

October 2021

## NRDS M&E framework under RICE Approach



# CARD

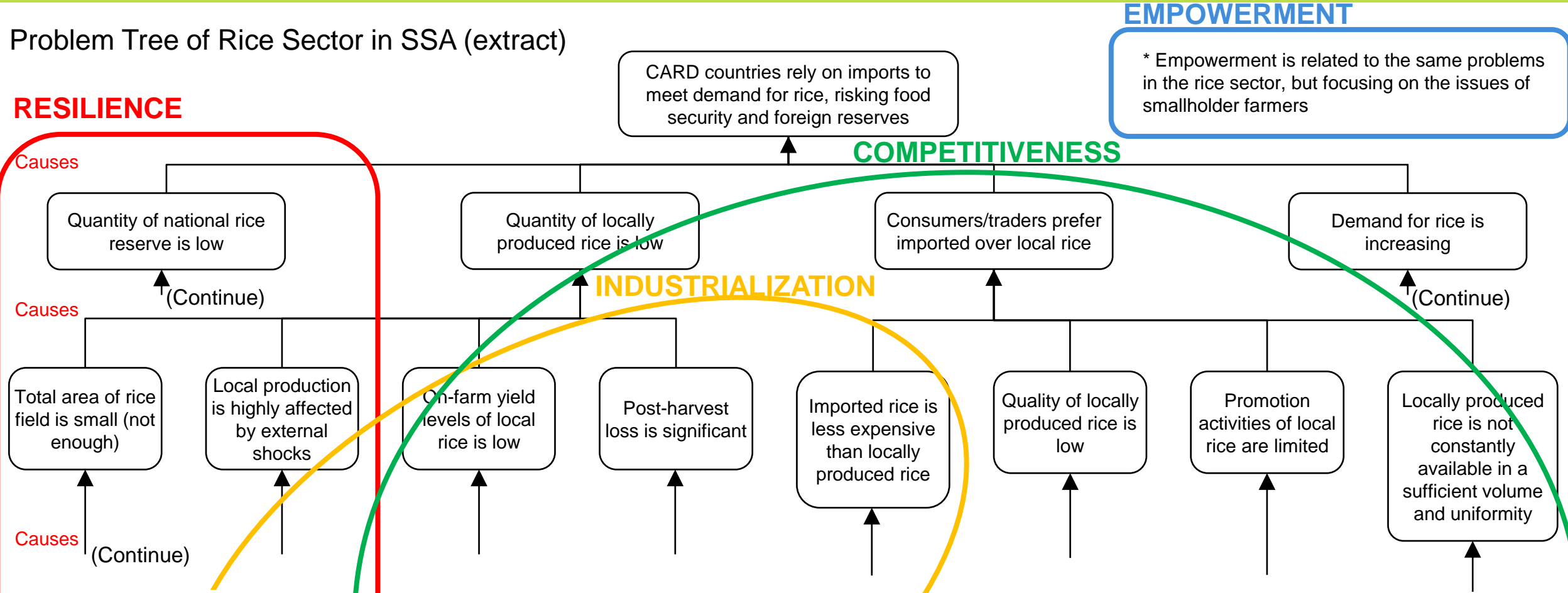
**Coalition for African Rice Development  
(CARD) Phase 2**

# What is RICE Approach? (1/2)

Aspect	Definition
<b>R</b> esilience	Making rice production and supply systems more stable and sustainable to cope with any kind of shocks, in particular climate change and the population increase
<b>I</b> ndustrialization	Promoting industrialization in all categories of actors along the rice value chain through working with the private sector
<b>C</b> ompetitiveness	Strengthening market competitiveness of locally produced rice in terms of accessibility, quality and price against imported rice
<b>E</b> mpowerment	Improving livelihood and welfare of smallholder farmers through capacity building

# What is RICE Approach? (2/2)

Problem Tree of Rice Sector in SSA (extract)



**RICE Approach**

Most problems in the rice sector can be categorized into **Resilience**, **Industrialization**, **Competitiveness** and **Empowerment**.

→ We are now bringing a new sort of filter of these 4 aspects to monitor our progress of interventions addressing these problems.

# RICE Approach and M&E Indicators

Aspect	M&E Indicators
<b>R</b> esilience	<ul style="list-style-type: none"><li><input type="checkbox"/> Area under <b>irrigation</b></li><li><input type="checkbox"/> Quantity of <b>resilient variety seeds</b></li></ul>
<b>I</b> ndustrialization	<ul style="list-style-type: none"><li><input type="checkbox"/> Level of <b>milling sector upgrading</b></li><li><input type="checkbox"/> Level of <b>mechanization in production</b></li></ul>
<b>C</b> ompetitiveness	<ul style="list-style-type: none"><li><input type="checkbox"/> <b>Share of local rice</b> in the market</li><li><input type="checkbox"/> Quantity of <b>high-yielding variety seeds</b></li></ul>
<b>E</b> mpowerment	<ul style="list-style-type: none"><li><input type="checkbox"/> Smallholder farmers' accessibility to <b>financial services</b></li><li><input type="checkbox"/> Smallholder farmers' accessibility to <b>technical training or services</b></li></ul>

# M&E Indicators for Phase 2

M&E Indicators based on RICE Approach will be added to Overall Indicators adopted in Phase 1

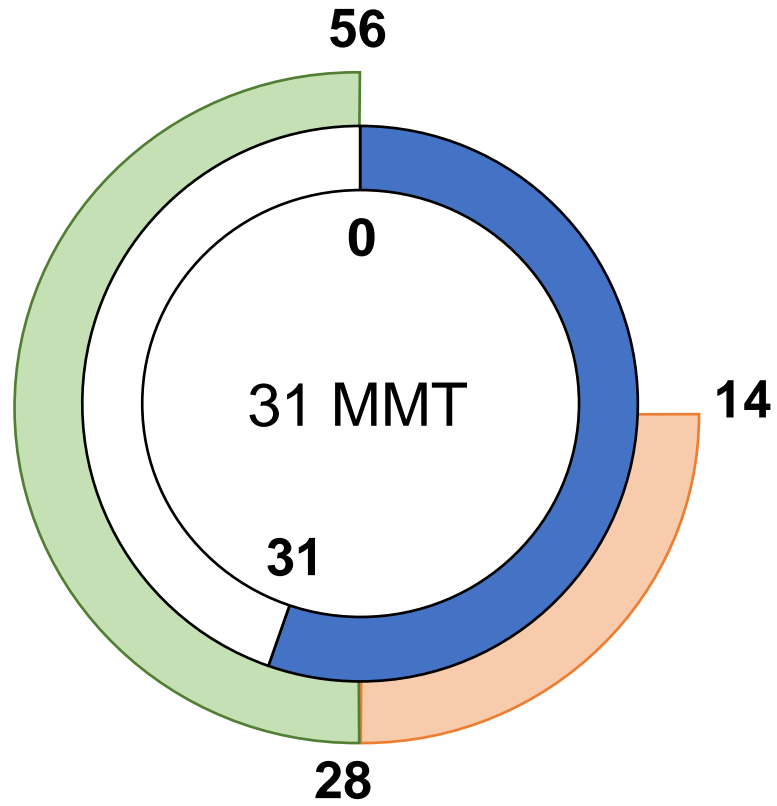
	M&E Indicators	
Overall	<ol style="list-style-type: none"> <li>1. Quantity of paddy production</li> <li>2. Total area harvested</li> <li>3. Yield per unit area</li> <li>4. Self-sufficiency rate (complementary, with no target as CARD)</li> </ol>	} Indicators since Phase 1
Resilience	<ol style="list-style-type: none"> <li>1. Area under irrigation</li> <li>2. Quantity of resilient variety seeds</li> </ol>	
Industrialization	<ol style="list-style-type: none"> <li>1. Level of milling sector upgrading</li> <li>2. Level of mechanization in production</li> </ol>	
Competitiveness	<ol style="list-style-type: none"> <li>1. Share of local rice in the market</li> <li>2. Quantity of high-yielding variety seeds</li> </ol>	
Empowerment	<ol style="list-style-type: none"> <li>1. Smallholder farmers' accessibility to financial services</li> <li>2. Smallholder farmers' accessibility to technical training or services</li> </ol>	

# Who will conduct M&E?

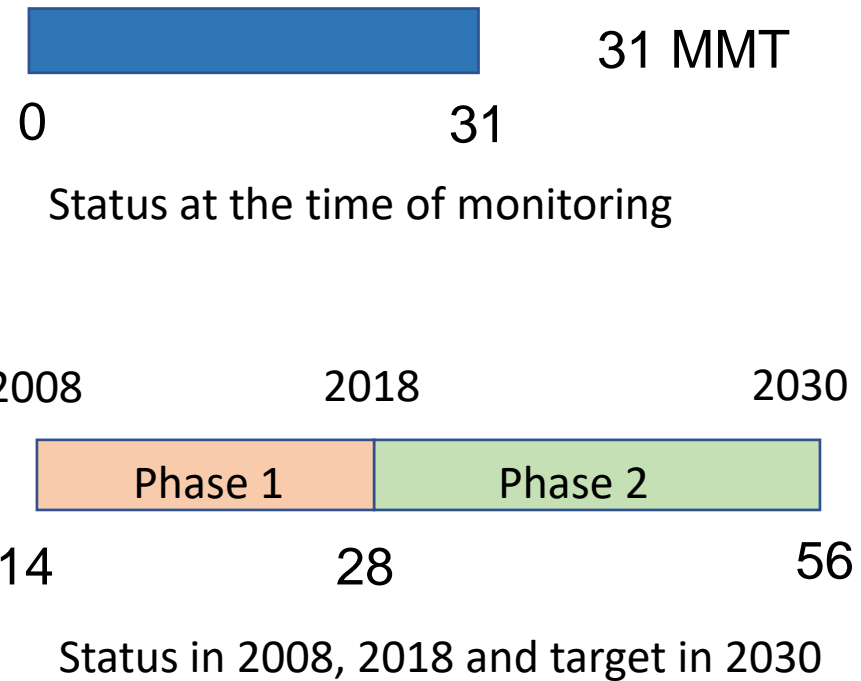
NRDS FP with Task Force members will play a key role in conducting M&E activities during Phase 2

<b>Milestone</b>	<ul style="list-style-type: none"> <li>➤ Baseline (2018): Survey to be conducted ASAP</li> <li>➤ Target (2030): To be set by NRDS2/Seed Strategy/Mechanization Strategy; set by baseline survey</li> </ul>
<b>Data source</b>	<ul style="list-style-type: none"> <li>➤ FAOSTAT</li> <li>➤ Ministry of Agriculture (Statistics department / Extension services / Seed certification unit / Crop protection department / etc.)</li> <li>➤ Bureau of Statistics, Bureau of Standard, Ministry of Industry, Revenue Authority</li> <li>➤ Simple survey</li> </ul>
<b>Frequency</b>	Annual (→ <i>Annual Progress Review Meeting</i> ; SC meeting; Update on CARD Website)
<b>Responsibility</b>	NRDS Focal Point and Taskforce (assisted by CARD regional consultants)

# Overall Indicators



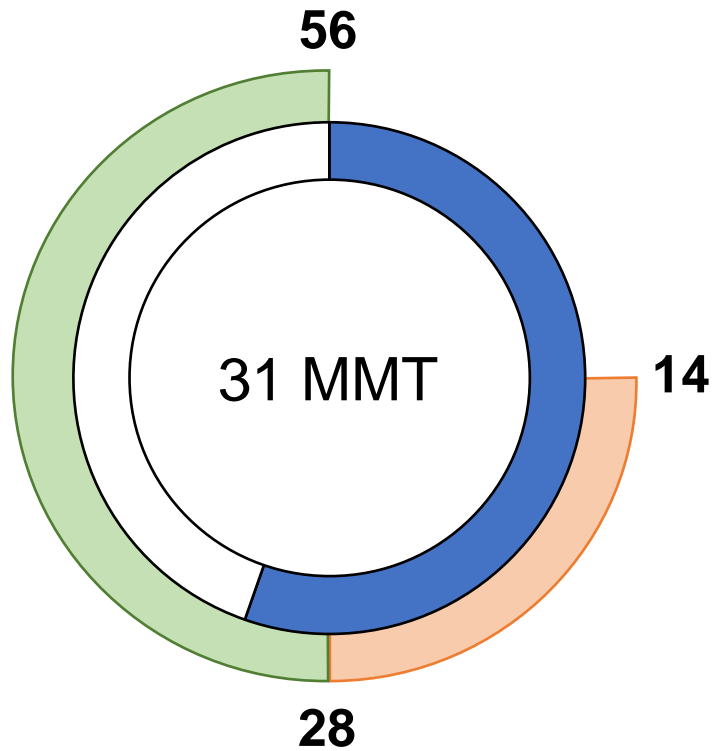
Quantity of production



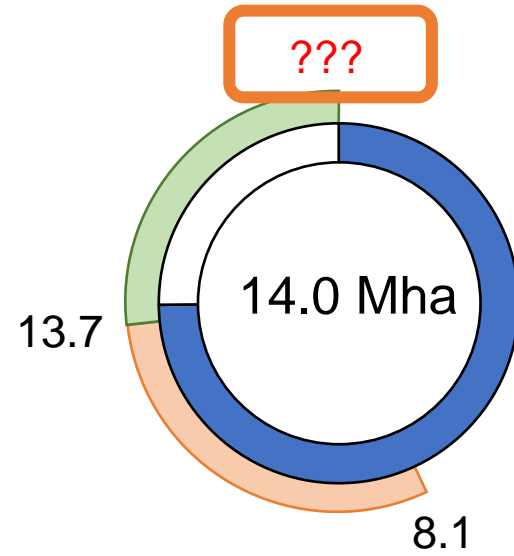
*Prepared in September 2020, using FAOSTAT accessed on 3<sup>rd</sup> September*

# Overall Indicators

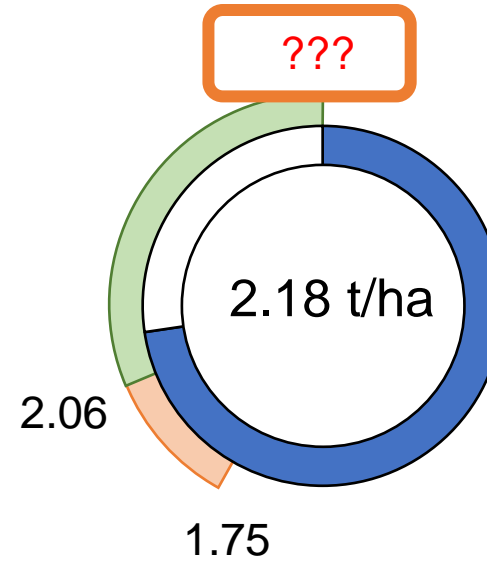
At continental level



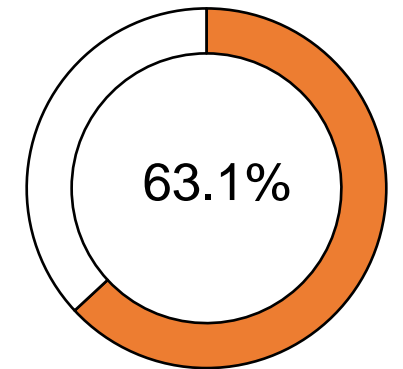
Qty. production



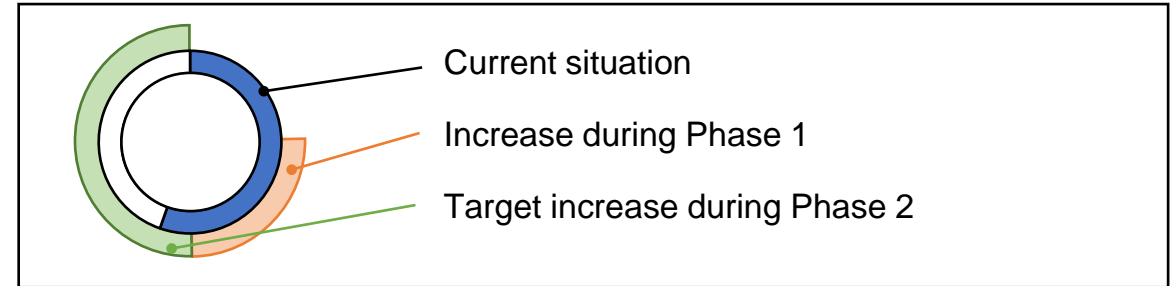
Area



Yield



Self-sufficiency





# Overall Indicators: Target area and yield

Combination of increase in area and yield to make production double

Area	Yield	Prod
2.00	1.00	2
1.90	1.05	2
1.80	1.11	2
1.70	1.17	2
1.60	1.25	2
1.50	1.33	2
1.40	1.43	2
1.30	1.53	2
1.20	1.67	2
1.10	1.82	2
1.00	2.00	2

2007

*Area x Yield = Production*

$$8.1 \text{ Mha} \times 1.75 \text{ t/ha} = 14.1 \text{ MMT}$$

$$\begin{matrix} \downarrow & & \downarrow & & \downarrow \\ \boxed{\times 1.70} & & \boxed{\times 1.17} & & \boxed{\times 2} \end{matrix}$$

$$13.7 \text{ Mha} \times 2.06 \text{ t/ha} = 28.2 \text{ MMT}$$

$$\begin{matrix} \downarrow & & \downarrow & & \downarrow \\ \boxed{\times ???} & & \boxed{\times ???} & & \boxed{\times 2} \end{matrix}$$

2018

2030

$$?.? \text{ Mha} \times ?.?? \text{ t/ha} = 56 \text{ MMT}$$

Phase 1

Phase 2

**Need to set targets for area and yield for Phase 2**

# Overall Indicators: setting target area and target yield

	Production fold	Area fold	Yield fold
Benin	2.9	1.8	1.6
Togo	5.8	1.8	3.2
Nigeria	5.0	1.3	4.0
Liberia	5.2	1.8	2.9
Gambia	8.5	2.7	3.1
Ghana	5.6	2.7	2.1
Kenya	6.6	4.0	1.7
Ethiopia	10.8	6.0	1.8
Tanzania	6.1	3.0	2.0
Mozambique	2.7	1.3	2.2
Rwanda	3.4	1.8	1.9
Burkina Faso	10.0	4.0	2.5
Niger	12.2	9.0	1.4
Senegal	2.3	2.1	1.1
Cote d'Ivoire	2.4	1.2	1.9
Mali	2.0	1.5	1.3
Guinea	2.3	0.8	2.8
Guinea Bissau	3.0	1.2	2.6
Chad	7.2	1.8	4.0

- The production target and combination of target area and target yield cited from their NRDS2/their working document for 19 countries where information is available.
- Some countries tried to achieve double production by focusing on yield improvement, while others focus on area expansion.
- Calculation at the continental level using these 19 countries' data gives **area increase by 13%** and **yield improvement by 77%** for achieving doubling rice production.

# Overall Indicators: setting target area and target yield

## Prof. Otsuka's presentation at GM7 in 2018

“ New goal of CARD (Phase 2) is to achieve another doubling of rice production from 2018 to 2030. As a possible scenario: 30% increase in harvested area x 50% increase in yield per hectare =  $1.3 \times 1.5 \approx 2.0$  “

“ 50% increase in yield means change from 2.06 ton/ha to 3.09 ton/ha. The question is if it is possible to achieve yield of more than 3.00 ton/ha. “

“ To do that, we need African Rice Green Revolution comparable to Asian Rice Green Revolution “

“ In some areas, African Rice Green Revolution has already started, through provision of crop management training. “

# Overall Indicators: Target area and yield

Combination of increase in area and yield to make production double

Area	Yield	Prod
2.00	1.00	2
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1.80	1.11	2
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1.00	2.00	2

*Area x Yield = Production*

2007

$$8.1 \text{ Mha} \times 1.75 \text{ t/ha} = 14.1 \text{ MMT}$$

2018

$$13.7 \text{ Mha} \times 2.06 \text{ t/ha} = 28.2 \text{ MMT}$$

2030

$$18.7 \text{ Mha} \times 3.00 \text{ t/ha} = 56.0 \text{ MMT}$$

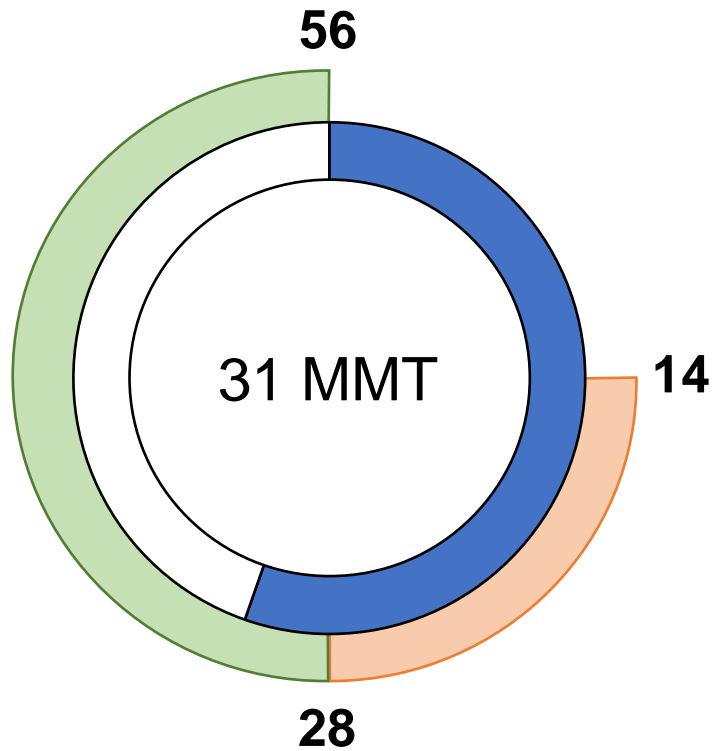
Phase 1

Phase 2

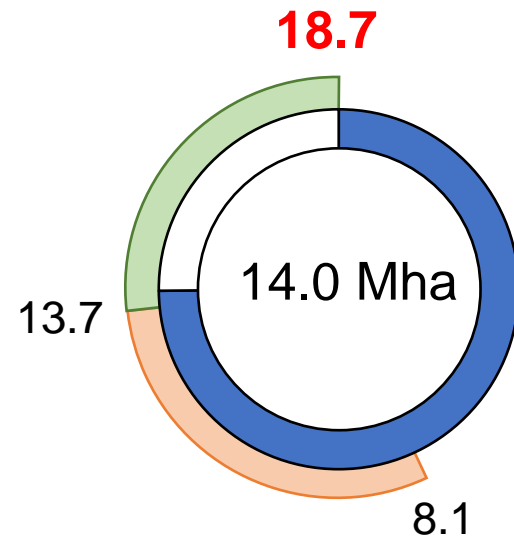
**These are the proposed target figures for Phase 2**

# Overall Indicators

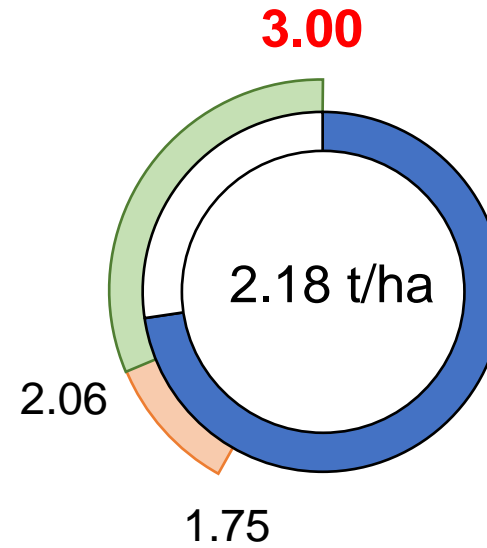
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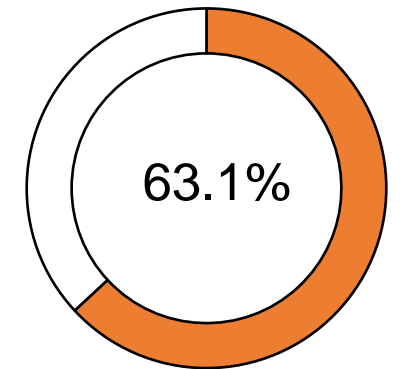
Qty. production



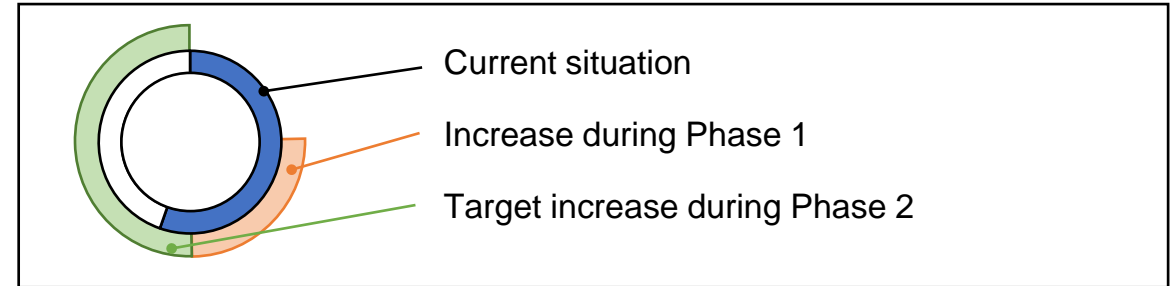
Area



Yield



Self-sufficiency



# RICE Approach Indicators: **R**esilience

	Resilience 1	Resilience 2
Indicator	<b>Area under irrigation</b>	<b>Quantity of resilient variety seeds</b>
Definition	<b>Area under rice cultivation with supplementary irrigation that could mitigate the negative impacts of weather fluctuations on rice production (ha)</b>	<b>Quantity of seeds of locally preferred varieties with resilient characteristics, locally produced and/or imported annually (ton)</b>
Explanation	<ul style="list-style-type: none"> <li>Sum of rice fields with water control, including micro- and small-scale irrigation.</li> <li>Where double cropping is practiced, areas for both seasons should be counted.</li> </ul>	<ul style="list-style-type: none"> <li>Proxy to the area under cultivation of resilient varieties (actual adoption rate is difficult to obtain).</li> <li>“Resilient varieties” should be defined in each country by NRDS TF.</li> <li>Including certified seed, quality declared seed, and seed from Community Based Seed System.</li> </ul>
Data source	Agricultural statistics department / National bureaus of statistics / NRDS FP & TF	Seed certification unit / Plant protection unit / Revenue authority / National bureaus of statistics / NRDS FP & TF

# RICE Approach Indicators: **Industrialization**

	Industrialization 1	Industrialization 2
Indicator	<b>Level of milling sector upgrading (Industrial milling capacity)</b>	<b>Level of mechanization in production</b>
Definition	<b>Ratio of installed capacity of medium and large mills (2 tons/hour or larger) among all functional mills (%)</b>	<b>Number of machines available for ploughing and harvesting in rice producing areas (units)</b>
Explanation	<ul style="list-style-type: none"> <li>▪ Larger share of rice milled by medium- to large-scale modern mills, rather than small-scale artisanal mills, can be considered as a major drive for industrialization of the whole rice value chain.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Limited to representative rice producing areas, to relatively accurately count tractors meant for rice, not for other crops.</li> </ul>
Data source	Survey / Directorates in charge of agricultural mechanization and/or commercialization / Bureau of standard / NRDS FP & TF	Survey / Directorates in charge of agricultural mechanization / NRDS FP & TF

# RICE Approach Indicators: **C**ompetitiveness

	Competitiveness 1	Competitiveness 2
Indicator	<b>Share of local rice in the market</b>	<b>Quantity of high-yielding variety seeds</b>
Definition	<b>Share of locally produced rice in the total quantity of rice procured by major retail stores (%)</b>	<b>Quantity of seeds of locally preferred varieties with high-yielding attributes, locally produced and/or imported (ton)</b>
Explanation	<ul style="list-style-type: none"> <li>Assumption: major retail stores (such as supermarkets) capture the best the value of both the local and imported rice to consumers.</li> <li>Aiming to capture the level of competitiveness as a whole, which is a function of 1) quality, 2) price, 3) adequate &amp; constant supply, and 4) consumer awareness (branding).</li> </ul>	<ul style="list-style-type: none"> <li>Proxy to the area under cultivation of high-yielding varieties (actual adoption rate is difficult to obtain).</li> <li>“High-yielding varieties” should be defined in each country by NRDS TF.</li> <li>Including certified seed, quality declared seed, and seed from Community Based Seed System.</li> </ul>
Data source	Market surveys / NRDS FP & TF	Seed certification unit / Plant protection unit / Revenue authority / National bureaus of statistics / NRDS FP & TF



# RICE Approach Indicators: **E**mpowerment

	Empowerment 1	Empowerment 2
Indicator	<b>Smallholder farmers' accessibility to financial services</b>	<b>Farmers covered by technical training or services</b>
Definition	<b>Ratio of smallholder farmers having access to financial services in rice producing areas (%)</b>	<b>Ratio of farmers accessing technical training or services in rice production areas (%)</b>
Explanation	<ul style="list-style-type: none"> <li>▪ Aiming to measure the capacity of smallholder rice farmers over investing in their farming operations, evaluated by the degree of their access to financial services that can support and upgrade their rice production system.</li> <li>▪ Financial services considered under this indicator should be identified by NRDS TF.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Including extension services both by public and private sectors.</li> <li>▪ Technical training and services to be defined in each country by NRDS TF before commencement.</li> </ul>
Data source	Survey / Financial institutions or Ministry of Finance / NRDS FP & TF	Survey / NRDS FP & TF

# New CARD website as M&E / Data Management tool

## 1. Use web based/online data collection tools



Data for the M&E indicators and other necessary information can be collected through digital data collection tools available, input by stakeholders (mainly by NRDS FPs at MoA) in each member country

## 2. Store/Manage/Analyze data



Once input by stakeholders, data will be sent to the host server in Nairobi, and managed and analyzed

## 3. Present them on the new CARD website

Data analyzed will be used for visual presentation on the newly launched CARD website.



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# New CARD website

[New CARD Website](#) ready for launching

# Annual Progress Review Meeting

## Organization of Annual Progress Review Meeting in each CARD member country

1.	Objective	All rice stakeholders in the country share their activities and the progress made during the past year and identify the needs and roles that each stakeholder has to play in the following year to achieve the 2030 targets	
2.	Frequency	Once a year	
3.	Finance	Same as NRDS Working Week	
4.	Organizer	Ministry of Agriculture (NRDS FP and TF members)	
5.	Style	Two-day workshop	
6.	Participants	Day 1:	<ul style="list-style-type: none"> <li>➤ NRDS FP and TF members</li> <li>➤ Representatives of SC members and other DPs in rice sector development</li> </ul>
		Day 2:	<ul style="list-style-type: none"> <li>➤ All participants in Day 1</li> <li>➤ Other rice stakeholders in the country</li> </ul>
7.	Contents	<ul style="list-style-type: none"> <li>➤ Review of RICE indicators (achievement to date)</li> <li>➤ Review of programs/projects supported by each SC member and DP</li> <li>➤ Discussion on the way forward (including fine-tuning of ongoing projects and drafting additional project concept)</li> </ul>	

**THANK YOU FOR YOUR ATTENTION**



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