

Upscaling SRI in Africa to Reduce Greenhouse Gas Emissions from Rice Paddies

Prof. Bancy M. Mati

Association of Irrigation Acceleration Platform (AIAP)

20th February 2024

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Introducing the System of Rice Intensification (SRI)

SRI is a package of **practices** adopted to improve the productivity of rice grown in paddies, *by changing some agronomic practices from conventional practices*

Some seven components distinguish SRI from conventional flooded paddy practice:

1. Transplant **younger seedlings**; i.e. at 10 to 14 days old, *(rather than 3-4 weeks old)*
2. Raising the seedlings in **un-flooded nurseries**, preferably with organic matter
3. Transplant seedlings in lines, at **wider spacings** (at least 20x20 cm or more);
4. Transplanting **only one seedling** per hill *(not clumps of seedlings)*;
5. Alternate **wetting and drying** of the paddy *field (do not continuously flood the soil)* to ensure aerating of the root zone,
6. **Weed control** preferably using a **mechanical/ rotary weeder**; and
7. Use of **organic manures/ fertilization** is preferred.

Invest in promotion of SRI through knowledge, financing, capacity building & advocacy

SRI requires Knowledge to change field practices *(utilizing what the farmer has)*

Conventional flooded nursery

SRI practice: Nursery & transplanting



Conventional flooded paddy nursery emits GHGs

SRI uses 90% less seeds



SRI dry nursery, 8-14 day old seedling ready for transplanting



Conventional – Old seedlings transplanted in flooded paddy

Transplanting SRI, only one seedling



Transplanting SRI young seedlings in SRI paddy

SRI requires just knowledge to change field agronomic practices

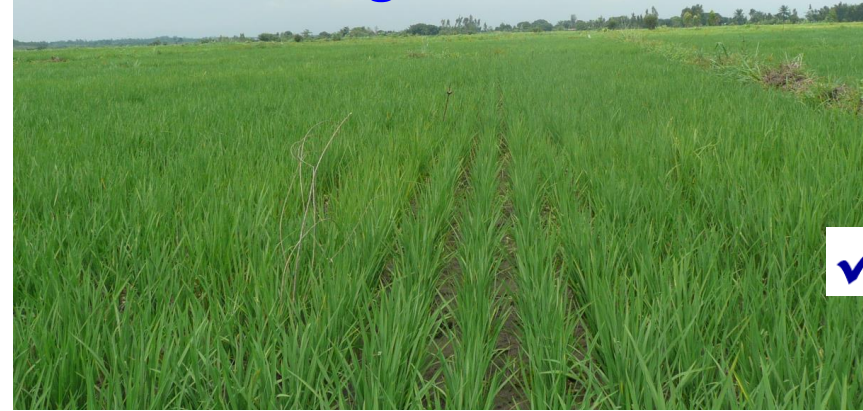
From fully flooded paddiesto AWD water management under SRI



Conventional fully flooded paddy, builds up GHGs



Women manually weed a conventional flooded paddy



SRI wetting & drying paddy field, reduces GHGs by up to 70%

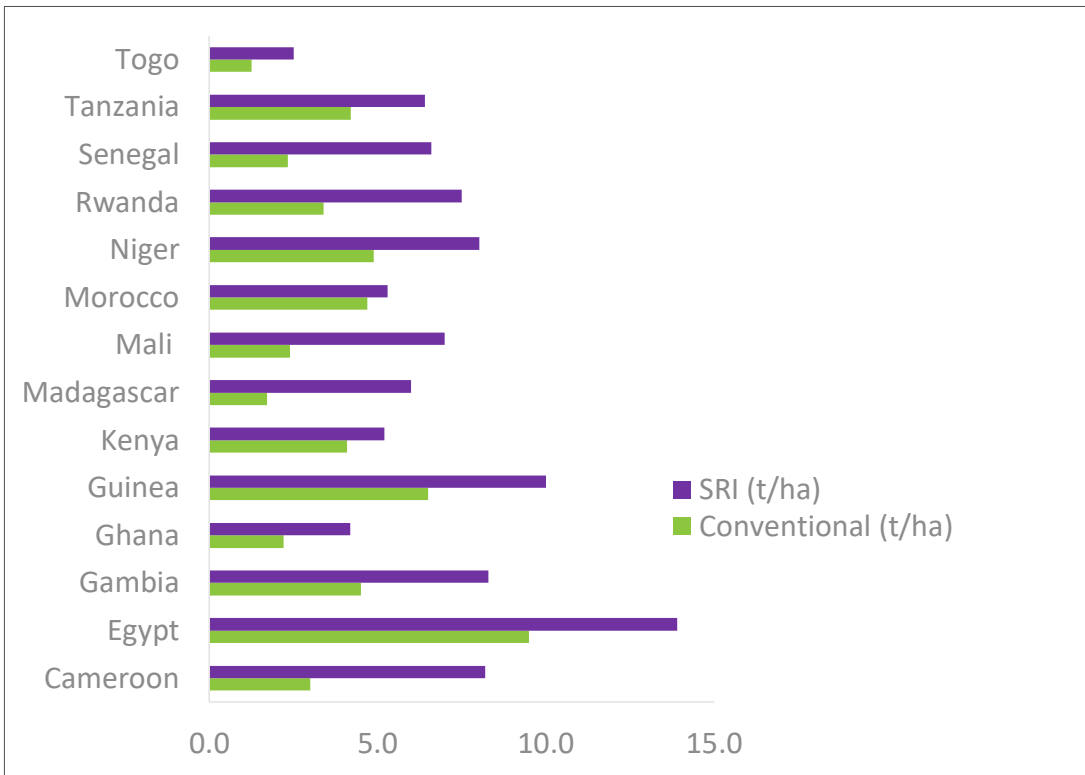


Weeding SRI paddy with rotary weeder: Gender & youth engagement

Benefits: SRI Increases Yields of Rice

Rice yields under SRI vs conventional practice in African countries

Mean yields under SRI were 7.1 t/ha, vs conventional paddies at 3.9 t/ha

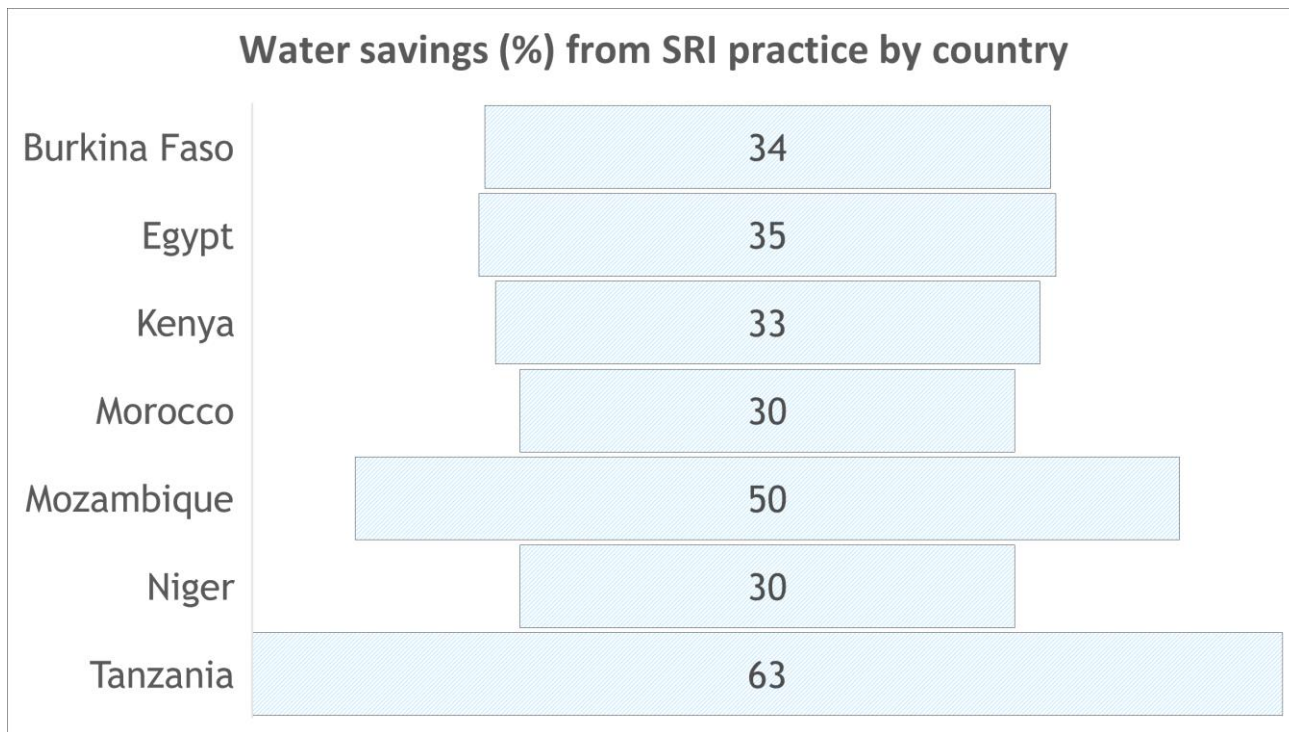


Data source: Mati, 2022, <https://doi.org/10.58297/GWET8377>



Benefits: SRI saves irrigation water by up to 50%

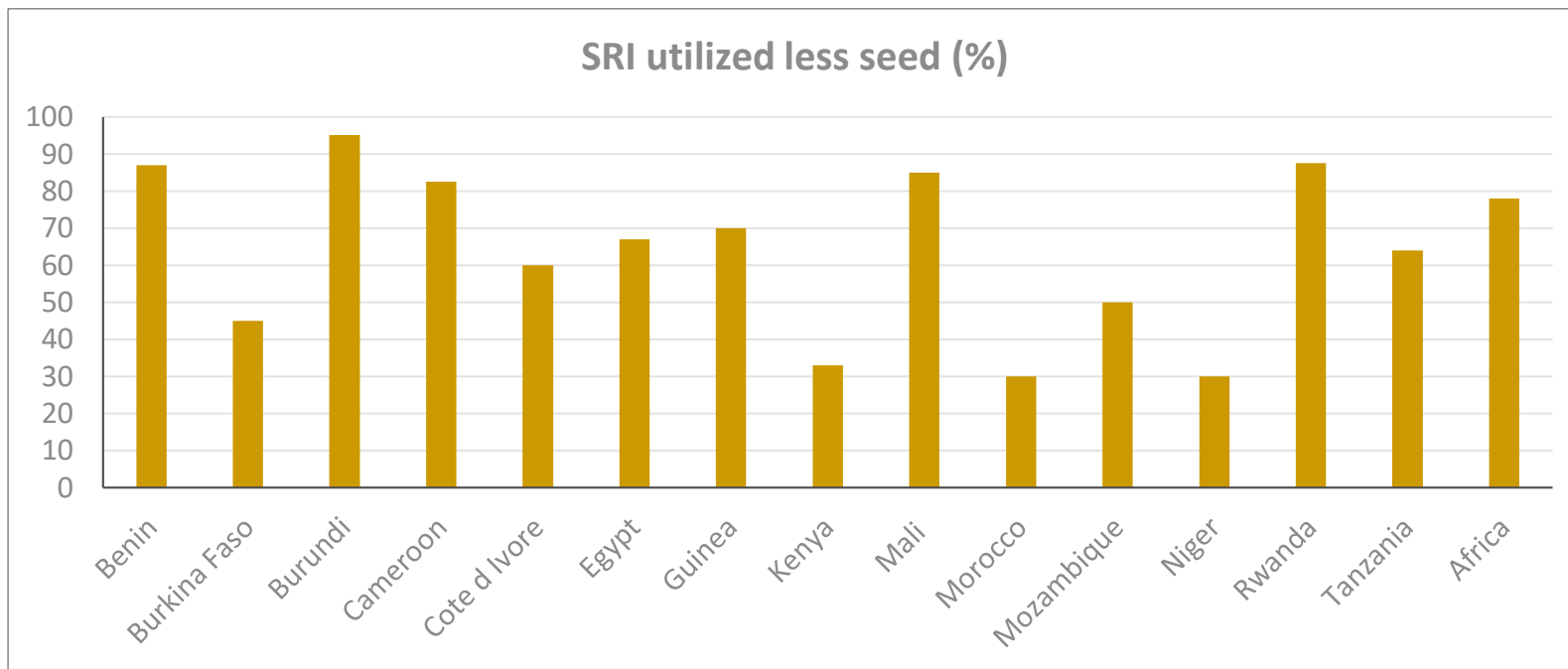
Water savings due to AWD under SRI (data from African countries)



On average, AWD of paddies for between 4 -12 days under SRI saves water by 30% - 63% in Africa

Data source: Mati, 2022, <https://doi.org/10.58297/GWET8377>

Benefits: SRI utilizes less seed: Examples from selected African countries



SRI required only 16 kg/ha as compared to conventional systems that used 73 t/ha of seed

Data source: Mati, 2022, <https://doi.org/10.58297/GWET8377>

Introducing SRI-Africa

The Knowledge & Information Platform Dedicated to Advancement of SRI

<https://sri-africa.net/>



SRI-AFRICA

The System Of Rice Intensification In Africa

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Welcome to SRI-Africa Knowledge sharing Portal



SRI AFRICA



May 7, 2021



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THE SYSTEM OF RICE INTENSIFICATION: MEMOIRES OF AN INNOVATION

Visit SRI Memoires Website:
<https://www.srimemoires.com>



Type here to search



There are 26 countries Captured in SRI-Africa Database

SNo.	Country	SNo.	Country
1.	<u>Madagascar</u> – Origin of SRI	14.	<u>Mali</u>
2.	<u>Benin</u>	15.	<u>Morocco</u>
3.	<u>Burkina Faso</u>	16.	<u>Mozambique</u>
4.	<u>Burundi</u>	17.	<u>Niger</u>
5.	<u>Cameroon</u>	18.	<u>Nigeria</u>
6.	<u>Cote d'Ivoire</u>	19.	<u>Rwanda</u>
7.	<u>Democratic Republic of Congo</u>	20.	<u>Senegal</u>
8.	<u>Ethiopia</u>	21.	<u>Sierra Leone</u>
9.	<u>Egypt</u>	22.	<u>Tanzania</u>
10.	<u>Gambia</u>	23.	<u>The Gambia</u>
11.	<u>Guinea</u>	24.	<u>Togo</u>
12.	<u>Kenya</u>	25.	<u>Uganda</u>
13.	<u>Liberia</u>	26.	<u>Zambia</u>

The scientific basis for SRI has been proven in many countries in Africa & in the world

Knowledge Disconnect and Opportunities for SRI in Africa

Knowledge Disconnect for SRI in Africa

The main **gap** is knowledge flows- **lacking**:

- **Upscaling** - to policy makers –in country,
- **Out-scaling** - to reach many farmers
- **Outreach** – to reach everyone (media, info)

Because...

- Africa is fragmented by national boundaries and poor connectedness
- Scientific papers have little impact at grassroots on farmers' knowledge
- **SRI remains relative unknown** to the majority (decision makers, farmers)
- Lack of funds to support SRI initiative
- Lack of linkages for SRI information to farmers.

Opportunities to address these Issues

- Existence of SRI-Africa –a dedicated platform with continental outreach
- Rich knowledge-base and experiences ready for rolling out
- Institutions in each country that promote SRI and/or AWD practices
- Farmers, extension workers and rice stakeholders have digital access
- Growing acceptance of SRI as a climate-smart way to grow rice
- New funding sources e.g. Climate finance
- Existence of mass & social media platforms for sharing information

What we should do!

**SRI Upscaling in Africa:
Action starts with Knowledge**

Promoting SRI for Greenhouse Gas Mitigation in Africa



Stakeholder
engagement

Synthesized
Knowledge
products

Innovative
Financing

Capacity building
of key actors

Information & Policy
Advocacy to upscale SRI

*Captions obtained from Clip Art
All Photos by Bancy Mati*

Thank you



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