
MOVEing
Towards Rice Self-Sufficiency

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DEUTSCHE ZUSAMMENARBEIT

Co-funded by the European Union

Gates Foundation

MOVE
Market Oriented Value Chains for Jobs and Growth in the ECOWAS Region

CARI
Competitive African Rice Initiative
www.cari-project.org

MOVEing Towards Rice Self-Sufficiency Webinar Series

Boosting Rice Production: Pathways to Higher Yields and Better Quality

Implemented by
giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

MOVEing
Towards Rice Self-Sufficiency

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Agenda

- Project Overview
- Recap of Webinar Series
- Context & Background
- The Sustainable Rice Platform
- Implementing the Sustainable Rice Platform
- Composting & Soil Fertility
- Silage production
- Water Management
- Digital Tools
- Q&A
- Way Forward

Introduction of Presenters

Profile of Presenters

Dr. Ali Ibrahim (I.Ali@cgiar.org)
Cropping Systems Agronomist & Regional Representative AfricaRice Sahel Station

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Technical Advisor – Production Component
Market-Oriented Value Chains for Jobs and Growth in the ECOWAS Region

The Market Oriented Value Chain for Jobs & Growth for the ECOWAS Region (MOVE)

Implemented by
giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH
MOVEing Towards Food Self-Sufficiency

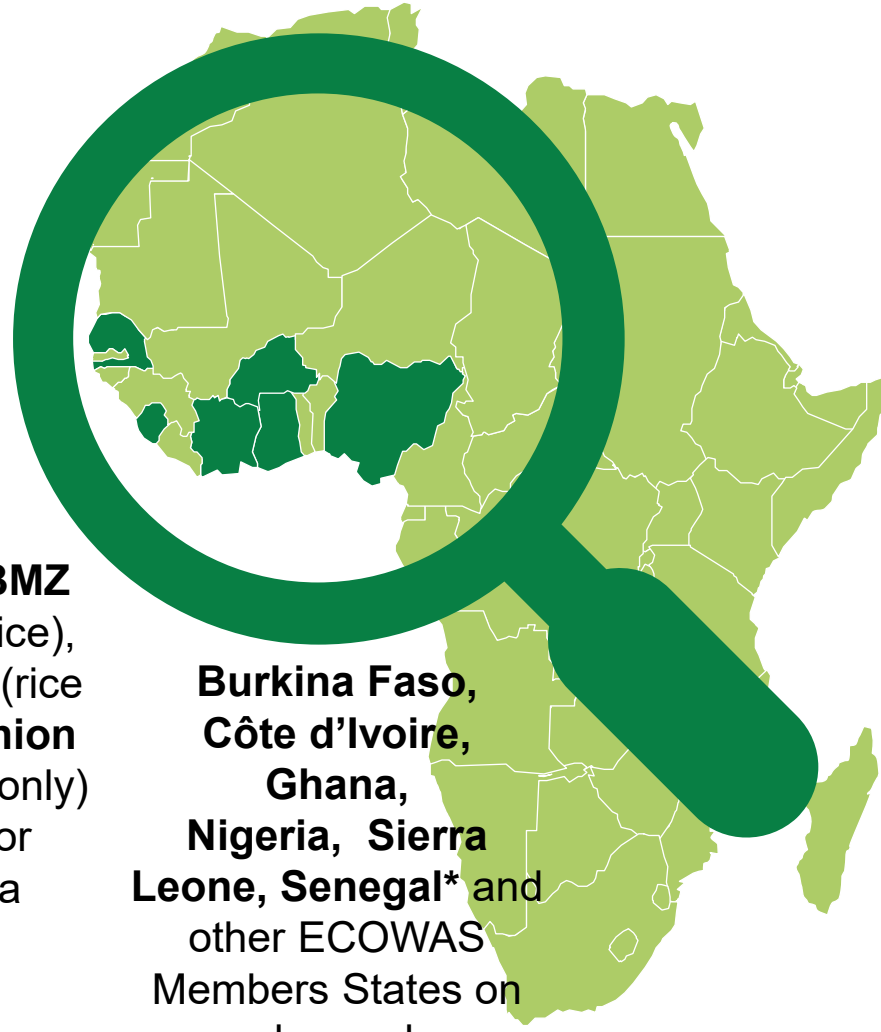
MOVE Overview

Duration
01/22 - 06/27

Political Partner
ECOWAS Commission for Agriculture

2 Value Chains
Cashew & **Rice**

Co-financed from **BMZ** (both cashew and rice), **Gates Foundation** (rice only), **European Union Burkina Faso** (rice only) and **EU INTPA** (for Cashew for Africa and Caribbean)



Burkina Faso, Côte d'Ivoire, Ghana, Nigeria, Sierra Leone, Senegal* and other ECOWAS Members States on demand

Context & Background

Global Importance of Rice

RICE = Food & livelihoods

- The **daily staple food** for more than **3.5 billion** people
- The source of **livelihoods** for more than **1/5** of the world's population
- Global demand for rice is expected to **grow** significantly by **2050**

Meeting Future Global Rice Demand

More Land?

More Fertilizer?

More Pesticides?

More Water?

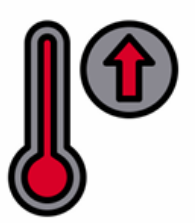
Rice production & climate change

- About **10% of global methane emissions** come from rice paddies and a sizable amount of **nitrous oxide (N2O)**

- At the same time, **rice is a victim of climate change**

Drought

Flooding



High temperature

Rising Sea level

The Sustainable Rice Platform

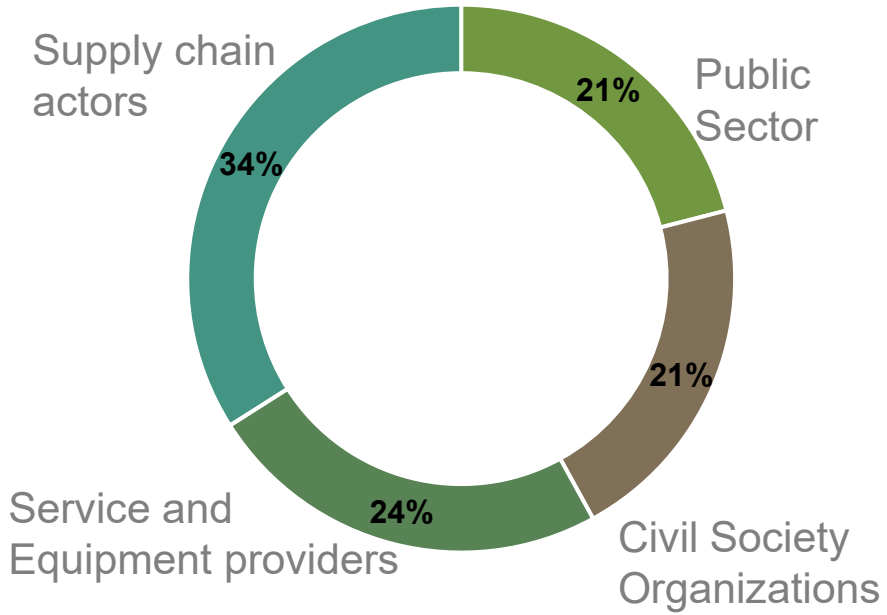
The Sustainable Rice Platform (SRP)

- The Sustainable Rice Platform (SRP) is a global multi-stakeholder alliance established in 2011 led by the United Nations Environment Programme (UNEP) and International Rice Research Institute (IRRI)

- with over 100 institutional members working toward a common goal

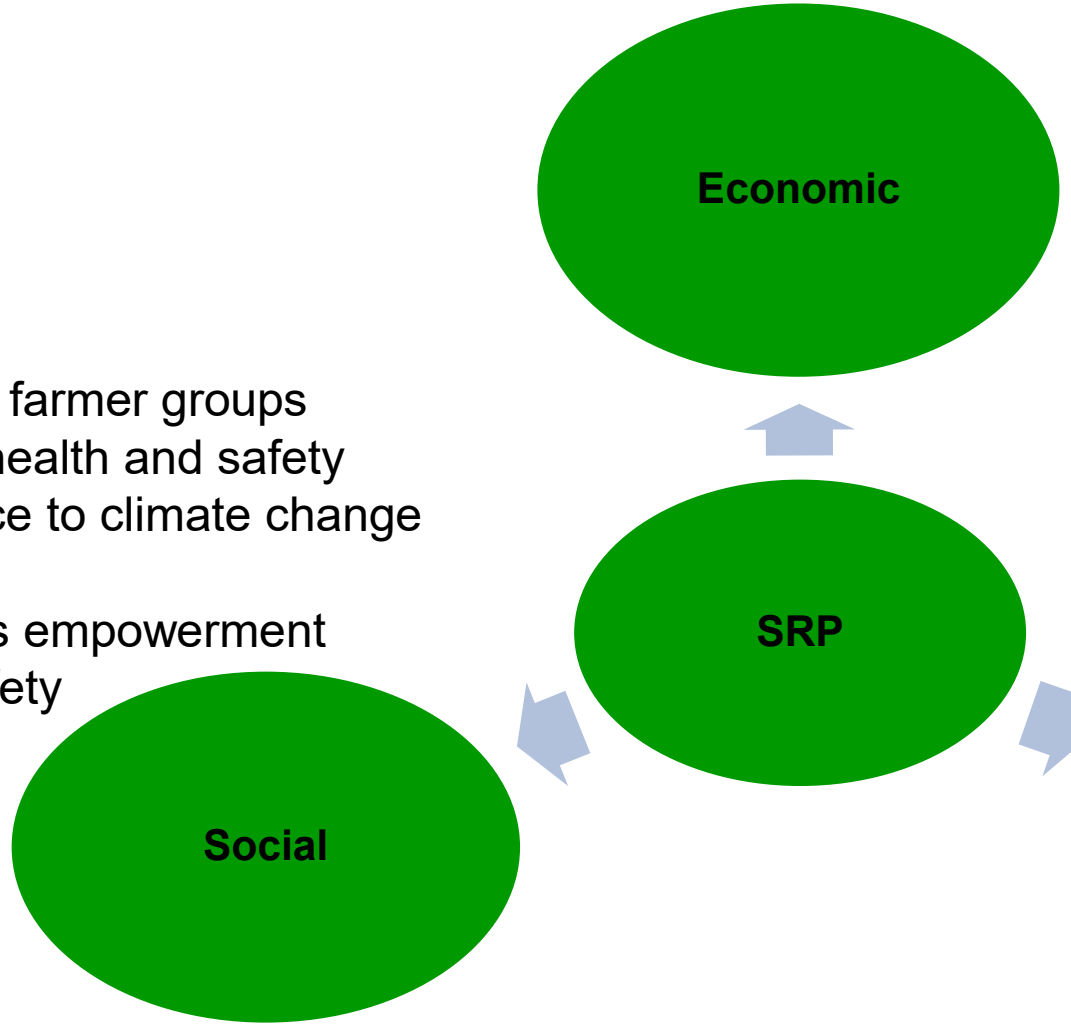
  - to promote resource efficiency and sustainability in the global rice sector

  - to facilitate wide-scale adoption of sustainable best practices in the global rice sector



SRP Authorized Trainers manual

Sustainable Rice Production



- Better quality product means better market access and selling price
- Reducing input cost means higher net income

- Stronger farmer groups
- Farmer health and safety
- Resilience to climate change impacts
- Women's empowerment
- Food safety

- Site-specific soil nutrient management
- Efficient water use
- Good Integrated Pest Management (IPM) practices
- Lower greenhouse gas emissions

The SRP Tool Box

SRP Standard

Good Practice

- A set of good (agricultural) practices to work toward sustainable rice cultivation
- A set of requirements (41) to ensure sustainability

- Training Extension Agents/Workers
- Training farmers to follow GAP

SRP Performance Indicators

Measure Impacts

- A set of indicators showing moving in the right direction when applying the Standard
- Quantitatively measures whether we are achieving the desired impacts at the farm level
- Monitoring of outcomes

- Report results of your project to the project director or donor

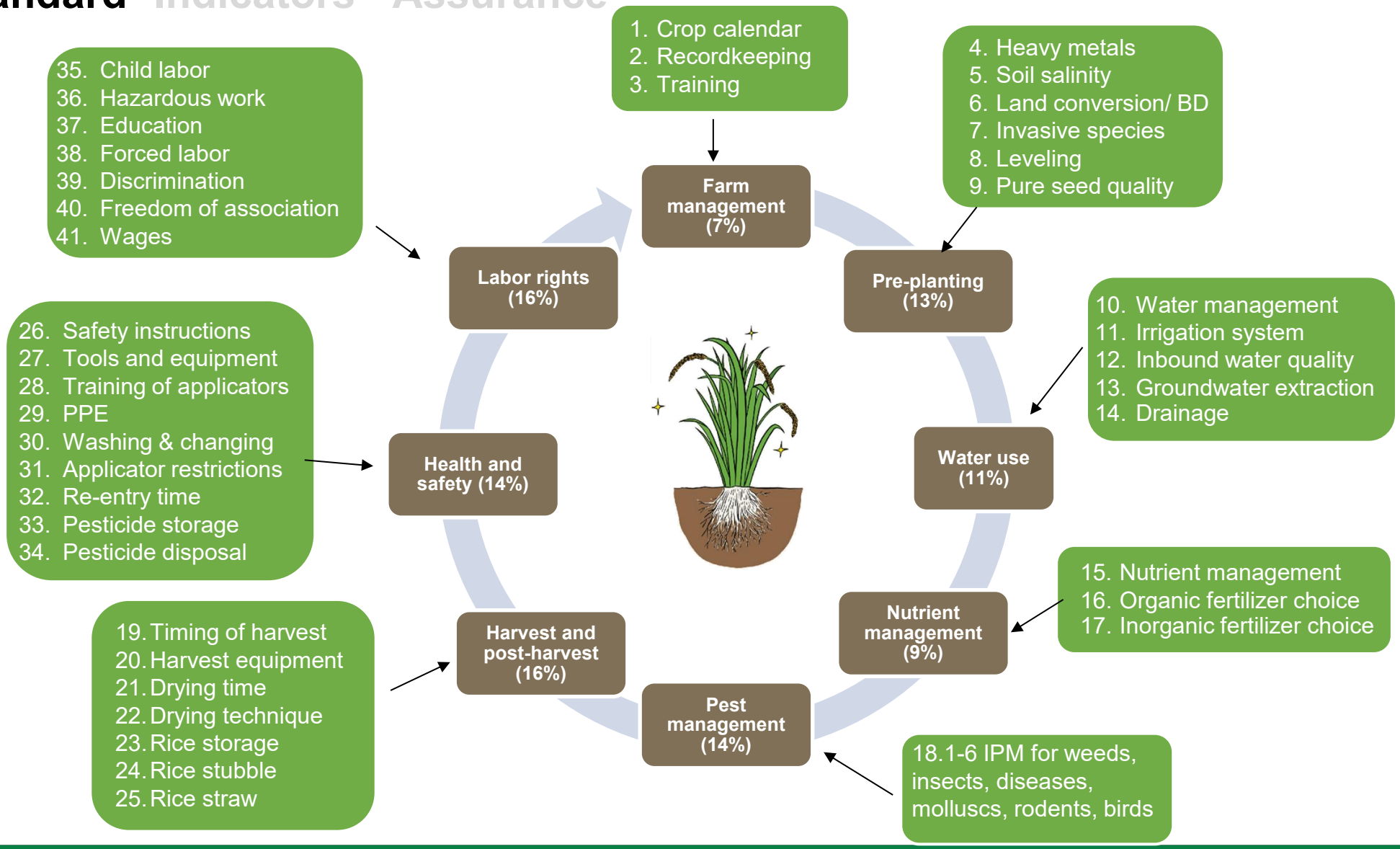
SRP Assurance Scheme

Verify Good Practice

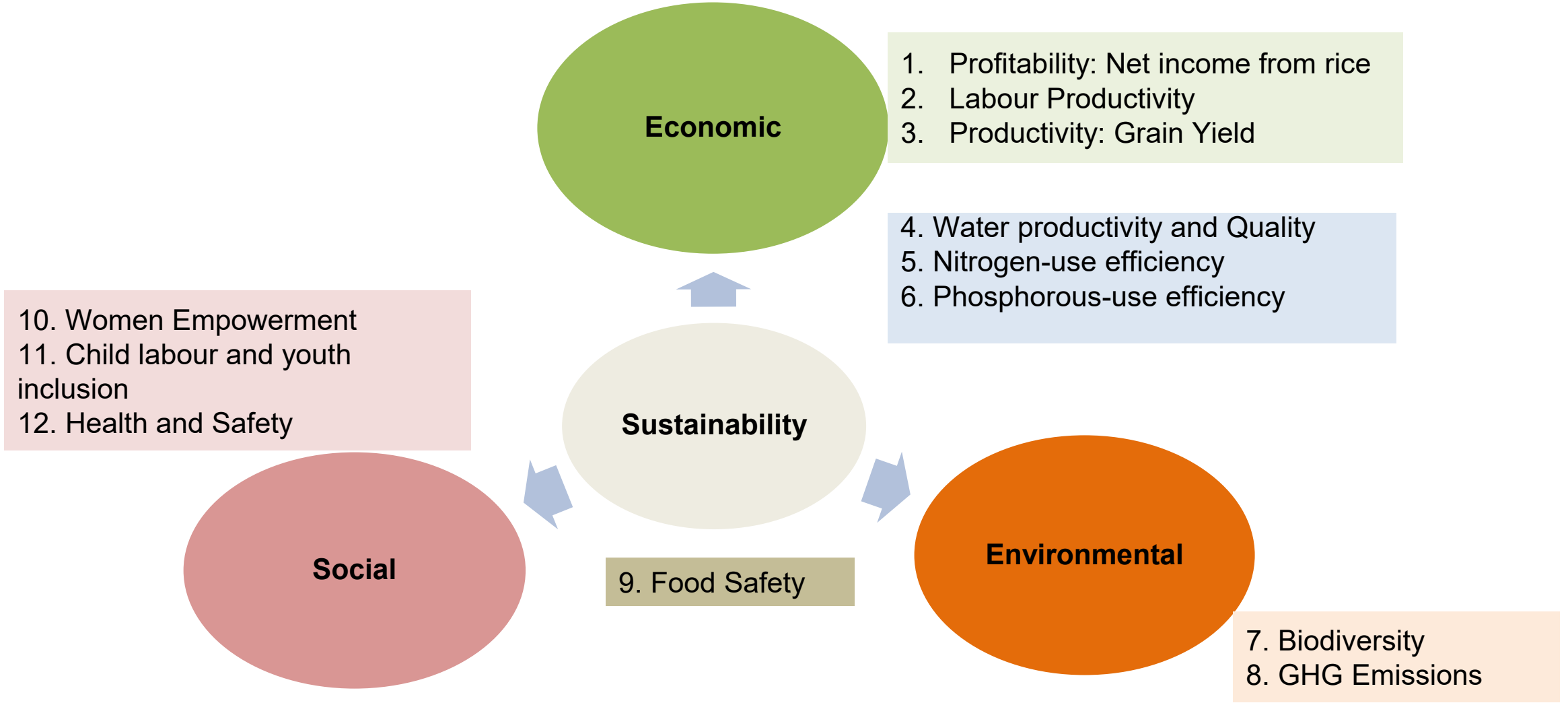
- A set of rules and guidelines to verify compliance with the SRP Standard
- Ensure that (on/off pack) SRP marketing claims are consistent and credible
- Monitoring of output

- Verify whether farmers comply with the SRP standard requirements
- Make claims

Standard -Indicators - Assurance



Standard - **Indicators** - Assurance



Standard -Indicators - **Assurance**

- An instrument to verify compliance with practice recommendations (represented by the SRP Standard)
- Assurance is needed to verify the sustainability claim made either on-product or off-product
- There are three possible levels of Assurance, which define the product claims that may be made under the Scheme

Level 1

Evaluation of compliance with SRP Standard by the producers or producer group themselves, or by a person or organization under their responsibility

Level 2

Evaluation by an approved external Verification Body **linked** to the producer or producer group for implementation of SRP Standard e.g., consultants, SRP authorized trainer

Level 3

Evaluation by an SRP-approved external Verification Body **independent** to producer or producer group e.g., SRP authorized trainer, Preferred by Nature

Standard -Indicators - **Assurance**

How does the Assurance Level affect your claim presentation?

Off-Pack (marketing materials, article, website etc.)	SRP Claim	SRP Claim	SRP Claim
	SRP Oganizational Logo	SRP Oganizational Logo	SRP Oganizational Logo
On-Pack		SRP-Verified Claim	SRP-Verified Claim
			SRP-Verified Label
Assurance Level	Level 1	Level 2	Level 3

SRP Scoring System

The SRP Score is presented on a 1 - 100 scale

$$\textbf{Score} = \frac{\text{Total number of points earned}}{\text{Maximum number of points possible}} \times 100$$

Total number of points earned = total points earned of all applicable requirements

Maximum number of points possible = total of highest points of all applicable requirements

* When all standards are met, maximum point is 132

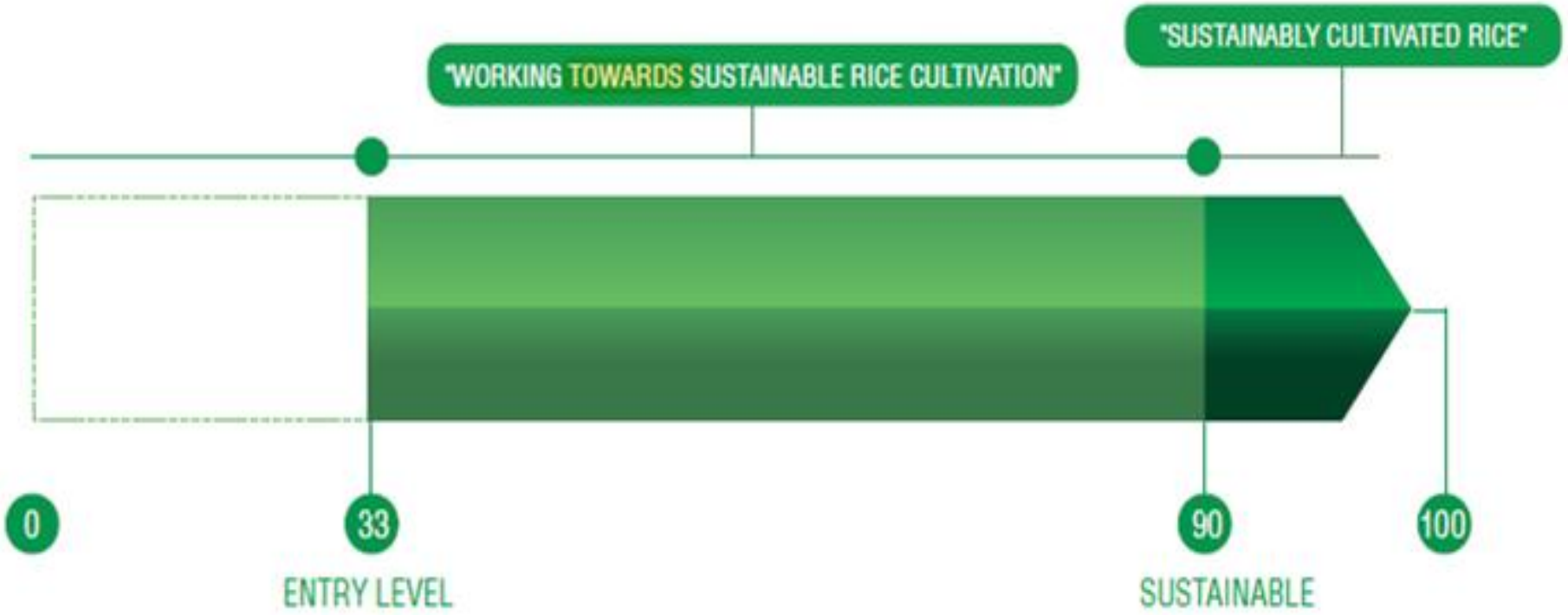
Non-Applicability

	Farming Conditions	Non-applicable requirement	Max. number of points possible
1	Farmer produces **under rainfed conditions**	11, 12, 13, 14	120
2	Farmer **does not dry** his/her rice himself/herself	22	129
3	Farmer **does not store** his/her rice	23	129
4	Farmer has **no children below 18 years old working on the farm**	36	129
5	Farmer has **no children of school age**	37	129
6	Farmer has **no hired workers** (labour)	36, 39, 40, 41	120

One Example out of the 41 Requirements

No.	Impact	Requirement	Level(s) of compliance	Points
17	Profitability Productivity Nutrient use efficiency Greenhouse gas emissions	**INORGANIC FERTILIZER CHOICE** Inorganic fertilizers can be used only if they are registered and come from a noncounterfeit source.	a) There is no use of inorganic fertilizers. b) Farmer uses inorganic fertilizers that are registered and come from a noncounterfeit source. c) Farmer uses inorganic fertilizers that are not registered and/or come from a counterfeit source. 	3 3* 0

SRP Scoring System



Mandatory Thresholds

Requirement	Threshold
R4- Heavy Metals	A group risk assessment (not older than 5 years) does not show risk from heavy metal contamination
R 18.1- R 18.5- Integrated pest management (except Bird Management	Farmer follows IPM principles and complies with five criteria
R23- Rice Storage	Farmer prevent contamination with hazardous substances such as agrochemicals, and maintains 14% moisture content or less
R29- Personal protective equipment	Pesticide applicators use at least chemical-resistant gloves and masks of good quality
R33- Pesticide and chemical storage	Pesticides and inorganic fertilizers (including partly-empty containers) are stored in a locked place that is separate from fuel, food, and rice and which is out of reach of children
R34- Pesticide disposal	Farmer meets the criteria for good practices in pesticide disposal
R35- Hazardous work	Family members below 15 years of age are living and working on the farm, and farmer complies with the four criteria.
R36- Child labour	There are children below 18 years of age working on the farm, and farmer complies with the five criteria.

Implementing the Sustainable Rice Platform

From Practice Gaps to Scalable Solutions

- Rice self-sufficiency requires higher yields with better input efficiency
- Soil fertility, water control, residue use and advisory services must work together
- Digital tools and SRP principles help translate good practices into measurable performance

Composting for Enhanced Soil Fertility

Implemented by
giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH
MOVEing Towards Rural Self-Sufficiency

Why compost matters in rice systems

- Improves soil structure and water retention.
- Recycles rice straw and local organic resources.
- Supports nutrient cycling and biological activity.
- Complements mineral fertilizer for sustained productivity

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Practical Compost Recipe

Use local materials, but manage balance

- Chop straw to accelerate decomposition.
- Layer dry and green materials; avoid compacting the pile.
- Keep moisture like a squeezed sponge: moist, not waterlogged.
- Cover the pile to conserve moisture and reduce nutrient losses.

Composting Process: Critical Control Points

Quality depends on management

- Temperature: pile should heat within a few days.
- Aeration: turn the pile every 1–2 weeks where feasible.
- Moisture: too dry stops decomposition; too wet causes bad odor.
- Maturity: dark color, earthy smell, stable texture, no fresh straw odor.

How to apply compost in rice fields

- Apply before final land preparation and incorporate shallowly.
- Prioritize weak plots, sandy patches and low organic matter fields.
- Use compost as a base amendment; do not rely on it as the only N source for high yields.
- Combine with site-specific mineral fertilizer recommendations.

Best use: compost + balanced fertilizer + good water control

Avoid: fresh manure, burning residues, waterlogged compost piles

Compost and Crop Performance

Compost does not replace agronomy — it strengthens the foundation for agronomy.

Better soil structure less crusting	**Improved water retention less drought stress**	**More nutrient cycling less loss risk**	**Higher resilience more stable yield**

- Benefits are strongest where compost quality is good and water is well managed.
- Results should be tracked with yield, fertilizer rate, labor and gross return data.

Rice Silage Production

Why Rice Silage?

Residue management with system benefits

- Rice straw is abundant after harvest and often underused.
- Silage preserves feed for dry season livestock feeding.
- Residue use reduces open burning and supports circular farming.
- Rice-livestock integration can diversify farm income.

Rice silage benefits within rice farming systems

- **Instead of burning residues, farmers can redirect straw into feed and income.**

Feed security during dry season

Residue value from straw biomass

Less burning lower emissions risk

- Integrated rice-livestock systems can improve resilience and reduce waste.
- Economics depend on straw availability, labor, storage materials and livestock demand.

Rice silage: practical production steps

1.	2.	3.	4.	5.
Collect straw at correct moisture	Chop short pieces	Add molasses/urea where advised	Compact tightly remove air	Seal airtight ferment

- Airtight sealing is essential: oxygen causes spoilage.
- Chopping improves compaction and animal intake.
- Supplementation may be needed because rice straw is low in protein.
- Use trained advice before applying urea treatment.

Quality and safety of rice silage

Good smell slightly acidic	No mold no rot	Tight seal no air pockets	Balanced ration with supplements

- Do not feed spoiled, moldy or badly fermented material.
- Introduce silage gradually into livestock diets.
- Combine with protein and mineral sources where required.
- Store away from flooding, rodents and direct puncture.

Water Management

Why water management determines rice performance

- Uniform water depth improves crop establishment and nutrient use.
- Excess water causes nutrient loss, poor rooting and delayed operations.
- Water stress around panicle initiation and flowering can sharply reduce yield.

Field-level water control

1. Land levelling uniform depth	2. Bunds hold water	3. Inlets/outlets control flow	4. Drainage remove excess	5. Records learn by season

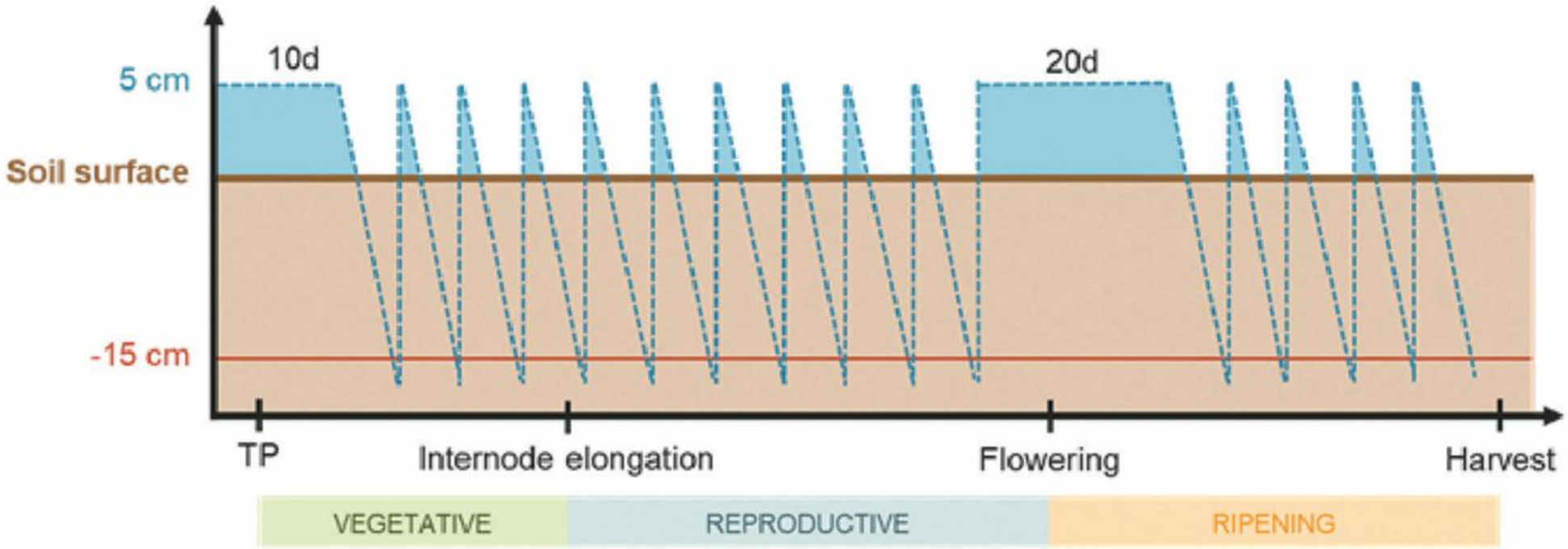
- Poor levelling creates dry and flooded zones in the same field.
- Bunds must be compacted and maintained before crop establishment.
- Drainage allows timely operations and reduces waterlogging risk.
- Water records make irrigation decisions evidence-based.

Alternate wetting and drying (AWD)

AWD is water management practice in irrigated rice characterized by the periodic drying and re-flooding of the rice field.

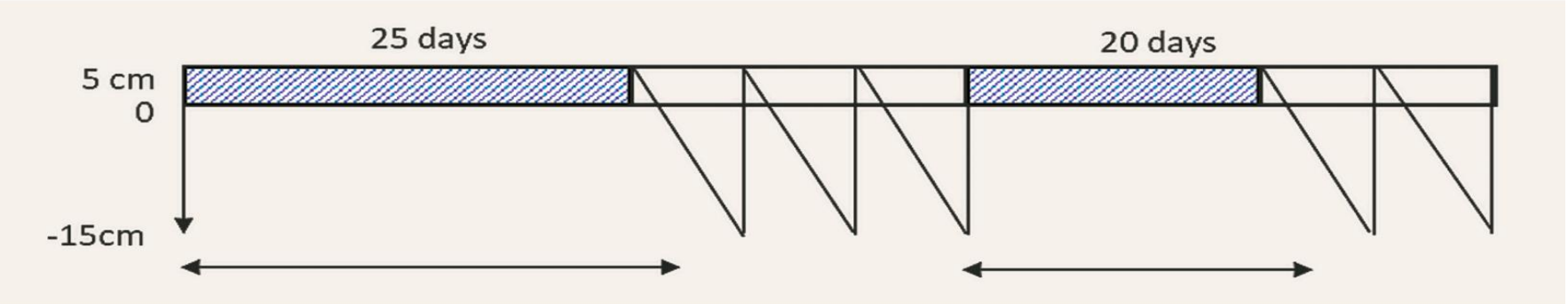
- Reduces greenhouse gas (GHG) emissions while maintaining yields.
- Reducing the number of irrigations events required;
- Reduced water use by up to 30%.

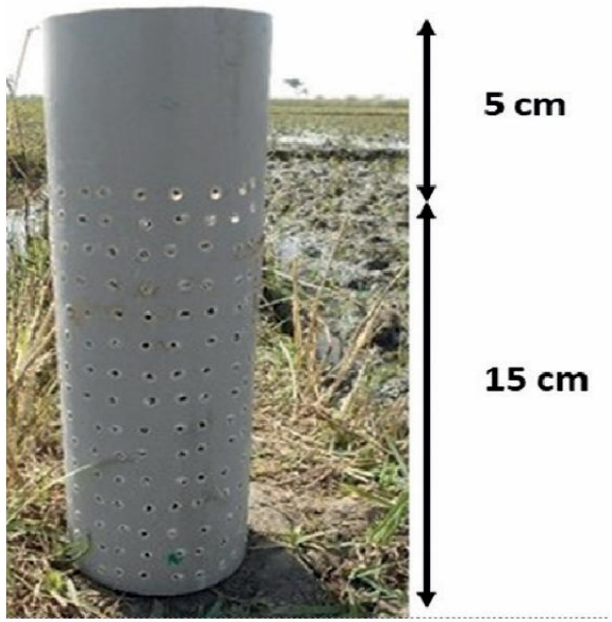
Alternate wetting and drying (AWD)



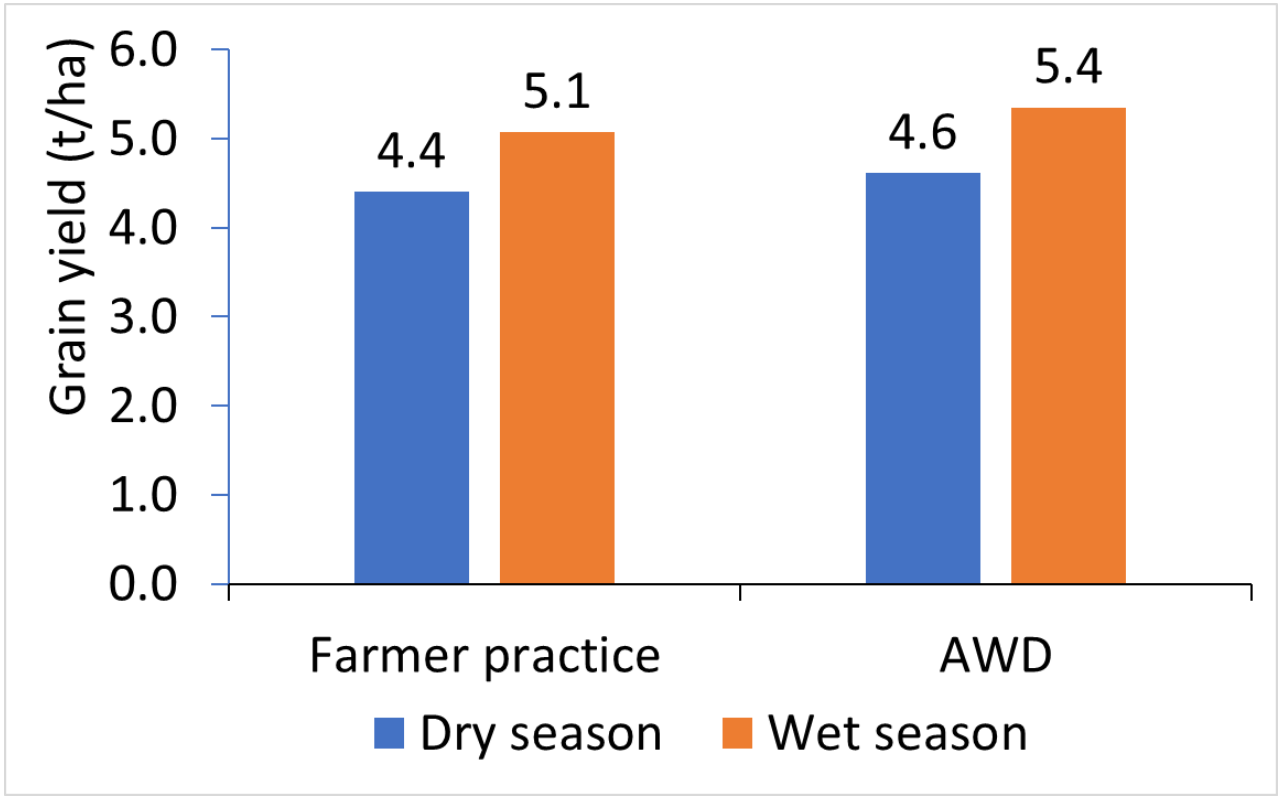
Mid-season drainage

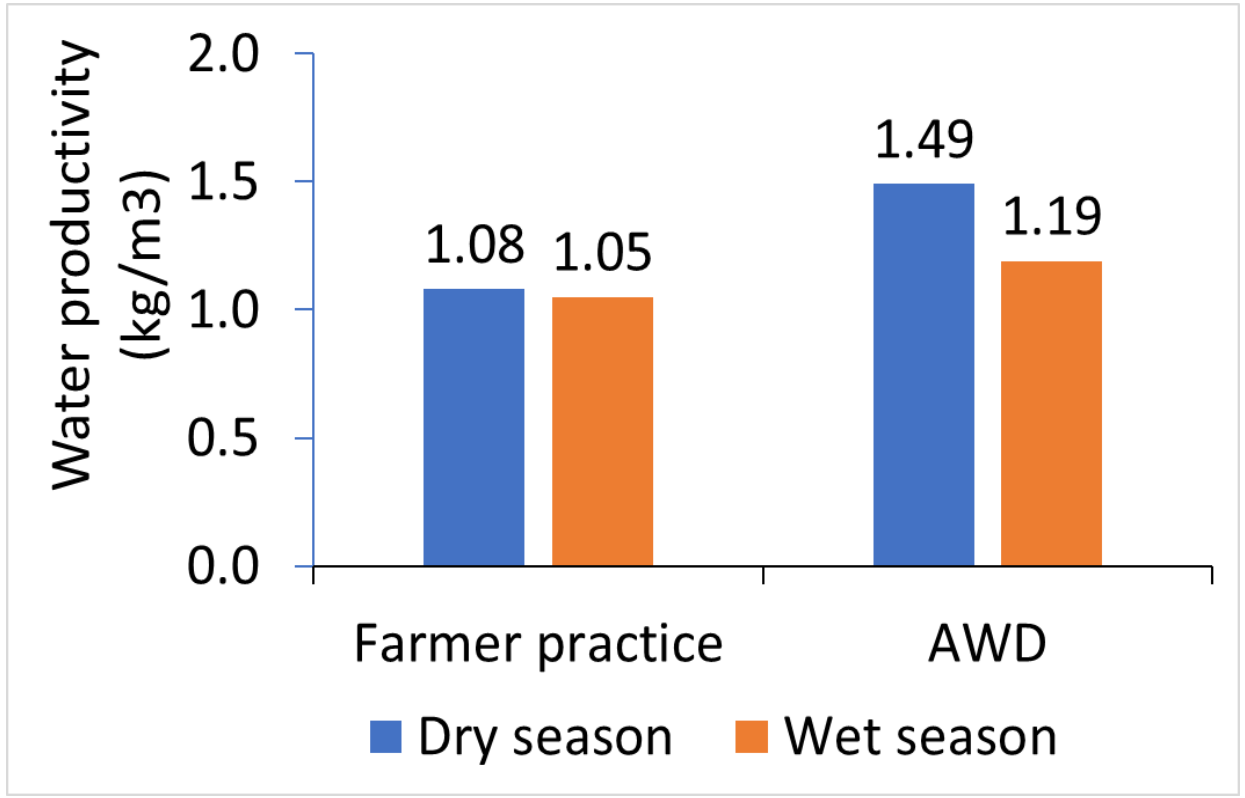
- Mid-season drainage involves forced drainage to remove all surface water from the rice field at mid to late tillering





Alternate wetting & drying (AWD)





Smart-valleys

- Community-based drainage canals + irrigation intake + bunded & levelled fields.
- Low-cost and easy to replicate.
- Includes site selection → design → construction → bunding → levelling → GAP integration.

Digital tools for rice productivity

Implemented by
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MOVEing Towards Rice Self-Sufficiency

Why are digital advisory tools needed?

- Farmers often face delayed, generalized or incomplete advisory services.
- Fertilizer and water decisions depend on location, season, variety and target yield.
- Digital tools can deliver localized recommendations and capture learning data.
- Extension agents can reach more farmers with consistent advice.

Evidence of value from RiceAdvice Lite

Yield gains
17–27%

Profit gains
25–67%

Scaled use
West Africa

- Benefits come from better fertilizer timing, rates and complementary GAPs.
- Digital advisory should be combined with training and follow-up.
- Impact depends on correct implementation of the recommendation.

Rice GapFinder and SRP performance indicators

- Rice GapFinder collects data on SRP Standard and performance indicators.
- It diagnoses yield gaps and management constraints at field level.
- SRP indicators connect agronomy with economic, environmental and social performance.
- Digital data support targeting, monitoring and policy decisions.

SUSTAINABILITY FRAMEWORK

SRP Performance Indicators Linked to Field Practices

Economic Domain

PI: Profitability

Compost reduces input costs; RiceAdvice optimizes fertilizer spend

PI: Yield (Productivity)

RiceAdvice: 7–27% yield gain.
RiceAdvice Lite: +0.4–1.1 t/ha.

PI: Labor Productivity

DSR eliminates transplanting; mechanized weed control; digital tools reduce advisory labor cost.

Environmental Domain

PI: Water Productivity

AWD saves 30%; SRI saves 44%; rainwater harvesting & smart valley reduce pumping. SRP PI supported.

PI: GHG Emissions

AWD reduces CH_4 by 30–50%; compost + mid-season drainage reduce N_2O; DSR lowers flood-related emissions.

PI: Nutrient Use Efficiency

SSNM via RiceAdvice; split N application; compost reduces luxury consumption and runoff losses.

Social Domain

PI: Women's Empowerment

Digital tools accessible to women farmers; DSR reduce labor burden; gender-disaggregated data captured.

PI: Food Safety

Reduced herbicide overuse via WeedManager; IPM compliance; proper storage linked to post-harvest GAP.

PI: Youth & Child Labor

RiceAdvice Lite creates youth service provider enterprises; smart valley construction drives youth employment.

What should be prioritized now for improving rice productivity

1. Fix the field first

Levelling, bunding, and drainage before fertilizer intensification

2. Valorize residues

Compost and silage models instead of open burning

3. Target irrigation wisely

Match technology choice to scheme typology and operating capacity

4. Institutionalize digital advisory

Embed tools in extension and private service networks

5. Measure what matters

Use SRP indicators for productivity, water, nutrient, and climate results

Priority intervention package by production context

Irrigated schemes

Levelling and drainage

Water scheduling and selective AWD

Digital tools e.g RiceAdvice

Favorable lowlands

Bunding and calendar alignment

Targeted nutrient use

Smart Valleys approach

Mixed rice–livestock zones

Residue collection and silage

Manure return and composting

Service mechanization for chopping/baling

Moving toward rice self-sufficiency means moving from isolated technologies to integrated systems

- Self-sufficiency will not come from inputs alone.
- The scalable package combines soil, water, residues, irrigation, and better decisions.

Upcoming webinars

#	MOVEing Towards Rice Self Sufficiency
1	Rice Self-Sufficiency in West Africa: Where Are We Today and Where Do We Need to Go
2	Boosting Rice Production: Pathways to Higher Yields and Better Quality
3	**Building Competitive Rice Value Chains with the Private Sector**
4	From Paddy to Product: Unlocking Rice Value Addition in West Africa
5	Trading Rice within the Region: The Role of Intra-ECOWAS Trade in Self-Sufficiency
6	Connecting Farmers to Markets: Strengthening Linkages for Inclusive Growth
7	Women at the Center: Advancing Gender-Inclusive Rice Processing
8	Policies that Enable Change: Advocacy and Regional Coordination for Rice Self-Sufficiency
9	Building Skills for the Future: Strengthening Expertise in the Rice Sector
10	From Vision to Action: A Roadmap for Rice Self-Sufficiency in West Africa

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For More Information on MOVE

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For more information on SRP: Sustainable Rice Platform (SRP) – Feed the world. Sustainably.

Thank You

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