriculture Minister of Gabon, and the Ethiopian, Rwandan, Mozambican Liberian and Burkinabe Ministers;
- xi) Seeds of improved rice varieties were distributed in 20 countries covered by the Emergency Rice project;
- xii) The DG-AfricaRice participated in strategic meetings (e.g. Governing Board of the African Development Bank; the ECOWAS Round Table on funding of the agricultural sector; and the strategic orientation Board of Agreenium, France) to advocate for giving increased importance and investments to agriculture in general and rice in particular;
- xiii) Strengthening of the AfricaRice-NARS partnership with an increase from 43% (2007) to 67% (2009) in the percentage of scientific publications with NARS;
- xiv) Greater ownership of the Center by member states with increased payment of contributions since 2007. The average annual member states' contribution has increased 30 fold compared to the period 2001–2006.

Summary of Discussions

A series of questions and comments by the NARS DGs ensued in reaction to the AfricaRice-DG's presentation. There was overall concurrence on three issues: i) the significant strengthening of the partnership between AfricaRice, the NARS and regional/sub-regional organizations such as CORAF/WECARD in the past couple of years, ii) that AfricaRice's strong advocacy in support of increasing African rice production has made an important contribution towards the visibility of rice as a strategic commodity on the continent, and iii) the potential of the lowlands for rice production needs to be better exploited.

The NARS DGs made a series of observations for AfricaRice's review as follows:

- i) That the value chain approach should be followed to reinforce AfricaRice's partnership with its stakeholders;
- ii) That GRiSP should focus on partnership with the NARS;
- iii) That there is a need for more training of technicians from the NARS, especially on seed production, post-harvest rice processing and marketing as result of the increasing demand for high quality seed and as the emerging issue will likely be how best to market African rice with increasing rice production in many African countries;
- iv) That the AfricaRice Task Forces need to be revitalized as they serve in focusing AfricaRice and NARS scientists on partnership-based research;
- v) That the impact of climate change on rice production in Africa be further investigated;
- vi) That there is need for the development of varietal catalogues and for specific varieties to be recommended per ecosystem per country.

In terms of future perspectives, NEC members suggested the listing of potential challenges that research and development in Africa would be confronted with in the future.

2.4. Status of activities carried out at AfricaRice headquarters in Côte d'Ivoire

The AfricaRice representative in Côte d'Ivoire, Dr Sitapha Diatta, presented the activities carried out at the AfricaRice headquarters in Côte d'Ivoire. His report highlighted the production of seed at Mbe and the state of the infrastructure at headquarters, which were well maintained. He also mentioned that proactive partnerships were being maintained with national agricultural research systems of the country (i.e., CNRA, PNR, ANADER) and NGOs in the towns of Divo and Danané.

According to Dr. Diatta, the security situation in Bouaké is improving with all banks currently open for business. He noted that the country has paid its contribution for 2010.

Summary of discussions

The discussion of Dr. Diatta's presentation resulted in the NEC members suggesting that:

- i) AfricaRice should sign a Memorandum of Understanding with member countries in the area of seed production and exchange, and for seed to be distributed free by Governments in cases of emergency and sold during normal non-crisis periods;

- ii) A meeting be organized so that concrete suggestions could be made to establish viable and sustainable seed systems, subsidies and institutionalization of seed systems by building on the experience of other countries.
- iii) That the possibility of an eventual return to Côte d'Ivoire be examined, that relevant bodies previously based in Cote d'Ivoire are consulted (e.g. African Development Bank, World Bank and United Nations) and the outcomes presented to the AfricaRice Council of Ministers for consideration.

2.5 Global Rice Science Partnership

Dr. Marco Wopereis, Deputy Director General – Research for Development, presented the Global Rice Science Partnership (GRiSP), which is the first CGIAR Research Program approved by the Consortium. He described the GRiSP as a partnership among three CGIAR Centers, namely the International Rice Research Institute (IRRI), Africa Rice Center (AfricaRice), and the International Center for Tropical Agriculture (CIAT), and an evolving alliance of numerous international agricultural research organizations –(e.g. CIRAD, IRD, JIRCAS – and, advanced research institutes) including NARS partners, private sector, civil society organizations, farmer's associations, and sub-regional and regional organizations.

According to the DDG-R, GRiSP has three main objectives: 1) to improve rice productivity and value for the poor in the context of a changing climate through the development of improved varieties and other technologies along the values chain; 2) to foster sustainable rice-based production systems; 3) and to improve the efficiency and equity of the rice sector through better and more accessible information. Dr Wopereis added that GRiSP will affect the lives of one billion people involved in the growing and processing of rice worldwide and another one billion that depend on rice for their staple food. Partnerships will be the main driving force behind GRiSP.

Dr Wopereis also presented an overview of how GRiSP will interface with the various task forces that were being developed. The task force mechanism is being revitalized to build critical mass in rice research in Africa. Through the task forces, scientists from AfricaRice and the NARS will work together on specific scientific themes.

Summary of Discussions

The NARS DGs during the question and answer session requested clarification on how GRiSP would work with the NARS. The DDG-R explained that the GRiSP partnership with NARS Would mean that all projects would be carried out in close collaboration with NARS. Tasks would be assigned on the basis of comparative advantage. A priority setting exercise will be carried out jointly with the NARS partners. GRiSP will also offer graduate training and internships to NARS partners.

Memoranda of Understanding (MoU) will be signed with implementing NARS partners for accountability purposes. A generic MoU between AfricaRice and its NARS partners would contain the Terms of Reference, the amount of funds involved, the scientists implementing the activities and those providing backstopping and supervision.

2.6. Reports of the member states

For the first time ever, the NARS DGs were requested to make 15-minute presentations on the status of rice research and development in their various countries. The DGs' presentations i) provided information and updates on the ongoing rice research activities in the countries and their priorities, ii) allowed for a better definition of the role of AfricaRice in rice research and development in the member states and iii) provided information on how the NARS could contribute to the Global Rice Science Partnership (GRiSP).

Presentations from 22 countries (Benin, Burkina Faso, Central African Republic (CAR), Chad, Côte d'Ivoire, Democratic Republic of Congo (DRC), Egypt, Gabon, Ghana, Guinea, Guinea Bissau, Liberia, Madagascar, Mali, Mauritania, Niger, Nigeria, Senegal, Sierra Leone, The Gambia, Togo, and Uganda) followed a set of prepared guidelines and provided information on the general rice research and development situation in the member countries, the status of research funding, the size and structure of rice research in the country, rice research priorities, rice varieties released, impact of the partnership with AfricaRice and the major achievements.

Summary of Discussions

The specific rice R & D situation in some countries were worth highlighting as follows:

- i) Improved parboiling techniques have helped reduce the amount of broken grains and thereby increase the value and quality of rice in Benin;
- ii) Due to structural reforms in the Republic of Congo, there has been a focus on privatization and this has led to the dismantling of the seed-sector infrastructure. The situation was worsened by the civil war and this has led to increased rice imports;
- iii) Egypt has recorded average rice yields of 9.9 tonnes per hectare through the use of high-yielding varieties. The country has a strong pool of scientific manpower – breeders, scientists and extension workers, who collaborate closely with farmers. Egypt has organized training of researchers from other African countries and is much involved with international collaboration, especially hybrid rice development in collaboration with China. Egypt's major problems have been the decreasing land for agriculture and diseases.

- iv) In Senegal, rice has been declared as a strategic crop and the President has initiated a nationwide campaign (GOANA) to increase food production;
- v) Shortage of experts, declining soil fertility, inadequate agricultural infrastructure and minimal access to finance are the major challenges in Sierra Leone;
- vi) In Uganda, there is little mechanization and manual farm operations prevent the growth of the agricultural sector. Milling machines are of poor quality resulting in loss of value for the growers, and weeds such as Striga cause serious damage every year;
- vii) The challenge in The Gambia is to develop the agri-businesses sector and involve the private sector in the rice value chain;
- viii) In the Democratic Republic of Congo, rice imports have been demotivating farmers and as results the yields recorded were low, between 1.5 and 2.0 tonnes per hectare. There is potential for increasing production and quality with the availability of land suitable for rice cultivation.
- ix) Togo, which imports half of its rice consumption currently, has expanses of lowlands that can be utilized. There is a flourishing market for local rice in Togo;
- x) In Ghana, the Government has increased mechanization across the rice value chain and increased the area under rice cultivation. The challenges are inadequate funding and staffing.

The conclusions that could be drawn from the presentations of most of the member countries were that there was i) a shortage of trained manpower for rice research in the national programs, ii) a shortage of good quality seed of improved varieties, iii) a shortage of post-harvest facilities, iv) a lack of mechanization, v) inadequate funding and vi) poor or inexistent marketing infrastructure.

The NARS DGs suggested the following actions to respond to the above observations:

- The establishment of a Seed Task Force by AfricaRice to ensure the production of good quality rice seed and the formulation of policies on pricing, distribution and regulation;
- Studies to be conducted on the impact of subsidies on rice production in member countries to see whether they have positive or negative effects;
- Lowland varieties and lowland rice production should be promoted.

2.7 Decisions and recommendations

Recommendation 1: Achievements by AfricaRice DG and his team

The NEC is impressed by the many and significant achievements of the AfricaRice DG and his team during his first term, namely:

- i) the geographical expansion of the Center's membership (24 member countries in 2010);
- ii) the increase in the number of publications and joint projects with NARS;
- iii) the Outstanding rating from the World Bank based on scientific, administrative and financial indicators;
- iv) the development of a CG Research Program – the Global Rice Science Partnership (GRiSP) – which is the only CRP approved by the CGIAR Consortium Board;
- v) the successful organization of the 2nd Africa Rice Congress in Bamako, Mali,
- vi) the strong advocacy on behalf of member countries and AfricaRice in international and local fora, and various meetings and;
- vii) the excellent financial health of the Center,

The NEC encourages

The Director General and his staff to do everything possible to continue to maintain this path of excellence.

Recommendation 2: Global Rice Science Partnership (GRiSP)

The NEC notes with satisfaction the approval by the Consortium Board of the CG Research Program called the Global Rice Science Partnership (GRiSP),

It recommends that:

The Center focuses now on the elaboration of a Strategic Plan for the next 10 years (2011–2020).

Recommendation 3: Building research and development capacity in member countries

Due to the weak research and development capacity of member countries,

The NEC urges AfricaRice to revive the rice Task Force mechanism in order to build collaboration in research for development on the major thematic areas of the rice

sector, based on the principles of sustainability, building critical mass, experience sharing and the ownership of knowledge by the national agricultural research systems.

Recommendation 4: Strengthening linkages with Regional Economic Communities

The NEC recommends that AfricaRice i) collaborates more with Regional Economic Communities such as ECOWAS in order to ensure price stability, and harmonization of seed legislation, ii) register the products of the new Breeding Task Force (ARICA lines) in the regional varietal catalogues, and iii) develops regional rice development strategies.

Recommendation 5: AfricaRice Headquarters in M'be

The permanent Headquarters of AfricaRice remains M'be, Cote d'Ivoire, where the infrastructure is well maintained and intact.

The NEC notes the positive evolution of the socio-political situation in Côte d'Ivoire and encourages the team in place to continue to maintain the upkeep of the headquarters.

Recommendation 6: Joining the Temperate Rice Research Consortium (TRRC)

The NEC thanks Egypt for strongly pointing out the importance of TRRC in terms of rice research.

The NEC recommends that AfricaRice joins the Temperate Rice Research Consortium (TRRC).

Recommendation 7: Reinforcement of partnership with Egypt

The NEC appreciates the performance of Egypt in irrigated rice research and recommends that AfricaRice and Egypt prepare a research and training project proposal to be submitted to the Islamic Bank for Development or other donors.

The objective of this project is to bring together expertise from Egypt and AfricaRice in irrigated rice systems to bridge the important yield gap and face the challenges of climate change in Africa. AfricaRice will be handling facilitation of NARS training in Egypt.

Recommendation 8: Post-harvest Technologies and value chains

The NEC notes with satisfaction the work achieved in the area of post-harvest technologies and value chain, and recommends that AfricaRice reinforces advocacy for rice, and also partnerships with all stakeholders along the value chain in order to contribute to achieving the Millennium Development Goals.

Recommendation 9: Project proposal to CIDA

Having taken note of the regional project proposal “Enhancing food security in Africa through the improvement of rice post-harvest handling, marketing and the development of new rice-based products” submitted to the Canadian International Development Agency (CIDA) and covering Cameroon, The Gambia, Ghana, Mali, Nigeria, Senegal, Sierra Leone and Uganda;

The NEC commends this initiative by AfricaRice and encourages the Center to intensify its efforts in resource mobilization to improve post-harvest technologies and practices, and develop the rice sector value chain.

Recommendation 10: Integration of the gene banks of the CGIAR under the Convention on Biological Diversity (CBD)

The NEC is concerned with the expansion of the CBD which could result in the inclusion of materials that come under the International Treaty on Genetic Resources for Food and Agriculture under the CBD. This would be a bottleneck for genetic resource exchange between research institutions.

And recommends:

That AfricaRice member countries initiate advocacy at the level of their Ministries of Agriculture and Environment to make sure that the African representatives participating in the CBD negotiations are well informed of the treaty’s current benefits to African agriculture, and the need for African countries to make the most of these spin-offs.

Recommendation 11: Recognition of the Contribution of NARS to the development of research products

The NEC approves the revitalization of the Task Force mechanisms and recommends that recognition and credit be given to the NARS involved in the development of rice varieties.

Recommendation 12: Strengthening of the rice sector in the member countries

The NEC notes that since the 2008 food crisis, most member states have realized the importance of local rice production. Therefore, each country has developed national strategies for sustainable rice production, which could lead to decreased dependence on rice imports.

The NEC encourages countries to implement these strategies fully and recommends that member countries support rice research for development and training to reach their strategic objectives.

Vote of Thanks

The NEC expresses its sincere thanks to the Government and the people of Benin for the warm and fraternal welcome as well as the hospitality extended to all participants. Thanks are also due to the Government of Cote d'Ivoire for preserving the integrity of the AfricaRice Headquarters in M'be despite the Ivorian crisis.

3. Closing ceremony

Dr. Mustapha Ceesay closed the 7th NEC on behalf of the DG of NARI, Chair of NEC. He praised the highly participative meeting and called for enhanced capacity building of rice scientists, farmers and extension workers in Africa. He warmly welcomed the revitalization of the task force mechanism as well as the approval of GRiSP as they could provide avenues to effectively and better channel AfricaRice's capacity building efforts.

ANNEX 1

Provisional agenda and work program

Monday 13 September 2010

8:00 – 8:30	Arrival and Registration
8:30 – 8:45	Welcome Remarks, Chair of NEC
8:45 – 9:00	Adoption of Agenda and Work Program and Election of Rapporteurs
9:00 – 10:00	Highlight of main activities (Sept 2009 – Aug 2010) – Director General, AfricaRice
10:00 – 11:00	Discussion
11:00 – 11:30	Coffee Break & Group Photo
11:30 – 12:00	Update on AfricaRice headquarters, Côte d'Ivoire - Sitapha Diatta, AfricaRice Representative
12:00 – 12:30	Discussion
12:30 – 2:00	Lunch
2:00 – 3:00	Global Rice Science Partnership (GRiSP) & AfricaRice Task Forces - Marco Wopereis, DDG-R
3:00 – 3:30	Discussion

Reports from Member States (15 mins/country)

3:30 – 4:30	Benin Burkina Cameroon Central Africa Republic
4:30 – 5:00	Discussion
5:00	End of Day 1

Tuesday 14 September 2010

Reports from Member States (cont.) 15 mins/country

8:30 – 9:30	Congo Brazzaville Democratic Republic of Congo Côte d'Ivoire Egypt
9:30 – 10:00	Discussion
10:00 – 11:00	Gabon Gambia Ghana Guinea
11:00 – 11:30	Coffee Break
11:30 – 12:00	Discussion
12:00 – 1:00	Guinea-Bissau Liberia Madagascar Mali
1:00 – 2:30	Lunch
2:30 – 3:00	Discussion
3:00 – 4:00	Mauritania Niger Nigeria Senegal
4:00 – 4:30	Discussion
4:30 – 5:30	Sierra Leone Chad Togo Uganda
5:30 – 6:00	Discussion
6:00	End of Day 2

Wednesday 15 September 2010

8:30 – 9:30	Presentation of Synthesis Report (Rapporteurs)
9:30 – 10:00	Closing Remarks (AfricaRice DG, Chair of NEC)
10:00	End of NEC VII

ANNEX 2

Report of AfricaRice DG - Highlights of main activities

I. Major achievements and activities

This report will cover major achievements and activities that have taken place after the 27th Ordinary Session of the Council of Ministers, held in September 2009 in Lome, Togo.

1.1 AfricaRice ranked “Outstanding” for the first time in World Bank evaluation

As part of its annual evaluation of 15 international Centers belonging to CGIAR based on performance-linked measurements, the World Bank announced this year that it has rated AfricaRice as ‘Outstanding,’ in the 2009 Performance Measurement exercise. This is the highest of three performance categories. This year four centers (including AfricaRice) – out of 15 centers – are outstanding.

The assessment was based on a number of criteria that included results, impacts, quality and relevance of the Center’s research and publications, financial and institutional health, and stakeholder perceptions.

The Performance Measurement System (PMS) is a regular annual feature in the CGIAR monitoring and evaluation system, which provides Centers with a barometer to better gauge their own performance and demonstrate accountability and transparency to their stakeholders. The World Bank uses the performance measurement data as a guideline for allocating part of its funding to the Centers.

Warmly congratulating the AfricaRice staff for their dedication and performance, Director General said, “This is a great achievement, but we consider this as just the beginning of our journey towards our goal. So we cannot rest on our laurels.” He expressed his deep appreciation to all the donors and R&D partners of AfricaRice, particularly the national programs, which work hand in hand with the Center to boost rice production and rural development in Africa.

The Director General highlighted the following underlying factors for this achievement:

- Developing a true enterprise culture at the Center
- Streamlining our research structure and decentralization of our activities
- Using a new type of advocacy for policy-makers
- Strengthening ownership by NARS

- Applying rigorous control measures
- Ensuring professional planning for all staff categories
- Putting in place a strategy for increased visibility
- Strengthening internal capacity for successful proposal development
- Ensuring regular meetings of AfricaRice overseeing/consultative bodies (the Board of Trustees, Council of Ministers and National Experts Committee) and implementation of their decisions/resolutions

1. 2 Rice megaprogram « GRiSP » approved by CGIAR Consortium Board

The “Global Rice Science Partnership (GRiSP) is the only megaprogram to have been approved until now by the CGIAR Consortium Board. Developed by AfricaRice, CIAT and IRRI, GRiSP is a comprehensive strategy on rice based systems aligning international rice research worldwide. Its mission is to reduce poverty and hunger, improve human health and nutrition, and enhance ecosystem resilience through high-quality international rice research, partnership, and leadership. All research within GRiSP related to Africa will be coordinated by AfricaRice. GRiSP is expected to be fully functional in 2011.

1.3 Geographic expansion

According to our analysis, our technologies and services are benefiting at least 34 African countries, including non-member States. In several of these non-member States, AfricaRice scientists are already working in partnership and some of these States have either formalized their partnership by becoming member States or are in the process of doing so. In 2010, Madagascar joined AfricaRice. With the joining of Madagascar, the number of AfricaRice member States has gone up to 24.

Madagascar is one of the biggest per capita consumers of rice in the world. Rice provides over 50% of calories consumed in the country and rice production involves about 80% of rural households. However, the country is desperate to boost production as it is importing about 200,000 tons of rice every year to meet its growing demand.

Madagascar is already benefiting greatly from AfricaRice technologies, particularly its Participatory Learning and Action Research (PLAR) methodology. We have recent reports that in northern Madagascar through the PLAR-IRM approach, rice yields doubled in 4 years and the PLAR method and learning tools has reached at least 40,000 farmers. The Aga Khan Foundation has supported the publication of a special edition of the PLAR manuals targeted to Madagascar.



Map of AfricaRice member States

In December 2009, the Government of Madagascar sent a high-level delegation comprising the Permanent Secretary of Ministry of Agriculture and the Director of Research of the national program (FOFIFA) accompanied by a JICA representative to explore the possibilities of collaboration on rice. The delegation appreciated the extensive discussion with AfricaRice Management and scientists. Two weeks later the Ministry of Agriculture sent a formal request for joining AfricaRice. This application was sent to the member States and positive responses were received. The Government of Madagascar subsequently conveyed its deep appreciation to AfricaRice Council of Ministers for accepting its application to join the Center.

Warmly welcoming the new member State, the Director General said that the Center has already been working closely with the country. The Minister of Agriculture invited the Director General to attend a seed donation ceremony as part of the Japan-funded AfricaRice Emergency Rice Initiative. This ceremony was subsequently attended by a high-level delegation from AfricaRice representing the Director General.

1.4 Increase in recovery of membership contribution

For years, AfricaRice was seriously affected by the low recovery of member State contributions. But since 2007, tangible improvements have been made. We are gratified that in 2009, the average annual contribution by member States increased by 30 times compared with the period 2001–2006.

Some member States paid their contribution along with the arrears for the first time or after a gap of many years. The contributions also increased because of payments from new members.

The Director General has adopted a new strategy for recovery of payment – advocacy at the highest government level. Over the course of his visits in 2009, the Director General met Heads of State and 15 Ministers of member States. He is continuing to use this strategy in 2010.

1.4.1 The Gambia

In 2009, the President of The Gambia His Excellency Prof. Aladji Dr Yaya Jammeh granted audience to the Director General, who was accompanied by the Board member Mr Momoudou Ceesay, the DG and the DDG of the National Agricultural Research Institute (NARI) and the Permanent Secretary of the Department of Agriculture.

At this meeting, the President conveyed his decision to pay off the arrears of the last 22 years. He congratulated AfricaRice for its leadership in the rice sector, stating that no other institution has benefited Africa as much as AfricaRice. After presenting a book that reflected his views on African development, the President promised to invite the Director General to show his NERICA farm during the right season. The Director General's visit and interviews were widely covered by the national press and TV.

This significant meeting prepared the groundwork for The Gambia's taking over the Chairmanship of the Council of Ministers from September 2009. The agriculture portfolio is under the charge of the President of The Gambia. As a follow-up to this Presidential meeting, the Director General was invited in December 2009 to the Gambian Council of Ministers in the presence of all the members of the Government. Mr. Momoudou Ceesay, AfricaRice Board member, also attended.

During this Gambian Ministerial meeting, it was decided that The Gambia as Chair of the Council of Ministers would make a strong case for AfricaRice to be granted the Observer status by the African Union, in accordance with the Resolution passed at the 27th Session of the Center's Council of Ministers held in September 2009 in Lomé, Togo.

1.4.2 Gabon

In June 2010, the Director General met with the Prime Minister of Gabon His Excellency Paul Mba Biyoghe, who expressed his strong commitment to support the Center and the domestic rice sector in Gabon. Gabon joined AfricaRice in 2009. The Director General was presented to the Prime Minister by the Gabon Minister of Agriculture Mr Raymond Ndong Sima. The Director General also met with the Minister of Scientific Research and the DG of ONADER Dr. Obame Ondo.

The Director General was invited to make a keynote presentation at a public scientific forum in Gabon on the issue of Africa's rice potential with particular reference to Gabon. The Forum was attended by the Minister of Agriculture, Ambassador of Japan, representatives of ONADER, University Professors, Institute directors and public and private operators. The Director General's visit was widely covered by the media.

1.4.3 Mali

In connection with the Africa Rice Congress 2010, the Director General met with the Prime Minister of Mali, His Excellency Dr. Modibo Sidibé, who inaugurated the Congress on behalf of the President, His Excellency M. Amadou Toumani Touré.

1.4.4 Other countries (Ethiopia, Rwanda, Mozambique, Liberia, Burkina Faso)

The Director General had working sessions with the Minister of Agriculture and Foreign Office of Ethiopia; Minister of Agriculture of Rwanda; Minister of Scientific Research of Mozambique; Minister of Agriculture of Liberia; and Minister of Agriculture of Burkina Faso.

1.5 Increase in volume of projects

The volume (in financial terms) of AfricaRice research projects in 2009 tripled since 2006. This is the result mainly of joint proposals developed with partners like IRRI and CIRAD.

This remarkable achievement in restricted budget shows the fulfilment of our vision stated in 2007 about the need for AfricaRice to increase significantly its record in bankable projects.

Important projects launched in 2009 & 2010

Project	Donor	Amount
Next generation rice breeding project	Japan	\$8 mln
Famine prevention rice project	USAID	\$5.2 mln
Emergency rice initiative	Japan	\$4.8 mln
Green super rice project	CAAS/BMGF	\$3.4 mln
Sawah inland valley project (SMART-IV)	Japan	\$3.1 mln
Rice challenge project	GCP	\$3 mln
Inland valley RAP project	EC	€1.05 mln
Climate change & disease	GTZ	€1.2 mln
Parasitic weeds	Nether.	€700,000
IRM training for SSA	BADEA	\$320,000/year
Seed support in Liberia	UNDP	\$300,000
AfroWeeds	EC	€226,000
Rice development in Chad	ESSO	\$193,317

All these AfricaRice projects cover member States and in some instances go beyond member States. For instance the Japan Emergency Rice Project covers 20 SSA countries.

The Emergency Rice Project was launched by AfricaRice with support from Japan in the wake of the food crisis. The seed component of the Japan Emergency Project was designed to provide access to quality rice seed to vulnerable farmers. A total of 73 institutions participated including 20 NARS, 11 seed companies, 19 input-dealers and 23 NGOs promoting rice production. The project led to a reinforcement of the seed system in most countries and in some cases, to start rebuilding them (Liberia, Sierra Leone, and Côte d'Ivoire).

The project has been able to help a total of 58,226 vulnerable farmers get access to quality seed and at the same time, to reinforce or rebuild seed systems. More than 60% of the project countries have now a good starting seed capital for the production of newly released varieties, including upland and lowland NERICAs. On average the number of hectares to be covered ranges from 350 (Sudan) to 1000 hectares (Côte d'Ivoire, Madagascar) and the majority of countries (more than 75%) will cover at least 600 hectares.

As part of the project, seed donations were made to farmers in each of the project countries through a ceremony that generally included the following participants: Minister in charge of research; Ambassador of Japan; AfricaRice Director General or his representative; NARS DG; Farmers/NGO associations

1.6 Increase in benefits to member States

1.6.1 Increase in projects covering member States

As mentioned above, the volume of projects has tripled. As these projects largely cover the member States, the benefits have also increased in terms of research collaboration and technology dissemination.

As part of this, a strong concerted effort is being made to get the second phase of the AfDB-funded African Rice Initiative (ARI) project approved in view of the tangible impact made in the pilot countries and the keen interest of other sub-Saharan African countries to be included in the AfDB rice project. The Director General has made a strong plea to AfDB to support the 2nd phase of ARI and its extension to other countries and the signs from AfDB are positive.

The first phase of the 5-year \$35 million AfDB-funded project supports the dissemination of NERICA and other improved rice varieties in seven West African countries – Benin, Ghana, Guinea, Mali, Nigeria, Sierra Leone and The Gambia.

The AfDB project is coordinated by ARI, which is hosted by AfricaRice. ARI has been supported by several partners and donors, including AfDB, Rockefeller Foundation, JICA and UNDP. Two JICA rice specialists who are working with the Initiative have been particularly involved in group training programs on important aspects of rice cultivation – ranging from quality seed production to agronomic packages.

1.6.2 Increase in training fellowships initiated/facilitated by the Center

- Post-Masters Program in Benin and Nigeria are well appreciated
- Annual Japan capacity building programs for NARS
- Annual CGIAR IFAR program for NARS
- Gates Foundation-funded CGIAR AWARD program for African women scientists

1.6.3 Increase in the number of technical workshops for NARS

Not only the technical workshops for NARS have increased but also the number of participants and the increase in training of technicians, farmers and processors. For example, in the recent AfricaRice-IRRI training course on hybrid rice seed production in Egypt, NARS scientists from 10 countries attended and in the AfricaRice-CORAF/WECARD training course on marker-assisted selection, 12 countries took part. Several training courses have been conducted through Emergency Projects supported by Japan and USAID and other major projects supported by AfDB, JICA, EU, IFAD, ESSO-Chad, FARA and BADEA.

Number of AfricaRice workshops and participants		
Year	Workshops	Participants
2004-2006	20	602
2007-2009	59	1304

Number of post-graduate students	
Year	Students
2004-2006	64
2007-2009	134

1.6.4 Support in communication

At the specific request of Agricultural Ministers and Directors General, AfricaRice has begun supporting national partners in the development of communication material as well as in capacity building in this area. Liberia and Mali are greatly benefiting from this expertise.

AfricaRice has a strong obligation to assist its member States and this will continue to be a major priority of our Center.

1.7 Stronger strategic alliances

Alliances have been formed with strategic partners to maximize the use of common resources and achieve more tangible impact.

1.7.1 AfricaRice (AfricaRice)-IRRI alignment

Since 2007, there has been continuous exchange of high-level meetings between the respective Board members, DGs, DDGs, and researchers of both rice institutions in the CGIAR. A comprehensive joint IRRI-AfricaRice strategy for Eastern & Southern

Africa has been developed. Following the launching of the IRRI-AfricaRice-NARS partnership based Stress-tolerant rice for South Asia and Africa (STRASA) project funded through IRRI by the Bill & Melinda Gates Foundation, another multi-million dollar project “Green Super Rice for the Resource-poor of Africa and Asia” involving the Chinese Academy of Agricultural Sciences (CAAS), IRRI and AfricaRice was launched in 2009 with support from the Bill & Melinda Gates Foundation. The project aims to develop and disseminate “Green Super Rice” varieties that give high and stable yield without requiring heavy inputs.

The African component of both the projects are coordinated by AfricaRice and carried out in partnership with IRRI and national programs of project countries, non-governmental organizations, farmers’ associations and the private sector.

IRRI and AfricaRice are also partners in the Japan Trust Fund supported Rice Breeding Project that has been initiated in 2010. This project will allow IRRI and AfricaRice to re-build rice breeding capacity at NARS level in sub-Saharan Africa and South-East Asia and pursue a systematic collaborative approach to rice breeding that will greatly shorten the time needed to develop the next generation of rice varieties in both regions of the world.

1.7.2 Coalition for African Rice Development (CARD)

CARD was launched by JICA in May 2008 as a consultative grouping of bilateral and multilateral development partners and African and international institutions to double rice production in Africa by 2017. Right from the beginning, AfricaRice is involved in CARD in a big way – from reviewing its formation to attending its launching in 2008 and to becoming a member of the CARD Steering Committee.

AfricaRice has been actively participating in all the CARD activities. The Director General, accompanied by the DDG and the ARI Coordinator participated in the Second CARD meeting in Tokyo in June 2009 where the National Rice Strategies for the 1st set of 12 CARD countries were presented and discussed.

1.7.3 AfricaRice- French research institutions partnership

Through our partnership with French research institutions (CIRAD, IRD and INRA united under the umbrella of Agropolis), new avenues have opened up for collaboration with other European countries beyond France, such as the Netherlands. One such example is the funding from EU for the Inland Valleys (RAP) project developed by AfricaRice, CIRAD and the University of Wageningen (Netherlands), which was initiated in 2009 and the AfroWeeds Project which has just been launched.

1.7.4 AfricaRice–FAO partnerships

AfricaRice has forged a special alliance with FAO, following Director General's first courtesy visit to Head of FAO, and subsequent visit in the context of the Emergency Rice Initiative. As a result, FAO included the Emergency Rice Initiative under its Soaring Food Prices Initiative and convened jointly with AfricaRice a workshop on this issue. An MoU was signed with FAO.

This joint effort has catalyzed new resources in cash and kind from various donors (USAID, BOAD, AfDB, JICA...) to support the Initiative. USAID is supporting the Emergency Initiative in four West African countries which is being carried out in partnership with the Catholic Relief Service (CRS) and IFDC.

As part of the overall support to the AfricaRice Emergency Rice Initiative, JICA is providing significant support to carry out activities in CARD project countries to enhance access to quality seed of improved rice varieties in selected countries in SSA, most of which belong to the group of 21 CARD candidate countries. The project also addresses the need for better quality rice data in all of the 21 CARD candidate countries to support development and implementation of national rice development strategies.

The FAO-AfricaRice alliance goes far beyond the Emergency Initiative, covering other areas of collaboration: capacity building, seeds, technology transfer, biosafety and joint publications. This is a much desired link with a CGIAR co-sponsor and an international development agency – essential for food security and poverty reduction. In 2009, the Director General represented the CGIAR at the 21st session of the FAO Committee on Agriculture in Rome.

1.7.5 IFAD

The Director General has met several times and consulted with the President of IFAD, who as the former Director General of AfricaRice takes a special interest in the Center's progress. The Research Division is planning to establish a strategic alliance with IFAD to ensure that AfricaRice aligns its projects with the development projects of IFAD in Africa wherever they concern rice.

1.7.6 EMBRAPA

Rice is an important crop for Brazil and the national program EMBRAPA has accumulated much expertise that can benefit Africa's rice sector. In view of its significance as a potential partner which can help bring in new joint projects, AfricaRice has initiated efforts for partnership with this organization. The Head of EMBRAPA Rice Program was invited to be a member of the CCER of Program 1 in late 2009 and a research delegation led by the AfricaRice Deputy Director General recently visited Brazil to explore collaboration with EMBRAPA. We hope to sign a MoU in 2010.

1.7.7 Strategic alliances with other sister institutes (IITA, Bioversity, CIP)

We have strengthened our collaboration, particularly with the IITA-Cotonou scientific staff in areas such as entomology, pathology, nematology, biosystematics, value chains, health in agriculture, and socioeconomics research. This has resulted in an increased number of joint publications. New opportunities will continue to be exploited. IITA and AfricaRice have also learned how to share scarce resources, especially office and laboratory space, and will be exploring the sharing of equipment and staff. Our collaboration with our sister center, Bioversity International, continues to be very positive in Cotonou. In 2009, we signed an MoU with CIP to host its regional office here and this partnership is progressing smoothly.

1.7.8 Regional Economic Organizations

In view of the importance of regional organizations such as ECOWAS, UEMOA in the agricultural sector in West Africa and similar organizations in other parts of Africa, AfricaRice continues to strengthen its rapport with them. For instance, a UEMOA representative was invited to attend the AfricaRice Council of Ministers in Lome, Togo. UEMOA and ECOWAS have contributed to the organization of the Africa Rice Congress. Establishment of MoUs with both these key regional organizations are planned for 2010 to ensure that AfricaRice is considered their technical arm for rice in the region.

1.8 Increasing level of recognition

1.8.1 Significant awards

- In 2010, the Government of Senegal conferred upon the Director General the title of *Officier de l'Ordre du Mérite* and in 2005 the *Chevalier de l'Ordre National du Lion*. In 2009, he was honored by the French Government with the *Chevalier de l'Ordre du Mérite Agricole*.
- At the CGIAR General Meeting (GCARD), AfricaRice received 2 out of 7 outstanding scientific awards instituted by CGIAR for 15 Centers: one for Outstanding Communication and another for Outstanding Promising Young Scientist.
- The 2009 CGIAR Outstanding Communication Award was presented to Dr Paul Van Mele, former AfricaRice Program Leader on Learning and Innovation Systems, for the Rice Rural Learning Initiative based on farmer-to-farmer videos on improved rice production practices.

- The 2009 CGIAR Outstanding Promising Young Scientist Award was presented to Dr Jonne Rodenburg, AfricaRice Weed Scientist, for his commitment to help resource-poor rice farmers in Africa, especially women, through the development of integrated approaches to managing parasitic weeds, the major source of yield loss in rice in Africa.
- Mr. Amos Onasanya, Research Assistant under Dr Sere, won the 2009 Japan International Award for Young Agricultural Researchers.

1.8.2 High-level participation

The Director General was invited to Chair the CORAF/WECARD Second Scientific Week and in the Ministerial Round Table, held in May 2010 in Cotonou, Benin. He was also invited to be a spokesperson for scientific partners to speak on the issue of agricultural research for Africa at the 5th FARA General Assembly held in Ouagadougou, Burkina Faso in July 2010.

The Director General has participated in strategic meetings to advocate for giving increased importance and investments to agriculture in general and rice in particular. These include his participation in:

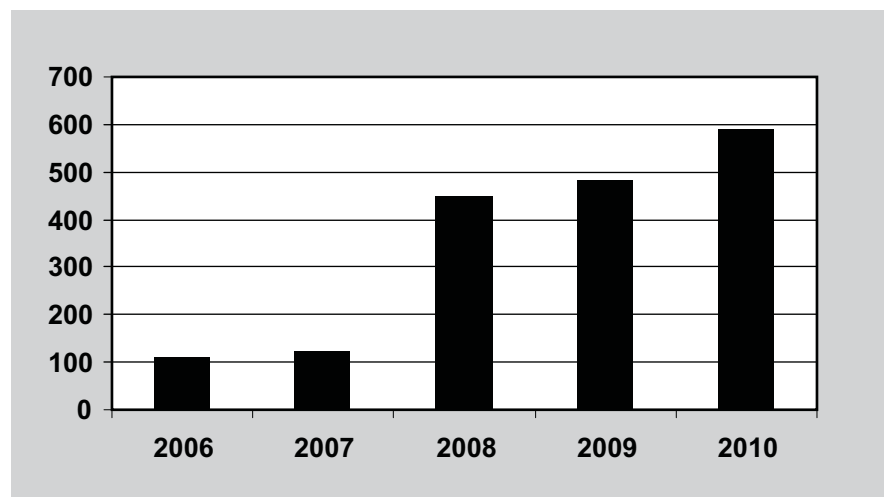
- The African Development Bank Governing Board meeting
- The ECOWAS Round Table Meeting on funding of the agricultural sector
- Participation at the strategic orientation board of Agreenium, France

1.8.3 MoU with African Union to recognize AfricaRice as Center of Excellence

As mentioned above, The Gambia as Chair of the Council of Ministers will make a strong case for AfricaRice to be granted the Observer status by the African Union, in accordance with the Resolution passed at the 27th Session of the Center's Council of Ministers held in September 2009 in Lomé, Togo. An MoU with the African Union to recognize AfricaRice as its Center of Excellence is being finalized.

1.8.4 Press coverage

AfricaRice is making steady progress in getting coverage in the press. In 2009, the Council of Ministers event particularly attracted good press coverage. In 2010, the Center and its technologies were highlighted in 591 press reports compared to 483 in 2009.



1.9 Organization of the 2nd Africa Rice Congress in Mali

The Africa Rice Congress 2010, with a theme “Innovation and partnerships to realize Africa’s rice potential,” was organized by AfricaRice in March 2010 in Bamako, Mali, in collaboration with the Mali national program, IER, under the aegis of the Malian President.

The Congress brought together nearly 450 participants from 54 countries, particularly from Africa. The participants included rice farmers; seed producers; processors; input dealers; manufacturers of agricultural machinery; national rice research and extension systems; representatives from agricultural ministries, international and advanced research institutes, non government organizations, and the donor community; and other development partners.

The distinguished guests included the IFAD President; the representative of FAO DG; the representative of CGIAR Executive Secretary of the Fund Council; AfricaRice Board Chair; Executive Secretary, CORAF/WECARD; the former AfricaRice Director General Dr Eugene Terry; IRRI Director General; and IER DG.

During the opening ceremony, on behalf of Mali’s President Amadou Toumani Touré, Prime Minister Modibo Sidibé presented distinguished service awards to Drs. Jacques Diouf, Eugene Terry, and Kanayo Nwanze for their outstanding contributions to rice research and development in Africa during their respective terms as Director General of AfricaRice.

Dr. Getachew Engida, AfricaRice Board chair, presented a plaque of appreciation to President Touré for his government’s tremendous efforts to raise rice productivity through the Presidential Initiative on Rice in Mali, which has led to a 50% increase in rice production in the country.

The participants took the opportunity to deliberate on strategies to significantly increase rice production in Africa, develop competitive and equitable rice value chains, reduce imports, and enhance regional trade. They enthusiastically supported the newly proposed Global Rice Science Partnership, an initiative of the AfricaRice, IRRI, and CIAT to harmonize national and international rice research agendas worldwide for increased impact in Africa.

Under the main theme, the topics included rice genetic diversity and improvement; ecological intensification and diversification of rice-based systems; developing competitive rice value chains; new alliances and tools for rural learning and innovations and policy implications; integrated management of pests, diseases, and weeds in rice-based systems; and rice physiology and modeling.

A major part of the Congress was a forum on “Investing in Africa’s rice sector: opportunities and challenges,” in which ways to increase investments in the rice sector in Africa particularly through innovative public-private partnerships were explored. Issues such as the need to increase investments for increasing the area under irrigation, improving rural infrastructure, and introducing agricultural mechanization were raised. The forum featured exhibitions of machinery, inputs, and rice products.

At the end of the Congress, key recommendations (see Annex 1) were made to boost Africa’s rice sector. Awards for the best presentation per theme, the best poster, and the Most Promising Young Scientist were also presented.

II. Conclusion

In conclusion, we wish to emphasize that since no achievement is permanent we must continue to redouble our efforts, particularly in the following areas:

- Strengthening institutional ownership
- Continuation of arrears recovery
- Strengthening achievements in risk management
- Continuous advocacy with traditional donors and other donors
- Continuation of out-reach stations rehabilitation
- Building endogenous capacity in formulating research proposals

ANNEX

2010 AFRICA RICE CONGRESS 22–26 March 2010, Bamako, Mali

Declaration

The second Africa Rice Congress (after the first one held in Dar-Es-Salaam, Tanzania in 2006) was organized by the Africa Rice Center (AfricaRice, ex-WARDA) under the aegis of the Malian government and in collaboration with the Malian national research institute 'Institut d'Economie Rurale' from 22 to 26 March 2010 in Bamako. The Congress was opened by the Prime Minister of the Republic of Mali, Dr. Modibo Sidibé, on behalf of the President, His Excellency M. Amadou Toumani Touré and had as the theme 'Innovation and Partnerships to Realize Africa's Rice Potential'. The more than 500 participants included rice farmers, seed producers, rice processors, input dealers, agricultural machinery manufacturers and representatives from agricultural ministries, national and international rice research and extension communities, non-governmental organizations, the donor community and other development partners.

During the opening ceremony, His Excellency Dr. Modibo Sidibé, Prime Minister of the Republic of Mali presented distinguished service awards to Dr. Jacques Diouf, Dr. Eugene Terry and Dr. Kanayo Nwanze for their outstanding contributions to rice research and development in Africa during their terms as Executive Secretary and Director Generals respectively of the Africa Rice Center. In turn, the chair of the Board of Trustees of AfricaRice, Dr. Getachew Engida presented a plaque of appreciation to the President of Mali, His Excellency M. Amadou Toumani Touré for the tremendous efforts of the Malian government to raise rice productivity through the Presidential Initiative on Rice in Mali.

The Congress in its deliberations noted:

- the global food crisis that imparted negatively on the African continent in 2008, predicted in 2007 by AfricaRice, leading to soaring and highly volatile rice prices, declining rice stocks and closing of borders to rice export;
- that rice prices are predicted to remain high because of declining production capacity in major rice producing countries in Asia and growing demand;
- the fact that rice consumption in Africa is growing at 6 to 7% per year and that the African continent is already importing close to 10 M tons of rice annually, equivalent to one-third of rice traded on the world market and costing US\$ 4 billion in foreign exchange in 2009;

- the large gap between yields obtained by African farmers and what would be possible under better management;
- that the African continent has sufficient land and water resources and favorable growth environments to close the gap between Africa's rice consumption and production and that local rice production is competitive vis-à-vis imported rice;
- the Maputo declaration where African countries committed to investing 10% of their national budgets in agriculture by 2010 and congratulating the nine African countries that have so far achieved this target while urging others to follow suit;
- that the CAADP framework as re-enforced by the 2008 World Development Report emphasized that the largest impact on poverty reduction in Africa comes from investments in agriculture;
- that rice has become a strategic commodity to fuel economic growth and to contribute toward hunger and poverty reduction across the continent;
- the desperate lack of capacity at all levels in the rice value chain which puts in jeopardy progress toward developing Africa's rice sector, and especially the neglect of Africa's rice research capacity as already noted during the first Africa Rice Congress;
- the lack of appropriate technology delivery mechanisms;
- the need for a holistic investment approach and public-private partnerships to develop Africa's rice sector across the entire value chain, creating trust and benefits for all stakeholders, from seed to plate.
- that relying on the world market to supply rice to African consumers is becoming a very risky, expensive and unsustainable strategy and that it may lead to severe food insecurity and civil instability;
- that Africa's agriculture is predicted to be the hardest hit by climate change;
- that Africa's rice sector depends primarily on the efforts of small-scale resource-poor farmers, particularly women;

formulated recommendations related to investment in the following key areas pertaining to Africa's rice sector:

Investments in Africa's rice sector

1. Africa's rice farmers need to be involved in the definition and implementation of policies that modernize rice farming, lessen the burden on women, and turn it into a viable agri-business, attractive to young people.

2. National and foreign investments are needed to unlock Africa's tremendous rice potential whilst ensuring that this leads to win-win situations for all of Africa's rice farmers and consumers.
3. Sustainable intensification and diversification of rice-based production systems are necessary to meet the demand of Africa's population.
4. National seed regulatory bodies need to be established and/or strengthened to map and meet rice seed demand for target ecosystems and consumer preferences. They should ensure efficient varietal release mechanisms, link public and private sector seed producers and establish functional and decentralized seed control systems.
5. Small-scale enterprises will need support to help them create and sustain a viable seed business. Private medium and large size seed companies should play an increasingly important role in high input systems, especially for hybrid rice seed.
6. Regional economic communities should be strengthened to contribute in such areas as harmonizing seed legislation, import tariffs and regulating rice imports, in line with the CAADP framework.
7. National governments need to take the lead in promoting public-private partnerships across the rice value chain for adequate production, storage, processing, and distribution infrastructure to produce quality rice for the African market.
8. A global effort to develop targeted technological options to help African farmers to adapt to and mitigate the effects of climate change is needed.

Investments in capacity building

9. A 'Marshall' plan by African governments and their development partners is needed to substantially strengthen the training and retention of new staff, whilst updating agricultural curricula in vocational training schools and universities and ensuring efficient spill-over to actors in the rice value chain. Conducive working environments are needed to retain an effective capacity in agriculture.
10. The Congress endorsed the Task Force concept, a collective research for development effort on critical thematic areas in the rice sector, based on the principles of sustainability, build-up of critical mass and ownership by the national systems and asked AfricaRice to facilitate and animate these Task Forces.
11. The Congress endorsed the emergence of a Global Rice Science Partnership, an initiative of AfricaRice, IRRI and CIAT as part of part of the revamped CGIAR to pool resources, build capacity and align national and international research agenda's, enabling greater efficiency and efficacy of rice research.

Participants commended the Congress organizers for their efforts.

ANNEX 3

Update on AfricaRice Headquarters, Côte d'Ivoire

Activities of Africa Rice Center (AfricaRice) in Mbe, Côte d'Ivoire,
in 2009 and 2010

1. Introduction

Since the crisis of 19 September 2002, the Administration and Research have been temporarily relocated in Cotonou, Benin by decision of the Council of Ministers held in Ouagadougou in April 2004. During this meeting, it was decided to maintain AfricaRice's Headquarters in Mbe, Cote d'Ivoire. At the same time, it was also decided to keep a reduced team of 38 staff at Headquarters in Mbe, and in the Liaison Office in Abidjan to maintain the main the infrastructures at the level of the offices, laboratories and experimental farms. In all, there are five staff members in the Liaison Office in Abidjan and 33 staff members in the Headquarters in M'be. The return of all staff members to Mbe will be undertaken only when security would have been restored across the country.

The first part of this document will be on the maintenance of office infrastructures and research sites and the second part on research and partnership activities carried out in the Headquarters and in collaboration with the NARS. It should be pointed out that research activities have been reduced quite a bit in the Headquarters for security reasons. However during these last two years, some research activities have been carried out by two research units, the Genetic Resources Unit and the Plant Pathology Unit.

Collaborative activities with CNRA, PNR, ANADER, and the Directorate General of Scientific Research have been undertaken through the AfricaRice Resident Representative based in the Headquarters in Bouaké and who serves as an interface between the Host country (Cote d'Ivoire) and AfricaRice.

2. Maintenance of infrastructure in Abidjan and Mbe

2.1 Abidjan

This is where the Liaison Office is located, and it serves to provide logistical support to AfricaRice personnel in Cotonou and in other stations (i.e. Saint-Louis in Senegal, Ibadan in Nigeria and Dar-es-Salam in Tanzania) transiting through Abidjan. With a staff complement of five, comprising four General Support Staff (GSS) and one Internationally Recruited Staff (IRS), the Liaison Office assists with the purchase of equipment and supplies for Cotonou.

2.2 Bouaké and Mbe

- Bouaké. The Liaison Office in Bouaké comprises the Guesthouse that was used as office before the Headquarters was built in Mbe. It is supervised by an Administrative Officer and supported by AfricaRice's accountant in Cote d'Ivoire, and three members of staff. The Guesthouse is used as accommodation by visiting AfricaRice's scientists from Cotonou. Other visitors who use the guesthouse for accommodation are from the Government Ministries, soldiers from the UN Mission (ONUCI), staff from NGOs such as CARE, Save the Children and from UN Organizations like FAO and UNICEF.



Photo 1. Shows the Guesthouse and the Liaison Office building in Bouaké.

- Mbe Site. The AfricaRice headquarters site in Mbe covers a surface area of 700 hectares and contains buildings that house the administrative and scientific staff, laboratories, a documentation center and heavy machinery for maintaining the experimental plots. There are 400 ha allocated for experiments out of which, 30 ha are developed for irrigation using a dam built upstream.



Photo 2. Main entrance of AfricaRice Headquarters, Mbe

Three buildings (A, B and F) accommodate respectively the Director General's Office, the Research Division, the research facilities and administration (buildings A and B), the Finance and Administration (building F). Photographs 3, 4, 5, 6, 7 and 8 show respectively, the main entrance of Building A, the Office of the Director General of AfricaRice and that of the Director of research, the main entrance of Building B that communicates directly with Building A, Building F and the Office of the DAF.

Building A accommodates the soil & water, breeding, molecular biology, entomology and weed science laboratories, while building B accommodates agronomy, soil science, ecophysiology and grain quality laboratories.

Photographs 9, 10 and 11 give an idea of the state of the soil science, breeding and plant pathology labs.



Photo 3. Main entrance of Building A



Photo 4. Office of the Director General



Photo 5. Office of the Deputy Director General, Research



Photo 6. Main entrance of building B



Photo 7. Building F (Administration and Finance)



Photo 8. Office of the Director of Administration and Finance



Photo 9. Partial view of the soil science lab



Photo 10. Partial view of the breeding lab



Photo 11. Partial view of the plant pathology lab



Photo 12. Partial view of the library

The library is well maintained as well as the physical structure of the building. Photographs 13, 14 and 15 show the interior of the library.



Photo 13. Shelves with documents



Photo 14. Hall of the library

Other block such as the mechanic workshop for repairing agricultural machinery (Photo 15) and the screen houses for controlled experiments (Photo 16) are also well maintained.



Photo 15. Workshop for maintaining agricultural machines



Photo 16. Screen houses for controlled experimentation

Photographs no. 17 and 18 show respectively the buildings of the Genetic Resources Unit and quarantine laboratory, where seed produced at the Headquarters are stored.



Photo 17. Genetic Resources Unit



Photo 18. Quarantine building

Photographs shown give an idea of how well all offices, labs and other infrastructures are maintained. At any time, the offices and labs can be used without investing too much to rehabilitate them.

3. Activities carried out in the Headquarters

The main activity undertaken in 2007, 2009 and 2010 is the multiplication of rice seed. In fact in 2007:

- Nigeria had financed the production of 16 tons of foundation seed of NERICA1 and NERICA 2. This quantity was produced and delivered.
- In 2009, FAO financed the production of 50 tons of foundation seed for Liberia. This quantity was produced and delivered to Liberia.

Photographs 19 and 20 show respectively the performance of one of these varieties on farm and seed stored before they are loaded for Liberia.



Photo19. NERICA-L 19 variety



Photo 20. Stored seed before they are sent to Liberia

- In 2010, UNDP ordered 65 tons of certified seed for Liberia.

4. Research activities carried out

Very few research activities are currently carried out at Mbe. Only the Genetic Resources Unit is undertaking a trial in collaboration with China.

5. Partnership with NARS

AfricaRice Cote d'Ivoire has contributed to the implementation of the Japan-funded Emergency Seed Project. This one-year project was coordinated by Dr Amadou M. Beye, Seed Specialist based in Abidjan. Sixty tons of certified seed of NERICA 1 and WITA 9 were produced. A seed handing over ceremony was organized in the presence of the Ministries of Scientific Research and Agriculture, and the DGs of CNRA and AfricaRice.

AfricaRice also participated in the third edition of the Ivorian Research Promotion Week / *Semaine de la Promotion de la Recherche ivoirienne* (SEPRI) that was held in Abidjan from 6 to 9 July 2010.

NERICA – L 19 and FKR 19 varieties are the subject of close collaboration with ANADER, who in fact produce these varieties in collaboration with AfricaRice.

6. Conclusion

It is important to note the commitment of AfricaRice Côte d'Ivoire to the maintenance of infrastructure at the Headquarters in compliance with the recommendations of management. Partnership with NARS and NGOs is ongoing.

ANNEX 4

Global Rice Science Partnership (GRiSP) & AfricaRice Task Forces

Transition to GRiSP and future of Task Forces and IVC

Marco Wopereis, 9 August 2010

The Africa Rice Congress held in Mali in March 2010 endorsed the Task Force concept, a collective research for development effort on critical thematic areas in the rice sector, based on the principles of sustainability, build-up of critical mass and ownership by the national systems and asked AfricaRice to facilitate and animate these Task Forces. The table below gives an overview of GRiSP themes, current AfricaRice research programs and associated Task Forces/Consortia (some of which need to be created) and coordinators.

GRiSP Theme	Current Program	Task Forces/Consortia (research projects)
1: Genetic diversity and discovery	1	Rice Breeding Task Force (STRASA, GSR, GCP, Japan Breeding)
2: Varietal improvement and adoption	1	
3: Innovative production systems	2	Rice agronomy Task Force with working groups on weeds, water & soil fertility (explore links with AGRA) Rice crop-health Task Force (MICCORDEA, explore links with CABI crop health initiative) Inland Valley Consortium (SMART-IV, RAP-IV)
4: Processing and value addition	3 + 4	Rice post-harvest and value chain Task Force (CIDA, JAPN11, EU and ARI Phase 2)
5: Policy and impact assessment	4	Rice policy and impact Task Force (EURO3B, CIDA) Gender Task Force (EU)
6: Rice sector support	RiceTime + 3	Rice knowledge, innovation systems and advocacy Task Force (funding to be identified)

AfricaRice will ensure a smooth transition to the new GRiSP research structure and continuation of building and strengthening partnerships with NARS. The establishment of the Task Force Mechanism is of great importance in that respect.

The Task Forces in italics in the Table do not yet exist, but they will be created as soon as possible and officially launched during the 40th anniversary of AfricaRice in 2011.

Task Forces will provide synergy to research efforts across the continent, thereby increasing impact. They will also have an important function in building capacity in rice research at NARS level. A network of rice alumni trained by GRiSP partners in Africa will be established and these alumni will be able to become part of the Task Force mechanism. Ideally capacity building efforts will be linked with universities to have direct access to university graduates. Links may also be established with universities from the north, but always in partnership with local universities. Graduates will gradually start to work together through project funding and apply what they learned and provide feedback to the trainers.

Task Force meetings will be held at least once per year and focus during the first one or two days on progress made in joint projects and the next one or two days on capacity building within the Task Force on a particular topic.

It is proposed that the Inland Valley Consortium will become part of the Task Force Mechanism.

Task Forces will have an AfricaRice coordinator and will be chaired by NARS. All AfricaRice member countries will be invited to join the Task Force Mechanism.

Global Rice Science Partnership (GRiSP)

Executive Summary

This first strategic and work plan of the Global Rice Science Partnership (GRiSP) is the fruit of a process that began in late 2006 when IRRI, together with hundreds of stakeholders worldwide developed a new strategic plan and three CGIAR centers involved in rice, IRRI, AfricaRice, and CIAT, started discussions on aligning their rice research programs. The process was greatly accelerated by the CGIAR change process, including regional consultations organized by the Global Conferences on Agricultural Research for Development (GCARD). GRiSP was recommended to be developed as a Mega Program on rice-based systems, under Thematic Area 3 (Sustainable Crop Productivity Increase for Global Food Security) of the new Strategy and Results Framework. Three more research organizations working on rice in a global context, CIRAD, IRD, and JIRCAS joined the effort on developing GRiSP. Consultations with many stakeholders, particularly national research and extension systems and several global and regional NGOs helped shape the GRiSP proposal. The resulting draft proposal thus represents, for the first time ever, a single strategic and work plan for global rice research and how it can contribute more effectively to solving development challenges at regional, national and local level. It streamlines current research for development activities and adds new activities of high priority, in areas where science is expected to make significant contributions. GRiSP provides new opportunities for partnerships in research and development, bringing together advanced research institutions, national systems, the private sector and civil society organizations involved grassroot work with male and female farmers. GRiSP was endorsed by the Africa Rice Congress in March 2010.

The urgency to re-orient and align the world's main research efforts on rice is illustrative of the crop's importance to the world's growing population. There can be no doubt that future global food security and the precarious livelihoods of the world's poor will depend on maintaining reliable and sustainable growth in rice production and productivity. Yield growth rates have stagnated because of decades of neglect in research and infrastructure, and area expansion has nearly stopped. Projected demand will outstrip supply in the near to medium term unless something is done to reverse current trends. Steep and long-term price increases would wreak havoc on the lives of the poor and send dangerous tremors across the political and economic landscapes in the world's most populous regions. In order to meet future rice demand, the world must increase rice yield growth rates on the remaining rice lands in Asia in a resource-efficient, ecologically resilient manner, and judiciously and sustainably expand both area and yield growth rates in Africa and Latin America.

Enhancing rice production faces many future challenges, not the least of which is climate change. The rice of the future will have to tolerate extremes of temperature, both high and low, droughts, floods, and salinity. The delta regions, from which much recent gain in production comes, will be particularly susceptible to sea-level rise and stronger tropical storms. These “future” problems are exactly the same as those that plague most of the poor rice farmers who did not directly benefit from past scientific advances. Thus, preparing rice for future climate uncertainties also prepares rice farmers, especially the women to better deal with today’s certain constraints to yield. Extreme variability in climate pushes young men to migrate leaving the elderly and the women behind with greater work burden as they do more field work and farm management responsibilities. Technologies for rice improvement designed with and for women farmers will differentially improve their well-being as well as that of their children. Considering the enormous environmental footprint made by the more than 150 million hectares of rice fields, any effort to mitigate the impact of agriculture on the global environment must include rice-based systems.

Rice contains a tremendous array of genetic diversity that scientists have only just begun to tap. Applications of the newest scientific tools have led to the development of rice varieties that tolerate stresses, such as prolonged submergence and saline soils, which just a few years ago were considered to be intractable. Powerful computation and communication technologies coupled with remote-sensing capacity offer unprecedented opportunities for integration across biological, physical, and social sciences not only to address challenges but also to create opportunities for improving the livelihoods of rice farmers and consumers. The very recent entry of the private sector in product development for rice producers in developing countries offers an additional opportunity to expand partnerships beyond the public sector. At the grass-roots level, many civil society organizations do excellent work with farmers, small entrepreneurs, and their families, but could benefit greatly from better linkages with the agricultural research sector—and also provide important feedback to the product-oriented and basic research conducted there.

GRiSP’s mission, in accordance with that of the CGIAR, is *to reduce poverty and hunger, improve human health and nutrition, and enhance ecosystem resilience through high-quality international rice research, partnership, and leadership.*

GRiSP has three objectives, aligned with the CGIAR strategic objectives and contributing to achieving quantitative outcomes stated in its vision of success toward 2020 and 2035. These objectives will be achieved through a set of six interconnected research and development themes.

Objective 1: To increase rice productivity and value for the poor in the context of a changing climate through accelerated demand-driven development of improved varieties and other technologies along the value chain (addressed through Themes 1, 2, 3, 4, and 6).

Objective 2: To foster more sustainable rice-based production systems that use natural resources more efficiently, are adapted to climate change and are ecologically resilient, and have reduced environmental externalities (addressed through Themes 3, 4, and 6).

Objective 3: To improve the efficiency and equity of the rice sector through better and more accessible information, improved agricultural development and research policies, and strengthened delivery mechanisms (addressed through Themes 5 and 6).

In pursuing the objectives, the focus will be on poverty reduction and the livelihoods of poor farmers, gender issues will be fully explored in all objectives, and capacity building in rice science and extension will be emphasized to ensure adequate skilled personnel for future rice development. GRiSP has enormous potential to generate benefits for the poor, the hungry and the environment. Ex-ante assessment of expected benefits, based upon conservative assumptions about productivity contributions, finds the following by 2035:

- GRiSP directly affects the lives of 1 billion people involved in growing and processing rice worldwide, as well as another 1 billion consumers who depend on rice as their staple food. This includes nearly 600 million of the world's poorest people.
- GRiSP attributable reductions in food prices will effectively lift 133 million Asian people above the \$1.25 PPP poverty line, reducing the number of poor by 15%.
- As a result of increased availability and reduced prices, 107 million undernourished Asians will reach caloric sufficiency, reducing hunger by 20%.
- 3 million hectares less land will be used for rice, saving natural ecosystems.

Production systems and value chains will form the overarching organizing principle of the partnership. All research will use an interdisciplinary approach based on a clear understanding of the different environments, management systems, and market segments targeted. On the one hand, this will need a broad range of scientific, or upstream, partners to seek out innovations and, on the other hand, many partnerships at the grass-roots level for both dissemination and feedback. The result will be accelerated development of international public goods across the whole rice sector. Based on these considerations and for effective management of the R&D process,

the program components are structured into six major rice research and development themes, with a total of 32 global and regional R&D product lines:

- Theme 1: Harnessing genetic diversity to chart new productivity, quality, and health horizons
- Theme 2: Accelerating the development, delivery, and adoption of improved rice germplasm
- Theme 3: Increasing the productivity, sustainability, and resilience of rice-based production systems
- Theme 4: Adding more value from rice harvests through improved processing and market systems and new products
- Theme 5: Fostering improved policies and technology targeting to enable improved rice production and marketing
- Theme 6: Supporting the growth of the global rice sector

At the core of GRiSP's approach lies a thorough understanding of the socioeconomic and biophysical factors that drive what farmers, agri-businesses, small entrepreneurs, consumers, and many other actors in the value chain need from research. Under each theme, R&D product lines are families of products or deliverables that provide global or regional options for next, intermediate, and final users. Product-oriented, interdisciplinary activities are carried out with partners to develop innovative products and facilitate their uptake. Products can be global or regional in their targeted usage, but they must be based on evidence for large impact potential. The interaction between the GRiSP themes is established through projects and networks that cut across several GRiSP themes and are often of regional nature, addressing local, national or regional development needs and bringing the different activities and partners together on the ground. Many such regional initiatives or consortia exist already and they will be further strengthened in GRiSP, also in linkage with other Mega Programs.

GRiSP will have a 25-year vision of success and an initial 10-year road map, which will be implemented through 5-year rolling work and business plan addressing the six research and development themes described above. GRiSP will evolve over time, re-defining its priorities and approaches based on evidence of impact potential and actual impact, focusing on how international R&D can make the greatest contributions to the development of rice production systems and value chains and thus improving the livelihoods of the people involved in those. The GRiSP approaches, work and business plans will thus be continuously refined, seeking an even better alignment with but also contributions from all major national research and extension systems, global and national development NGOs, the research communities in major developed countries, and the private sector. Capacity building and gender are fully integrated in all GRiSP themes, but will also be supported through centrally managed GRiSP funds.

Partnerships will be the main drivers for reaching GRiSP's vision of success. At present, the three principal CGIAR centers involved in GRiSP, IRRI, AfricaRice, and CIAT, have more than 450 active partnerships that contribute to the rice research and development sector (252 NARES, 72 ARIs, 54 private sector, 31 CSOs and farmers' associations, 20 foundations, 19 international and regional organizations, and 18 other CGIAR centers, Challenge Programs, and systemwide initiatives). GRiSP will provide a new umbrella for strengthening and expanding partnerships.

IRRI is the lead center for GRiSP, with each of the three CGIAR centers assuming a leadership role at the continent level (Africa: AfricaRice; Asia: IRRI; Latin America: CIAT). Program management in GRiSP will largely be done through existing research management and administrative support systems of IRRI, AfricaRice, CIAT, and their strategic partners. In addition, GRiSP will have a small Oversight Committee (OC) and a Program Planning and Management Team (PPMT). The OC and PPMT will be assisted by a small Program Management Unit (PMU), comprising the GRiSP Program Director and two assistant managers recruited by the lead center (IRRI).

The first 4-year GRiSP budget for 2010 through 2013 is USD 457.5 million. To initialize the program and several new high-priority activities with partners, a GRiSP budget of USD 98.6 million is anticipated for 2010, of which USD 88.6 million (90%) are currently committed unrestricted funds, restricted (bilateral) grants, and other income of IRRI, AfricaRice, and CIAT (as per 2010 mid-term plans of these centers). GRiSP investments are projected to rise at an annual rate of 10%, reaching USD 131.2 million in 2013 (33% increase over planned 2010 level or 48% over currently secured 2010 level). Although this represents a significant increase in funding over time, it still falls far short of the stated CGIAR goal to double funding for agricultural research and development. Annual co-investments by three global partners in GRiSP (CIRAD, IRD, and JIRCAS) are expected to exceed USD 20 million.

GRiSP is more than a "rice program" it aims to develop integrated solutions for a wide range of cropping systems that include rice, but often also other crops and commodities. Through cross-cutting projects in different regions of the world, GRiSP will be linked with other Mega Programs that focus on a wide range of commodities, production systems, and health and environmental issues, but that often also include rice. Through its own activities and through collaborative projects, co-investment from/in other Mega Programs, and active participation by IRRI, AfricaRice, and CIAT and their partners in other Mega Programs, GRiSP will be fully integrated in the Strategy and Results Framework of the CGIAR Consortium. Several other CGIAR centers will be involved in GRiSP-related projects and activities, including regional and national initiatives that cut across different MPs. Examples include ongoing and future collaboration with CIMMYT, IFPRI, ILRI, IWMI, ICARDA, ICRISAT, IITA, and WorldFish and systemwide programs such as the GCP, which have been integrated in the GRiSP.

ANNEX 5

Rice statistics project report

Africa Rice Center (AfricaRice)

7th Biennial Consultative Meeting of National Experts Committee
13–15 September, 2010
Cotonou, Benin

Rice data system for sub-Saharan Africa: Contribution to the Japan-AfricaRice Emergency Rice Project

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Disclaimer

The present synthesis report is a preliminary working document which is still in progress. First of all, the country databases that have been used to draft the report are being cleaned and data processing is still on-going. Secondly, the various statistics and graphs relating to yield by ecology have been generated from the village level datasets and not from the producers' databases. Therefore, these results should not be used or quoted at this point for any purpose.

ABBREVIATIONS

AGRA	Alliance for a Green Revolution in Africa
AGRHYMET	Agro meteorological and hydro meteorological programme
CARD	Coalition for African Rice Development
CGIAR	Consultative Group on International Agricultural Research
ERI	Emergency Rice Initiative
JICA	Japanese International Cooperation Agency
MOU	Memorandum of Understanding
NARS	National Agricultural Research Systems,
NARES	National Agricultural Research and Extension Systems,
NASS	National Agricultural Statistical Services
NSRD	National Strategy for Rice Development
TICAD	Tokyo International Conference for African Development

Rice data system for sub-Saharan Africa: Contribution to the Japan-AfricaRice Emergency Rice Project

Executive Summary

The rice data system for sub-Saharan Africa, which is a contribution to the Japan-AfricaRice emergency rice initiative, is funded by the government of Japan. The project is coordinated at the regional level by AfricaRice and implemented at national levels by the project national focal points. Throughout the course of the project implementation, the country focal points have made substantial and active contributions to ensure a smooth coordination of the project in-country activities. The national country focal points are from the National Agricultural Research Systems (NARS) and National Agricultural Statistical Services (NASS) of the Coalition for African Rice Development (CARD). To ensure an effective communication between the project coordination unit and the countries, an intensive networking was established including quarterly progress reports sent by the countries.

After the completion of the project data collection, country teams embarked on intensive data entry, treatment, and analysis in close collaboration with the project coordination unit at AfricaRice. Each country provided the first draft of country end of project technical report. The draft reports will be later on updated and revised by the countries. However, some countries have not sent their revised reports yet and these are Liberia, Tanzania, Uganda, and the Democratic Republic of Congo. The countries have also sent in their databases which were used to generate cross-country data and information. Overall, the implementation of the project activities went well and it was a very good occasion to show the feasibility of long-term collaborative working relationships between several national stakeholders on building sustainable multipurpose rice data systems. At the regional coordination level hosted by AfricaRice through its Program 4 (Policy/Impact), active backstopping and monitoring missions were conducted by the Program 4 leader and staff involved in the implementation of the project activities. In line with the general monitoring framework, before the end of the project, each country was visited at least once by the project coordination staff. The monitoring missions offered the opportunity to interact with country partners on various aspects of project implementation. The main objectives of the monitoring missions were to learn lessons while project activities were evolving. The various field experiences learned from the different countries provided solid insights for a future multi-country rice data collection project.

The surveys permitted to the countries to develop well structured rice statistical databases. Overall, the project activities went well and the national surveys were successfully conducted leading to the development of up to date rice data and

information which will be accessible. In fact, as future perspectives of the project activities, the country teams will work to conduct in-depth analysis of the data collected in this project to update the National Rice Development Strategies (NRDS), conduct rice research priority setting exercises and publish papers and policy briefs. AfricaRice has been discussing with the main donor in Japan who has accepted that in-depth analysis of the data collected can continue after April 30, 2010 to publish the data in Google map and transform the countries reports into final and more comprehensive reports.

Finally, it is worthwhile to point out to a few cases of shortfalls and internal operational difficulties faced by a few countries, although they were quickly corrected with the active technical assistance of the project coordination. Some delays in data collection process were observed (Liberia and Tanzania) and data entry and processing (Uganda, Mozambique, and Rwanda).

The present technical report is a synthesis of the project implementation activities in all participating countries but also an attempt to summarize some descriptive statistics and country aggregate data based on village level datasets. The reason for this is that producers' level datasets are still being cleaned. As the report is being written, all countries are still working on completing the development of the databases and the checking for completeness and correctness. Therefore, only the data sets that were ready have been used to complete this first version of the technical synthesis report of the project. It is well understood that a final comprehensive up-to-date project technical report will come in later. This report has two parts. The first part is subdivided into three chapters. The first chapter provides some general information on Africa. Chapter 2 presents the project entitled "Building a rice data system for sub-Saharan Africa: a contribution to the Emergency Rice Initiative". Chapter 3 provides the methodological background and achievements of the project. Part II gives some preliminary results from the surveys conducted (results for some countries). The preliminary results relate first to some descriptive statistics and then cross country aggregate data (Chapter 4). The last section presents the annexes.

Introduction

The Government of Japan, within the framework of the Yokohama Action Plan adopted during the Fourth Tokyo International Conference on African Development (TICAD IV) in 2008, pledged to enhance Africa's capacity to increase food production and agricultural productivity. Specifically, the Japanese Government committed itself to help African countries double their domestic rice production over the next 10 years. To achieve this goal, the Japanese Government through the Japan International

Cooperation Agency (JICA), and in partnership with the Alliance for a Green Revolution in Africa (AGRA), launched the Coalition for African Rice Development (CARD). CARD is a consultative group of donors, research institutions and other organizations aiming to promote rice cultivation in Africa through information sharing, coordinating and harmonizing existing initiatives and projects, and advocating further investment. During the first CARD General Meeting in Nairobi, a group of 21 countries in sub-Saharan Africa that needed development assistance were identified. These countries received support to develop their own National Rice Development Strategy (NRDS). The Government of Japan funded the Emergency Rice Initiative (ERI) project in this context. ERI has two components: 1) improving access to quality seed, and 2) building a rice data system for sub-Saharan Africa. Within the framework of the rice data system component, the project is working with the national agricultural research systems (NARS) and the national agricultural statistics services (NASS) in the 21 CARD member countries (Benin, Burkina Faso, Cameroon, Central African Republic, Côte d'Ivoire, Democratic Republic of Congo, The Gambia, Ghana, Guinea, Kenya, Liberia, Madagascar, Mali, Mozambique, Nigeria, Rwanda, Senegal, Sierra Leone, Tanzania, Togo, and Uganda) to collect large detailed rice statistics and information from nationally representative samples. Data collection process is now completed in all countries. These databases constitute the foundation for the establishment of a sustainable system of rice statistics and information at both regional and national levels that will contribute to strengthen the capacity of AfricaRice member-States in generating, analyzing, disseminating and accessing information on technologies and rice economies. Most importantly, the in-depth data analysis of these statistics and information will help guide rice policy decisions, monitor and assess the impacts of investments made in the domestic rice sector.

The present technical report is a synthesis of the project implementation activities in all participating countries but also an attempt to summarize some major descriptive statistics and country aggregate data pooled from the 21 countries. At the time of writing this report, all countries are still working on completing the development of the databases and checking for completeness and correctness. Therefore, only the data sets that were ready have been used to complete this first version of the technical synthesis report of the project. It is well understood that a final comprehensive up-to-date project technical report will come later. This report is structured into two parts. The first part is subdivided into three chapters. The first chapter provides some general information on Africa. Chapter 2 presents the project entitled "Building a rice data system for sub-Saharan Africa: a contribution to the Emergency Rice Initiative". Chapter 3 provides the methodological background and achievements of the project. Part II gives some preliminary results from the surveys conducted (results for some countries). The preliminary results relate first to some descriptive statistics and then cross country aggregate data (Chapter 4). The last section presents the annexes.

PART I

CHAPTER 1

General information on Africa

1.1. Importance of Rice

In 2008, Africa produced an estimated quantity of 23 million tonnes of paddy rice on 9.5 million hectares (FAOSTAT, accessed April 2010). Western, Northern and Eastern Africa regions had the biggest shares with 10.2 million tonnes, 7.3 million tonnes, and 5 million tonnes, respectively. These quantities of paddy were harvested on 5.8 million hectares, 0.76 million hectares and 2.4 million hectares in Western, Northern and Eastern Africa regions respectively. Among African staple food, rice consumption has been growing the fastest and it is the first source of food calorie in West Africa. Rice consumption increased at a rate of 4.5% per year while rice production grew at 3.2% per annum between 1961 and 2006. The high increase in rice consumption is not limited to West Africa as high rice consumption growth rate is recorded in Eastern and Southern Africa. In Mozambique for instance, rice consumption grew at a yearly rate of 15% during 1990-2005 with little increase in domestic production (Kajisa and Payongyong, 2008).

Africa's rice production has not been able to match the growth in demand. Rapidly rising imports (8.4% growth per annum since 1997) have been filling the widening gap between regional supply and demand. This rapid growth in imports was estimated at 3.77 % in 2001-2006. In 2009, paddy rice production in Africa was 24.5 million tonnes (nearly 16 million tonnes of milled rice) and 9.6 million tonnes were imported- a third of the volume of rice traded in the global market (FAO Rice Market Monitor, 2009). In fact, Nigeria, South Africa, Côte d'Ivoire, and Senegal rank among the world's ten leading rice importing countries. Nearly 40% of the rice consumed in Africa is imported. With such high dependence on imports, Africa is highly exposed to international market shocks with grave consequences for its food security and political stability as attested to by events during the 2008 food crisis.

CHAPTER 2

Strengthening the Availability and Access to Rice Statistics for Sub-Saharan Africa: a Contribution to the Emergency Rice Initiative

2.1 The Project

2.1.1. Background

Global rice stocks are at their lowest level since 1983/1984 and African countries can no longer rely on Asian imports to feed their growing populations. Food, fuel and fertilizer prices soared in 2008 and riots to protest the vastly increased costs of living have been reported in several of Africa's major cities. Rice is particularly vulnerable as it is one of the two main crops (with wheat) that show a huge deficit between local supply and demand. In 2006, sub-Saharan African countries imported about nine million tonnes, costing more than US\$ 2 billion. At current rice prices, these imports would cost more than US\$ 6 billion. Urgent action is needed to ensure that African countries will have enough rice to feed their rural and urban populations.

The Government of Japan, within the framework of the Yokohama Action Plan adopted during the Fourth Tokyo International Conference on African Development (TICAD IV) in 2008, pledged to enhance Africa's capacity to increase food production and agricultural productivity. Specifically, the Japanese Government committed itself to help African countries double their domestic rice production over the next 10 years. To achieve this goal, the Japanese Government through the Japan International Cooperation Agency (JICA), and in partnership with the Alliance for a Green Revolution in Africa (AGRA), launched the Coalition for African Rice Development (CARD).

CARD is a consultative group of donors, research institutions and other organizations aiming to promote rice cultivation in Africa through information sharing, coordinating and harmonizing existing initiatives and projects, and advocating further investment. During the first CARD General Meeting in Nairobi in 2008, a group of 21 countries in sub-Saharan Africa that needed development assistance were identified. These countries received support to develop their own National Rice Development Strategy (NRDS).

For the sub-Saharan African countries to fully achieve their potential for rice production it is critical to have adequate and reliable information on their rice economies, to help formulate appropriate strategies and policies. Africa Rice Center (AfricaRice) launched an initiative in December 2007. This initiative is designed to improve the timely availability, reliability and relevance of rice statistics and information needed

for quality rice research, evidence-based policy formulation, and monitoring and evaluation of rice related investments in Sub-Saharan Africa (SSA). The initiative was implemented in collaboration with the national agricultural research systems (NARS), the national agricultural statistics services (NASS), the African Development Bank (AfDB), AGRHYMET and other regional stakeholders.

The Government of Japan funded the Emergency Rice Initiative (ERI) project in this context. ERI has two components: 1) improving access to quality seed, and 2) building a rice data system for sub-Saharan Africa.

The project worked with NARS partners in the 21 CARD member countries (Benin, Burkina Faso, Cameroon, Central African Republic, Côte d'Ivoire, DR Congo, The Gambia, Ghana, Guinea, Kenya, Liberia, Madagascar, Mali, Mozambique, Nigeria, Rwanda, Senegal, Sierra Leone, Tanzania, Togo, and Uganda) to collect detailed rice statistics and information from nationally representative samples.

In addition to collecting nationally representative rice data, the project has contributed in strengthening the capacity of NARS and NASS in designing and implementing surveys to collect detailed and reliable crop-specific data for this major crop from nationally representative samples. In most cases the samples currently used in the annual national crop surveys do not allow the collection of nationally representative crop-specific statistics in general and rice statistics in particular. For that to be possible, new sample frames and sampling methodologies were required in most countries. Another important achievement of the project was the harmonization of the various sampling methodologies and survey instruments used in the different countries. This harmonization of the methodologies was necessary in order to perform some cross-country aggregations and comparative analyses. As stipulated in the contract, the synthesis report will include main results from countries (descriptive summary results) and analysis of the aggregated data pooled across the 21 countries. The harmonization of the sampling methodologies took into account theoretical and practical statistical considerations (such as selection of the appropriate sample frames, stratification method, probability sampling, multistage cluster sampling, etc.) as well as cost and crop specific constraints. This methodological task was the subject of a regional workshop that was attended by all participating countries including AGRHYMET, Niger, and a representative of the AfDB.

2.1.2. Objectives

The project addressed the need for better quality rice data in all of the 21 CARD countries to support the implementation and monitoring of national rice development strategies through various activities. The specific objectives of the project were to:

1. Strengthen the capacity of national agricultural statisticians and NARS scientists on best practices on agricultural survey design, sampling methodology for rice data collection and statistical analysis, and publication. This was done through the organization of training courses for Anglophone and Francophone participants.
2. Harmonize rice data collection methodologies.
3. Collect, process, analyze and publish updated rice statistical data in 21 countries in sub-Saharan Africa.
4. Publish policy briefs based on these data.

2.1.3. Expected outputs

1. National Agricultural Research and Extension Systems (NARES) scientists, agricultural extension agents and agricultural statisticians from CARD candidate countries trained in implementing common rice data collection methodologies (total of 42 people).
2. Rice data collection methodologies and questionnaires are harmonized across CARD member countries.
3. Updated and reliable rice data (relevant data on ecologies, varieties, farmers' characteristics, source of income and cost production) available for CARD member countries.
4. Policy briefs which will help guide rice policy decisions monitor and assess the impacts of investments made in the domestic rice sector.

CHAPTER 3

Methodological Background and Achievements of the Project

Introduction

As part of the launching of the project activities, two successive workshops were organized for Francophone and Anglophone countries. The launching workshops enabled experts to consult on the best practices for data collection, rice survey design and framework for organizing and analyzing the data collected. The workshop permitted country participants to share with their colleagues some general information about their countries but, most importantly, participants gave their experience on methodological steps taken to gather agricultural data and information. The workshop also permitted a discussion of the different approaches to facilitate the insertion of the emergency rice data collection activities within the existing data collection system. Another important achievement was drafting the respective countries' workplan and budgets in order to initiate the activities on the ground. The major events of the launching workshops were: official opening ceremony, keynote presentations, countries' presentation, group sessions, country action plans and budgets developments, and round table discussions.

The group sessions discussed the standard structure of survey questionnaires and sampling methods, plenary sessions discussed the outcomes of the group sessions, and country team sessions developed country workplans and budgets. The aim of the round table was to share views and perspectives from different practitioners on the subject matter. The round table gathered panelists from the statistics division, NARS, and the CGIAR.

A methodological workshop was also organized to provide some theoretical background on the design of appropriate sampling methods and procedures for collecting nationally representative data. To achieve the objectives of the workshop, two expert statisticians with good theoretical backgrounds in survey statistics and extensive experience in implementing agricultural surveys in developing countries were invited to serve as resource persons. The expert statisticians elaborated a technical document that was circulated to all country participants.

The countries prepared their action plan and conducted the in-country surveys with technical support and assistance from the regional coordination unit at AfricaRice Cotonou (Benin) and Dar Es Salam (Tanzania). Monitoring and evaluation missions were undertaken in the various countries during project activities implementation

stages. In addition, active networking was maintained between the coordination units with all participating countries. Technical documents and statistical tools were prepared by the coordination unit and sent to the country focal points to assist them in their data manipulation and analysis and technical report writing.

3.1. Organization and Project Implementation Steps

In line with the project's objectives, the methodology used was structured into several important steps:

1. Preparation of the detailed project workplan and hiring of the project coordinators and their research assistants.
2. Organization of initial technical consultative workshops (launching workshops).
3. Follow up on the major outcomes of the initial technical consultative workshops.
4. Organization of national consultative workshops.
5. Organization of the regional methodological workshop.
6. Implementation of national surveys for data collection (pre-testing and review of questionnaires, training of field enumerators and conduct of the survey).
7. Technical assistance provided by AfricaRice in various aspects:
 - a. Review of countries pre-tested questionnaires,
 - b. Development of countries' data entry templates using Access software,
 - c. Development of French and English standardized outline for the country reports along with a tabulation plan,
 - d. Stata programs to clean the data, produce the tables and perform the statistical analyses,
 - e. Field missions for monitoring project activities and provide technical backstopping for data entry and analysis,
 - f. On-line technical assistance was also provided on a request basis.

The project was designed to be executed jointly by the NARS and the NASS. The project was designed to build a close and durable collaboration between the NARS and the NASS in each country to ensure the regularity of data collection. The responsibilities of each of the two national partners were clearly delineated and assigned with the corresponding budget to manage as follows:

1. Overall project coordination was the responsibility of the National Agricultural Research Institute (NARIS).
2. Design of the survey, data collection and processing was done by the National Agricultural Statistics Service (NASS).
3. Adaptation of the questionnaire and training of enumerators were the joint responsibility of both partners through a team of NARS rice researchers and NASS statisticians.
4. Data analysis (descriptive analysis and interpretation of results) and publication were also the joint responsibility of both partners and, in most cases, was performed by the same team of NARS rice researchers and NASS statisticians.

In each country, two focal points were nominated: 1) an economist, and 2) a statistician to coordinate the project activities and work directly with the projects regional coordinators based in Cotonou, Benin and Dar-es-Salaam, Tanzania.

AfricaRice provided the standard questionnaires (divided into several modules), which were adapted by each country team to its own country specificities in a way that kept the coherence and comparability of the data collected across countries. Each country team conducted its own data analysis to produce the country report. The countries first produced initial draft reports that were reviewed and analyzed by the project coordinating unit. Based on the reviews of the draft reports, comments and suggestions were made to partners toward improving the quality of the final reports. Updated and revised reports, including databases, were received from the countries.

AfricaRice bought for each country two licenses of the statistical software Stata, recommended for the analysis of the data. AfricaRice provided a standardized outline for the country reports along with a tabulation plan and Stata programs to clean the data sets, produce the tables, and conduct the statistical analysis.¹

The country data sets and reports were sent to AfricaRice for an aggregated and comparative cross-country analysis. Each country was required to produce and disseminate its own reports and briefs. As a follow up to the current regional synthetic report, AfricaRice will also produce a final comprehensive report and will make all the information generated by the project available through the web in a geo-referenced format using Google Maps.

AfricaRice signed a Memorandum of Understanding (MOU) with the NARS in each of the 21 countries. An important clause in the MOU requires that at least 53% of the

¹AfricaRice has recommended countries to use either CPro or Access for data entry and archiving. However the choice is left to the countries to decide (some countries were already using CPro). AfricaRice will provide the data entry templates to countries using Access.

budget be allocated to the data collection and processing activities and this should be given to the NASS to manage. Two other important clauses in the MOU define the data ownership and access rights. In particular, it is stipulated in Article 16 that “data resulting from the questionnaire called the ‘specialized rice questionnaire’ added to the general questionnaire to cater for the specific needs of the present project are the joint property of the NASS, NARS and AfricaRice”. In article 17, dealing with data access, it is stipulated that “for the needs of analysis and publication, the researchers and students of NARS, AfricaRice, universities and other institutions associated with the present project will have free, unreserved and without prior notification, access to all data collected as part of the present agreement (raw data and cleaned data) and including data derived from the questionnaire called ‘general’ of the permanent agricultural survey”. The MOU also requires NARS and NASS of each country to facilitate access to the data set by researchers not associated with the projects, when they request it.

3.1.1. The project launching workshops

The AfricaRice Director General sent letters to each NARS DG with project documents and inviting him or her to nominate one economist and have his or her colleague from agricultural statistics to nominate a statistician for the launching workshops which took place in Cotonou from May 11 to 15, 2009, for Francophone countries and in Dar es Salam from June 1 to 5, 2009, for Anglophone countries. Since Mozambique did not have representatives in the launching workshops, Dr Aliou Diagne, Program Leader, AfricaRice Policy and Impact Assessment, visited this country in August to brief the Mozambican NARS and NASS representatives on the objectives, methodology and workplans of the project.

The initial technical consultative workshops were organized to officially launch the project and to have country representatives prepare and present their detailed country action plans and budgets. The workshops were also intended to serve as a venue for experts’ consultations on survey design and methodology and for review and exchange of countries’ experiences on survey methodology for rice data collection (data collection tools and sampling techniques, etc.). The economists and statisticians who participated in the launching workshops worked for five days on the survey methodology, questionnaires harmonization, workplans and budgets.

The launching workshops’ programs consisted of 1) the presentation of the project objectives, workplans and budgets; 2) individual country presentations on their rice sectors and scope and methodologies of existing agricultural surveys; 3) working group sessions to review the structure and content of the questionnaires and discuss possible sampling methodologies for the rice statistics surveys; 4) country team

sessions to develop country workplans and budgets; and 5) plenary sessions to discuss the outcomes of working group and country team sessions.

The experiences from the five pilot countries (Burkina Faso, Côte d'Ivoire, Niger, Nigeria, and Senegal) which have established consultative frameworks on rice data harmonization and exchange were also presented in plenary sessions. On the last day of the workshop, a round table was organized to share views and perspectives on how to foster in each country an effective and long-term collaboration between the NARS and the NASS.

One major outcome of the launching workshops was an agreement on key steps and milestones set for a quick start up of project activities that included the signature of an MOU, the transfer of project funds, and logistical arrangements within each country. This step was very critical as the remaining of the project activities depend entirely on the attention given by countries to the milestones set. Detailed reports for workshops are available.

3.1.2 Training workshop on agricultural survey methodology

AfricaRice and the AfDB organized a training workshop on agricultural methodology from 27 to 31 July 2009, in Abidjan, Côte d'Ivoire in collaboration with the Regional Center AGRHYMET. The main aim of the workshop was to address the sample design and harmonization challenges and to facilitate the adoption of best practices in agricultural survey by the 21 countries involved in the project. The workshop was funded by the AfDB within the framework of its Multinational Program for Statistical Capacity Building in its regional member countries for MDG monitoring and results measurement.

The main objectives of the workshop were to: (i) critically review the different sampling methodologies implemented in the 21 countries in 2009 to collect rice data; (ii) discuss survey design options for collecting nationally representative detailed crop-specific data; (iii) recommend sampling methodology guidelines for use in the future for the 21 countries.

Besides the participants from the 21 project countries who attended the May and June launching workshops, participants from AGRHYMET and the NARS and NASS of Niger also took part in the workshop.

The Methodological Training Workshop lasted for five days. The first two days were devoted to the presentation of sampling methods and design used in each country for rice data collection. The next three days focused on the design of appropriate sampling methods and procedures for collecting nationally representative crop-specific data.

Two expert statisticians, with good theoretical backgrounds in survey statistics and experience in implementing agricultural surveys in developing countries, were hired to serve as resource persons for the workshop. The expert statisticians acted as facilitators/instructors during the methodology workshop. The consultants produced a technical manual containing a review of the methodologies followed by the 21 countries and a guideline for conducting such crop-specific surveys.

3.2. Implementation of national surveys for data collection

3.2.1. Sampling Design

Table 1 presents the various methods and sample sizes used in the countries. In most countries, the 2-level sampling method that was used apart from a few exceptions that used 3-level (Liberia and Madagascar) and 4-level sampling methods (Tanzania).

Table 1: Sampling Method and Sample Size in the 21 Countries

Countries	Sampling Method	Sample Size
Benin	Sampling at 2 levels	1255
Burkina Faso	Sampling at 2 levels	760
Cameroon	Sampling at 2 levels	1200
Côte d'Ivoire	Sampling at 2 levels	3 325
The Gambia	Sampling at 2 levels	370
Ghana	Sampling at 2 levels	1120
Guinea	Sampling at 2 levels	1085
Kenya	Sampling at 2 levels	572
Liberia	Sampling at 3 levels	1500
Madagascar	Sampling at 3 levels	1606
Mali	Sampling at 2 levels	2 495
Mozambique	Sampling at 2 levels	492
Nigeria	Sampling at 2 levels	10,500
Central African Republic	Sampling at 2 levels	2140
Democratic Republic of Congo	Sampling at 2 levels	848
Rwanda	Sampling at 2 levels	395
Senegal	Sampling at 2 levels	1863
Sierra Leone	Sampling at 2 levels	1300
Tanzania	Sampling at 4 levels	1050
Togo	Sampling at 2 levels	727
Uganda	Sampling at 2 levels	1537

3.2.2. Planning and Implementation of data collection

The planning and implementation of data collection was conducted in each country according to the initial survey plan. Prior to data implementation, countries conducted in-country stakeholders meeting to discuss pertinent issues relating to the organizational and practical execution of the survey. Country teams created a pool of working staff in charge of conducting the surveys. In addition to the project country focal points, the teams were composed of supervisors, controllers, enumerators and data entry clerks (Table 2). All field staff involved in the data collection process benefited from a short training prior to the execution of the activity.

Table 2: Planning and implementation of data collection

S/N	Countries	Number of			
		Enumerators	Controllers	Supervisors	Data entry Clerks
1	Benin	63	17	8	15
2	Burkina Faso	78	28	9	
3	Cameroon	120		16	
4	Côte d'Ivoire				
5	The Gambia	120		16	6
6	Ghana	165			
7	Guinea	78	33	17	10
8	Kenya	60			12
9	Liberia	37		19	
10	Madagascar	60	15	6	15
11	Mali	120	28		
12	Mozambique				
13	Nigeria	112	62	36	
14	Central African Republic	72		6	10
15	Democratic Republic of Congo				
16	Rwanda	16			
17	Senegal				
18	Sierra Leone	130	13	4	
19	Tanzania	105	5	21	
20	Togo	25		2	
21	Uganda				

3.2.3. Data-processing (data entry, treatment and analysis)

In each country, several data entry clerks were trained in order to carry out in an efficient manner the task of data entry and cleaning (Table 2). Furthermore, countries followed the supporting documents sent to assist them in their data analysis and report writing. Mostly, they made use of the reporting plan and the tabulation plan including the various Stata codes for data transfer, data cleaning, and analysis.

3.3. Achievements by activity

The national surveys for data collection (pre-testing and review of questionnaires, field training of enumerators and conduct of surveys) were implemented by the country teams following the countries' specific workplans. Major achievements with respect to the outcomes of the various activities conducted to date are presented herewith.

Project implementation was not uniform in all countries due to country specificities. The monitoring of the project activities started in September 2009 through a number of country visits made by the leader of program 4, and the West Africa and East Africa coordinators including AfricaRice program 4 staff. The monitoring visits were planned and conducted to enable a smooth implementation of project activities and ensure that the project will meet all its objectives. Apart from the field visits, intensive networking and technical dialogues were maintained between AfricaRice and all the project countries focal points. Tremendous efforts were also made by program 4 staff to coordinate the development of the data entry templates in conformity with countries revised questionnaires. All countries received their data entry templates and the Stata software for data analysis. Moreover, AfricaRice developed several Stata codes to assist the countries with data manipulation and analysis: 1) Stata codes and programs to transfer automatically all ACCESS data files into Stata, 2) Stata codes for data cleaning, and 3) Stata codes to generate all the tables indicated in the tabulation plan. All the 21 countries received both the country reporting plan along with the tabulation plan. The following tables (3, 4, and 5) summarize the project implementation status in all countries. Specifically, Table 3 presents the project logistical arrangements status while Table 4 portrays status of feedback received from countries focal points. Finally, Table 5 provides a summary status of data collection and entry.

Table 3: Monitoring and evaluation of the project in AfricaRice countries – MOU, funds transfer, and logistics arrangement

S/N	Countries	MOU	Funds received	Computer purchasing	2 Stata licenses DVD and books received
1	Benin	Yes	Yes	Yes	Yes
2	Burkina Faso	Yes	Yes	Yes	Yes
3	Cameroon	Yes	Yes	Yes	Yes
4	Central African Republic	Yes	Yes	No	Yes
5	Côte d'Ivoire	Yes	Yes	Yes	Yes
6	Democratic Republic of Congo (DRC)	Yes	Yes	Yes	No ¹
7	The Gambia	Yes	Yes	Yes	Yes
8	Ghana	Yes	Yes	Yes	Yes
9	Guinea	Yes	Yes	Yes	Yes
10	Kenya	Yes	Yes	Yes	Yes
11	Liberia	Yes	Yes	Yes	Yes
12	Madagascar	Yes	Yes	Yes	Yes
13	Mali	Yes	Yes	Yes	Yes
14	Mozambique	Yes	Yes	Yes	Yes
15	Nigeria	Yes	Yes	Yes	Yes
16	Rwanda	Yes	Yes	Yes	Yes
17	Senegal	Yes	Yes	Yes	Yes
18	Sierra Leone	Yes	Yes	Yes	Yes
19	Tanzania	Yes	Yes	Yes	Yes
20	Togo	Yes	Yes	Yes	Yes
21	Uganda	Yes	Yes	Yes	Yes

Table 4: Monitoring and evaluation of the project in AfricaRice countries – status of progress reports

N° Order	Countries	First quarterly progress report	Second quarterly progress report
1	Benin	Yes	Yes
2	Burkina Faso	Yes	Yes
3	Cameroon	Yes	Yes
4	Central African Republic	Yes	No
5	Côte d'Ivoire	Yes	Yes
6	DR Congo	Yes	Yes
7	Gambia	Yes	Yes
8	Ghana	Yes	Yes
9	Guinea	Yes	No
10	Kenya	Yes	Yes
11	Liberia	Yes	Yes
12	Madagascar	Yes	Yes
13	Mali	Yes	Yes
14	Mozambique	Yes	No
15	Nigeria	Yes	Yes
16	Rwanda	Yes	Yes
17	Senegal	Yes	Yes
18	Sierra Leone	Yes	No
19	Tanzania	Yes	No
20	Togo	Yes	Yes
21	Uganda	Yes	Yes

Table 5: Monitoring and evaluation of the project in AfricaRice countries – status of data collection, entry and analysis

N°	Countries	Final adapted questionnaires returned	Data Collection Completed	Countries data entry templates available	Data entry completed	Software used for data entry
1	Benin	Yes	Yes	Yes	Yes	Access
2	Burkina Faso	Yes	Yes	Yes	Yes	CSPPro
3	Cameroon	Yes	Yes	Yes	Yes	Access
4	Central African Republic	Yes	Yes	Yes	Yes	Access
5	Côte d'Ivoire	Yes	Yes	Yes	Yes	Access
6	Democratic Republic of Congo	Yes	Yes	Yes	Yes	Access
7	The Gambia	Yes	Yes	Yes	Yes	Access
8	Ghana	Yes	Yes	Yes	Yes	Access
9	Guinea	Yes	Yes	Yes	Yes	CSPPro
10	Kenya	Yes	Yes	Yes	Yes	Access
11	Liberia	Yes	Yes	Yes	Yes	Excel
12	Madagascar	Yes	Yes	Yes	Yes	Access
13	Mali	Yes	Yes	Yes	Yes	CSPPro
14	Mozambique	Yes	Yes	Yes	Yes	Access
15	Nigeria	Yes	Yes	Yes	Yes	Access
16	Rwanda	Yes	Yes	Yes	Yes	Access
17	Senegal	Yes	Yes	Yes	Yes	Access
18	Sierra Leone	Yes	Yes	Yes	Yes	Access
19	Tanzania	Yes	No	Yes	No	Access
20	Togo	Yes	Yes	Yes	Yes	Access
21	Uganda	Yes	Yes	Yes	No	Access

Table 6: Monitoring and evaluation of the project in AfricaRice countries – status of country reports and databases

S/N	Country	Report sent to AfricaRice	Databases sent to AfricaRice	Observations
1	Benin	Yes	Yes, all modules	<ul style="list-style-type: none"> ○ Temporary report (results based on the sample), ○ Complete Stata version of databases, ○ Incomplete Access version
2	Burkina-Faso	Yes	Yes, all modules	<ul style="list-style-type: none"> ○ Temporary report (results based on the sample), ○ Complete Stata and SPSS versions of databases
3	Cameroon	Yes	Yes, all modules	<ul style="list-style-type: none"> ○ Temporary report based on sample
4	Côte d'Ivoire	Yes	Yes, all modules	<ul style="list-style-type: none"> ○ Temporary report ○ Access databases
5	The Gambia	Yes	Yes, except questionnaire for scientist	<ul style="list-style-type: none"> ○ Temporary report based on the sample, ○ no comments on result tables; ○ SPSS and Stata versions of databases
6	Ghana	Yes	Yes, except Complementary and Scientist Questionnaires	<ul style="list-style-type: none"> ○ Temporary report (results based on the sample), ○ Access databases
7	Guinea	Yes	Only Producer Questionnaire	<ul style="list-style-type: none"> ○ Draft report with extrapolated results, ○ database in Stata
8	Kenya	Yes	Yes, all modules	<ul style="list-style-type: none"> ○ Temporary report (results based on the sample); ○ Excel, SPSS and Stata version of databases
9	Liberia	No	No	<ul style="list-style-type: none"> ○ Draft Analysis based on the tabulation provided by MoA (Excel file); few tables
10	Madagascar	Yes	Yes, except scientist questionnaire	<ul style="list-style-type: none"> ○ Temporary report (results based on the sample), ○ Stata version of databases

S/N	Country	Report sent to AfricaRice	Databases sent to AfricaRice	Observations
11	Mali	Yes	Yes	<ul style="list-style-type: none"> ○ Draft report with some national pooled statistics ○ Database is not complete.
12	Mozambique	Yes	No	<ul style="list-style-type: none"> ○ Report with executive summary including comments of the tables.
13	Nigeria	Yes	Only part of Producer Questionnaire	<ul style="list-style-type: none"> ○ Some tables and graphs in excel and SPSS, ○ report
14	Central African Republic	Yes	Yes, all modules	<ul style="list-style-type: none"> ○ Temporary revised report , ○ Access version of databases
15	Democratic Republic of Congo	No	Yes, all modules	<ul style="list-style-type: none"> ○ Tables were generated and sent to partners for interpretation, ○ Databases in Access
16	Rwanda	Yes	Yes	<ul style="list-style-type: none"> ○ Tables at producer level and scheme levels,
17	Senegal	Yes	Only producer questionnaire	<ul style="list-style-type: none"> ○ Preliminary draft report (results based on the sample), ○ database in Stata
18	Sierra Leone	Yes	Yes, except scientist questionnaire	<ul style="list-style-type: none"> ○ Results presented in an Excel file but no report
19	Tanzania	No	No	<ul style="list-style-type: none"> ○ No report and database
20	Togo	Yes	Yes, all modules	<ul style="list-style-type: none"> ○ Temporary report (results based on the sample), ○ Access version of databases
21	Uganda	No	No	<ul style="list-style-type: none"> ○ No report and database

3.3.1. Institutional and Administrative Issues

- MOU between AfricaRice and NARES signed.
- Transfer of funds completed for all participating countries.
- In-country project coordination units well established with two main focal points by each country (1 NARS & 1 NASS).

3.3.2. Logistics issues

- Software for data analysis purchased and shipped to each participating country (2 single-user licenses for Stata 11 with 2 installation DVDs as well as 1 Micro-econometrics textbook).
- Countries purchased computers and other logistics and stationeries.

3.3.3. Project Activity 1: Capacity Building and Training

- Status - Achieved
- At least 45 people were trained in agricultural survey design and other methodological issues related to national crop-specific data collection (Annex 5).
- Regional collaboration established with AGRHYMET for project activities monitoring.
- Other technical support provided by AfDB: organization of a methodological workshop and a technical report was produced by the consultants.
- Both the French and English technical reports of the methodological workshop were distributed to all country focal points

3.3.4. Project Activity 2: Harmonize rice data collection methodologies

- Status – Achieved
- Survey questionnaires were reviewed and revised together with country project focal points.
- Both French and English revised questionnaires were sent back to countries.
- Both French and English technical manuals were developed and distributed to countries to facilitate data collection using the standard data collection tools.

3.3.5. Project Activity 3: Collect, process, analyze and publish updated rice statistical data in 21 countries in Sub-Saharan Africa

- Status: – Achieved
- First countries' quarterly reports submitted to the project coordination unit by all countries (Table 4).
- Second countries' quarterly reports submitted to the project coordination unit by all countries (Table 4).
- Survey completed in all countries (except Tanzania) – Table 5.
- Data entry templates prepared and sent to all countries by taking into account each country specific situation.
- Data entry completed for all countries except for Tanzania, and Uganda (Table 5).
- After the task of data entry, countries proceeded to data cleaning and analysis.
- Draft country reports and data sets sent to AfricaRice (Table 6).

PART II

CHAPTER 4

Preliminary Results of the Surveys

The preliminary results of the surveys are statistics which are essentially based on some countries village level data. Data cleaning and processing is on-going, therefore these statistics are to give an idea of the central tendencies based on the various villages data.

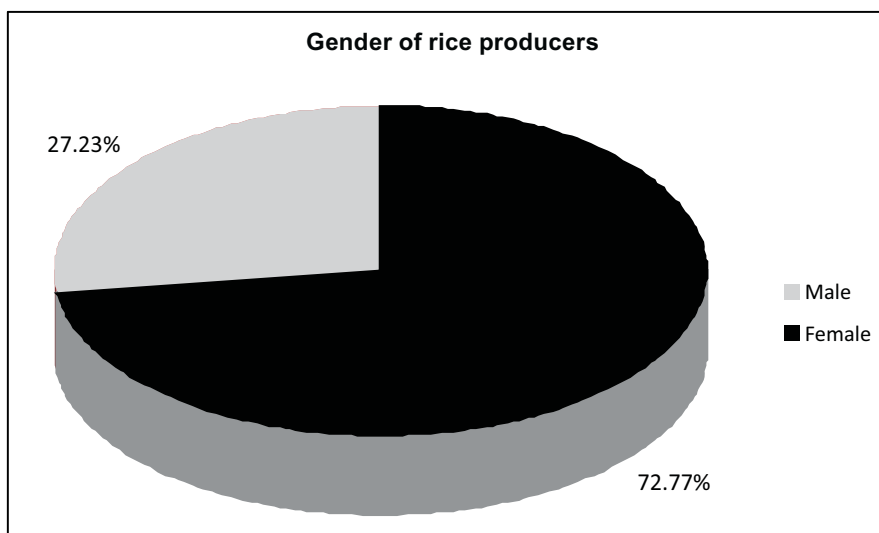
4.1. Distribution of samples by Gender

Table 7: Distribution of Samples by Gender, %

Countries	Male	Female
Benin	80.07	19.93
Burkina-Faso	80.70	19.30
Cameroon	62.00	38.00
Côte d'Ivoire	94	6
The Gambia	15.80	84.20
Ghana	92.09	7.91
Guinea	48.60	51.40
Kenya	52.30	47.70
Liberia	-	-
Madagascar	84.60	15.40
Mali	70.95	29.05
Mozambique	77.94	22.06
Nigeria	85.42	14.58
Central African Republic	-	-
Democratic Republic of Congo	85.80	14.20
Rwanda		
Senegal	90.74	9.26
Sierra Leone	52.77	47.23
Tanzania	-	-
Togo	90.51	9.49
Uganda	-	-
Whole	72.77	27.33

Based on the samples, Table 7 indicates that in most of the 21 countries, male rice farmers dominate. First of all, the main outstanding exception is the Gambia for which females are dominantly rice farmers (84.2% of the sample). Next, in Guinea, 51.4% of rice farmers are women; this is a dominant characteristic of rice farming in this country. Other countries for which women constitute a relatively large proportion of the sample are Kenya (47.7%), Sierra Leone (47.23%), Cameroun (38%), Mali (29%), and Mozambique (22%).

Figure 1: Gender of rice producers within the countries' overall samples



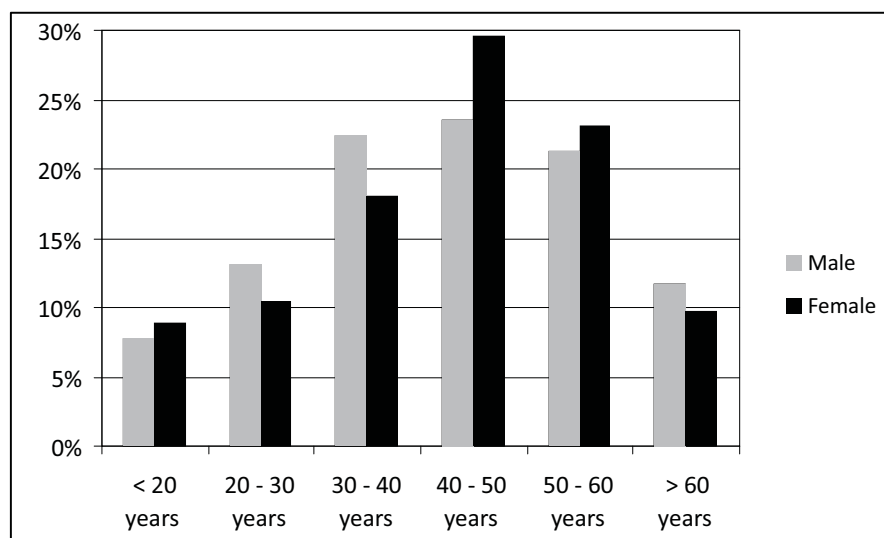
4.2. Distribution of Samples by Gender and by Age

Table 8: Distribution of Samples by Gender and by Age, %

Distribution of heads of rice farming households by age	Male	Female
< 20 years	7.81	8.94
20 - 30 years	13.10	10.47
30 - 40 years	22.36	18.05
40 - 50 years	23.53	29.53
50 - 60 years	21.25	23.10
> 60 years	11.70	9.69

Overall, 67% of male rice producers are between 30 and 60 years old while female rice producers of this group constitute 71%. The great proportion (46%) of male rice producers of this large group is located in the range of 30 and 50 years old while the female rice producers constitute more than 47%. About 1/3 of male rice producers (33%) are over 50 years old. The number of 16 countries was involved for these computations: Benin, Burkina-Faso, Cameroon, Ivory Coast, Gambia, Ghana, Guinea, Kenya, Madagascar, Mali, Mozambique, Nigeria, DRC, Senegal, Sierra Leone, and Togo.

Figure 2: Distribution of Samples by Gender and by Age, %



4.3. Marital Status

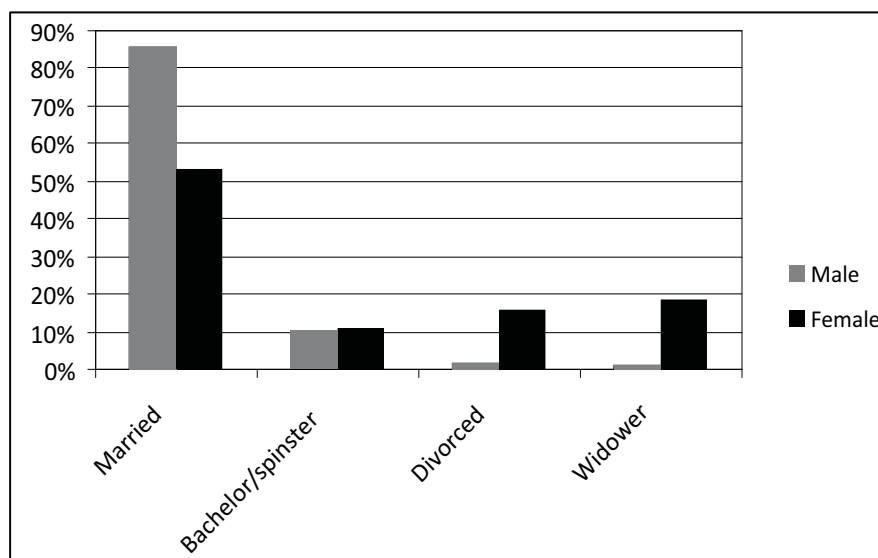
Table 9: Distribution of heads of rice farming households by marital status, %

Marital status	Male	Female
Married	85.68	52.95
Bachelor/spinster	10.07	11.04
Divorced	1.48	15.54
Widower	1.10	18.41

In all samples, rice producers both male (85.68%) and female (52.95%) are married. The bachelors/spinsters are almost in the same proportions for the case of male (10.07%) and female (11.04%) rice producers. However, divorced (15.54%) and

widower (18.41%) are much more observed for the case of female rice producers. These statistics were computed based on information from 11 countries: Benin, Burkina-Faso, Ivory Coast, Gambia, Ghana, Guinea, Kenya, Madagascar, DRC, Senegal, Togo.

Figure 3: Marital Status



4.4. Field Size

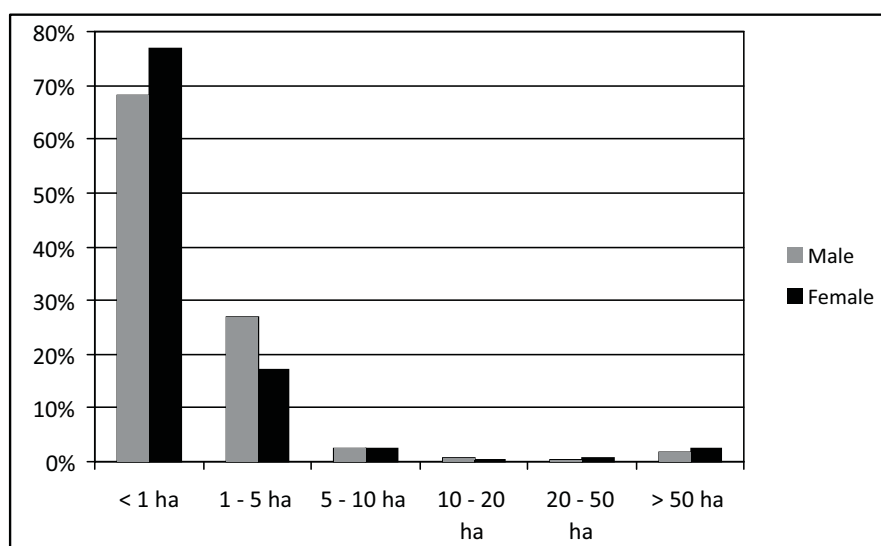
Based on 5 countries data: Benin, Madagascar, DRC, Senegal, and Togo; some statistics were computed relating to field size by category.

Table 10: Field Size by Category, %

Categories of field size	Male	Female
< 1 ha	67.95	76.97
1 - 5 ha	26.91	17.25
5 - 10 ha	2.53	2.42
10 - 20 ha	0.54	0.46
20 - 50 ha	0.24	0.57
> 50 ha	1.81	2.33

A general observation is that for both male (67.95 %) and female (76.97 %) rice producers, average cultivated land size are less than 1 hectare. A second important category of land holding is the category of 1-5 hectare for which about 27 % male rice producers are owners of this category of land size while female rice producers constitute 17.25 %. Much larger land sizes exist but very rare. However, category of land sizes over 50 hectares do exist up to 1.81 % for male rice producers and 2.33 % for female rice producers.

Figure 4: Field Size by Category



4.5. Yield

4.5.1. Aggregated Rice Yield by Ecology

Table 11: Average Yields by Type of Variety, tonne/Hectare

	Traditional	Improved AfricaRice NERICA	Improved AfricaRice non-NERICA	Improved NARS	Other improved
Yield (t/ha)	1.944	1.796	1.278	2.204	2.097

Highest yields are observed for improved rice varieties both from NARS and other institutions; over 2 tonnes per hectare. However, these figures refer to only countries such as: Benin, Ghana, Madagascar, DRC, Togo.

Figure 5: Average Yields by Type of Variety

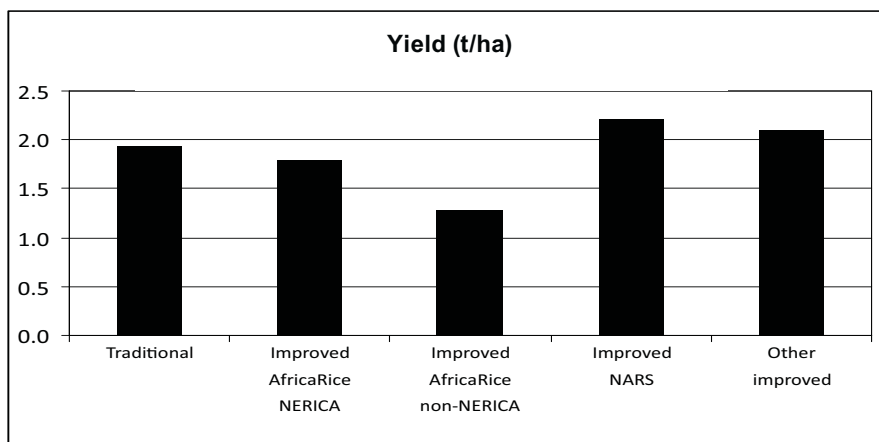
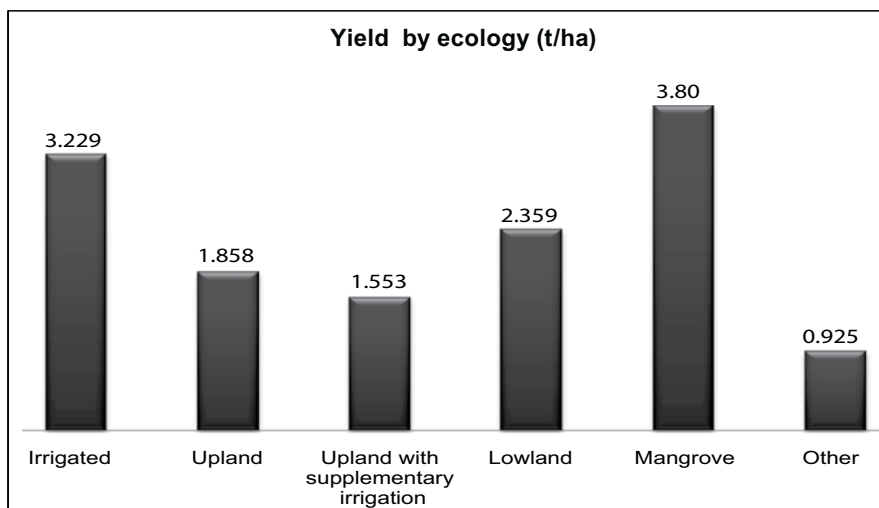


Figure 6: Yield by Ecology



The aggregated yields have been computed by ecologies in order to make a comparison of yields across ecologies. From these results, it can be noticed that the irrigated and mangrove ecologies on average have yields over 3 tonnes per hectare. However, the mangrove ecology is only for Ghana; more mangrove yield data are expected for other countries such as the Gambia, Ghana, Guinea, Liberia, Senegal, and Sierra Leone. Therefore, mangrove data may change when the aggregation will be made for all countries where mangrove rice production system exist implying that Ghana mangrove rice yield figure is just an exceptional case which does not allow a direct comparison with aggregated yield data for irrigated rice system.

Lowland rice growing ecology followed with an average yield of 2.3 t/ha. The aggregated lowland rice yields involve data from 8 countries (Benin, Burkina Faso, Cameroon, Ghana, Madagascar, Central African Republic, Democratic Republic of Congo, and Togo). Next, it is the upland rice production system which has a yield closer to 1.86 t/ha computed based on upland yield data from Benin, Burkina Faso, Cameroon, Ghana, Madagascar, Central African Republic, Democratic Republic of Congo, and Togo. The specific case of upland with supplementary irrigation shows an aggregated yield of 1.55 t/ha which is slightly lower than that of the upland strict. The reason is due to the fact that only five countries are involved in this case (Benin, Burkina Faso, Madagascar, Democratic republic of Congo, and Togo). Furthermore, for countries such as Burkina Faso and Democratic Republic of Congo, the upland strict yield is higher than that of upland with supplementary irrigation which could be due to reasons among which varietal effects, crop management practices, and physical soil conditions.

4.5.2. Cross Country Rice Yield by Ecology

Aggregated yield data have also been computed for the individual countries as shown by table 12 and figures 7 through 14.

Table 12: Yield by Ecology and by Country

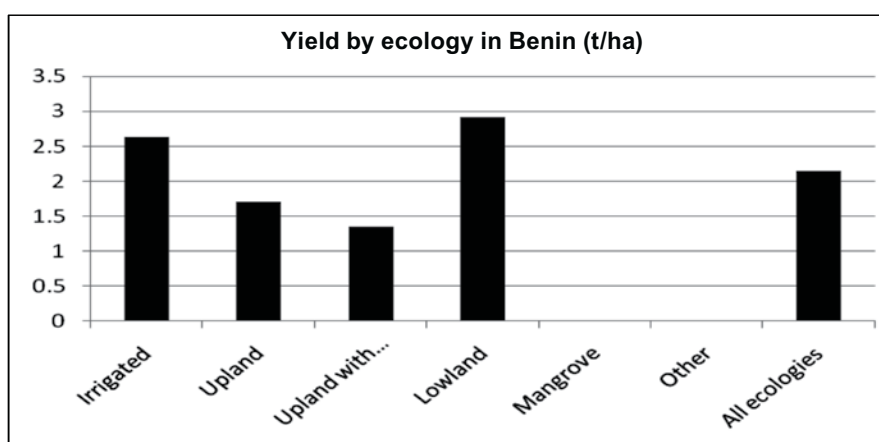
	Irrigated	Upland	Upland with supplementary irrigation	Lowland	Mangrove	Other	All ecologies
Benin	2.635	1.714	1.357	2.915			2.155
Burkina-Faso	2.691	2.889	2.333	4.358		0.25	2.504
Cameroon	4.422	1.648		2.790			2.953
Côte d'Ivoire							
Gambia							
Ghana	4.828	2.040		3.165	3.800		3.458
Guinea							
Kenya							
Liberia							
Madagascar	2.144	1.196	1.306	1.725			1.593
Mali							
Mozambique							
Nigeria							
RCA	1.142	2.248		0.390			1.260
RDC	1.950	1.451	1.000	1.422			1.456

	Irrigated	Upland	Upland with supplementary irrigation	Lowland	Mangrove	Other	All ecologies
Rwanda	6.290						6.290
Senegal							
Sierra Leone							
Tanzania							
Togo	2.960	1.674	1.770	2.109		1.600	2.023
Uganda							
All countries	3.229	1.858	1.553	2.359	3.800	0.925	

➤ Benin

In Benin, across all ecologies, the average rice yield is 2.15 t/ha. The highest yield was observed for the case of lowland (2.91 t/ha) followed by the irrigated rice yield (2.63 t/ha). Reasons could be due to the fact that rice producers use irrigated rice varieties in lowland rice growing systems with adequate cropping management practices (including fertilizers application). Also, farmers may replicate good practices from irrigated rice production system to lowland rice growing environment. Average yield for upland system is 1.71 t/ha compared to 1.36 t/ha for upland with supplementary irrigation. The same explanations as in the case of lowland versus irrigated system may also apply.

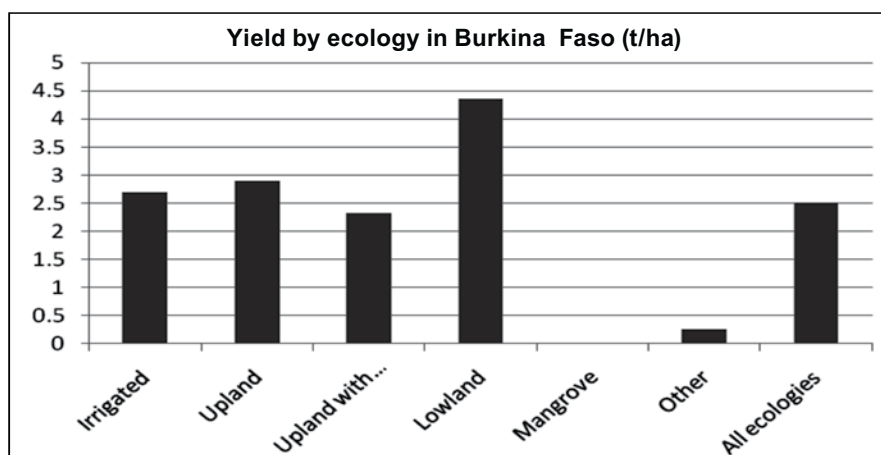
Figure 7: Yield by Ecology in Benin



➤ Burkina Faso

Considering all rice growing ecologies, the average yield in Burkina Faso is 2.50 t/ha with highest yield (4.36 t/ha) observed for lowland rice production followed by the upland system which has 2.89 t/ha. The irrigated rice system comes at a third place with 2.69 t/ha. In Burkina Faso, intensive efforts have been developed to improve lowland rice production systems (temporary water control systems and crop management practices). Also, improved rice varieties are used in the lowland systems. The upland rice system has also benefitted with some research output within the upland rice improvement project.

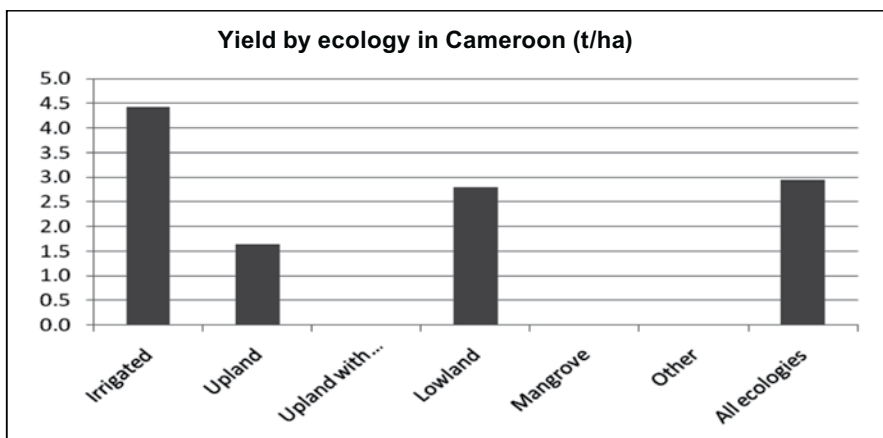
Figure 8: Yield by Ecology in Burkina Faso



➤ Cameroon

Average yield in all rice growing ecologies is 2.95 t/ha; the irrigated rice yield is 4.42 t/ha against 2.79 t/ha for lowland rice growing system. Upland rice system has a yield of 1.65 t/ha.

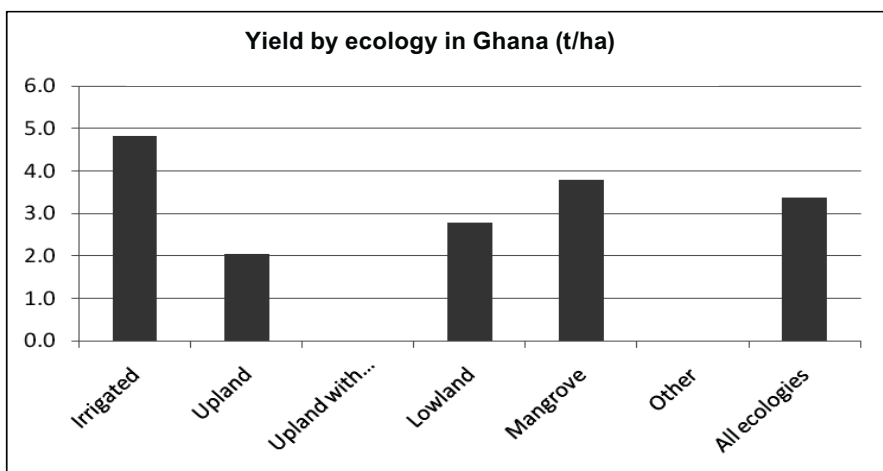
Figure 9: Yield by Ecology in Cameroun



➤ **Ghana**

In Ghana, the average irrigated rice yield is 4.83 t/ha which is much higher than the average yield computed across all ecologies (3.36 t/ha). Average yield for lowland rice production is 2.79 t/ha while the yield for upland system stands at 2.04 t/ha. A yield of 3.8 t/ha is also observed for the mangrove production system. As explained earlier, varietal and crop management practices may have contributed to the relatively high yield observed for mangrove rice production.

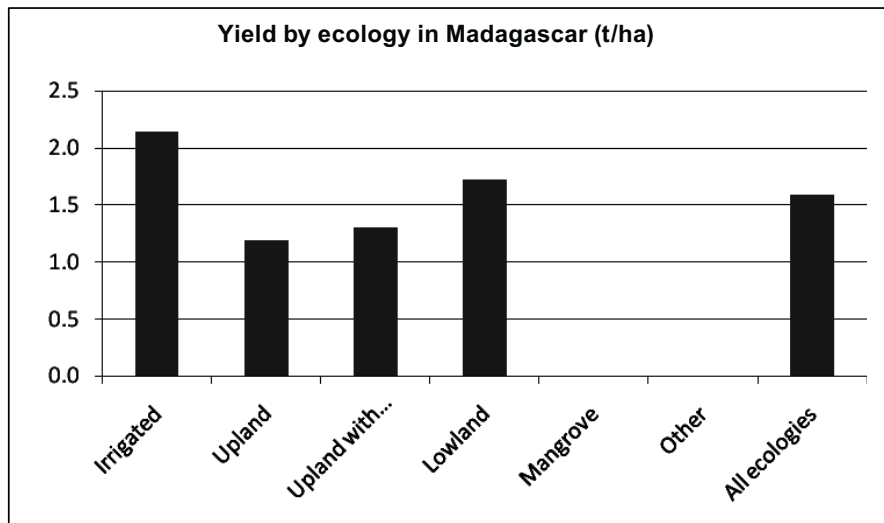
Figure 10: Yield by Ecology in Ghana



➤ Madagascar

Madagascar, a country with long history of rice growing culture, has shown an average rice yield of 1.59 t/ha. The average rice yield for irrigated system is 2.14 t/ha which seems low compared to the figure of 3.23 t/ha for irrigated rice for all the 9 countries. The lowland rice yield of 1.72 t/ha is also low in comparison to the average yield of 2.31 t/ha for all 8 countries. In Madagascar, however, the upland with supplementary irrigation has a yield of 1.31 t/ha against 1.19 t/ha for upland strict.

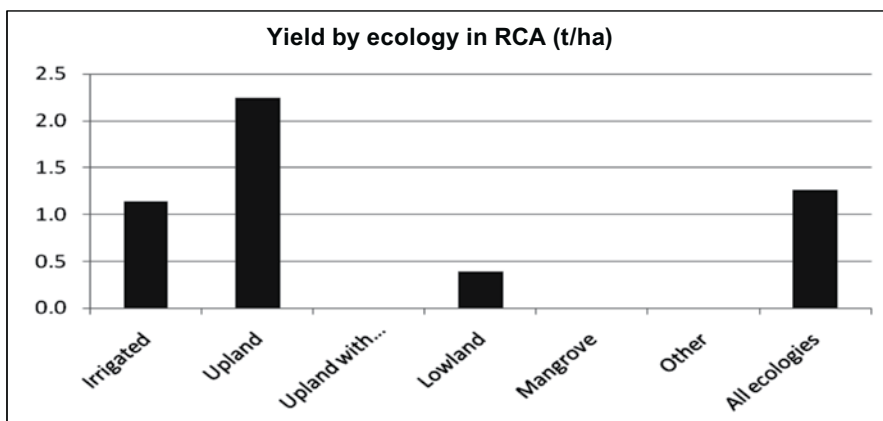
Figure 11: Yield by Ecology in Madagascar



➤ Central African Republic

In Central African Republic, the total average yield is only 1.26 t/ha with highest yield observed for upland rice production (2.25 t/ha). The irrigated rice is only 1.14 t/ha. The lowland rice system average yield is 0.39 t/ha which is not only the lowest yield observed among the 8 countries but also far below the average of 2.31 t/ha for all countries.

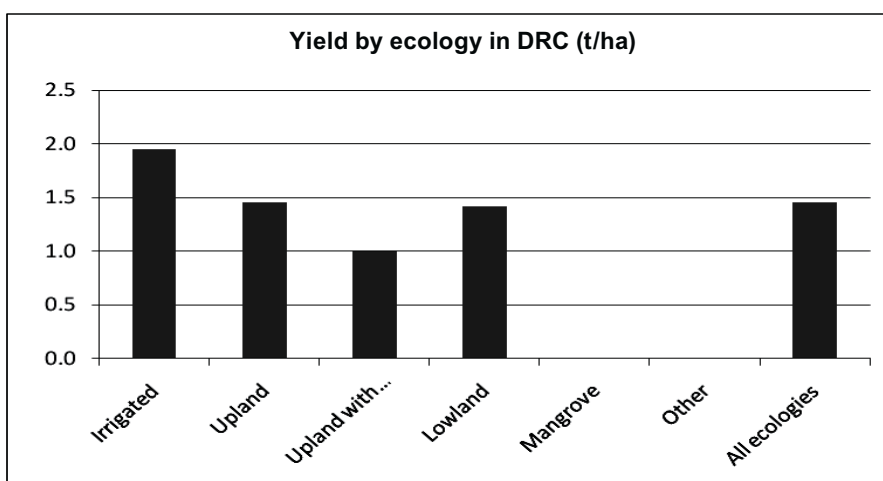
Figure 12: Yield by Ecology in Central African Republic (RCA)



➤ **Democratic Republic of Congo (DRC)**

Average rice yield for all ecologies in DRC is 1.46 t/ha close to the average rice yield for all ecologies as in the case of the Central African Republic (1.26 t/ha). The irrigated rice yield is 1.95 t/ha which is higher than the yields of all other ecologies namely upland system (1.45 t/ha), upland with supplementary irrigation (1.0 t/ha) and lowland rice production system (1.42 t/ha).

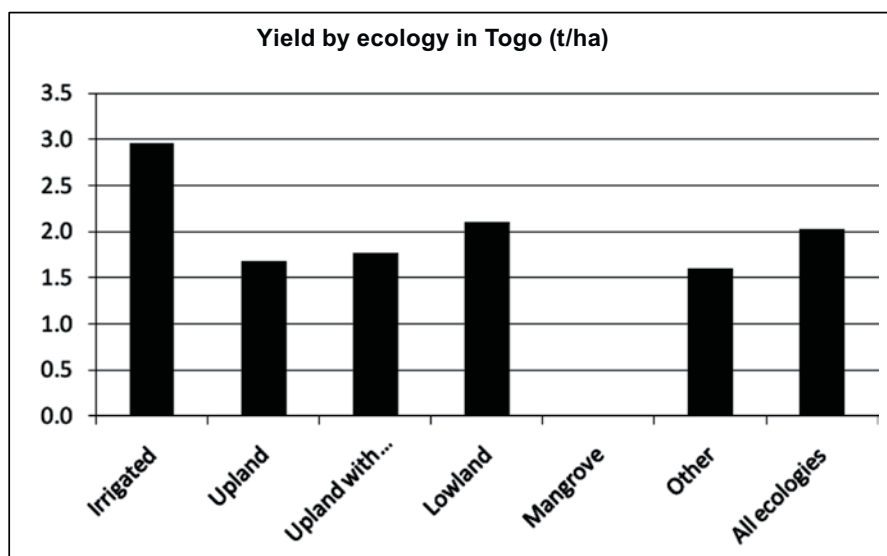
Figure 13: Yield by Ecology in Democratic Republic of Congo



➤ Togo

In comparison to a few countries in the sample (Madagascar, DRC, and Central African Republic), Togo has shown relatively better rice yields in all its major rice grown ecologies. First, the average yield for all ecologies is 2.02 t/ha. The irrigated rice system has an average yield of 2.96 t/ha. The lowland system has also a yield in the range of 2.1 t/ha; higher than the yields of 1.77 t/ha for upland with supplementary irrigation and 1.67 t/ha for upland strict.

Figure 14: Yield by Ecology in Togo



4.6. Knowledge of the Varieties

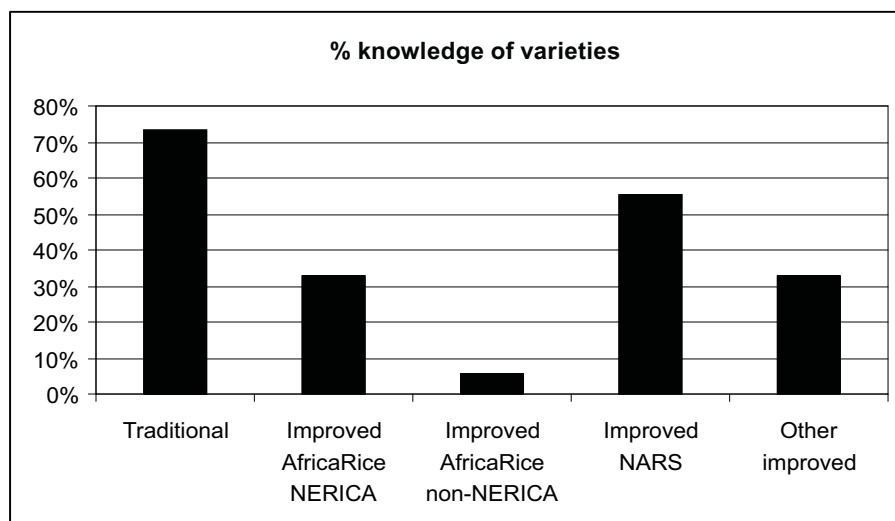
Table 13: Knowledge of Varieties, %

	Traditional	Improved AfricaRice NERICA	Improved AfricaRice non-NERICA	Improved NARS	Other improved
knowledge of varieties	73.12	32.92	5.43	55.38	32.97

Rice producers are fully aware of the types of rice varieties that they grow as shown by table 12. Rice producers have better knowledge of their traditional varieties that they

have been growing for centuries. Despite all, they do know very well also AfricaRice improved NERICA and non-NERICA varieties and the improved rice varieties introduced by NARS or other improved varieties. This information is generated based on 6 countries data: Benin, Ghana, Guinea, Kenya, Madagascar, and DRC.

Figure 15: Knowledge of Varieties



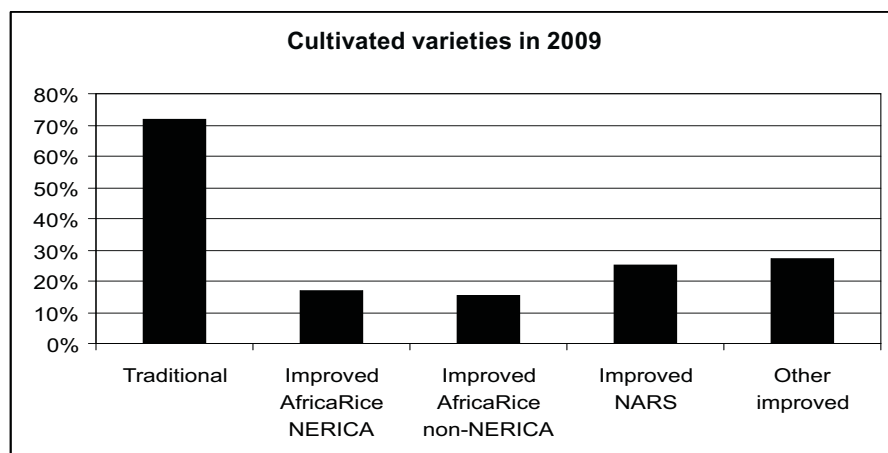
4.7. Varieties Grown

Table 14: Grown Varieties

	Traditional	Improved AfricaRice NERICA	Improved AfricaRice non-NERICA	Improved NARS	Other improved
Cultivated varieties in 2009	71.95	16.97	15.17	25.24	27.08

In 2009, in the majority of cases the cultivated rice varieties are traditional rice varieties. But, the improved rice varieties are also cultivated in relatively smaller proportions. This information is generated based on 6 countries data: Benin, Ghana, Guinea, Kenya, Madagascar, and DRC.

Figure 16: Grown Varieties



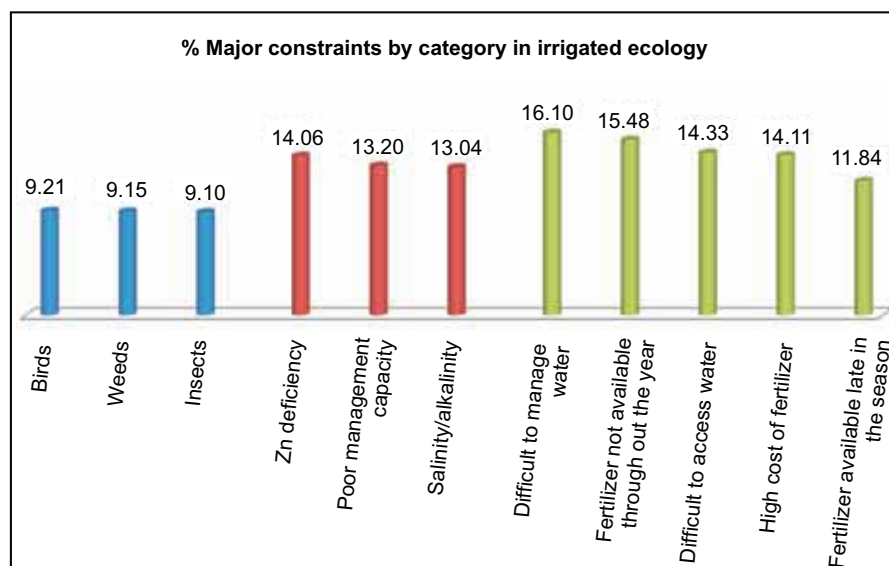
4.8. Constraints for Irrigated Ecology

Table 15: Constraints for Irrigated Ecology, %

	Major constraints	Average incidence in irrigated ecology (%)
Biotic constraints	Birds	9.21
	Weeds	9.15
	Insects	9.10
Abiotic constraints	Zn deficiency	14.06
	Poor water management capacity	13.20
	Salinity/alkalinity	13.04
Socio-economics constraints	Difficult to manage water	16.10
	Fertilizer not available throughout the year	15.48
	Difficult to access water	14.33
	High cost of fertilizer	14.11
	Fertilizer available late in the season	11.84

Abiotic and socio-economic constraints are more pronounced in irrigated ecology. These constraints are diverse according to survey results.

Figure 17: Major Constraints for Irrigated Ecology



Both the table and figure were generated based on the data for 4 countries data: Benin, Central African Republic, Democratic Republic of Congo, and Sierra Leone.

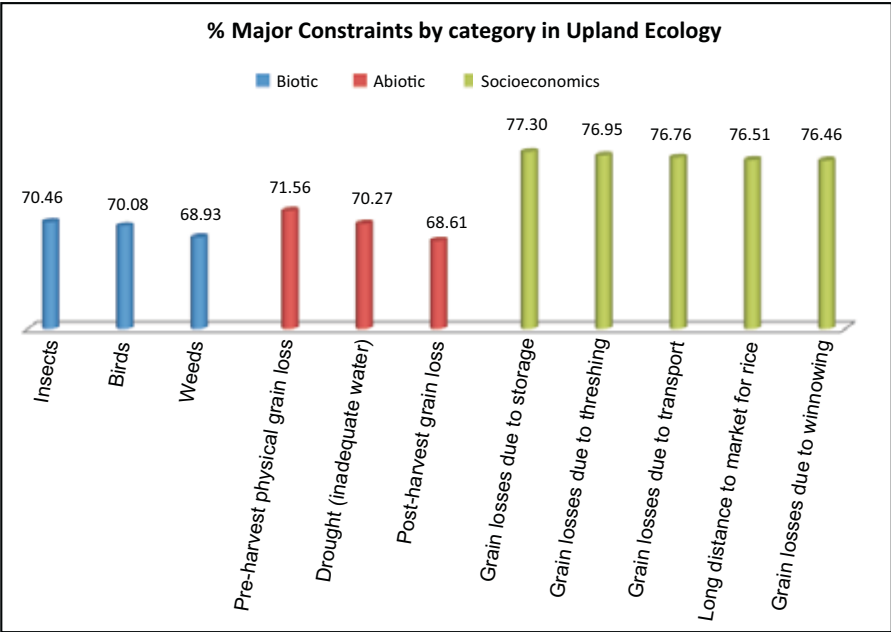
4.9. Upland Constraints

Table 16: Constraints identified in Upland Rice Growing Ecology, %

	Major constraints	Average incidence in upland ecology (%)
Biotic constraints	Insects	70.46
	Birds	70.08
	Weeds	68.93
Abiotic constraints	Pre-harvest physical grain loss	71.56
	Drought (inadequate water)	70.27
	Post-harvest grain loss	68.61
Socio-economics constraints	Grain losses due to storage	77.30
	Grain losses due to threshing	76.95
	Grain losses due to transport	76.76
	Long distance to market for rice	76.51
	Grain losses due to winnowing	76.46

Constraints that were evaluated in upland ecology involved all categories of constraints biotic, abiotic and socio-economic which are more pronounced with incidence in the range of 70%.

Figure 18: Major Constraints for Upland Ecology



Both the table and figure were generated based on the data for 4 countries data: Benin, Central African Republic, Democratic Republic of Congo, and Sierra Leone.

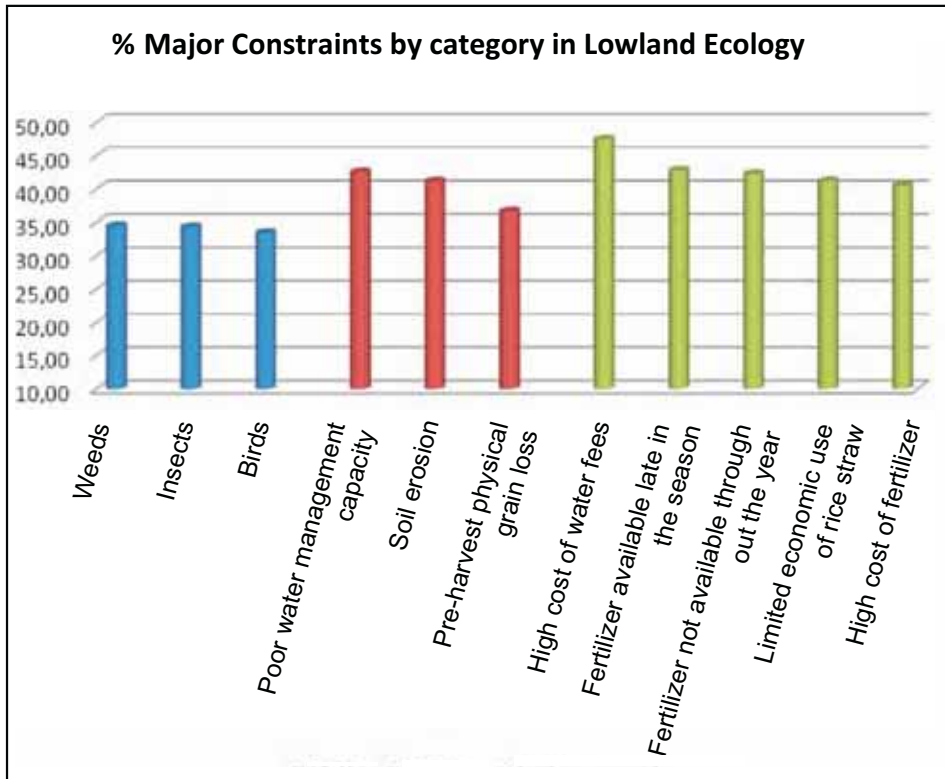
4.10. Constraints for Lowland

Table 17: Constraints identified for lowland

	Major constraints	Average incidence in lowland ecology (%)
Biotic constraints	Weeds	34.46
	Insects	34.33
	Birds	33.46
Abiotic constraints	Poor water management capacity	42.58
	Soil erosion	41.23
	Pre-harvest physical grain loss	36.71
Socio-economics constraints	High cost of water fees	47.54
	Fertilizer available late in the season	42.83
	Fertilizer not available through out the year	42.34
	Limited economic use of rice straw	41.25
	High cost of fertilizer	40.56

Lowland ecology also has all categories of constraints (biotic, abiotic and socio-economic); but the incidence is higher than that of the case of irrigated and much lower than that of upland. The incidence is the range of 33 – 47 %.

Figure 19: Major Constraints for Lowland Ecology



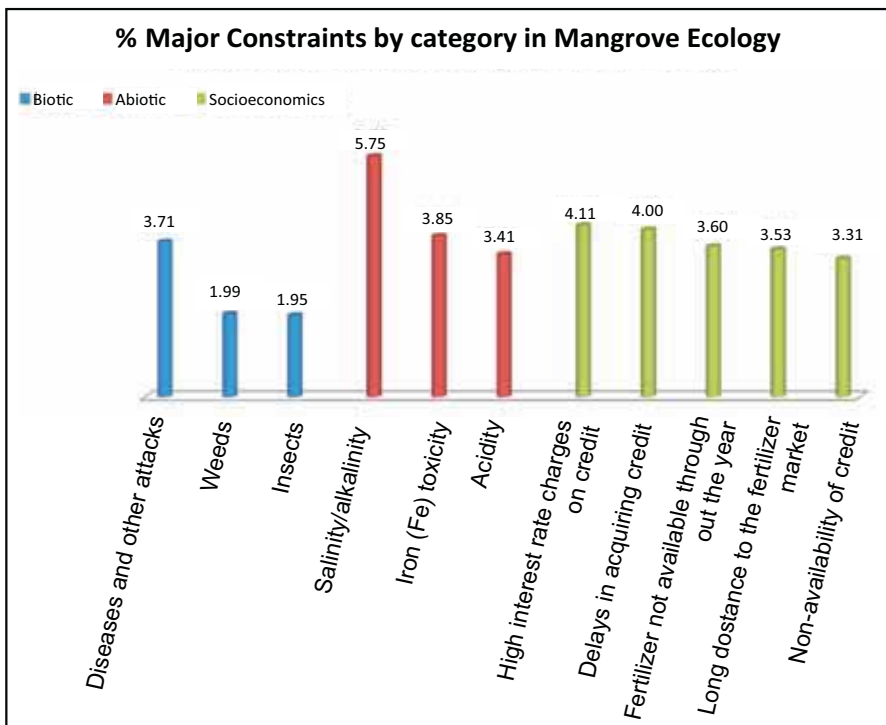
Both the table and figure were generated based on the data for 4 countries data: Benin, Central African Republic, Democratic Republic of Congo, and Sierra Leone.

4.11. Constraints for Mangrove

Table 18: Constraints identified for Mangrove, %

	Major constraints	Average incidence in mangrove ecology (%)
Biotic constraints	Diseases and other attacks	3.71
	Weeds	1.99
	Insects	1.95
Abiotic constraints	Salinity/alkalinity	5.75
	Iron (Fe) toxicity	3.85
	Acidity	3.41
Socio-economics constraints	High interest rate charges on credit	4.11
	Delays in acquiring credit	4.00
	Fertilizer not available throughout the year	3.60
	Long distance to the fertilizer market	3.53
	Non-availability of credit	3.31

Figure 20: Major Constraints for Mangrove Ecology



When compared to irrigated, lowland, and upland ecologies, the mangrove rice growing ecology has very little incidence of constraints (biotic, abiotic and socio-economic).

Both the table and figure were generated based on the data for 4 countries data: Benin, Central African Republic, Democratic Republic of Congo, and Sierra Leone.

ANNEX 1

Schedule (monthly timetable)

Specific Objective/ Intermediate Result	Activity	M 09	A 09	M 09	J 09	J 09	A 09	S 09	O 09	N 09	D 09	J 10	F 10	M 10	A 10
SO1: Strengthen the capacity of national agricultural statisticians and NARES scientists on best practices on agricultural survey design, sampling methodology for rice data collection and statistical analysis and publication. IR.1. NARES scientists, agricultural extension agents and agricultural statisticians from CARD countries trained in implementing a common rice data collection methodologies (total of 42 people). Partners: AfricaRice, NARES in CARD countries, Universities	A.1.1. The two consultants are recruited and operational			X WA*											
	A.1.2. Country focal points nominated and are fully operational			X	X	X									
	A.1.3. Preparation for the training session for country experts		X	X	X										
	A.1.4. Organization of the 2 training workshops for the country experts (West Africa and East Africa)			X	X										

Specific Objective/ Intermediate Result	Activity	M 09	A 09	M 09	J 09	J 09	A 09	S 09	O 09	N 09	D 09	J 10	F 10	M 10	A 10
SO 2: Harmonize rice data collection methodologies. IR.1. Rice data collection methodologies and questionnaires are harmonized across CARD countries Partners: AfricaRice, NARES in CARD countries, Universities, AGRHYMET, AFRISTAT	A.2.1. Development of standard data collection tools, reviewed and field tested by country partners				X	X	X	X							
SO 3: Collect, process, analyze and publish updated rice statistical data in 21 countries in Sub-Saharan Africa. IR.1. Updated and reliable rice data (relevant data on ecologies, varieties, farmers characteristics, source of income and costs of production) available for CARD countries. Partners: AfricaRice, NARES in CARD countries, Universities, AGRHYMET, AFRISTAT	A.3.1. Implementation of country level survey for rice data collection in different sites with known sample size							X	X	X	X				
	A.3.2. Data analysis											X	X	X	X

Specific Objective/ Intermediate Result	Activity	M 09	A 09	M 09	J 09	J 09	A 09	S 09	O 09	N 09	D 09	J 10	F 10	M 10	A 10
SO 4: Publish updated rice statistical data in 21 countries in Sub-Saharan Africa and publish policy briefs based on data. IR.1. Policy briefs which will help guide rice policy decisions monitor and assess the impacts of investments made in the domestic rice sector. Partners: AfricaRice, NARES in CARD countries, Universities, AGRHYMET, AFRISTAT	A.4.1. Dissemination of data and information by means of policy briefs, technical reports. Web based publication														X

*Recruitment of the WA coordinator.

ANNEX 2

Sampling design and sample size for the 21 countries

Countries	Sampling Method	Sample Sites	Regions/Sites
Benin	Sampling at 2 levels	1255	- 61 districts out the 77 districts - 11 Districts out of 12 (except Littoral)
Burkina Faso	Sampling at 2 levels	760	- For upland rice, 8 regions out of 13 regions were selected - For plain and lowland rice, 9 regions out of 13 regions were selected
Cameroon	Sampling at 2 levels	1200	5 rice basins
Côte d'Ivoire	Sampling at 2 levels	3 325	- 475 Census Districts (DR) in 672 regions
The Gambia	Sampling at 2 levels	370	- 6 regions
Ghana	Sampling at 2 levels		
Guinea	Sampling at 2 levels	1085	- 7 Regions (BOKE, FARANAH, KANKAN, KINDIA, LABE, MAMOU, N'ZEREKORE) - 33 Prefectures, - 217 Enumeration areas
Kenya	Sampling at 2 levels	572	- 5 provinces, - 9 districts (1 district in the central province and 2 districts in other areas).
Liberia	Sampling at 3 levels		
Madagascar	Sampling at 3 levels	1606	- Cultivated almost country wide -15 districts - 143 Fokontany
Mali	Sampling at 2 levels	2 495	
Mozambique	Sampling at 2 levels		
Nigeria	Sampling at 2 levels	10,500	- 6 Regions - 36 States - 700 ZD

Countries	Sampling Method	Sample Sites	Regions/Sites
Central African Republic	Sampling at 2 levels	2140	<ul style="list-style-type: none"> - 4 agro-ecological zones - South Eastern basin (prefectures of Ouaka, Basse-Kotto and the M'Bomou) - Central basin and North Eastern (prefectures of Kémo, Ouaka and a part of Haute-Kotto) - South West basin and a part of North West (prefectures of Ombella-M'Poko, Lobaye, and Ouham-Pendé) - Irrigated perimeters of Sakai (peri-urban zone of Bangui) - Bozoum (Chinese farm of PK 26) - Part of the Ouaka (Kidjokra)
Democratic Republic of Congo	Sampling at 2 levels	848	- 8 provinces
Rwanda	Sampling at 2 levels	395	<ul style="list-style-type: none"> - 6 principal rice producing regions - 10 villages : Bugarama (Western Province), Rwamagana, Kanyonyomba, Cyunuzi, Cyabayaga, and Bugesera (East Province), Mukunguli, Cyili, Rwasave and Rusuli (South Province)
Senegal	Sampling at 2 levels	2000	<ul style="list-style-type: none"> - Irrigated zones : Delta (Districts of Saint-louis and Dagana), Moyenne Vallée (Districts of Podor, Matam and Kanel), Haute Vallée (District of Bakel) and Anambé (District of Vélingara) - Irrigated zones : Central East of Senegal (District of Tamba), Kédougou (Districts of Kédougou, Salémata and Saraya), South West Basin (Districts of Fatick and Foundiougne), Haute Casamance (Districts of Kolda, Vélingara, and Médina Yoro Foulah), Moyenne Casamance (Districts of Sédhiou, Goudomp Bounkiling and Bignona) and Basse Casamance (Districts of Ziguinchor and Oussouye)

Countries	Sampling Method	Sample Sites	Regions/Sites
Sierra Leone	Sampling at 2 levels	1300	- 13 rice producing districts - 571 surveys areas
Tanzania	Sampling at 4 levels		- 21 Districts and 105 villages sampled, - Lake zone (Mwanza, Mara, Shinyanga, and Kagera), - Northern zone (Manyara, Kilimanjaro and Arusha), - Eastern zone (Morogoro, Pwani, Dar es salaam and Tanga), - Western zone (Kigoma and Tabora), - Central zone (Dodoma and Singida), - Southern highland zone (Mbeya, Iringa and Rukwa), - Southern zone (Mtwara, lindi and Ruvuma).
Togo	Sampling at 2 levels	727	- 5 regions (Maritime, Plateaux, Centrale, Kara, Savanes) - 251 villages
Uganda	Sampling at 2 levels		

ANNEX 3

Focal Point/Representation by country

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*Mr Gilbert Talongomo died on 2 December 2009 in Kinshasa. A new staff, Mr Robert NGONDE NSAKALA, was appointed.

**Dr Ogunlana, Bandlele has retired.

ANNEX 6

Implementation of NEC 6 Recommendations

Decisions and Recommendations of the National Experts Committee

6th Biennial Consultative Meeting (23-25 June, 2008)

Recommendation 1: Congratulations to the DG of AfricaRice and his team

The National Experts Committee is impressed with the major achievements recorded by the Director General of AfricaRice within a relatively short period of time in office, such as:

- i) geographic expansion of the Center,
- ii) increase in joint project proposals with National Agricultural Research Systems (NARS),
- iii) developing an Emergency Initiative in response to the global food crisis, launching of a Post-Masters Program,
- iv) strong advocacy for member countries and AfricaRice at international and local fora, and
- v) the excellent financial health of the Center.

And

Congratulates the Director General and his staff for this achievement realized in the short time of the Director General's ascendancy to the highest leadership position of the Center.

Recommendation 2: New Program Structure and Strategic Plan

The National Experts Committee notes with satisfaction the steps taken by AfricaRice to develop a new program structure and a new 2010-2015 Strategic Plan,

And

Recommends that consultations with all partners are increased and that AfricaRice provides the financial resources required for this important exercise.

Status as of September 2010:

Because of the CGIAR change management and the development of the Global Rice Science Partnership (GRiSP), the finalization of a new Strategic Plan has been moved forward to 2011. A research priority setting exercise based on household data obtained in 21 African countries is ongoing and will be used as an input for a new Strategic Plan for the Center within the context of GRiSP.

Recommendation 3: Alignments AfricaRice-IITA and AfricaRice-IRRI-CIAT

The National Experts Committee appreciates steps taken by the Center in forging a corporate services alignment with IITA to the extent that AfricaRice currently manages Corporate Services at the Cotonou Station, and is further impressed by the bold steps taken by the Center in achieving programmatic alignment with IRRI and CIAT.

It recommends that the initiatives be sustainable and that AfricaRice involves as much as possible NARS of member states in the implementation of joint projects.

Status as of September 2010:

The development of GRiSP means that the programmatic alignment with IRRI and CIAT will be sustainable. All project executed by AfricaRice involve NARS of member states.

Recommendation 4: Geographic expansion and Center of Excellence of the African Union

The National Experts Committee appreciates the fact that AfricaRice has become a truly pan-African Center by virtue of its geographical expansion, which has resulted in the adhesion of new member countries,

And

Exhorts AfricaRice to manage this expansion well, consider membership from southern African countries, and actively explore the possibilities of becoming a Center of Excellence of the Africa Union while remaining a CGIAR Center.

Status as of September 2010:

AfricaRice continues to cautiously expand the number of member states. Currently the institute counts 24 member states, but is working in 35 African countries. The MOU with the African Union is being finalized for signature.

Recommendation 5: Membership of Egypt

The National Experts Committee congratulates Egypt for its recent membership of the Africa Rice Center (AfricaRice)

And

Recommends that AfricaRice encourage and actively engage counterparts from Egypt, and mutually explore all possible synergies that are achievable for a win-win arrangement.

Status as of September 2010:

AfricaRice has recruited two staff from Egypt, a hybrid rice breeder and a molecular biology laboratory assistant, both based in Senegal. In 2010 a training course on hybrid rice breeding was organized in Egypt. Currently possibilities are explored to allow AfricaRice member country teams to visit Egypt using IFAD funding. Moreover, a meeting between RTTC and AfricaRice staff identified collaborative research topics (such as adaptation of rice-based systems to climate change) for which funding will be sought.

Recommendation 6: Training of NARS scientists

The National Experts Committee is concerned about the continually low and eroding levels of human capacity in the national programs for high quality rice research and technology transfer activities, and acknowledges the steps taken by AfricaRice to start the Post-Masters Program,

And recommends that:

AfricaRice analyzes the data available in the Center to determine the training needs of NARS and identify donors to support an accelerated development of human capacity for rice research for Africa.

AfricaRice makes the necessary effort to establish a Rice Information Gateway (RIGA), an action that should result in an improvement in information sharing and communication between stakeholders in rice research and development communities.

Status as of September 2010:

Through the survey conducted in 2008 and further analyses done for CARD, AfricaRice has a good overview of rice research capacity in Africa. AfricaRice is reviving the Task Force mechanism to pool scarce human resources at NARS level in various key disciplines, such as rice breeding. NARS staff are hosted at AfricaRice as visiting

scientists or attend specialized individual or group training courses. Young member country nationals can enrol in the post-Masters program. Capacity building efforts to the benefit of NARS is part of virtually every project proposal. The development of RIGA depends on funding from CIDA that is expected to come on line early 2011.

Recommendation 7: Rice yields in member countries

The National Experts Committee notes the wide disparity in yield levels of rice in the member countries,

And

Recommends that AfricaRice carefully analyze the reasons for the yield gaps, and share the information as to why such discrepancies occur, and subsequently take proactive steps to have them rectified.

Status as of September 2010:

Yield gaps are being analyzed through household level surveys conducted in 2009 and 2010 as part of the rice statistics component of the Emergency Rice Initiative funded by the government of Japan. Results of the surveys will be used to analyze the reasons for yield gaps and set rice R&D priorities accordingly.

Recommendation 8: Reduce Post-harvest constraints

Post harvest handling and the lack of systematic involvement of the private sector will continue to be major constraints for rice production in Africa.

The National Experts Committee recommends that AfricaRice to aggressively develop a long-term strategy to confront this constraint in a sustained manner in collaboration with the NARS.

Status as of September 2010:

Post-harvest issues are Theme 4 in the Global Rice Science Partnership and as such as gained prominence in AfricaRice's research program. AfricaRice is actively looking for funding, in particular from CIDA and the Syngenta Foundation.

Recommendation 9: Advocacy on behalf of African Rice Production

The National Experts Committee is encouraged by AfricaRice's decision to strengthen its policy dialogue with major policy makers,

And

Recommends that the Center be involved in the implementation of the Presidential Rice Initiative to be launched by his Excellency Dr Thomas Yayi Boni (President of the Republic of Benin), while at the same time deepening dialogue with the Regional Economic Communities (RECs) and farmer groups in Africa.

Status as of September 2010.

The Yayi Boni Presidential Rice Initiative was not implemented as it was taken over by events that occurred as a response to the 2008 rice crisis. AfricaRice is actively seeking enhanced collaboration with RECs, in particular with ECOWAS. The Center has proposed several axes of collaboration within the framework of the ECOWAS Mobilizing and Federating programs to boost the rice sector in West Africa.

Recommendation 10: Results in rice research in Africa

The National Experts Committee notes the relevance and diversity of rice research results obtained in Africa from the member country reports

And

Requests AfricaRice to document these in the report of the proceedings to make them more visible and for mutual sharing of information between NARS.

Status as of September 2010

Proceedings of NEC meetings will capture such information, as was done for the 2008 NEC meeting.

Recommendation 11: Assistance to Post-Conflict Countries

The National Experts Committee recognizes the major efforts being made by member countries especially those coming out of conflicts to re-establish rice production to normalcy,

And

Recommends that post-conflict member countries receive special attention within the framework of AfricaRice's activities.

Status as of September 2010

Support to post-conflict countries is part of Theme 6 of GRiSP, product lines 6.1 and 6.4. Activities are ongoing in Liberia and the expectation is that AfricaRice staff will be

based in the country by 2011 to backstop rice research and rice sector development in Liberia and in the Mano River Union in general.

Recommendation 12: Quality seed

As seed quality continues to be a major concern for all member countries, the National Experts Committee recommends that:

Training courses on seed provided to member states by AfricaRice be supported and

Urges AfricaRice to mobilize resources to sustain an increased production of foundation seed and seed for multiplication by NARS and farmers.

Status as of September 2010:

AfricaRice has conducted numerous training courses on seed production over the years. Emergency initiatives as a response to the 2008 rice crisis have helped to provide farmers with access to quality seed.

Recommendation 13: Lowland Rice Production

The National Experts Committee recognizes that the future of rice production in Africa lies in the massive use of the lowlands.

It therefore, recommends that AfricaRice strengthen its research efforts in rice improvement in this ecology through water and soil management, and taking into account socioeconomic aspects.

Status as of September 2010:

Lowland rice systems are a major focus in Theme 3 of GRiSP, whilst not ignoring the upland rice ecology. Two major projects funded by Japan and the EU focus on realizing the potential of inland valley lowlands in West Africa.

Recommendation 14: Arrears in member state contributions

The National Experts Committee recognizes that payment of contributions by member states places AfricaRice in a favorable position to negotiate with donors when seeking funding.

The National Experts Committee urges member states to take ownership of this tool, which is their Center, through the payment of their annual contributions.

Recommendation 15: Motion of Thanks

The National Experts Committee wishes to express its sincere thanks to His Excellency the President, the Government and the people of the Republic of Benin for the warm and fraternal welcome, and kind hospitality reserved for all the participants.

A motion of thanks is equally being addressed to the Government of Cote d'Ivoire for preserving the headquarters of the Africa Rice Center in M'be despite the crisis.

Done in Cotonou, 25 June 2008

National Experts Committee

ANNEX 7

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