

JICA's Rice related Intervention in Mano River Union Countries

Takahiro Nakamura
Rural Development Department
JICA

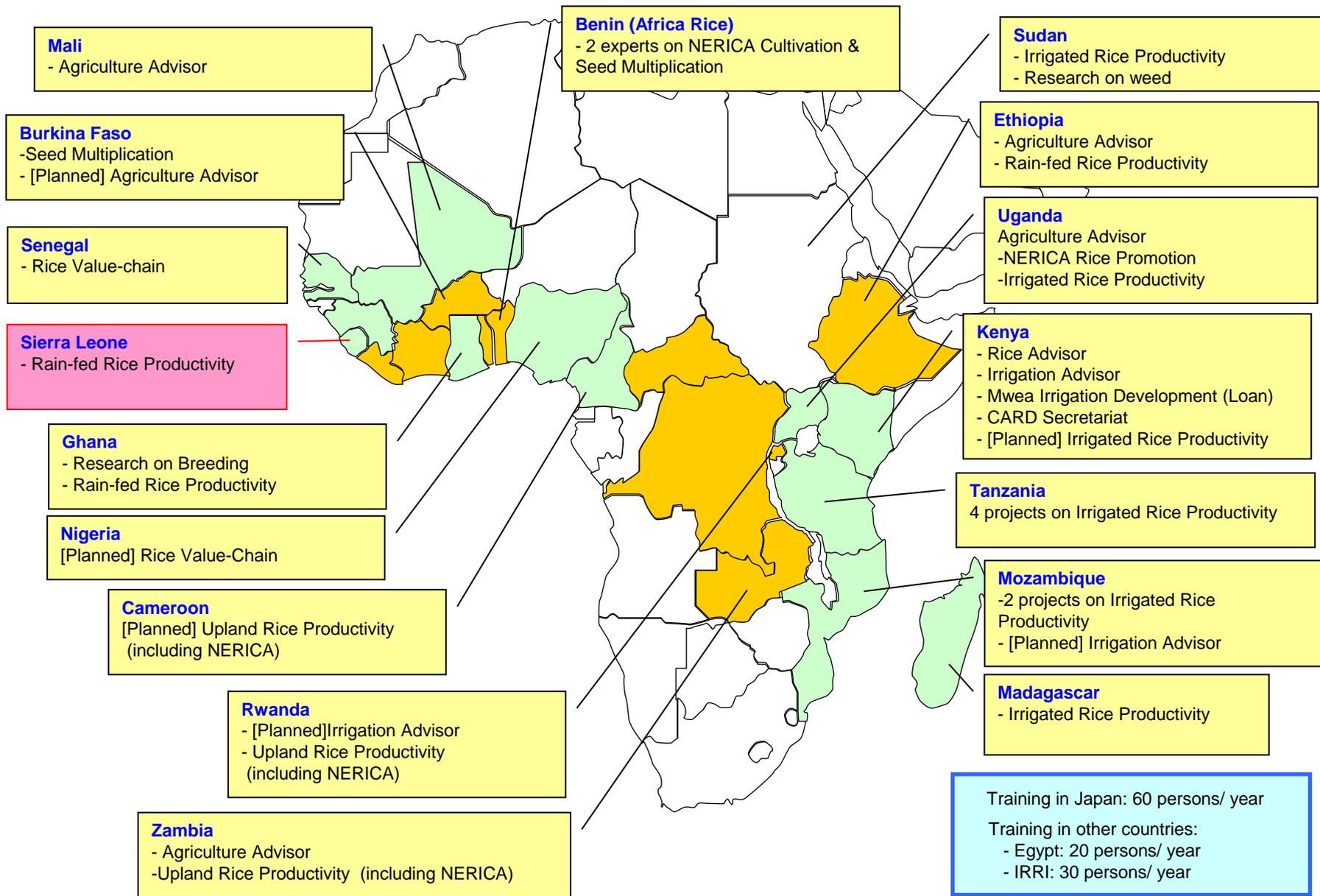
JICA's Rice related Intervention in SSA

Under CARD Initiative, JICA is supporting SSA countries with following thematic focus, in rice sector

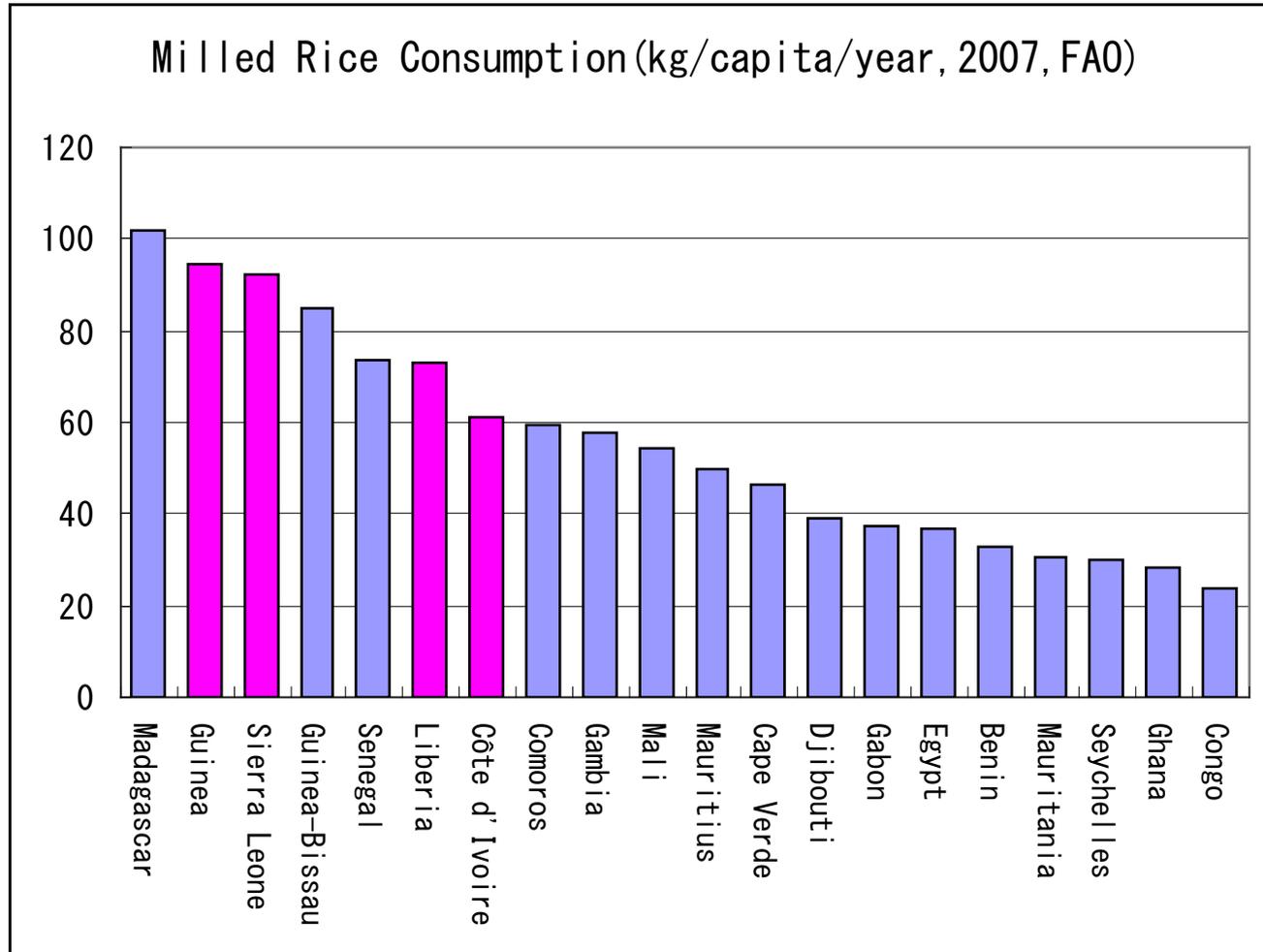
- Irrigation Development (new development, rehabilitation) ex. Kenya
- Sustainable Productivity Improvement in rain-fed low land ex. Ghana, Sierra Leone
- Up-land rice (NERICA) dissemination, ex. Uganda
- Human Resource Development (researcher, extension workers, farmers)
- Institutional Capacity Building ex. Tanzania
- Value Chain approach ex. Nigeria, Senegal

Through technical assistance (capacity building by team of Japanese experts deployed), training in Japan, Infrastructure development.

Location of JICA's Rice-related Interventions in SSA



Rice in Mano River Union Countries



Guinea 12th, Sierra Leone 13th, Liberia 23rd, Côte d'Ivoire 28th in the world

The Agricultural Development Project in Kambia In Sierra Leone

Project Period; Feb 2006 – March 2009 (3 years)

Objective;

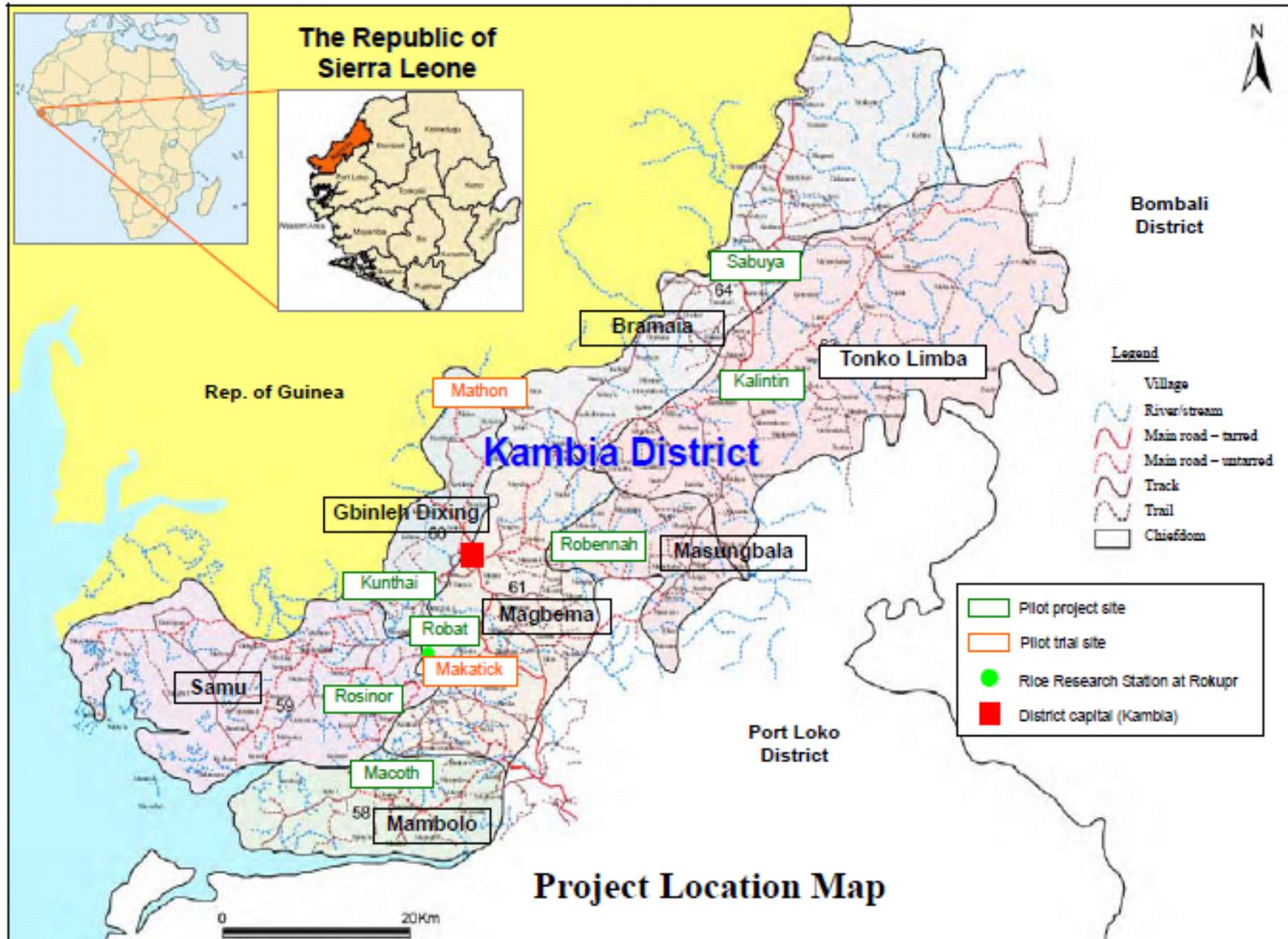
To strengthen technical support system for farmers in Kambia District

Outcome;

- Develop technical package (with Rokupr ARC)
- Train the extension workers and farmers (with district office of Ministry)

Input;

- Team of Japanese technical experts, total 66 MM
- Machinery, such as Motor-bike.



Technical Package for Rice Cultivation

Key techniques introduced, with low-input, to achieve self sufficiency.

- Timely farming based on well-planned cropping calendar,
- Rational seed rate,
- Proper land preparation,
- Proper water control such as bund making,
- Appropriate transplanting methods

Integrated approach will improve grain yield
0.5 ton/ha → 1.0 ~ 1.5 ton/ha

Example of Technical Package

Transplanting a few seedlings per hill. Reduce the amount of seeds to $\frac{1}{2}$, gain more yield.



Traditionally, farmer transplant more than 5-6 seedlings



transplant 2-3 seedlings is recommended to gain the higher yield

Example of Technical Package

Same cultivation method,



Without drainage



With drainage

2.3 How to Obtain Higher Yield

Yield of rice is determined by the product of:

- (1) Number of filled grains per unit field area
- (2) Size (weight) of filled grain

To obtain higher yield, efforts should be directed to increase the number of grains per unit field area. This is important since the grain size does not vary much between cultural practices.

How can we increase number of filled grain in each growth stage?		
Vegetative growth stage:	Reproductive stage:	Maturity stage:
Increase panicle number	Increase spikelets number per panicle	Increase grain filling rate

How can we achieve the target?		
<p>(1) Direct sowing in upland:</p> <ul style="list-style-type: none"> a) Select fertile land after sufficient fallowing. b) Secure seeds with high germination rate. c) Weed timely. d) Apply just enough fertilizer timely. <p>(2) Transplanting in lowland:</p> <ul style="list-style-type: none"> a) Grow healthy seedlings. b) Prepare main field well. c) Uproot seedlings with care. d) Transplant seedlings properly. e) Manage water well. f) Weed timely. g) Apply just enough fertilizer timely. 	<p>(1) Direct sowing in upland:</p> <ul style="list-style-type: none"> a) Apply just enough fertilizer timely. b) Expose plants to sunlight. <p>(2) Transplanting in lowland:</p> <ul style="list-style-type: none"> a) Manage water well. b) Apply just enough fertilizer timely. c) Expose plants to sunlight. 	<p>(1) Direct sowing in upland:</p> <ul style="list-style-type: none"> a) Expose plants to sunlight. <p>(2) Transplanting in lowland:</p> <ul style="list-style-type: none"> a) Manage water well. b) Expose plants to sunlight.

PART III Agricultural Technical Manuals



Photo 2.5-2 Land Preparation for Upland Rice Planting: After Slashing (above left), Burning (above right) and Clearing (left)

(5) Sowing, fertilizer application, harrowing, and bird scaring

Consult the experienced farmers or master farmers for the timing of sowing. Sowing is a precarious activity since germination depends much on rainfall.

To sow seeds and fertilizer evenly, divide them into three portions and broadcast them separately at orthogonal angle (Figure 2.5-2). Fertilizer, if available, should be applied in the same way as sowing for even distribution.

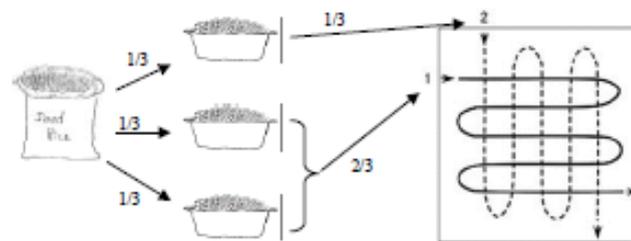


Figure 2.5-2 Method for Uniform Seed Sowing

Remained Issues

- Necessity to improve “Technical Package” to enhance productivity further
- Necessity to disseminate “Technical Package” to a large extent
- Necessity to develop further the capacity of researchers & extension workers

Sustainable Rice Development Project

Project Period; Oct 2010 – Sep 2014 (4 years)

Objective;

Establish rice production techniques and its extension method.

Outcomes;

- To elaborate the Technical Package for Rice (TP-R) through on-station and on-farm verification
- To extend the TP-R to small-scale farmers/Farmers Based Organizations (FBOs) in Kambia,

Input;

Japanese Technical Experts, total 110 M/M planned

Approach of the Project

(1) Elaboration of TP-R

- To obtain higher yield (target yield to be set), to pursue commercialization of farmers with agricultural input (in line with SCP)

(2) Dissemination of TP-R to FBO farmers

- To develop capacity of extension workers (facilitators) assigned to the FBOs
- To adopt Farmer Field School (FFS)

(3) Technology transfer to counterparts

- Through daily collaborative works, in principle, with researchers and extension workers

(4) Coordination with all stakeholders

- Government strategy & Program, CAADP, NSADP, Smallholder Commercialization Program, NRDS
- New program such as WAAPP

Expected Outcome

Target Yield of technical Package; 3.0 ton/Ha
(under discussion considering farmer field condition)

Target Farmers; 15 Farmer Organization

* 3 years * 30 households = 1,350 households
(in line with SCP)

Working daily, together with researchers and extension workers

Conclusion

- Practical technology with scientific experiment to make fit the reality of farmers field, for extension.
- Human Resource Development for sustainable activity, especially core researchers and extension workers.
- Coordination with all the stakeholders to maximize the impact.
- Continue of simple, small activities, to reach the solutions at the farmers field.