HOW TO INCREASE THE IMPACT OF AGRICULTURAL RESEARCH FOR DEVELOPMENT IN AFRICA: THE CASE OF NERICA

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ABSTRACT

We cannot fight against poverty and achieve food security in Africa without excellent research. However, this does not mean that excellent research is enough to change Africa's agricultural sector. Research in Africa can have high impact only if we have (1) good technologies and (2) good infrastructure and suitable environment thanks to political will.

A recent study conducted in West Africa by IFPRI (IFPRI 2006) concluded that among agricultural commodities, rice showed the highest potential for growth and could subsequently generate the largest producer benefits. The New Rice for Africa (NERICA), developed by WARDA with its partners, has been confirmed as a revolution in rice research for Africa (Kijima et al. 2006), and the NERICA initiative has received strong technical and financial support from Japan.

Both upland and lowland NERICAs have won for WARDA several international and national awards, including the 2006 United Nations South-South Triangular Partnership Award and the International Koshihikari Prize.

According to the latest report from FAO (FAO 2007), the paddy production in Africa has gone up for the 6th consecutive year, reaching 21.6 million tonnes in 2006 — 6% above 2005. FAO attributed this increase to good weather conditions and to the positive effect of NERICA adoption.

The NERICA rices have leapfrogged from West Africa to East Africa in Ethiopia, Kenya, and Tanzania. Uganda has now about 36,000 ha under NERICA production within 5 years of its introduction in the country. The NERICAs have also become the first choice for agricultural rehabilitation efforts in post-conflict areas in DR Congo, Sierra Leone, Liberia, Rwanda, and Uganda.

Thanks to NERICA success, countries from Central and Eastern Africa want to join WARDA as members. Existing member countries have also more confidence in investing in rice research at WARDA.

WARDA is strengthening the rice research partnership through a programmatic alignment with IRRI and CIAT to have a large-scale impact in Africa. WARDA scientists and their partners, particularly with scientists from JICA and JIRCAS, are also addressing some major research gaps in NERICA, particularly relating to agronomic aspects.

However, all these good news hide major constraints to rapid expansion of NERICA. One of the biggest constraints is the lack of seed and the main reason for this is the lack of necessary resources of national seed systems. The second biggest constraint is the lack of low-cost processing equipment. Post-harvest losses in SSA account for 15–50% of the market value of production.

In most African countries, the national agricultural extension systems are not sufficiently developed. The linkages between rice research, development, and policy are also weak. Extension services and operators throughout the rice value chain lack the capacity to compete with their counterparts in Asia and Europe.

SSA production systems face competition from the government-subsidized sectors found in other regions of the world. For example, USA's 11,000 rice farmers receive subsidies worth $1.4 billion per year. But Africa's 36 million rice farmers struggle with no subsidies and little access to credit, inputs, markets, and market information. Limited port and road facilities have raised the costs of delivering inputs to farmers,

and outputs to market. Fertilizer prices are 2 to 6 times greater in SSA than those in Asia, Europe, and North America.

To overcome these constraints, the author recommends that every country should establish standard seed laws, seed quality control mechanism for rice and should ensure their application. Seed legislation should encourage the involvement of the private sector in seed supply and national programs should be strengthened to produce breeder and foundation seeds.

Every country should also have local processing plants and post-harvest technologies to bring African rice grain quality up to par with imported rice. Governments should reduce the import tax on low cost small-scale machinery which can increase farmers' labor efficiency.

Every country should establish a rice stakeholders' platform and create a fund to support the national rice program. Governments should provide adequate funding to rice research and extension systems. The rice sector in every country should be made competitive by improving the capacity and efficiency of operators at the research, extension, production, processing, and marketing levels.

It is vital for SSA governments to recognize urgently that African farmers, like all other farmers, need support. Governments must supply fertilizers to farmers through support policies without killing the private sector.

All these measures, combined with excellent research thanks to the strong technical and financial support from donors like Japan, will lead to further increase in food security and prosperity in SSA and will help African countries achieve the Millennium Development Goals.

KEYWORDS
Africa, NERICA, rice, research, policy

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Outline

I. Starting point

II. Case of NERICA

III. What can be done

IV. Conclusion

I. Starting Point

- Without strong research, we cannot reduce poverty & increase food security in Africa
- But good research is not enough to change agriculture in Africa
- Research in Africa can have high impact only if we have:
  - Good technologies
  - Good infrastructure & suitable environment, thanks to political will

II. Case of NERICA

- We all agree that NERICA is a good technology
- It is a powerful weapon for increasing Africa's food security
- It is a model of collaborative research with strong technical and financial support from Japan
- In 2006 / 07, we have lots of good news on NERICA

II. Case of NERICA: Good News

- 2006 United Nations Award for South-South Partnership for NERICA initiative
- Japan's International Rice Award
- Monty Jones: among 100 most influential persons in the world
- FAO: record rice harvest in Africa in 2006 to positive effects from NERICA adoption & to good weather

II. Case of NERICA: Good News

- In Nigeria, NERICA is a major component of Presidential Rice Initiative
- In Nigeria, rice production increased by 10% above 2005 level and imports reduced by > 800,000 tonnes in 2005
- In Uganda, more than 36,000 ha under NERICA production

II. Case of NERICA: Good News

- NERICA is first choice for agricultural rehabilitation efforts in post-conflict areas:
  - DR Congo
  - Sierra Leone
  - Liberia
  - Rwanda
- Uganda Government training 16 000 refugees to grow NERICA

II. Case of NERICA: Good News

- Several countries from Central and Eastern Africa want to join WARDA as new members, thanks to NERICA success
- Member countries contributions to WARDA in last 10 months = their contribution in last 10 years!

II. Case of NERICA: Good News

- WARDA-IRRI-CIAT programmatic alignment initiated; endorsed by Boards & appreciated by donors
- Priority themes identified: ● genomics ● post-harvest technology ● seed systems ● policy & markets ● value chain ● NRM
- Joint declaration signed to boost Africa's rice production

II. Case of NERICA

- However, these good news hide major constraints to dissemination.
- Why is NERICA covering only 5.8% of the total upland rice area in Africa?

II. Case of NERICA: Constraints

1. Seed issues

There is a high demand for seeds but

- National seed systems lack resources
- Few countries have seed laws & lack resources to enforce them

II. Case of NERICA: Constraints

2. Post-harvest losses

- Post-harvest losses account for 15–50% of market value of production

II. Case of NERICA: Constraints

3. Poor extension systems and weak linkages

- National agricultural extension systems not sufficiently developed because of lack of funds
- Linkages between rice research, development, and policy also weak

II. Case of NERICA: Constraints

4. Lack of capacity

- In Africa we have 70 scientists for 1 million persons against more than 4000 scientists in Japan.

II. Case of NERICA: Constraints

5. Foreign subsidies & little support to African farmers

- In USA 11,000 rice farmers receive $1.4 billion / year, while in Africa we have 36 million rice farmers, who do not get any subsidy
- African farmers have almost no access to credit, inputs, markets, & market information

II. Case of NERICA: Constraints

6. Poor infrastructure and high cost of inputs

- Fertilizer prices are 2 to 6 times greater in SSA than in Asia, Europe, North America

III. What can be done?

1. Seed issues

- Every country should establish seed laws, seed quality control mechanism for rice & ensure their application
- Seed legislation should encourage private sector involvement in seed supply & trade
- NARS should be strengthened to produce breeder and foundation seeds
- Informal seed sector must be recognized & helped to improve seed quality

III. What can be done?

2. Post-harvest issues

- Every country should have local processing plants and post-harvest technologies to bring African rice grain quality equal to imported rice
- Governments should reduce the import tax on low cost small-scale machinery which can increase farmers' labor efficiency

III. What can be done?

3. Extension and R&D linkages

- Every country should establish a rice stakeholders' platform
- Should adopt comprehensive approach to rice R&D
- Should create fund to support national rice program
- Governments should provide adequate funding to rice research and extension systems

III. What can be done?

4. Strengthening capacity

- Rice sector in every country should be made competitive by improving capacity & efficiency of operators at all levels:
  - Research
  - Extension
  - Production
  - Processing &
  - Marketing

III. What can be done?

5. Support to farmers

- Governments should recognize urgently that African farmers need to be supported
- Countries, like Nigeria, Guinea & Uganda can be used as models to improve domestic rice sector in terms of:
  - Favorable rice policies
  - Technical & financial support

III. What can be done?

5. Support to farmers

- Governments should work together to reduce fertilizer prices and provide credit mechanisms to farmers
- Governments must supply fertilizers to farmers through support policies without killing private sector

IV. Conclusion

All these efforts, together with technical & financial support from donors like Japan, will accelerate NERICA's impact in SSA and contribute to achieving the Millennium Development Goals

Thank you