


WARDA



Status of NERICA Dissemination In SSA

AKINTAYO, ARI Coordinator

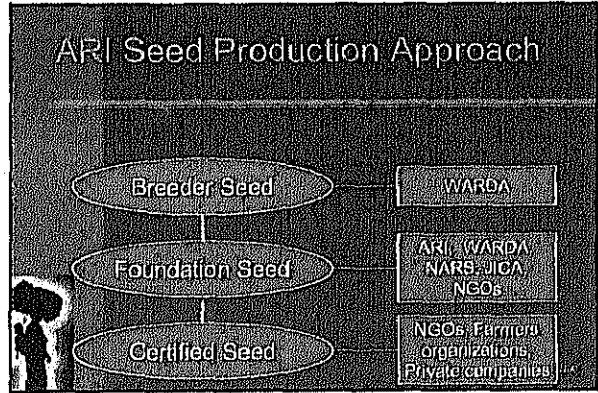
Presented at
Sustainable Rice Farming in Africa
GIMPA Accra, Ghana December 6-8, 2006

Outline

- Seed issues
- Complementary Technology Development
- Resource Mobilization
- Way Forward

Status of Seeds Production

Seed Production and Distribution were among our major activities during the period under review



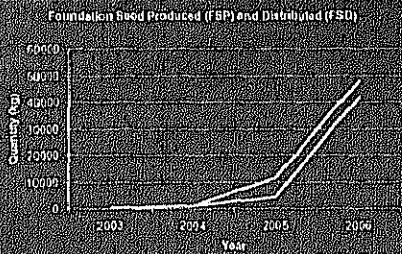
Satisfying seed requests in ARI countries by ARI regional Coordination Unit

2003: 425 kg
2004: 1,214 kg
2005: 15,576 kg
2006: 67,253 kg

Table 1: Production and distribution of Breeder Seed (BS) and Foundation Seeds (FS) of NERICA by ARI Coordination Unit between 2003-2006

Year	Seed produced (kg)			Seed distributed (kg)			Beneficiary countries
	B.S	F.S	Total	B.S	F.S	Total	
2003	75	350	425	65	350	415	Mali, Togo
2004	131	1,083	1,214	100	1,000	1,100	Burkina Faso, Mali, Togo, Nigeria
2005	1,474	14,102	15,576	1,400	13,900	15,300	Benin, BF, DRC, Ethiopia, Gambia, Ghana, Guinea, India, Kenya, Mali, Nigeria, Liberia, Mozambique, Philippines, SL, Tanzania, Togo, Uganda
2006	855	49,183	50,038	100	42,000	42,100	Benin, BF, Cameroon, DRC, CI, Gambia, Guinea, Guinea, Japan, Kenya, Liberia, Madagascar, Mali, Nigeria, Mozambique, SL, Tanzania, Togo
Total	2,559	64,638	67,253	1,665	57,250	58,915	

Achievements (Cont'd)



Achievements (Cont'd)

More than 3,000 tons of Foundation and Certified seeds produced by the PCUs in Pilot countries and distributed.

Introduction of new NERICA lines to Farmers - PVS

More than 100 upland NERICA lines and other improved varieties sent to NARS for PVS.



Introduction of new NERICA lines to Farmers - PVS

Many of the PVS materials met the requirements of farmers and some of them have been adopted or released.



Introduction of new NERICA lines to Farmers - PVS (Cont'd)

NERICA 8

Extra early variety



NERICA 14

New candidate for release




Performance of New Named NERICA

Variety	Plant height (cm)	Potential yield (t/ha)	Harvested yield (t/ha)	Maturity (days)	Grain length (mm)
NERICA 8	101	6,000	4,200	86	10
NERICA 9	110	6,000	3,900	86	10
NERICA 10	110	5,000	3,000	93	9
NERICA 11	105	7,000	5,500	95	10
NERICA 12	105	6,000	5,000	93	10
NERICA 13	124	6,000	4,000	94	10
NERICA 14	110	4,500	3,100	82	10
NERICA 15	129	5,000	3,200	97	10
NERICA 16	131	5,000	3,300	93	9
NERICA 17	117	6,000	3,600	94	9
NERICA 18	112	5,000	3,300	97	10


Introduction of New NERICA Lines to Farmers – PVS (Cont'd)

ARI also contributed to the introduction and release of lowland NERICA lines; up to 60 have been named, of which 5 have already been released and 5 others adopted.




Varietal Maintenance and Characterization

Intensive varietal maintenance and characterization activities in progress




Varietal Maintenance and Characterization

- Off types continued to be observed in some released varieties. Measures are taken to correct this
- Characterization of all released/named materials in progress.



Status of NERICA Dissemination

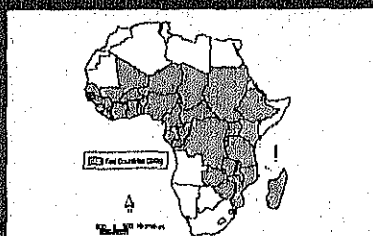
By 2006, NERICA lines tested in nearly all SSA countries



Status of NERICA Dissemination

By 2006, NERICA lines tested in nearly all SSA countries

NERICA Test Countries



Status Of NERICA Dissemination (Cont'd)

More than 150,000ha cultivated

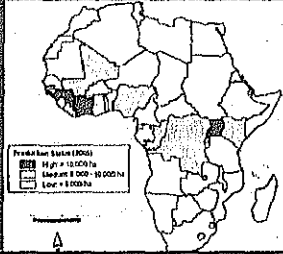


Table 4. NERICA lines adopted/released in selected countries

COUNTRY	NERICA																Total
	1	2	3	4	5	6	7	8	10	11	12	13	14	15	17	18	
Burkina Faso	A	A		A													3
Burkina Faso											R	R		A	R	A	5
Congo Brazza									A								1
Congo DRC				A	A	A	A										3
Cote d'Ivoire	R	R	A	A	A												6
Ethiopia	R		R	R	R												3
Guatemala	A	A	A	A	A	A											7
Guinea	R																1

Table 4. NERICA lines adopted/released in selected countries (Cont'd)

COUNTRY	NERICA																Total		
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16		17	18
Guinea	R	R	R	R	R	R	R												7
Kenya	A			A						A	A								4
Mali				R					A	A				A			A		5
Nigeria	R	R	A				R												5
Sierra Leone	A	A	A	A	A	A													6
Togo	A		A	A												A			4
Uganda	A		A	R															3
Zambia		R		R	R	A	A	A	A	A									11

Development of Complementary Technologies

In collaboration with WARDA scientists, intensive research on:

- Fertilizer rates for integrated soil fertility management
- Weeding regime
- Cropping system
- Water regime

some preliminary results are available...

Development of Complementary Technologies (Cont'd)

ARI has also developed new NERICA-based recipes using NERICA flour and concluded that NERICA flour could easily replace that of wheat in many confectioneries.



Achievements (Cont'd)

New NERICA based processed products have been developed. Their performances indicated that NERICA flour could easily replace wheat flour in many confectioneries products.



Development of Complementary Technologies (Cont'd)

Table 5. Average of Protein Contents per Variety

Varieties	Parboiled	Non-Parboiled
NERICA 1	11.03	10.05
NERICA 2	11.81	10.49
NERICA 3	11.14	10.20
NERICA 4	9.51	8.87
NERICA 6	10.76	10.34
NERICA 7	11.69	10.43
NERICA 8	10.14	9.49
Imported Rice	-	7.78

Workshops, Capacity Building and Public Awareness

Training is offered to rice technicians and farmers every year. Field day conducted for farmers, NGOs and scientists to expose them to NERICA seed technologies in all pilot countries by the regional and national coordination units.



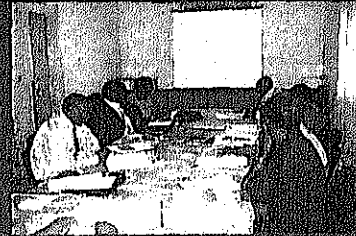
Achievements

ARI held its Steering Committee meeting during which seed issues were duly discussed.



Achievements

NERICA dissemination platforms in pilot countries conducted their planning and priority setting meeting with the Regional coordinator in attendance.



Achievements

Several Training conducted on Seed production and PVS by WARDA and PCUs.



Achievements

14 Technicians from The Gambia, Ghana, Liberia, Nigeria and Sierra Leone were trained in NERICA seed production.



Achievements


- Field Days were conducted for more than 1000 Farmers, NGOs and Scientists to expose them to NERICA seed Technologies in all Pilot Countries and at WARDA, Cotonou



The Africa Rice Center

Monitoring Tour


- A successful Monitoring Tour was conducted to assess on-going activities of ARI in Guinea, Sierra Leone and Benin.



The Africa Rice Center

Public Awareness


- Posters on NERICA and other ARI activities developed and exhibited during various national, regional and international forums.



The Africa Rice Center

RESOURCE MOBILIZATION

- In collaboration with other WARDA scientists, proposals have been developed and submitted to:
 - ECOWAS
 - World Bank
 - UNDP
 - CFC
 - Rockefeller Foundation
 - USAID Liberia
 - ASARECA
 - Round Table Discussion with Bill & Melinda Foundation



The Africa Rice Center

PARTNERSHIP

- Partnership Developed:
 - Local Banks
 - Farmers
 - NGO (SG200, PRODEPAM, Songhai)



The Africa Rice Center

Partnership Development

- Partnership has been developed with BRS and Farmer's organization in area of seed production



The Africa Rice Center

Partnership Development

- BRS Benin is supporting Women Farmers Organizations at Daassa with a Loan amounting 42 millions CFA in NERICA seed production.



Partnership Development

- We have also developed a partnership with Private Sector (TUNDE s.a) in NERICA seed production at Glazoue.



PARTNERSHIP (Cont'd)

- Joint Monitoring with JICA



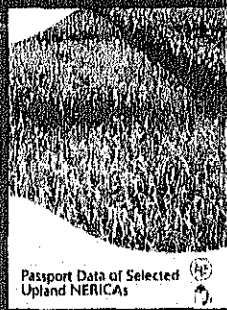
Other Activities

- Assistance to Countries from conflict
- 1900 kg of NERICA seed to Liberia
- 500kg to Sierra Leone



Publications

- Passport data of selected upland NERICAS
- Conference Papers
- More than 20 posters on NERICA performance developed




Outlook

seed will continue to be the main target

Outlook (Cont'd)


- Maintenance activities will continue.



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Outlook (Cont'd)


- Complementary technology development will continue and results published



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Outlook (Cont'd)

- Resource mobilization efforts will continue to facilitate coverage of more countries



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ACKNOWLEDGEMENT

- We are grateful to donors for their supports to ARI. Notably:
- The Rockefeller Foundation
- UNDP
- Japanese Government
- The African Development Bank
- JICA
- World Bank
- Canada

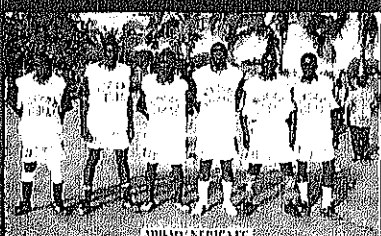


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CONCLUSION

NERICA Dissemination is:


- Team work



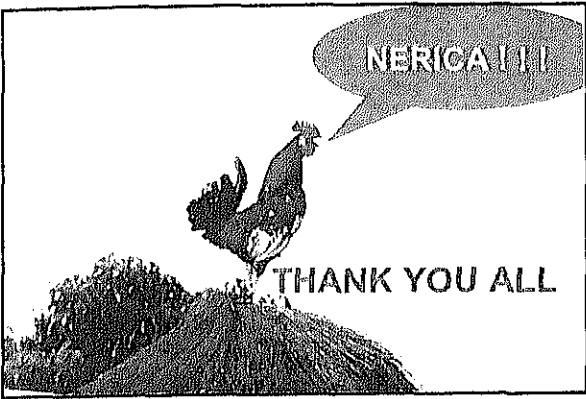
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Conclusion (cont'd)

A battle against hunger and poverty
 No one alone can win it
 Please join us for a better future of the growing populations of SSA



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FARA

Promoting Dissemination of Agricultural Technologies: The Role of FARA

BOIPELO FREUDE



Background Information

AFRICA

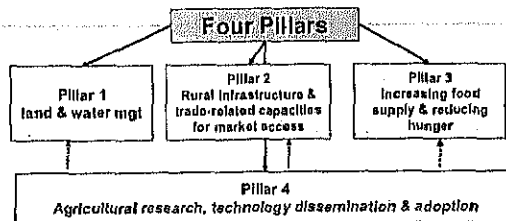


- Low actual agricultural productivity
- ▣ **Adverse agro-climatic conditions**
- ▣ **Slow diffusion of technology**
- ▣ **High transport costs**
- ▣ **Small markets**
- ▣ **High disease burden**

Background Information (cont)

- ▣ Challenges can not be met through expansion of cultivated area
 - ▣ Daunting challenge to agricultural research
 - ▣ More important is the dissemination of the technologies to end-users

CAADP: the African response



AIM: Attain 6% annual agricultural production growth rate by 2015

FARA

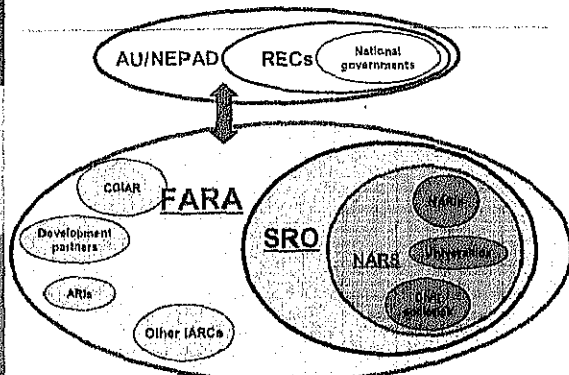
a creation of the SROs
 recognized technical arm of the African Union and NEPAD

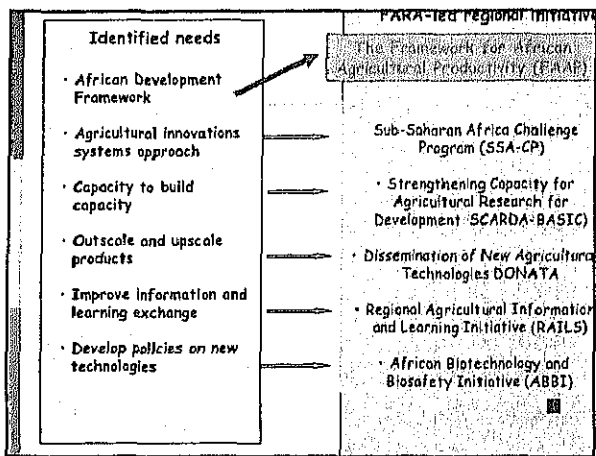
three functions

- ▣ **Advocacy for agricultural research**
- ▣ **Promoting partnerships**
- ▣ **Sharing and dissemination of information & learning**



Evolving Institutional ARD environment in Africa





Dissemination of New Agricultural technologies in Africa (DONATA)

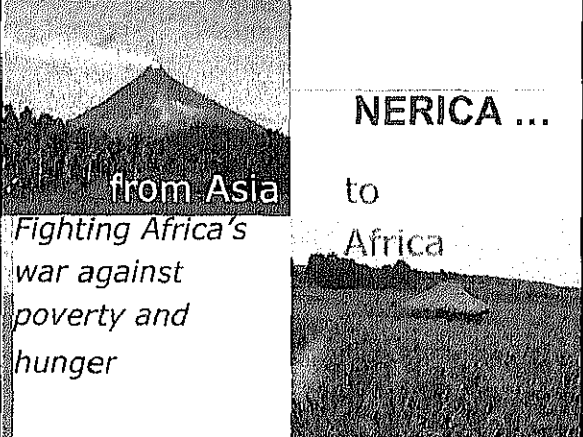
Why a DONATA program

- To promote the adoption and impact of successful islands of agricultural technologies including farmer innovations in areas where they are suited but are yet to be utilized
- Responds to:
 - Low adoption of improved technologies
 - Low confidence on S&T

DONATA portfolio

Includes:

- NERICA rice
- Tissue culture banana &
- Improved cassava
- IR-Maize for striga infested land &
- High-beta carotene sweet potato
- TC Sweet Potato
- Pigeon Pea
- INRM Tools
- Dry land pitting (African farmer-Innovations that have not had enough attention)



NERICA ...
from Asia to Africa
Fighting Africa's war against poverty and hunger

NERICA Rice

Advantages of NERICAs over traditionally grown varieties

- Improved yields per hectare and reduced risk associated with rainfed rice cropping because of better resistance to abiotic and biotic constraints
- Stable yields under both low and high input conditions
- Enhanced labor productivity through reduced needs for weeding and shorter growth duration
- Enhanced sustainability through durable crop resistance to drought, insect pests and diseases.

Dingkuhn and Randolph (1997)

Upscaling and Outscaling of Products

- Better understanding of the links between;
 - technology originators,
 - disseminators,
 - potential adopters,
 - processors of outputs,
 - marketers and
 - consumers
- Reliable and rapid means of identifying where new technologies can be effectively targeted
- Using knowledge and tools in disseminating and catalysing adoption



FARA's Dissemination of New and Proven Technologies (DONATA) will improve the dissemination pathways

FARA

Support to National Institute for Agricultural Research- INRAN

□ **The promotion and dissemination of NERICA rice in Niger**

- Participatory varietal tests
- NERICA seed multiplication; enhancing farmers' access to good quality seed in order to facilitate the dissemination and hence the adoption of the technology






FARA

Support to University of Ghana Legon:

□ **Productivity of NERICA in the rain-fed upland ecology using cowpea as green manure**

- Introducing NERICA rice as an alternative upland crop to maize and root crops.
- Enhancing soil fertility, through rotational cropping of NERICA and nitrogen fixing leguminous food crop.

FARA

Prizes for Innovation in African Agriculture

Purpose

- To identify and help scale up the most successful new techniques in African agriculture, through prize awards paid in proportion to the measured economic gains from their adoption

Approach

- Involves cash awards to innovators and users of adopted technologies in proportion to adoption and impact, as measured through farm surveys and field experiments
- Doing so will elicit new information about successful innovations and provide new incentives to promote their spread

Beneficiaries

- Originators and end users for their initial use of technologies

FARA will foster...

□ **Partnerships and Linkages**

- Between the SROs
- Between NARS and IARCs
- Between Researchers, Farmers Organisations, Community based Organisations, NGOs, Ministries of Trade and Industry, other government departments e.g Customs and Phyto-sanitary authorities

FAO



JAICAF-WARDA-JICA Joint Seminar
NERICA Dissemination in Africa 2006.

Activities of FAO in Africa

by
Dr. Brahim Kebe
Crop Production and Protection Officer
FAO Sub-Regional Office for West Africa



Activities of FAO in NERICA Dissemination in Africa

Two types of activities...

- I. Field Program activities
- II. Normative Activities



Field Program activities

Objective:

Dissemination of NERICA and introduction of improved rice production systems to reduce food deficit and raise farmers incomes.

Projects:

GCSP/ST/021/UNO
GCSP/GHA/028/UNO
GCSP/ETH/063/UNO
GCP/UGH/035/JPN



FAO Representation in Guinea

- Organization of the International Year of Rice IYR celebration activities in NERICA seed multiplication projects in 4 provinces of Guinea
- Participation in the implementation of the monitoring and evaluation components of UNDP funded NERICA seed multiplication project in Guinea
- Participation in the distribution of 336 tons of NERICA seeds produced in Guinea and collaboration with Saseakawa Global 2000.



Normative Activities in NERICA dissemination in Africa

A. Activities of FAO Crop Services

1997: Support to WARDA for the collection, analysis and dissemination of information on NERICA varieties and performance.

1999: Support for the cost of travel of 2 national coordinators of the SPFS (Burkina & Guinea) to WARDA to discuss collaboration on rice technology transfer issues.



Normative Activities in NERICA dissemination in Africa

2000:

-Signature of Memorandum of Understanding between WARDA and FAO to strengthen collaboration in the implementation of Rapid Rice Technology Diffusion in West Africa (RARIDWA) in the context of FAO/SPFS

2001:

- Attendance of FAO staff at WARDA's Workshop on NERICA-based Food Security in Sub-Saharan Africa.
- Participation of FAO in the International Organising Committee of NERICA Consortium for food security in Sub-Saharan Africa.



Normative Activities in NERICA dissemination in Africa

2002:

- Participation of FAO at the launching meeting of the Africa Rice Initiative (ARI)
- Organization of a meeting by FAO for SPFS Coordinators on NERICA technology transfer to farmers: in attendance were UNDP, WARDA etc

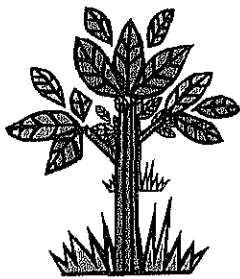


Activities of FAO Seed Service

B

2006

- Preparation of NERICA Rice Compendium: Joint FAO and WARDA on-going activity



21st International Rice

Commission, Chiclayo, Peru

- AFRICAN SMALL HOLDER FARMERS: RICE PRODUCTION AND SUSTAINABLE LIVELIHOODS
- BY
- BRAHIM KEBE, CROP AND PASTURE PRODUCTION
FAO REGIONAL OFFICE FOR AFRICA, ACCRA,
GHANA

1) Rice in the rural economy of African small holder farmers

a) Rice as a staple food

- Rice forms the basis of the diet of millions of people in SSA
- Rice provides more calories and protein than other locally known staple foods such as cassava, maize and sorghum/millet

b) Rice for food security

- *Rice consumption has increased since the 1970s in many countries in SSA*
 - 5% in West Africa
 - 8% in Mozambique (1995-1999)
- Rice is a popular staple food in many countries where it does not represent a major food crop (BKF, Ghana, Mali, Niger, etc)
- Rice provides 54% of energy needs of rural populations (Sierra Leone)

c) Rice for poverty reduction

- Rice production and post harvest activities provide employment for millions of small holder farmers in Africa (Nigeria, Mozambique) and cash income to cover the expenses of families (clothing, school, house, etc).
- Rice is also used in barter economy to acquire goods and services.

2) Overview of rice production

- Rice production is done by small holder farmers who represent some 95% of farming families in extreme cases (Sierra Leone)
- Rice demands exceed production in most countries and large quantities of rice are annually imported to meet domestic demand at high cost (Ghana: \$100 million in 1999 against import cost of \$200 million in 2005)

3) Constraints in rice production in SSA

- Low productivity in SSA : 1.87 t/ha vs. world average of 3.84 t/ha
- Cause of low productivity: Inappropriate production and post harvest practices, lack of access to credit to acquire inputs, difficulties in marketing, poor support to extension services and research, and ineffective farmers' organizations

4) Promotion of increased and sustainable rice production in African small holder cropping systems

- Increased and sustainable production of rice in SSA calls for the intervention of science and technology, coupled with support to women and rice marketing

Interventions

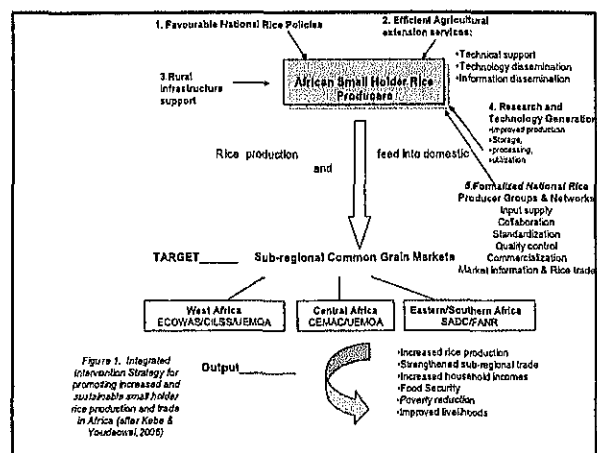
- 1) Development of farmers' organizations to play effective roles (advocacy, training, networking, dissemination of technologies, access to credit, etc).
- 2) Formulation of good government policies (to make available credit facilities and rural infrastructure, and provide support research and extension services).
- 3) Promotion of stakeholder collaboration to improve rice production and consumption.

Intervention cont.

- 3) Support from technical development partners to build and strengthen local capacities for improved rice production (FAO IPPM, RICM, Rice Check and Mechanized Threshers, WARDA recently developed varieties, NERICA, etc)
- 4) Support from donors to assist governments and farmers to build local capacity in areas such as seed multiplication of NERICA.

Intervention cont.

5. Support from the private sector in areas such as input supplies, seed industry and processing equipment.
6. Effective exploitation of market opportunities in sub-regional and regional organizations such as West African grain markets and removal of trade barriers between countries.



Conclusion

Rice plays a very important role in food security and socio-economic development in SSA. Its increased and sustainable production by small holder farmers should be supported through:

- The effective involvement of various stakeholders of the rice industry, namely, farmers' organizations, government institutions, technical development partners and donors and the private sector, to promote rice production and consumption.

- The effective collaboration among stakeholders to promote rice production and consumption.
- The diversification of rice based products (rice cakes, beer, starch, etc) to create market opportunities for farmers.
- The exploitation of market opportunities available in sub-regional and regional economic organizations (ECOWAS, NEPAD) and an aggressive marketing of locally produced rice (advertising).