

**Promotion of African Rice Development through
strengthening coordination between CARD and CAADP
27th July – 1st August 2014**

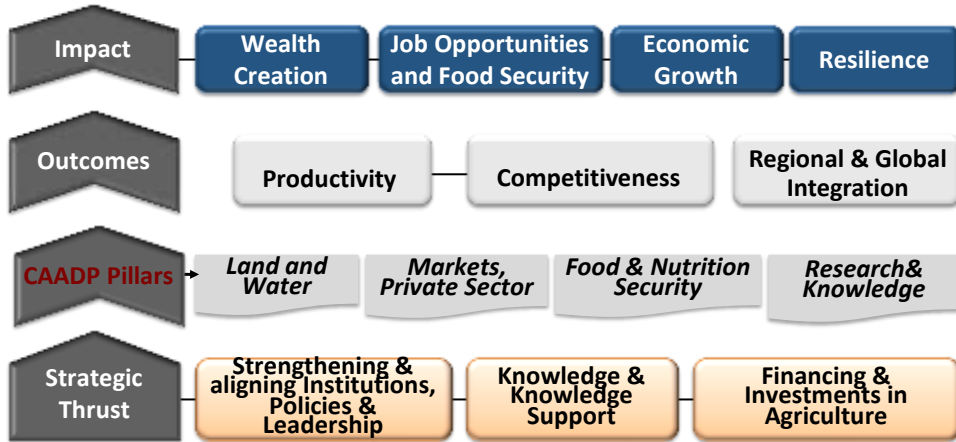
*Promotion of Rice Production in Sudan
for the Implementation of the Executive
Programme of the Agricultural Revival
July 2014*



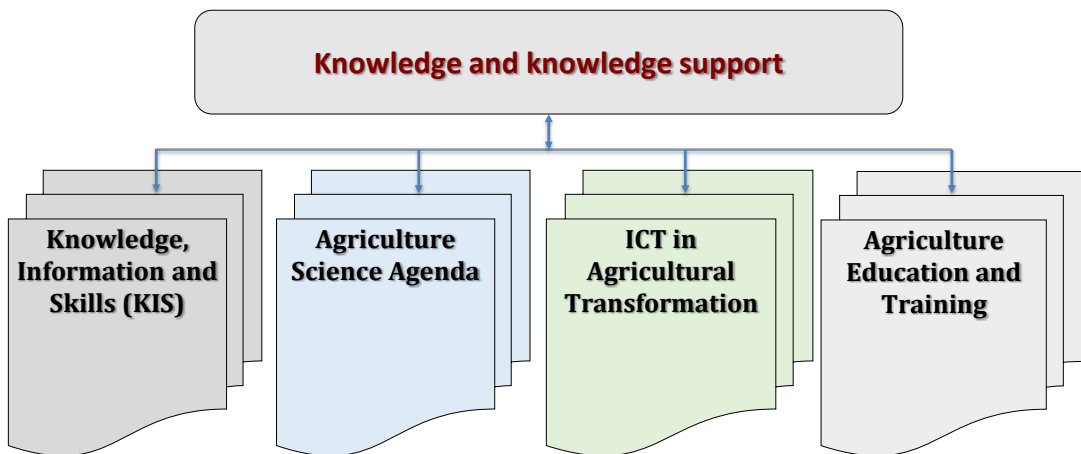
CARD and CAADP

- The coalition for Africa Rice Development (CARD) which is an initiative for doubling rice production in sub-Saharan Africa within the next ten years was launched at the Tokyo International Conference on Africa Development (TICAD IV) in May 2008.
- **CARD was jointly developed by the Alliance for Green Revolution in Africa (AGRA) and the Japan International Cooperation Agency (JICA).**
- **This initiative will be implemented in full respect of African ownership and leadership embodied in the Comprehensive Africa Agriculture Development Program (CAADP), and with strong links to existing structures, programs, networks and initiatives such as Forum for Agricultural Research in Africa (FARA), and the African Rice Initiative (ARI).**

Sustaining CAADP Momentum (Implementation, results and impact)

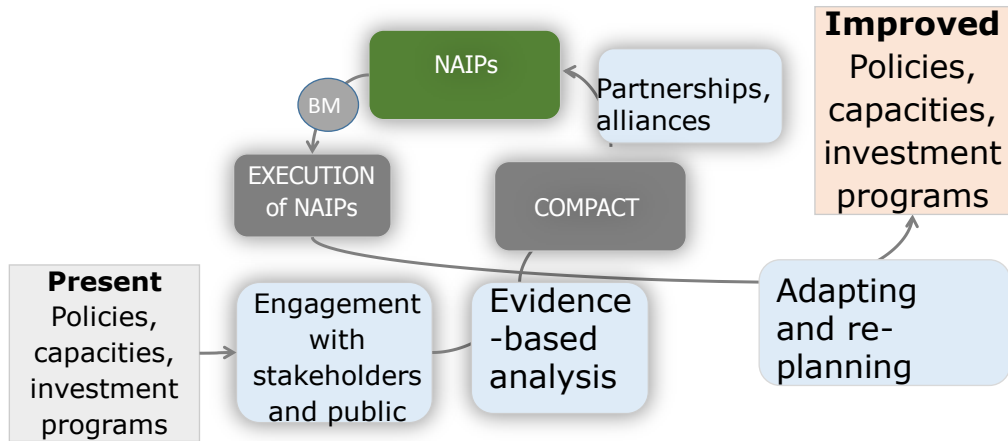


Strategic Thrust on Knowledge & Knowledge Support



FROM CAADP TO NAIP

Sudan now starts the **NAIP development stage** in the post CAADP compact process.

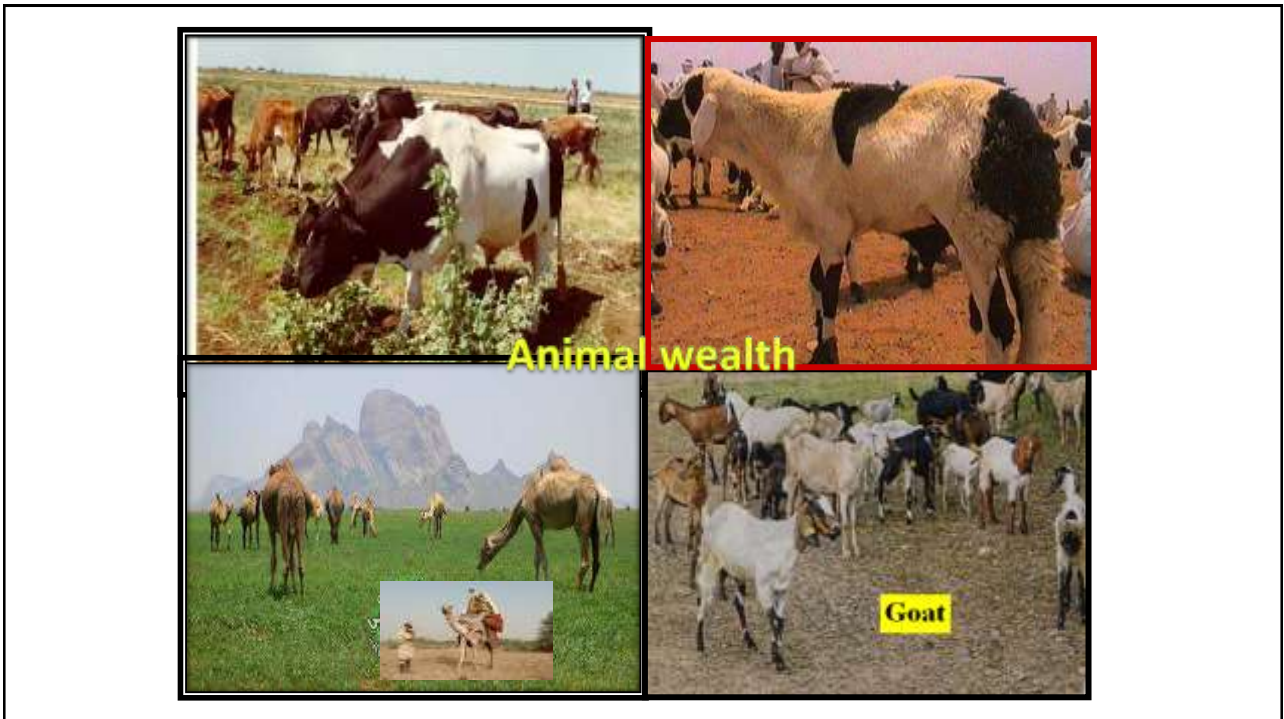




MAIN CROPS:



Natural resources





Rice Production in Sudan (2003-2013)

Year	Production (000 metric ton)	Growth Rate
2003	11	120.00 %
2004	24	118.18 %
2005	13	-45.83 %
2006	17	30.77 %
2007	15	-11.76 %
2008	21	40.00 %
2009	23	9.52 %
2010	21	-8.70 %
2011	23	9.52 %
2012	23	0.00 %
2013	23	0.00 %

Sudan Rice Consumption (2003-2013)

Year	Domestic Consumption (000 metric ton)
2003	51
2004	89
2005	63
2006	72
2007	60
2008	56
2009	53
2010	56
2011	63
2012	63
2013	63

Rice Consumption in Sudan (1960-2013)

Period	Average consumption / ton
1960-1969	7800
1970-1979	11300
1980-1989	30500
1990-1999	31600
2000-2013	57000

The increase of consumption is an indicator for changing in nutritional and consumers' behavior, also it is link to population increase.

Annual imported quantities of Rice 2003-2013

Market Year	Imports (000 metric ton)	Growth Rate
2003	40	14.29 %
2004	65	62.50 %
2005	50	-23.08 %
2006	55	10.00 %
2007	45	-18.18 %
2008	35	-22.22 %
2009	30	-14.29 %
2010	35	16.67 %
2011	40	14.29 %
2012	40	0.00 %
2013	40	0.00 %

Rice import costs annually US \$ 18 million, that can be used enhance rice production (The international Rice prices is 448.8 dollar per ton- Nov 2013)

JICA Efforts for Promotion of Rice Production in Sudan

- Studies that have been conducted by JICA during 1973-78 periods proved the feasibility of growing rice in White Nile State with average productivity for the experiments reached 9.9 tons per hectare under irrigated low land cultivation.
- Upland rice technical and appropriate cultivation methods were transferred to extensionists and farmers (ToT and FFS)
- Demonstration farms that covered, Gezira, White Nile, Sinnar, Gadarif , River Nile and Northern State. Showed good results that prove in real Rice is a suitable crop to be cultivated in Sudan .
- Provision of necessary equipment and agricultural machineries for rice cultivation by JICA assisted in rice activities .
- Installment of medium processing units enhanced post harvest operation .
- JICA also play a major role in developing NRDS .
- Rice units e.g Gezira rice promotion unit enhanced the situation of rice crop and succeed to attract the farmer to the rice field .
- Many of the Bottle neck issues were studied through JICA demo farms which will have it's in pacts in developing rice technical package.

JICA Supports: March 2010-March 2014

1. Achievement

- 1) Capacity Building in Federal MoAI
- 2) Promotion of Rice Production in 6 State MoAs

2. Issues for Sustainability

- Internalization of “Model System” in Federal MoAI
- Coordination between Federal MoAI (NRP) & States MoA
- Implementation of NRDS follow up / Rice Sector Development Forum
- Monitoring & Evaluation

Capacity Building in Federal MoAI

Through the experimental activities of the Project, a model system of human resource development and organizational capacity development of the Ministry of Agriculture has been developed.

Utilization to Internalization



Activities Under Capacity Building

1. to develop a model system of human resource development for the Ministry of Agriculture → Individual Training
2. to develop a model system of organizational capacity development of the Ministry of Agriculture → Organizational Training
3. to establish a monitoring and evaluation (M&E) and management system of capacity development activities → Proposal of Institutional Setting
4. to prepare annual reports compiling review of Activities and recommendation for plans in next year on human resource development, organizational capacity development and the M&E and management system → Annual Report (Compiling results and lessons learnt)

Main Lessons Learnt (1)

- The most important lesson is that we can obtain (understand) the knowledge and skills after utilizing them into the daily work.
- Through the action plan, the Task Team member has developed their human network to other directorate, external organizations, states and/or private sector.
- It is possible to conduct activities using our own resources
- Even though small budget, it can make big achievements. Also we made up the difficulty by their confidence, commitment, transparency and teamwork spirit.
- Social/Cultural Activity is very useful to enhance the communication among all staff (between different generations).
- Skillful member can work efficiently, leading others. Then they make positive impacts around them/her/him.

Main Lessons Learnt (2)

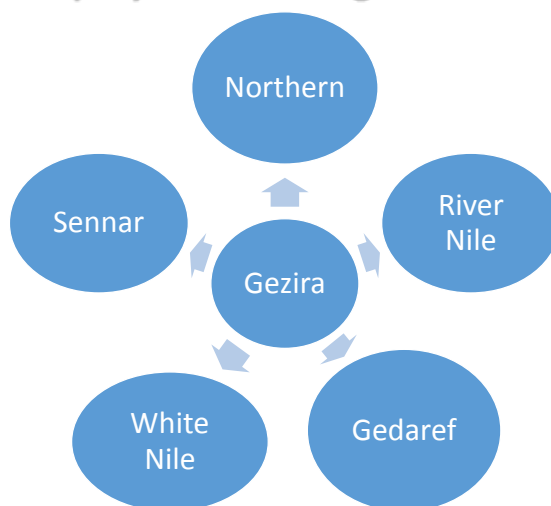
- It is necessary that all members have the strong commitment to the work, and that we get supports from the DG and seniors.
- It would be better to share the experiences and solution (means) of who has different disciplines as agricultural research staff, community development agents and university staff.
- It would be better that federal staff, in cooperation with State staff, increases opportunities to involve field activities and understands the situation and the policy needs from the field level.
- The MoAI and the directorates having Task Team activities would be better to ensure the sustainability of capacity development activities.

Activities of Promotion of Rice Production in Sudan

1. NRDS & Rice Sector Development Forum	2. Field Trial	3. Seed Production	4. Training	5. Demonstration Farms
To enhance planning, implementation, monitoring and evaluation for promotion of rice production	To develop appropriate upland rice cultivation techniques	To improve upland rice seed production techniques	To train extension workers and farmers on appropriate rice cultivation techniques	To promote upland rice cultivation to farmers' fields

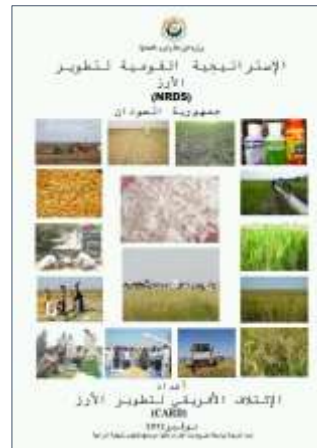
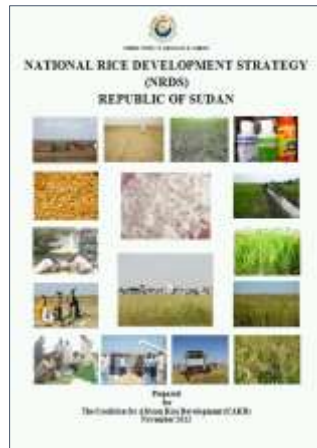
Activities of Promotion of Rice Production in Sudan

Project Activities Deployed Centering Gezira State to Other States



National Rice Development Strategy

**NRDS was authorized by FMoAI
in November 2012**



NRDS and Rice Sector Development Forum

Solving bottleneck issue is indispensable to develop rice sector in Sudan (NRDS)

1st Forum
Feb.17, 2013

- Prioritized bottleneck issues
- Idea of Working Group to discuss the issues

Working Group Meeting
(6 times)

- Formulated a Working Group
- 8 bottleneck issues were categorized
- Deepen understanding each issues

2nd Forum
Jan.8, 2014

- Presented and discussed 8 issues how to tackle and solve

Identified Category of 8 Bottleneck Issues

1. Research
2. Training
3. Extension
4. Cultivation (seed, machineries, irrigation management, weed control),
5. Agricultural inputs
6. Post harvest
7. Marketing
8. Agricultural organization

Rice Sector Development Forum (1)

- Plan of seed multiplication with private sector as a countermeasure against seed multiplication's issues.
- Problem Analysis and Countermeasures against machinery's bottleneck issues.
- Agrochemicals for high yield and better quality.
- Rice Research plan to tackle bottleneck issues by ARC.
- Perspective of extension and agricultural organization for future rice production.
- World rice trade, production and consumption and Sudan's trend.
- General comment on review of current rice production in Sudan and governmental intervention for rice development.

Field Trial

- Development of appropriate upland rice cultivation techniques
- Irrigation Interval, Weed Control, Plant Spacing and Sowing Time Trial
- Field of MoA Gezira State

Seed Production

- Improving seed production techniques
- Multiplication of seed of NERICA 4
- 20 feds in Rahad Scheme

Yield Result

Field Area (ha)	Planted Area (ha)	Rice (kg)	Yield (kg/ha) (M.C.14%)
8.4	5.94	1123.1	162.4

Note: Planted areas are measured by GPS.

Training in Sudan

- Training as OJT for extensionists and farmers
- W/S :
 - ① Before sowing
 - ② Mid of season
 - ③ Harvesting time



Assembling and explanation on adjustment of Rice Milling Machine.

Explanation on renovation of store for Rice Milling Machine in Gedaref State.



Seminar on Postharvest Technology in Gezira State

Presentation on Postharvest Technology by Rice Promotion Unit members



Training in Uganda

- **Basic Course (1 week)**
 - 09 – 15 June 2013
 - 22 participants (Gezira=4, Sennar=4, Gedaref=4, River Nile=4, Northern=4, White Nile=2)
- **Advanced Course (2 weeks)**
 - 15 – 26 April 2013
 - 8 participants (Gezira=3, Sennar=1, Gedaref=1, River Nile=1, Northern=1, White Nile=1)

Training in Egypt

- **Agricultural Machinery Course (2 weeks)**
 - 19 April – 03 May 2013
 - 15 participants (Gezira=5, Sennar=2, Gedaref=2, River Nile=2, Northern=2, White Nile=2)
- **Weed Control Course (2 weeks)**
 - 19 April – 03 May 2013
 - 20 participants (Gezira=8, Sennar=3, Gedaref=3, River Nile=2, Northern=2, White Nile=2)

Training in Egypt

- **Post-Harvest and processing Course (2 weeks)**
 - 21 October – 04 November 2013
 - 15 participants (Gezira=5, Sennar=2, Gedaref=2, River Nile=2, Northern=2, White Nile=2)

Training in Japan (1)

- Soil Diagnosis Technology for Sustainable Agricultural Production and Environmental Conservation
- Agricultural Infrastructure Improvement in Upland Crop Farming Areas for Rural Development
- Integrated Pest Management for Plant Protection
- Agricultural Extension Planning and Management
- Appropriate Management of Land and Water Resources for Sustainable Agriculture in Arid/Semi-arid Regions
- Post-harvest Rice Processing for English Speaking African Countries

Training in Japan (2)

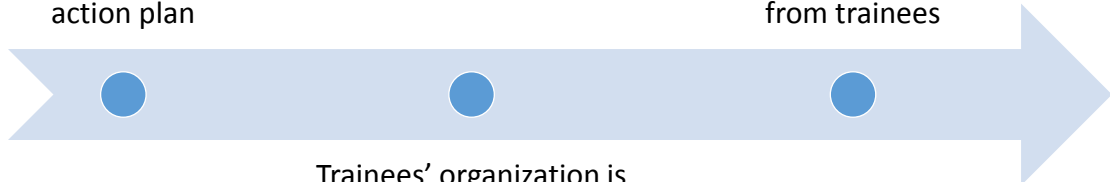
- Integrated Agriculture & Rural Development through the Participation of Local Farmers
- Planning of Agricultural Policy
- Planning and Designing of Agricultural Statistics for Food Security Policy Making
- Rice Cultivation Techniques Development
- ICT (Information and Communication Technology) for Agricultural Information Use
- Upland Rice Cultivation and Variety Selection Techniques for Africa

Post training

- **Monitoring & evaluation of the trainees**

Trainees complete the training and formulate action plan

Non-trainees' (extensionists farmers) receive knowledge & skills from trainees



Trainees' organization is responsible for follow up trainees by proper methods

(e.g. periodical reports, presentation etc.)

Plan in FY 2013

Demonstration Farms

- Introducing upland rice cultivation to farmers' fields
 - Gezira State (9 sites)
 - Sennar State (5 sites)
 - Gedaref State (2 sites)
 - River Nile State (2 sites)
 - Northern State (2 sites)
 - White Nile State (2 sites)
 - **Total : 22 sites in 6 States**

Outline of Cultivation at Demonstration Farms

Site	Area (fed)	Sowing	Seed (kg/fed)	Spacing (cm)	Pendimethalin (1.5L/fed)	2,4-D (0.5L/fed)	TSP (0-45-0)	Urea (46-0-0)		
								1st	2nd	3rd
Amara Taha	4.0	30/06	35	20	○	○	200	300	250	---
Abu Juwali	4.0	01/07	35	20	○	○	200	200	200	---
Rahad 44	4.0	27/06	35	20	○	---	200	200	200	200
Hosh	4.0	08/07	35	20	○	○	200	200	250	200
Mezigila	2.4	09/07	35	20	○	---	150	150	50	50
Wad Al Naim	4.0	24/06	35	20	○	○	200	200	200	200
Faris	8.0	30/06	35	20	Ronstar (0.7L/fed)	---	400	500	400	---
Rufaa	2.0	07/07	35	20	○	○	100	100	150	100
Goz Alihead	4.0	06/07	35	20	○	○	200	200	200	100

Area 44, Rahad Site (31/10/2013)



Rice growth was good under proper management.
(Maturity Stage) Yield : 4.0t/ha (1.7t/fed) !

Wad Al Naim Site (31/10/2013)



Rice growth was good under proper management.
(Maturity Stage) Yield : 3.4t/ha (1.4t/fed) !



Rice Field Day !

06/11/2013

**State Governor
and Ambassador
of Japan with
more than 300
participants !**



Demonstration Farms in other States

State	Site	Area (Fed)	Sowing	Sowing method	Sowing Space
Sennar	Morafaa	2.5	03/07/2013	Seed Driller	20cm
	Maiurno	2.5	15/07/2013	Seed Driller	20cm
	Wad Hashim	2.5	21/07/2013	Seed Driller	20cm
	Kassab 1	2.5	07-10/07/2013	Hand	25cm
	Kassab 2	2.5	03-06/07/2013	Hand	25cm
Gedaref	Al Fau	3.0	28/06/2013	Seed Driller	20cm
	Shuwak	2.0	27-29/06/2013	Hand	20cm
River Nile	Atbara	2.0	08/07/2013	Seed Driller	25cm
	Alfadlab	2.0	09/07/2013	Seed Driller	25cm
Northern	Sheikh Sharif	1.0	01/07/2013	Seed Driller	24cm
	Dongola Island	1.0	01/07/2013	Seed Driller	24cm
White Nile	Kosti	2.0	03/08/2013	Seed Driller	20cm
	Um Hani	2.0	09/08/2013	Seed Driller	20cm
TOTAL		27.5			

Yield Result of Demonstration Farms

State	Site	Area (Fed)	Yield (Whole area) (kg/fed)	Yield (By sampling) (kg/fed)
Sennar	Morafaa	2.5	470	2606
	Maiurno	2.5	231	1941
	Wad Hashim	2.5	75	960
	Kassab 1	2.5	118	855
	Kassab 2	2.5	121	1366
Gedaref	Al Fau	3.0	85	1549
	Shuwak	2.0	410	2547
River Nile	Atbara	2.0	242	823
	Alfadlab	2.0	57	1582
Northern	Sheikh Sharif	1.0	0.2	NA
	Dongola Island	1.0	1164	2536
White Nile	Kosti	2.0	297	1292
	Um Hani	2.0	727	1860
TOTAL		27.5		



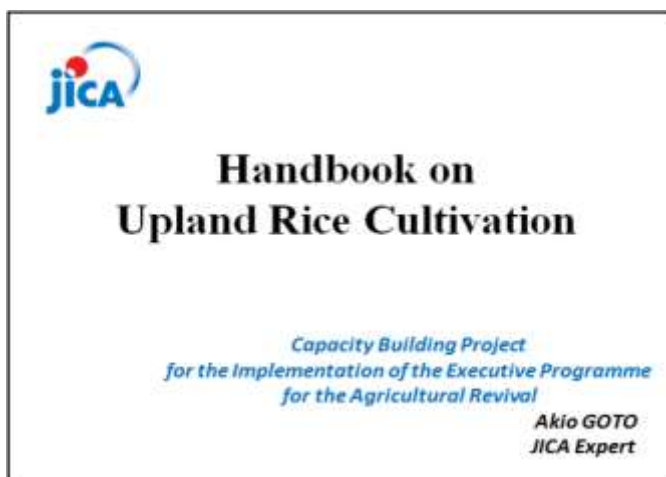
17/11/2013

Rice Field Day

More than 500 participants !



Preparing a Handbook (ongoing)



Achievements Measured in Indicators

The NRDS draft is formulated

- The NRDS was drafted in May 2011. FMoAI approved it officially in November 2012.

A structure to implement and review (monitoring and evaluating progress and reflecting evaluation results to the next plan) the NRDS is recommended.

- A structure was recommended already. It may take some more time for formulating a roadmap.

Achievements Measured in Indicators

Annual action plans for rice development (analysis, planning, monitoring & evaluation, technical development, seed production, and extension) are formulated.

- The wrap-up meetings have been held at 5 states and annual plans for rice development in the fiscal year 2014 was authorized by JCC in February 2014.

Achievements Measured in Indicators

A practical/technical handbook on upland rice cultivation is prepared

- The Technical Handbook on upland rice cultivation (both English and Arabic) was finalized in February 2014.

Quality of rice seed is improved.

- Comparing the purity of the seeds used in 2010, purity of seeds used in 2013 under the Project is very high. Purity of rice seeds is the most important element on utilizing as seeds.

Achievements Measured in Indicators

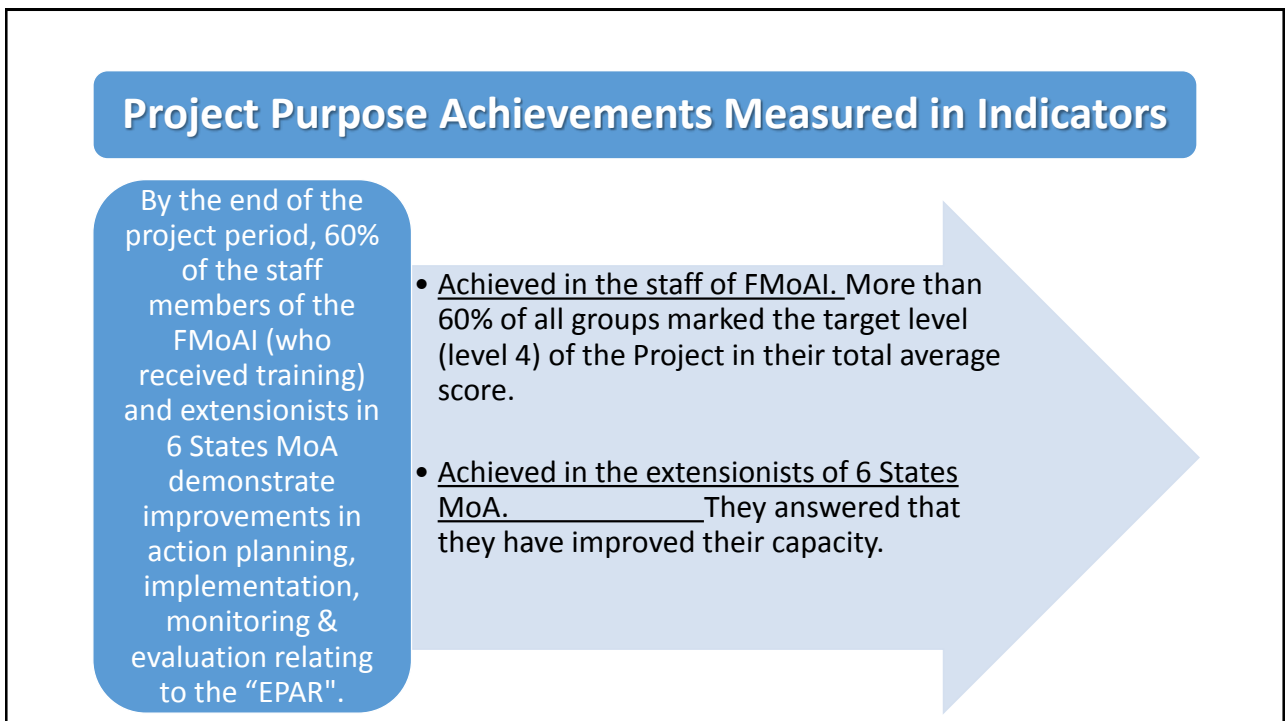
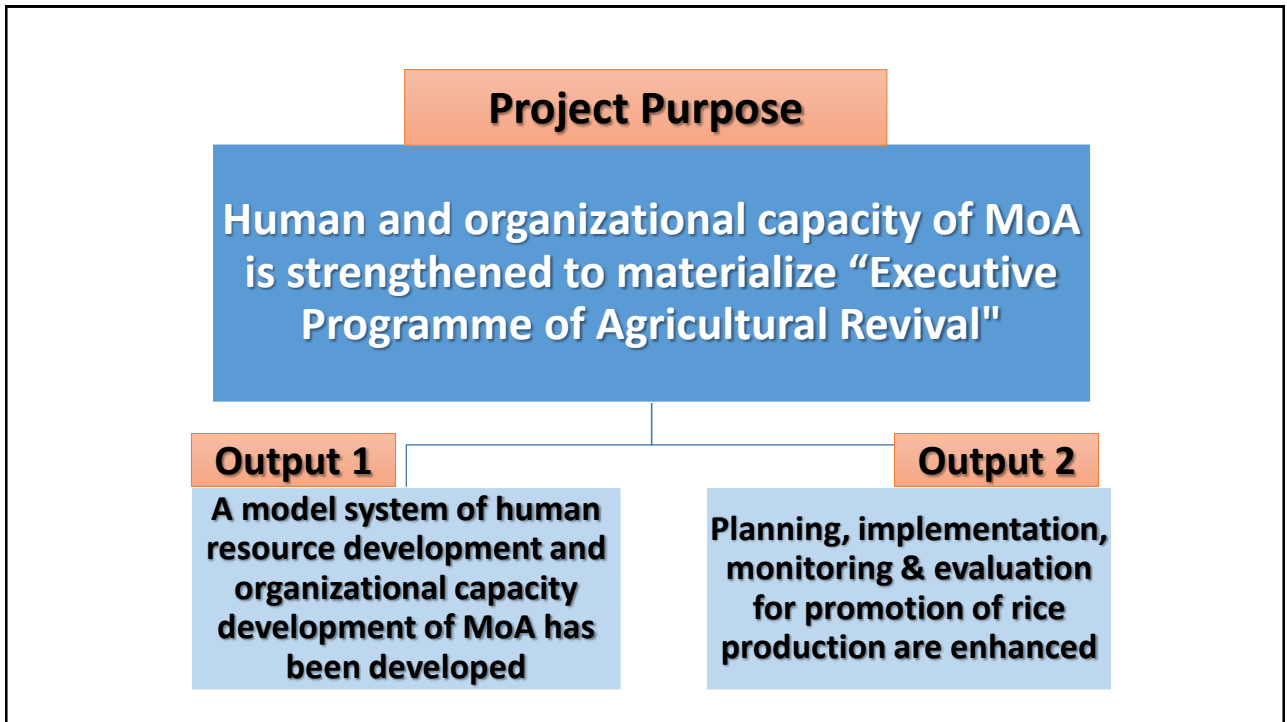
More than 80% of training participants are qualified as trainers on appropriate rice cultivation technique.

- As a result of the assessment of capacity of extensionists in Gezira SMOA, 82.4% of extensionist are qualified. On the other hand, the rate of same assessment did not exceed 80% in any other States.

More than 60% of farmers who grew upland rice in demonstration farms show a willingness to grow rice again.

- Twenty two farmers out of 24 farmers (91.7%) showed willingness to grow rice again after harvest in 2013 season.

Conclusion



Project Purpose Achievements Measured in Indicators

By the end of the project period, 80% of the staff of FMoAI (who received our training) and extensionists in 6 States MoA show improvement in the score of the self capacity evaluation.

- Achieved in the staff of FMoAI. More than 80% of all groups marked the target level (level 4) of the Project in their total average score.
- Gezira State MoA: 82.4% (achieved)
Other 5 States didn't exceed 80 %.

Issues for Sustainability

- Internalization of “Model System” in Federal MoAI
- Coordination between Federal MoAI (NRP) & State MoAs
- Implementation of NRDS follow up / Rice Sector Development Forum
- Monitoring & Evaluation





Experimental Farm (Umbarona) Season 2013



Demo-farms Season 2013







Rice Milling Locations (Fadasi & Hassahiesa)

